

Supplemental Table 1a  
eMSC vs. eEP

Transcripts Cluster Id	Genesymbol	eMSC vs. eEP (Fold change)	Regulation	Gene description
7921916	RGS5	66.071304	up	regulator of G-protein signaling 5
7934906	ACTA2	39.267563	up	actin, alpha 2, smooth muscle, aorta
8170648	BGN	31.946854	up	biglycan
8113039	MEF2C	30.892147	up	myocyte enhancer factor 2C
8059905	COL6A3	30.404747	up	collagen, type VI, alpha 3
7960865	SLC2A3	28.149218	up	solute carrier family 2 (facilitated glucose transporter), me
7961710	ABCC9	28.10258	up	ATP-binding cassette, sub-family C (CFTR/MRP), member 9
7960947	A2M	27.202726	up	alpha-2-macroglobulin
8058765	FN1	26.163923	up	fibronectin 1
8115327	SPARC	25.535135	up	secreted protein, acidic, cysteine-rich (osteonectin)
8146863	SULF1	24.181532	up	sulfatase 1
8115099	PDGFRB	22.287388	up	platelet-derived growth factor receptor, beta polypeptide
8115543	EBF1	22.018791	up	early B-cell factor 1
7949588	CD248	21.835312	up	
8016094	GJC1	21.276186	up	gap junction protein, gamma 1, 45kDa
7921882	OLFML2B	20.67696	up	olfactomedin-like 2B
8097692	EDNRA	20.080338	up	endothelin receptor type A
8102792	PCDH18	19.01472	up	protocadherin 18
7925320	NID1	18.592417	up	nidogen 1
8144917	LPL	18.460636	up	lipoprotein lipase
8056363	SLC38A11	18.415771	up	solute carrier family 38, member 11
8080511	CACNA1D	18.170588	up	calcium channel, voltage-dependent, L type, alpha 1D sub
8055624	ZEB2	17.974997	up	zinc finger E-box binding homeobox 2
7965410	DCN	17.576475	up	decorin
8007701	HIGD1B	17.1339	up	HIG1 domain family, member 1B
8128991	LAMA4	16.547977	up	laminin, alpha 4
7952268	THY1	16.190092	up	Thy-1 cell surface antigen
8149071	ANGPT2	16.139389	up	angiopoietin 2
8058857	IGFBP5	15.331609	up	insulin-like growth factor binding protein 5
7965403	LUM	15.257358	up	lumican
7927606	PRKG1	15.20931	up	protein kinase, cGMP-dependent, type I
8098204	CPE	14.786374	up	carboxypeptidase E

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7936439	AFAP1L2	14.7761755	up	actin filament associated protein 1-like 2
7909789	TGFB2	14.546682	up	transforming growth factor, beta 2
8097973	GUCY1B3	14.494528	up	guanylate cyclase 1, soluble, beta 3
8097080	SYNPO2	14.358166	up	synaptopodin 2
7951437	GUCY1A2	14.289068	up	guanylate cyclase 1, soluble, alpha 2
8091511	P2RY14	13.797058	up	purinergic receptor P2Y, G-protein coupled, 14
7979133	NID2	13.791126	up	nidogen 2 (osteonidogen)
8123920	ELOVL2	13.498229	up	elongation of very long chain fatty acids (FEN1/Elo2, SUR4
7971150	LHFP	13.302231	up	lipoma HMGIC fusion partner
8126798	GPR116	13.052821	up	G protein-coupled receptor 116
8135594	CAV1	13.007801	up	caveolin 1, caveolae protein, 22kDa
7974902	RHOJ	12.88642	up	ras homolog gene family, member J
7961514	MGP	12.814338	up	matrix Gla protein
8062312	MYL9	12.434102	up	myosin, light chain 9, regulatory
7961540	RERG	12.202048	up	RAS-like, estrogen-regulated, growth inhibitor
8097753	DCLK2	11.983687	up	doublecortin-like kinase 2
7906919	RGS4	11.848627	up	regulator of G-protein signaling 4
7961532	ARHGDIB	11.600758	up	Rho GDP dissociation inhibitor (GDI) beta
8069689	ADAMTS5	11.5972805	up	ADAM metalloproteinase with thrombospondin type 1 mo
8050007	PXDN	11.579761	up	peroxidase homolog (Drosophila)
7952205	MCAM	11.407302	up	melanoma cell adhesion molecule
8001800	CDH11	11.356074	up	cadherin 11, type 2, OB-cadherin (osteoblast)
8121949	LAMA2	11.3407955	up	laminin, alpha 2 (merosin, congenital muscular dystrophy)
8123104	FNDC1	11.322584	up	fibronectin type III domain containing 1
7905147	C1orf54	11.07904	up	chromosome 1 open reading frame 54
8046922	COL3A1	10.714236	up	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV
8146957	PI15	10.688923	up	peptidase inhibitor 15
7972750	COL4A1	10.66342	up	collagen, type IV, alpha 1
8129573	MOXD1	10.641282	up	monooxygenase, DBH-like 1
8105013	EGFLAM	10.588038	up	EGF-like, fibronectin type III and laminin G domains
8155864	RORB	10.54466	up	RAR-related orphan receptor B
8072876	LGALS1	10.441154	up	lectin, galactoside-binding, soluble, 1 (galectin 1)
7937952	OR51E1	10.396446	up	olfactory receptor, family 51, subfamily E, member 1

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8057506	FRZB	10.315161	up	frizzled-related protein
7988467	FBN1	10.270378	up	fibrillin 1
7997642	CRISPLD2	10.205807	up	cysteine-rich secretory protein LCCL domain containing 2
8101659	SPARCL1	10.200091	up	SPARC-like 1 (mast9, hevin)
8081067	HTR1F	10.151827	up	5-hydroxytryptamine (serotonin) receptor 1F
7965040	PHLDA1	9.940473	up	pleckstrin homology-like domain, family A, member 1
7995681	MMP2	9.737001	up	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase
8163202	SVEP1	9.726731	up	sushi, von Willebrand factor type A, EGF and pentraxin do
8096875	ENPEP	9.70702	up	glutamyl aminopeptidase (aminopeptidase A)
8105229	PELO ITGA1	9.642977	up	pelota homolog (Drosophila)   integrin, alpha 1
8095751	DKFZP564O0823	9.5594425	up	
8057578	CALCRL	9.513786	up	calcitonin receptor-like
8110932	SEMA5A	9.490686	up	sema domain, seven thrombospondin repeats (type 1 and
8150698	SNAI2	9.416415	up	snail homolog 2 (Drosophila)
8014768	PLXDC1	9.385873	up	plexin domain containing 1
8099982	APBB2	9.335447	up	amyloid beta (A4) precursor protein-binding, family B, me
8085665	RFTN1	9.016815	up	raftlin, lipid raft linker 1
8162394	ASPN	8.951345	up	asporin
8163896	STOM	8.918233	up	stomatin
8092707	LEPREL1	8.905254	up	leprecan-like 1
7938225	OLFML1	8.87207	up	olfactomedin-like 1
8106393	F2R	8.709909	up	coagulation factor II (thrombin) receptor
8018966	TIMP2	8.661832	up	TIMP metalloproteinase inhibitor 2
7903214	LPPR4	8.627643	up	plasticity related gene 1
8101675	ABCG2	8.589982	up	ATP-binding cassette, sub-family G (WHITE), member 2
8113800	FBN2	8.533026	up	fibrillin 2 (congenital contractural arachnodactyly)
8166079	EGFL6	8.491811	up	EGF-like-domain, multiple 6
7954293	PDE3A	8.490945	up	phosphodiesterase 3A, cGMP-inhibited
8162404	ECM2	8.39878	up	extracellular matrix protein 2, female organ and adipocyte
8004545	ATP1B2	8.32292	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 2 polypeptide
8046695	ITGA4	8.173707	up	integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4
8064539	CPXM1	8.119926	up	carboxypeptidase X (M14 family), member 1
8036710	GMFG	8.070192	up	glia maturation factor, gamma

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8145470	DPYSL2	8.067399	up	dihydropyrimidinase-like 2
7915229	HEYL	8.010626	up	hairy/enhancer-of-split related with YRPW motif-like
7907222	PRRX1	7.978912	up	paired related homeobox 1
7906900	DDR2	7.8985634	up	discoidin domain receptor tyrosine kinase 2
8131844	GPNMB	7.7600293	up	glycoprotein (transmembrane) nmb
7960850	SLC2A14 SLC2A3	7.698911	up	solute carrier family 2 (facilitated glucose transporter), me
7906878	DDR2	7.6505327	up	discoidin domain receptor tyrosine kinase 2
7925531	AKT3	7.5937314	up	v-akt murine thymoma viral oncogene homolog 3 (proteir
8145361	NEFM	7.518595	up	neurofilament, medium polypeptide 150kDa
8115234	ANXA6	7.3884854	up	annexin A6
8142345	DOCK4	7.3683553	up	dedicator of cytokinesis 4
8099524	LDB2	7.310877	up	LIM domain binding 2
8151512	PAG1	7.2616105	up	phosphoprotein associated with glycosphingolipid microd
7936968	ADAM12	7.216624	up	ADAM metallopeptidase domain 12 (meltrin alpha)
8122807	AKAP12	7.167212	up	A kinase (PRKA) anchor protein (gravin) 12
8090098	MYLK	7.161019	up	myosin light chain kinase
8106573	THBS4	7.1513157	up	thrombospondin 4
8050766	ADCY3	7.1135006	up	adenylate cyclase 3
8151816	GEM	7.022526	up	GTP binding protein overexpressed in skeletal muscle
8097957	GUCY1A3	6.95283	up	guanylate cyclase 1, soluble, alpha 3
8134869	PCOLCE	6.9103565	up	procollagen C-endopeptidase enhancer
8174189	TMSL8 MGC39900	6.872727	up	thymosin-like 8   thymosin beta15b
8104663	CDH6	6.8478765	up	cadherin 6, type 2, K-cadherin (fetal kidney)
7945680	H19	6.8355975	up	
8020110	RAB31	6.8156557	up	
7961702	KCNJ8	6.7398124	up	potassium inwardly-rectifying channel, subfamily J, memb
7990632	SGK269	6.72046	up	NKF3 kinase family member
8121257	PRDM1	6.6692343	up	PR domain containing 1, with ZNF domain
7945262	JAM3	6.6509924	up	junctional adhesion molecule 3
8151684	C8orf57 LOC10012	6.6202602	up	chromosome 8 open reading frame 57   hypothetical LOC
7944082	TAGLN	6.577153	up	transgelin
7937772	IGF2	6.549632	up	insulin-like growth factor 2 (somatomedin A)
8150509	PLAT	6.537773	up	plasminogen activator, tissue

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7919815	CTSK	6.5332866	up	cathepsin K
8057620	COL5A2	6.4697433	up	collagen, type V, alpha 2
8152617	HAS2	6.432604	up	hyaluronan synthase 2
7906307	KIRREL	6.399863	up	kin of IRRE like (Drosophila)
8047127	MYO1B	6.309224	up	myosin IB
7999674	MYH11	6.2899384	up	myosin, heavy chain 11, smooth muscle
8157153	PALM2-AKAP2	6.259479	up	
8059413	DOCK10	6.1910973	up	dedicator of cytokinesis 10
7950555	LRRC32	6.1707153	up	leucine rich repeat containing 32
8038319	HRC	6.1648455	up	histidine rich calcium binding protein
7997504	CDH13	6.1554785	up	cadherin 13, H-cadherin (heart)
7976073	FLRT2	6.066825	up	fibronectin leucine rich transmembrane protein 2
8151686	MMP16	6.056421	up	matrix metalloproteinase 16 (membrane-inserted)
8089544	CCDC80	6.021498	up	coiled-coil domain containing 80
7947512	DKFZP586H2123	5.9716773	up	regeneration associated muscle protease
7939365	FJX1	5.9477983	up	four jointed box 1 (Drosophila)
8067040	NFATC2	5.9179277	up	nuclear factor of activated T-cells, cytoplasmic, calcineurin
8069269	COL6A1	5.8840866	up	collagen, type VI, alpha 1
8056257	FAP	5.8640146	up	fibroblast activation protein, alpha
7951662	CRYAB	5.8412485	up	crystallin, alpha B
8072626	TIMP3	5.819831	up	TIMP metalloproteinase inhibitor 3 (Sorsby fundus dystrop
7926916	ZEB1	5.787029	up	zinc finger E-box binding homeobox 1
8078330	RBMS3	5.7833805	up	RNA binding motif, single stranded interacting protein
7970033	COL4A2	5.6824436	up	collagen, type IV, alpha 2
7965873	IGF1	5.671659	up	insulin-like growth factor 1 (somatomedin C)
8088979	VGLL3	5.671587	up	vestigial like 3 (Drosophila)
8138067	PSCD3	5.6598616	up	pleckstrin homology, Sec7 and coiled-coil domains 3
7953603	C1S	5.657471	up	complement component 1, s subcomponent
8167185	TIMP1	5.5823245	up	TIMP metalloproteinase inhibitor 1
8106098	MAP1B	5.575596	up	microtubule-associated protein 1B
8101828	TSPAN5	5.5578837	up	tetraspanin 5
7991234	MFGE8	5.555486	up	milk fat globule-EGF factor 8 protein
8036473	PPP1R14A	5.550947	up	protein phosphatase 1, regulatory (inhibitor) subunit 14A

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8148501	PTP4A3   LOC10013:	5.5396385	up	protein tyrosine phosphatase type IVA, member 3   simila
7982597	THBS1	5.533235	up	thrombospondin 1
8041383	LTBP1	5.51515	up	latent transforming growth factor beta binding protein 1
8136347	CALD1	5.5019603	up	caldesmon 1
8102950	INPP4B	5.4972086	up	inositol polyphosphate-4-phosphatase, type II, 105kDa
7906061	SYT11	5.488002	up	synaptotagmin XI
8006214	CENTA2	5.2327294	up	centaurin, alpha 2
8176026	FLNA	5.2195888	up	filamin A, alpha (actin binding protein 280)
8056343	COBLL1	5.181384	up	COBL-like 1
8047784	ZDBF2	5.1787224	up	zinc finger, DBF-type containing 2
8148070	COL14A1	5.134301	up	collagen, type XIV, alpha 1
8108217	TGFBI	5.129335	up	transforming growth factor, beta-induced, 68kDa
8097867	KIAA0922	5.0801187	up	
8140579	CACNA2D1	5.061368	up	calcium channel, voltage-dependent, alpha 2/delta subun
8161044	TPM2	5.0568013	up	tropomyosin 2 (beta)
7905329	MLLT11	5.054736	up	myeloid/lymphoid or mixed-lineage leukemia (trithorax h
8035896	TSHZ3	5.00855	up	teashirt zinc finger homeobox 3
8108749	PCDHB18	5.008513	up	protocadherin beta 18 pseudogene
7962250	CPNE8	5.0032687	up	copine VIII
8077323	CNTN4	4.99473	up	contactin 4
8040365	TRIB2	4.9714217	up	tribbles homolog 2 (Drosophila)
8016646	COL1A1	4.9448495	up	collagen, type I, alpha 1
7964660	AVPR1A	4.9263763	up	arginine vasopressin receptor 1A
8169541	DOCK11	4.9098415	up	dedicator of cytokinesis 11
8089112	FILIP1L	4.879243	up	filamin A interacting protein 1-like
7932082	CCDC3	4.859053	up	coiled-coil domain containing 3
8152522	ENPP2	4.853854	up	ectonucleotide pyrophosphatase/phosphodiesterase 2 (at
8135734	C7orf58	4.845587	up	chromosome 7 open reading frame 58
8092970	APOD	4.810966	up	apolipoprotein D
8067157	CBLN4	4.7945075	up	cerebellin 4 precursor
7970924	STARD13	4.782267	up	StAR-related lipid transfer (START) domain containing 13
8115691	SLIT3	4.7700415	up	slit homolog 3 (Drosophila)
7905220	ECM1	4.766947	up	extracellular matrix protein 1

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8174610	LRCH2	4.763786	up	leucine-rich repeats and calponin homology (CH) domain
8139212	GLI3	4.755533	up	
8007420	AOC3	4.712307	up	amine oxidase, copper containing 3 (vascular adhesion protein 1)
8039607	PEG3 ZIM2	4.7086344	up	paternally expressed 3   zinc finger, imprinted 2
7970954	DCLK1	4.703135	up	doublecortin-like kinase 1
7902127	SGIP1	4.6985865	up	SH3-domain GRB2-like (endophilin) interacting protein 1
8091867	BCHE	4.698123	up	butyrylcholinesterase
8126428	TRERF1	4.6849813	up	transcriptional regulating factor 1
8052269	CCDC88A	4.671764	up	coiled-coil domain containing 88A
8134263	COL1A2	4.6591177	up	collagen, type I, alpha 2
8042439	ANTXR1	4.622141	up	anthrax toxin receptor 1
8046333	CYBRD1	4.6113577	up	cytochrome b reductase 1
7974689	DACT1	4.600902	up	dapper, antagonist of beta-catenin, homolog 1 (Xenopus laevis)
8113504	C5orf13	4.5971527	up	chromosome 5 open reading frame 13
8121588	DSE	4.576738	up	dermatan sulfate epimerase
8043363	C2orf59 LOC54147	4.5592937	up	chromosome 2 open reading frame 59   hypothetical LOC54147
7966749	TESC	4.5585456	up	tescalcin
7932796	SVIL	4.542746	up	supervillin
8083779	SERPINI1	4.5377536	up	serpin peptidase inhibitor, clade I (neuroserpin), member 1
7970763	FLT1	4.5071077	up	fms-related tyrosine kinase 1 (vascular endothelial growth factor receptor 1)
7970569	SACS	4.49427	up	spastic ataxia of Charlevoix-Saguenay (saccin)
7922717	RGS16	4.4904637	up	regulator of G-protein signaling 16
8160040	PTPRD	4.4866066	up	protein tyrosine phosphatase, receptor type, D
8161964	FRMD3	4.480713	up	FERM domain containing 3
8100541	IGFBP7	4.4805126	up	insulin-like growth factor binding protein 7
8058091	SATB2	4.4529667	up	SATB homeobox 2
8117995	TUBB	4.450812	up	tubulin, beta
8107307	CAMK4	4.450164	up	calcium/calmodulin-dependent protein kinase IV
8177858	TUBB	4.4427004	up	tubulin, beta
8179174	TUBB	4.4408336	up	tubulin, beta
7933488	C10orf72	4.4237304	up	chromosome 10 open reading frame 72
8149413	DLC1	4.3980246	up	deleted in liver cancer 1
8083968	NLGN1	4.3603625	up	neuroligin 1

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7942957	PRSS23	4.3587766	up	protease, serine, 23
7942596	SERPINH1	4.3509727	up	serpin peptidase inhibitor, clade H (heat shock protein 47)
8094911	ATP10D	4.333474	up	ATPase, class V, type 10D
8081288	TMEM45A	4.3226366	up	transmembrane protein 45A
8147461	SDC2	4.2922688	up	syndecan 2
7943369	TMEM133	4.284354	up	transmembrane protein 133
8092520	LOC285382	4.2576303	up	hypothetical gene supported by AK091454
8097991	TDO2	4.2514653	up	tryptophan 2,3-dioxygenase
8162533	PTCH1	4.250068	up	patched homolog 1 (Drosophila)
8041781	EPAS1	4.2156	up	endothelial PAS domain protein 1
8104079	FAT	4.209736	up	
7961083	CLEC2B	4.2034583	up	C-type lectin domain family 2, member B
7956856	MSRB3	4.1845336	up	methionine sulfoxide reductase B3
8127767	ELOVL4	4.184053	up	elongation of very long chain fatty acids (FEN1/Elo2, SUR4
8121712	SLC35F1	4.1645207	up	solute carrier family 35, member F1
8172708	NUDT11	4.156832	up	nudix (nucleoside diphosphate linked moiety X)-type moti
7966690	TBX3	4.152437	up	T-box 3 (ulnar mammary syndrome)
8108697	PCDHB5	4.131452	up	protocadherin beta 5
8114814	NR3C1	4.1241846	up	nuclear receptor subfamily 3, group C, member 1 (glucoc
8054611	C2orf59 LOC54147	4.121842	up	chromosome 2 open reading frame 59   hypothetical LOC
8137670	PDGFA	4.1050243	up	platelet-derived growth factor alpha polypeptide
8102848	SETD7	4.091811	up	SET domain containing (lysine methyltransferase) 7
7904158	OLFML3	4.0916653	up	olfactomedin-like 3
8171172	MXRA5	4.08271	up	matrix-remodelling associated 5
8051762	SLC8A1	4.080743	up	solute carrier family 8 (sodium/calcium exchanger), memt
8003667	SERPINF1	4.08028	up	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pi
8095303	LPHN3	4.080261	up	latrophilin 3
8108724	PCDHB10	4.0770574	up	protocadherin beta 10
7968417	FRY	4.068975	up	furry homolog (Drosophila)
8042788	ACTG2	4.0687175	up	actin, gamma 2, smooth muscle, enteric
8151768	RUNX1T1	4.051766	up	runt-related transcription factor 1; translocated to, 1 (cycl
7951977	FXD6	4.050826	up	FXD domain containing ion transport regulator 6
8108753	PCDHB15	4.0494447	up	protocadherin beta 15



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8030007	EMP3	4.027714	up	epithelial membrane protein 3
7979204	FERMT2	4.0066423	up	fermitin family homolog 2 (Drosophila)
8048749	KCNE4	3.9981122	up	potassium voltage-gated channel, Isk-related family, mem
8047248	PLCL1	3.9879813	up	phospholipase C-like 1
8023598	RNF152	3.9831774	up	ring finger protein 152
7938485	MICAL2	3.9631054	up	microtubule associated monooxygenase, calponin and LIM
7940565	FADS2	3.953688	up	fatty acid desaturase 2
7937335	IFITM1	3.9332047	up	interferon induced transmembrane protein 1 (9-27)
8047926	MAP2	3.924339	up	microtubule-associated protein 2
7946589	MRVI1	3.9184303	up	murine retrovirus integration site 1 homolog
8120468	BAI3	3.918003	up	brain-specific angiogenesis inhibitor 3
7976810	SNORD113-3	3.885339	up	small nucleolar RNA, C/D box 113-3
8162908	GRIN3A	3.8813393	up	glutamate receptor, ionotropic, N-methyl-D-aspartate 3A
8041644	PLEKHH2	3.8732154	up	pleckstrin homology domain containing, family H (with M)
8021685	CCDC102B	3.8640466	up	coiled-coil domain containing 102B
7976814	SNORD114-2	3.8547812	up	small nucleolar RNA, C/D box 114-2
7956551	GEFT SLC26A10	3.8447313	up	RhoA/RAC/CDC42 exchange factor   solute carrier family :
8057045	FKBP7	3.8232658	up	FK506 binding protein 7
7980908	FBLN5	3.8164043	up	fibulin 5
8062251	EPB41L1	3.8147507	up	erythrocyte membrane protein band 4.1-like 1
7943349	FLJ32810	3.80734	up	
8044021	IL1RL1	3.806449	up	interleukin 1 receptor-like 1
8147573	OSR2	3.7972152	up	odd-skipped related 2 (Drosophila)
8140840	STEAP4	3.7875402	up	STEAP family member 4
7944722	UBASH3B	3.7789185	up	ubiquitin associated and SH3 domain containing, B
8071758	MMP11	3.7688298	up	matrix metalloproteinase 11 (stromelysin 3)
8142194	LAMB1	3.7662385	up	laminin, beta 1
8023415	TCF4	3.753584	up	transcription factor 4
7929388	PLCE1	3.7489219	up	phospholipase C, epsilon 1
7913357	ECE1	3.744457	up	endothelin converting enzyme 1
8111387	ADAMTS12	3.741271	up	ADAM metalloproteinase with thrombospondin type 1 mo
8155192	C9orf19	3.7267756	up	chromosome 9 open reading frame 19
8138765	HOXA11	3.7236822	up	homeobox A11

Supplemental Table 1a  
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8041508	QPCT	3.718512	up	glutaminyl-peptide cyclotransferase (glutaminyl cyclase)
7990657	TBC1D2B	3.704055	up	TBC1 domain family, member 2B
7956401	SHMT2	3.6799438	up	serine hydroxymethyltransferase 2 (mitochondrial)
8144742	EFHA2	3.6759164	up	EF-hand domain family, member A2
8149551	PSD3	3.6743245	up	pleckstrin and Sec7 domain containing 3
7965941	GLT8D2	3.6675494	up	glycosyltransferase 8 domain containing 2
8143397	DENND2A	3.6673076	up	DENN/MADD domain containing 2A
7953428	CD4	3.6514838	up	
8017867	FAM20A	3.6165667	up	family with sequence similarity 20, member A
8029006	AXL	3.61544	up	
8112980	EDIL3	3.610157	up	EGF-like repeats and discoidin I-like domains 3
7972682	KDEL1	3.5928562	up	KDEL (Lys-Asp-Glu-Leu) containing 1
8068651	PCP4	3.5863745	up	Purkinje cell protein 4
7945991	OR51E2	3.5856197	up	olfactory receptor, family 51, subfamily E, member 2
8115490	ADAM19	3.5733836	up	ADAM metalloproteinase domain 19 (meltrin beta)
7942417	ARHGEF17	3.553862	up	Rho guanine nucleotide exchange factor (GEF) 17
8067233	PMEPA1	3.5436523	up	prostate transmembrane protein, androgen induced 1
8058869	TNS1	3.5409706	up	tensin 1
8007154	FKBP10	3.534451	up	FK506 binding protein 10, 65 kDa
8108720	PCDHB9	3.5279286	up	protocadherin beta 9
8057486	PDE1A	3.521451	up	phosphodiesterase 1A, calmodulin-dependent
8148317	MYC LOC10013052	3.5063984	up	v-myc myelocytomatosis viral oncogene homolog (avian)
8161755	ALDH1A1	3.501809	up	aldehyde dehydrogenase 1 family, member A1
7950743	RAB30	3.4953744	up	
8006433	CCL2	3.4875405	up	chemokine (C-C motif) ligand 2
7949503	EFEMP2	3.4827125	up	EGF-containing fibulin-like extracellular matrix protein 2
7954997	TMEM16F	3.4774957	up	transmembrane protein 16F
8170119	FHL1	3.4732008	up	four and a half LIM domains 1
8096160	ARHGAP24	3.449458	up	Rho GTPase activating protein 24
7934997	PPP1R3C	3.4472013	up	protein phosphatase 1, regulatory (inhibitor) subunit 3C
8127346	RAB23	3.4247441	up	
8167815	MAGED2	3.4165142	up	melanoma antigen family D, 2
7900340	BMP8A	3.4150846	up	bone morphogenetic protein 8a

Supplemental Table 1a  
eMSC vs. eEP

7952601	ETS1	3.4145176	up	v-ets erythroblastosis virus E26 oncogene homolog 1 (avian)
7972336	DZIP1	3.4141117	up	DAZ interacting protein 1
7958202	CHST11	3.4129207	up	carbohydrate (chondroitin 4) sulfotransferase 11
8105040	OSMR	3.405387	up	oncostatin M receptor
8140955	CDK6	3.3989553	up	cyclin-dependent kinase 6
8129120	C6orf189	3.389297	up	chromosome 6 open reading frame 189
7917728	FAM69A RPL5	3.3853993	up	family with sequence similarity 69, member A   ribosomal
7935613	HPSE2	3.3852928	up	heparanase 2
8042830	MTHFD2	3.3849337	up	methylenetetrahydrofolate dehydrogenase (NADP+ dependent)
8149555	PSD3	3.3720183	up	pleckstrin and Sec7 domain containing 3
7974316	FRMD6	3.3667593	up	FERM domain containing 6
8045470	THSD7B	3.3649685	up	thrombospondin, type I, domain containing 7B
7984112	RAB8B	3.3638403	up	
8151756	TMEM55A	3.3607137	up	transmembrane protein 55A
8171684	SH3KBP1	3.357219	up	SH3-domain kinase binding protein 1
7946142	PRKCDBP	3.354513	up	protein kinase C, delta binding protein
8096176	PTPN13	3.3415625	up	protein tyrosine phosphatase, non-receptor type 13 (ApoE receptor 2)
8078286	RARB LOC1001303	3.3169098	up	retinoic acid receptor, beta   hypothetical protein LOC1001303
8048026	CPS1	3.3164093	up	carbamoyl-phosphate synthetase 1, mitochondrial
8024111	CNN2	3.31516	up	calponin 2
7969613	GPC6	3.3050885	up	glypican 6
8144322	MYOM2	3.303565	up	myomesin (M-protein) 2, 165kDa
8119357	DAAM2	3.2998562	up	dishevelled associated activator of morphogenesis 2
7973336	MMP14	3.2993028	up	matrix metalloproteinase 14 (membrane-inserted)
8092578	ETV5	3.2986217	up	ets variant gene 5 (ets-related molecule)
7965322	KITLG	3.295684	up	KIT ligand
8042038	RPL23AP13	3.293368	up	ribosomal protein L23a pseudogene 13
7929511	ENTPD1	3.2904727	up	ectonucleoside triphosphate diphosphohydrolase 1
7905088	HIST2H2AC BOLA1	3.2882786	up	histone cluster 2, H2ac   bolA homolog 1 (E. coli)
8106986	RHOBTB3	3.2873898	up	Rho-related BTB domain containing 3
8167835	TRO	3.283628	up	trophinin
8122222	PDE7B	3.2774365	up	phosphodiesterase 7B
8150428	SFRP1	3.2706177	up	secreted frizzled-related protein 1

Supplemental Table 1a  
eMSC vs. eEP

7970844	KATNAL1	3.2662508	up	katanin p60 subunit A-like 1
8021129	C18orf23 RNF165	3.2652051	up	chromosome 18 open reading frame 23   ring finger prote
7953200	CCND2	3.263396	up	cyclin D2
7972003	KLF12	3.261225	up	Kruppel-like factor 12
7903777	GSTM5	3.2602682	up	glutathione S-transferase M5
7972826	C13orf29	3.255323	up	chromosome 13 open reading frame 29
7938608	SPON1	3.235216	up	spondin 1, extracellular matrix protein
8116418	GFPT2	3.2331326	up	glutamine-fructose-6-phosphate transaminase 2
8123678	C6orf145	3.230103	up	chromosome 6 open reading frame 145
7921088	NES	3.2254956	up	nestin
7991186	NTRK3	3.219407	up	neurotrophic tyrosine kinase, receptor, type 3
7989199	ALDH1A2	3.2076764	up	aldehyde dehydrogenase 1 family, member A2
8132557	AEBP1	3.2023196	up	AE binding protein 1
8102532	PDE5A	3.1999435	up	phosphodiesterase 5A, cGMP-specific
7968577	NBEA	3.195922	up	neurobeachin
8062852	PKIG	3.1853886	up	protein kinase (cAMP-dependent, catalytic) inhibitor gami
8171248	KAL1	3.1792362	up	Kallmann syndrome 1 sequence
7969677	MBNL2	3.175161	up	muscleblind-like 2 (Drosophila)
7960744	C1R	3.171141	up	complement component 1, r subcomponent
8094301	SLIT2	3.1546516	up	slit homolog 2 (Drosophila)
8174692	6-Sep	3.1545198	up	septin 6
7963092	FMNL3	3.154001	up	formin-like 3
8133860	GNAI1	3.1479611	up	guanine nucleotide binding protein (G protein), alpha inhi
7950810	SYTL2	3.1477516	up	synaptotagmin-like 2
8040113	DDEF2	3.145959	up	development and differentiation enhancing factor 2
8086120	DCLK3	3.135572	up	doublecortin-like kinase 3
8036284	COX7A1	3.1353283	up	cytochrome c oxidase subunit VIIa polypeptide 1 (muscle)
7993458	C16orf45	3.1345448	up	chromosome 16 open reading frame 45
7984079	TPM1	3.1301644	up	tropomyosin 1 (alpha)
8164200	ANGPTL2	3.1274056	up	angiopoietin-like 2
8077376	ITPR1	3.1193256	up	inositol 1,4,5-triphosphate receptor, type 1
7937330	IFITM2	3.114547	up	interferon induced transmembrane protein 2 (1-8D)
7989661	OAZ2	3.108744	up	ornithine decarboxylase antizyme 2

Supplemental Table 1a  
eMSC vs. eEP

8015635	PTRF	3.106855	up	polymerase I and transcript release factor
8174670	RP13-347D8.3	3.1057816	up	KIAA1210 protein
8029950	EHD2	3.1013794	up	EH-domain containing 2
8130867	THBS2	3.0974648	up	thrombospondin 2
7979824	ACTN1	3.0950832	up	actinin, alpha 1
8050160	MBOAT2	3.0873854	up	membrane bound O-acyltransferase domain containing 2
8088919	ROBO1	3.0776412	up	roundabout, axon guidance receptor, homolog 1 (Drosophila)
8133155	TPST1	3.076922	up	tyrosylprotein sulfotransferase 1
8017039	4-Sep	3.0757627	up	septin 4
8030383	RCN3	3.0664244	up	reticulocalbin 3, EF-hand calcium binding domain
8127051	TRAM2	3.0663664	up	translocation associated membrane protein 2
8046530	HOXD11	3.0637393	up	homeobox D11
7935188	SORBS1	3.0635812	up	sorbin and SH3 domain containing 1
8087935	NT5DC2	3.06049	up	5'-nucleotidase domain containing 2
8149774	LOXL2 ENTPD4	3.0596797	up	lysyl oxidase-like 2   ectonucleoside triphosphate diphosphatase 4
8127201	COL21A1	3.0580852	up	collagen, type XXI, alpha 1
8129985	PLAGL1	3.0551293	up	pleiomorphic adenoma gene-like 1
8091078	RBP1	3.045371	up	retinol binding protein 1, cellular
7956301	LRP1	3.029223	up	low density lipoprotein-related protein 1 (alpha-2-macroglobulin receptor type 1)
8104570	FAM105A	3.0259724	up	family with sequence similarity 105, member A
7982366	SCG5	3.0139425	up	secretogranin V (7B2 protein)
8156278	S1PR3 C9orf47	3.0125153	up	sphingosine-1-phosphate receptor 3   chromosome 9 open reading frame 47
8025918	CNN1	2.9994009	up	calponin 1, basic, smooth muscle
8124380	HIST1H1A	2.9964154	up	histone cluster 1, H1a
7966135	CORO1C	2.994129	up	coronin, actin binding protein, 1C
8023727	DSEL	2.9909837	up	dermatan sulfate epimerase-like
7983527	SEMA6D	2.9888504	up	sema domain, transmembrane domain (TM), and cytoplasmic domain containing 6
8089835	FSTL1	2.977976	up	follistatin-like 1
8098441	ODZ3	2.9751964	up	odz, odd Oz/ten-m homolog 3 (Drosophila)
8100154	CORIN	2.974674	up	corin, serine peptidase
8083166	TRPC1	2.9743664	up	transient receptor potential cation channel, subfamily C, member 1
7953564	C12orf57	2.9714649	up	chromosome 12 open reading frame 57
7902808	HS2ST1	2.9705818	up	heparan sulfate 2-O-sulfotransferase 1

Supplemental Table 1a  
eMSC vs. eEP

8119525	HCRP1	2.9651468	up	
8145865	GPR124	2.9628646	up	G protein-coupled receptor 124
7999079	ADCY9	2.9577408	up	adenylate cyclase 9
8075673	RBM9	2.9492435	up	RNA binding motif protein 9
8081590	PHLDB2	2.9421673	up	pleckstrin homology-like domain, family B, member 2
8168589	ZNF711	2.9377625	up	zinc finger protein 711
7902874	LRRC8C	2.9268765	up	leucine rich repeat containing 8 family, member C
8138749	HOXA9	2.9264069	up	homeobox A9
8014233	SLFN11	2.9257727	up	schlafen family member 11
8041206	LBH	2.9234214	up	limb bud and heart development homolog (mouse)
7991335	ANPEP	2.9208083	up	alanyl (membrane) aminopeptidase (aminopeptidase N, a
8179595	GABBR1	2.9194882	up	gamma-aminobutyric acid (GABA) B receptor, 1
7914648	PHC2	2.9161718	up	polyhomeotic homolog 2 (Drosophila)
7962058	TMTC1	2.9141715	up	transmembrane and tetratricopeptide repeat containing 1
7951178	TRPC6	2.9126966	up	transient receptor potential cation channel, subfamily C, r
7939376	LDLRAD3	2.9072516	up	low density lipoprotein receptor class A domain containin
8016390	COPZ2	2.906741	up	coatomer protein complex, subunit zeta 2
7928558	ZMIZ1	2.9022899	up	zinc finger, MIZ-type containing 1
7974109	LRFN5	2.897485	up	leucine rich repeat and fibronectin type III domain contain
8112107	PPAP2A	2.8954537	up	phosphatidic acid phosphatase type 2A
7908204	HMCN1	2.890739	up	hemicentin 1
7944049	SIDT2	2.8842301	up	SID1 transmembrane family, member 2
8178298	GABBR1	2.8818111	up	gamma-aminobutyric acid (GABA) B receptor, 1
8117402	HIST1H4E   HIST4H4	2.8775563	up	histone cluster 1, H4e   histone cluster 4, H4   histone clu
7961546	EPS8	2.8728938	up	epidermal growth factor receptor pathway substrate 8
8046895	KIAA1946	2.8704264	up	
8036252	CLIP3	2.8684955	up	CAP-GLY domain containing linker protein 3
8168749	SRPX2	2.8630438	up	sushi-repeat-containing protein, X-linked 2
7963786	ITGA5	2.8609765	up	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
8107850	CHSY3	2.859712	up	chondroitin sulfate synthase 3
8126839	TNFRSF21	2.8571017	up	tumor necrosis factor receptor superfamily, member 21
8126402	TRERF1	2.8567882	up	transcriptional regulating factor 1
7980720	TTC7B	2.8531559	up	tetratricopeptide repeat domain 7B

Supplemental Table 1a  
eMSC vs. eEP

8121601	FAM26E	2.8528621	up	family with sequence similarity 26, member E
8124280	C6orf32	2.8524086	up	chromosome 6 open reading frame 32
7943051	NAALAD2	2.852143	up	N-acetylated alpha-linked acidic dipeptidase 2
7953040	CACNA1C	2.8472118	up	calcium channel, voltage-dependent, L type, alpha 1C sub
8085774	ZNF385D	2.8393364	up	zinc finger protein 385D
8169389	PAK3	2.8354023	up	p21 (CDKN1A)-activated kinase 3
8022674	CDH2	2.8343842	up	cadherin 2, type 1, N-cadherin (neuronal)
8017885	ABCA8	2.8307867	up	ATP-binding cassette, sub-family A (ABC1), member 8
7928944	PAPSS2	2.8304868	up	3'-phosphoadenosine 5'-phosphosulfate synthase 2
8067305	SYCP2	2.8286178	up	synaptonemal complex protein 2
8021695	DOK6	2.823917	up	docking protein 6
7951565	ARHGAP20	2.8237014	up	Rho GTPase activating protein 20
8061572	COX4I2	2.8233037	up	cytochrome c oxidase subunit IV isoform 2 (lung)
8096314	PKD2	2.8206925	up	polycystic kidney disease 2 (autosomal dominant)
8102982	GAB1	2.8199587	up	GRB2-associated binding protein 1
8037005	TGFB1	2.8188384	up	transforming growth factor, beta 1
7953409	PTMS	2.818156	up	parathyrosin
8019964	ARHGAP28	2.814463	up	Rho GTPase activating protein 28
7989670	RBPM52	2.8144276	up	RNA binding protein with multiple splicing 2
7931353	PTPRE	2.8070478	up	protein tyrosine phosphatase, receptor type, E
8049448	CENTG2	2.803996	up	centaurin, gamma 2
7955078	PFKM	2.801387	up	phosphofructokinase, muscle
8143188	CREB3L2	2.7999241	up	cAMP responsive element binding protein 3-like 2
7910792	RYR2	2.7996573	up	ryanodine receptor 2 (cardiac)
7924996	C1orf198	2.799452	up	chromosome 1 open reading frame 198
7924773	CDC42BPA	2.7989702	up	CDC42 binding protein kinase alpha (DMPK-like)
7986757	NDN	2.7958336	up	necdin homolog (mouse)
8068697	MX2	2.7930982	up	myxovirus (influenza virus) resistance 2 (mouse)
8157890	PBX3	2.7908866	up	pre-B-cell leukemia homeobox 3
7947363	WT1	2.78903	up	Wilms tumor 1
8127646	FILIP1	2.769562	up	filamin A interacting protein 1
8007323	CNTNAP1	2.7690961	up	contactin associated protein 1
8139087	SFRP4	2.7651079	up	secreted frizzled-related protein 4

Supplemental Table 1a  
eMSC vs. eEP

7920271	S100A4	2.7630255	up	S100 calcium binding protein A4
7923978	CD34	2.7619283	up	
8034130	KANK2	2.7592776	up	KN motif and ankyrin repeat domains 2
7936115	SH3PXD2A	2.7526696	up	SH3 and PX domains 2A
8175393	ARHGEF6	2.7523458	up	Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6
7943749	LAYN	2.7486029	up	layilin
8155169	RECK	2.7473578	up	reversion-inducing-cysteine-rich protein with kazal motifs
8002969	MAF	2.740462	up	v-maf musculoaponeurotic fibrosarcoma oncogene homo
8095854	11-Sep	2.739547	up	septin 11
8063437	TSHZ2	2.7353244	up	teashirt zinc finger homeobox 2
7972428	OXGR1	2.7348797	up	oxoglutarate (alpha-ketoglutarate) receptor 1
7986329	NR2F2	2.7345636	up	nuclear receptor subfamily 2, group F, member 2
8097586	GAB1	2.729808	up	GRB2-associated binding protein 1
7973709	NFATC4	2.7275658	up	nuclear factor of activated T-cells, cytoplasmic, calcineurir
8081081	EPHA3	2.7267275	up	EPH receptor A3
7950990	SLC36A4	2.717264	up	solute carrier family 36 (proton/amino acid symporter), m
8099172	CRMP1	2.7159424	up	collapsin response mediator protein 1
8064766	RNF24	2.7038422	up	ring finger protein 24
8112615	ENC1	2.7009158	up	ectodermal-neural cortex (with BTB-like domain)
8135378	PRKAR2B	2.6967409	up	protein kinase, cAMP-dependent, regulatory, type II, beta
7980485	DIO2	2.693079	up	deiodinase, iodothyronine, type II
8101260	ANTXR2	2.6907597	up	anthrax toxin receptor 2
7962000	PTHLH	2.6836534	up	parathyroid hormone-like hormone
7963054	TUBA1A	2.677017	up	tubulin, alpha 1a
8071768	SMARCB1	2.671441	up	SWI/SNF related, matrix associated, actin dependent regu
8075728	MYH9	2.6702724	up	myosin, heavy chain 9, non-muscle
8095868	UNQ3028	2.6694007	up	TSSP3028
8167973	HEPH	2.6686623	up	hephaestin
8124798	KIAA1949	2.6651149	up	
8026300	CD97	2.664287	up	
8078252	UBE2E2	2.6610544	up	ubiquitin-conjugating enzyme E2E 2 (UBC4/5 homolog, ye
8108716	PCDHB16	2.6603448	up	protocadherin beta 16
8090591	PLXND1	2.659718	up	plexin D1



Supplemental Table 1a  
eMSC vs. eEP

7925342	ERO1LB	2.6595957	up	ERO1-like beta ( <i>S. cerevisiae</i> )
8134098	PFTK1	2.6592426	up	PFTAIRE protein kinase 1
8123744	F13A1	2.6492913	up	coagulation factor XIII, A1 polypeptide
8161056	TLN1	2.6329184	up	talin 1
8173917	NAP1L3	2.6196811	up	nucleosome assembly protein 1-like 3
7972557	EBI2	2.6147864	up	Epstein-Barr virus induced gene 2 (lymphocyte-specific G
8083749	PPM1L	2.613429	up	protein phosphatase 1 (formerly 2C)-like
8049187	EFHD1	2.6110666	up	EF-hand domain family, member D1
8120402	BAG2	2.6099777	up	BCL2-associated athanogene 2
8169015	TCEAL7	2.6094365	up	transcription elongation factor A (SII)-like 7
7957861	TMEM16D	2.606442	up	transmembrane protein 16D
7943562	ELMOD1	2.5980663	up	ELMO/CED-12 domain containing 1
8027650	UBA2	2.5973299	up	ubiquitin-like modifier activating enzyme 2
8002403	ABBA-1	2.5954838	up	actin-bundling protein with BAIAP2 homology
7898988	CLIC4	2.5937672	up	chloride intracellular channel 4
7997712	IRF8	2.5934365	up	interferon regulatory factor 8
8124654	GABBR1	2.5877657	up	gamma-aminobutyric acid (GABA) B receptor, 1
8114050	8-Sep	2.5868797	up	septin 8
7902495	NEXN	2.5860224	up	nexilin (F actin binding protein)
8034940	NOTCH3	2.5800683	up	Notch homolog 3 ( <i>Drosophila</i> )
8137485	DPP6	2.5798488	up	dipeptidyl-peptidase 6
8165217	NOTCH1	2.5762265	up	Notch homolog 1, translocation-associated ( <i>Drosophila</i> )
7970111	ARHGEF7	2.575471	up	Rho guanine nucleotide exchange factor (GEF) 7
8026407	SYDE1	2.5726845	up	synapse defective 1, Rho GTPase, homolog 1 ( <i>C. elegans</i> )
8016841	TMEM100	2.5613391	up	transmembrane protein 100
7922610	ABL2	2.5598903	up	v-abl Abelson murine leukemia viral oncogene homolog 2
7976795	MEG3 LOC1001318	2.5582645	up	maternally expressed 3   hypothetical protein LOC100131
7986214	SLCO3A1	2.5580368	up	solute carrier organic anion transporter family, member 3
7964665	DPY19L2	2.545446	up	dpy-19-like 2 ( <i>C. elegans</i> )
8143144	PTN	2.5418768	up	pleiotrophin (heparin binding growth factor 8, neurite gro
8063444	TSHZ2	2.540073	up	teashirt zinc finger homeobox 2
8001197	NETO2	2.5356057	up	neuropilin (NRP) and tolloid (TLL)-like 2
7923608	REN	2.531618	up	renin

Supplemental Table 1a  
eMSC vs. eEP

7978285	ADCY4	2.53035	up	adenylate cyclase 4
8021047	SETBP1	2.5259874	up	SET binding protein 1
7984364	SMAD3	2.5227382	up	SMAD family member 3
7955663	TENC1	2.519154	up	tensin like C1 domain containing phosphatase (tensin 2)
8170538	GABRQ	2.5168958	up	gamma-aminobutyric acid (GABA) receptor, theta
7923386	LMOD1	2.5156612	up	leiomodulin 1 (smooth muscle)
7934936	SLC16A12	2.514504	up	solute carrier family 16, member 12 (monocarboxylic acid
8017599	PECAM1	2.509517	up	platelet/endothelial cell adhesion molecule (CD31 antigen)
8170891	GDI1	2.505431	up	GDP dissociation inhibitor 1
8049544	LRRFIP1	2.5053282	up	leucine rich repeat (in FLII) interacting protein 1
8108301	KIF20A	2.501873	up	kinesin family member 20A
8097256	FGF2	2.4972177	up	fibroblast growth factor 2 (basic)
8066214	TGM2	2.4964995	up	transglutaminase 2 (C polypeptide, protein-glutamine-gan
7963880	ITGA7	2.4956245	up	integrin, alpha 7
7971296	EPSTI1	2.4945722	up	epithelial stromal interaction 1 (breast)
7974425	SAMD4A	2.493858	up	sterile alpha motif domain containing 4A
8142497	CTTNBP2	2.493558	up	cortactin binding protein 2
8062623	PLCG1	2.492816	up	phospholipase C, gamma 1
7963946	MMP19	2.4880142	up	matrix metalloproteinase 19
8081838	CDGAP	2.4868584	up	Cdc42 GTPase-activating protein
8088560	ADAMTS9	2.484786	up	ADAM metalloproteinase with thrombospondin type 1 mo
8020878	MAPRE2	2.4829907	up	microtubule-associated protein, RP/EB family, member 2
8126163	KCNK17	2.4816225	up	potassium channel, subfamily K, member 17
8145055	BMP1	2.4811606	up	bone morphogenetic protein 1
7910680	GPR137B	2.475851	up	G protein-coupled receptor 137B
8069301	COL6A2	2.47567	up	collagen, type VI, alpha 2
7938528	PARVA	2.475549	up	parvin, alpha
7986049	CRTC3	2.4751186	up	CREB regulated transcription coactivator 3
8087337	LAMB2	2.4735458	up	laminin, beta 2 (laminin S)
8044462	TTL	2.4733725	up	tubulin tyrosine ligase
8095545	RUFY3	2.471027	up	RUN and FYVE domain containing 3
7901969	ROR1	2.4696858	up	receptor tyrosine kinase-like orphan receptor 1
7945371	IFITM3	2.469266	up	interferon induced transmembrane protein 3 (1-8U)

Supplemental Table 1a  
eMSC vs. eEP

8120378	KIAA1586	2.4526992	up	
7948229	SLC43A3	2.4521368	up	solute carrier family 43, member 3
8076481	CYB5R3	2.4520135	up	cytochrome b5 reductase 3
8007828	MAPT	2.451523	up	microtubule-associated protein tau
7989069	PYGO1	2.4466233	up	pygopus homolog 1 (Drosophila)
8090193	HEG1	2.4465156	up	HEG homolog 1 (zebrafish)
7929012	STAMBPL1	2.4423766	up	STAM binding protein-like 1
8135705	KCND2	2.4415052	up	potassium voltage-gated channel, Shal-related subfamily,
8130211	SYNE1 C6orf98	2.4407134	up	spectrin repeat containing, nuclear envelope 1   chromos
7968015	TNFRSF19	2.4401042	up	tumor necrosis factor receptor superfamily, member 19
7944493	CBL	2.4394896	up	Cas-Br-M (murine) ecotropic retroviral transforming sequ
8017133	FAM33A	2.436236	up	family with sequence similarity 33, member A
7924166	BATF3	2.4333818	up	basic leucine zipper transcription factor, ATF-like 3
8117594	HIST1H2BM	2.4304023	up	histone cluster 1, H2bm
8101701	PPM1K	2.4285934	up	protein phosphatase 1K (PP2C domain containing)
8064978	JAG1	2.425463	up	jagged 1 (Alagille syndrome)
7929026	LOC100132116	2.4244223	up	
8057898	HECW2	2.4175148	up	HECT, C2 and WW domain containing E3 ubiquitin protein
7944302	PHLDB1	2.4166315	up	pleckstrin homology-like domain, family B, member 1
7918622	SLC16A1	2.4146657	up	solute carrier family 16, member 1 (monocarboxylic acid t
7990545	CSPG4	2.4104	up	chondroitin sulfate proteoglycan 4
8045289	RHOQ	2.4099288	up	ras homolog gene family, member Q
7954029	CDKN1B	2.4091952	up	cyclin-dependent kinase inhibitor 1B (p27, Kip1)
8064808	SLC23A2	2.407334	up	solute carrier family 23 (nucleobase transporters), membe
8104693	PDZD2	2.4069242	up	PDZ domain containing 2
8128737	MICAL1	2.4061284	up	microtubule associated monooxygenase, calponin and LIM
8149629	GFRA2	2.405111	up	GDNF family receptor alpha 2
7968236	RASL11A	2.4026892	up	RAS-like, family 11, member A
7936856	GALNAC4S-6ST	2.4014246	up	B cell RAG associated protein
8005235	M-RIP	2.4009452	up	myosin phosphatase-Rho interacting protein
8077366	LRRN1	2.3992033	up	leucine rich repeat neuronal 1
8018754	CYGB	2.3983097	up	cytoglobin
8045336	GPR39	2.3976493	up	G protein-coupled receptor 39

Supplemental Table 1a  
eMSC vs. eEP

7986527	C15orf51	2.395477	up	chromosome 15 open reading frame 51
7940160	DTX4	2.395318	up	deltex 4 homolog (Drosophila)
7960362	UNQ3104	2.394487	up	ACAH3104
7971104	TRPC4	2.3929834	up	transient receptor potential cation channel, subfamily C, r
8021181	SCARNA17	2.3921437	up	small Cajal body-specific RNA 17
7897803	PLOD1 LOC100130	2.39089	up	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1   hy
7986509	LOC441734	2.387719	up	similar to hypothetical protein DKFZp434i1020
8140319	HIP1	2.3846483	up	huntingtin interacting protein 1
8152491	EXT1	2.3804636	up	exostoses (multiple) 1
7936516	HSPA12A	2.3802156	up	heat shock 70kDa protein 12A
8020551	LAMA3	2.37434	up	laminin, alpha 3
7977270	LOC388022	2.3713558	up	hypothetical gene supported by AK131040
7997582	WFDC1	2.368255	up	WAP four-disulfide core domain 1
7927876	TET1	2.3682208	up	tet oncogene 1
8006820	LASP1	2.3678212	up	LIM and SH3 protein 1
7983228	MAP1A	2.3572419	up	microtubule-associated protein 1A
7918593	RHOC	2.3544004	up	ras homolog gene family, member C
7923731	RIPK5	2.3487992	up	receptor interacting protein kinase 5
7956573	SLC26A10 GEFT	2.347934	up	solute carrier family 26, member 10   RhoA/RAC/CDC42 e
8156060	TLE4	2.34439	up	transducin-like enhancer of split 4 (E(sp1) homolog, Drosoc
8022559	ANKRD29	2.3407774	up	ankyrin repeat domain 29
7987385	MEIS2	2.338637	up	Meis homeobox 2
7929689	MARVELD1	2.3356977	up	MARVEL domain containing 1
7952436	ESAM	2.3343298	up	endothelial cell adhesion molecule
7961900	ITPR2	2.328608	up	inositol 1,4,5-triphosphate receptor, type 2
7909236	MAPKAPK2	2.3282232	up	mitogen-activated protein kinase-activated protein kinase
8158739	LAMC3	2.3255336	up	laminin, gamma 3
7952490	FEZ1	2.322991	up	fasciculation and elongation protein zeta 1 (zygin I)
7906085	LMNA	2.318904	up	lamin A/C
8113709	LOX	2.3188162	up	lysyl oxidase
8056890	CHN1	2.3174593	up	chimerin (chimaerin) 1
8047659	ABI2	2.3168683	up	abl interactor 2
7915444	LEPRE1	2.3160167	up	leucine proline-enriched proteoglycan (leprecan) 1

Supplemental Table 1a  
eMSC vs. eEP

8052654	PELI1	2.315781	up	pellino homolog 1 (Drosophila)
7921014	MEF2D	2.3093543	up	myocyte enhancer factor 2D
8091260	SLC9A9	2.3047333	up	solute carrier family 9 (sodium/hydrogen exchanger), mer
8098344	NBLA00301	2.3027532	up	Nbla00301
7920600	SHC1	2.302308	up	SHC (Src homology 2 domain containing) transforming prc
7921821	ADAMTS4	2.3020086	up	ADAM metalloproteinase with thrombospondin type 1 mo
8044133	NCK2	2.297438	up	NCK adaptor protein 2
8152280	LRP12	2.2970624	up	low density lipoprotein-related protein 12
8102720	ANKRD50	2.2946262	up	ankyrin repeat domain 50
8169240	PRPS1	2.2907453	up	phosphoribosyl pyrophosphate synthetase 1
8043203	VAMP5	2.283476	up	vesicle-associated membrane protein 5 (myobrevin)
8099259	AFAP1	2.2814574	up	actin filament associated protein 1
8018864	SOCS3	2.270428	up	suppressor of cytokine signaling 3
8142554	AASS	2.2686915	up	aminoadipate-semialdehyde synthase
8116272	ADAMTS2	2.2680051	up	ADAM metalloproteinase with thrombospondin type 1 mo
8162940	ABCA1	2.2674248	up	ATP-binding cassette, sub-family A (ABC1), member 1
7927146	CSGALNACT2	2.263632	up	chondroitin sulfate N-acetylgalactosaminyltransferase 2
7954631	MLSTD1	2.261788	up	male sterility domain containing 1
8020183	IMPA2	2.2603734	up	inositol(myo)-1(or 4)-monophosphatase 2
7991581	CHSY1	2.2601757	up	chondroitin sulfate synthase 1
8156134	NTRK2	2.260032	up	neurotrophic tyrosine kinase, receptor, type 2
8058221	TRAK2	2.2580874	up	trafficking protein, kinesin binding 2
8114536	TMEM173	2.2580316	up	transmembrane protein 173
8108729	PCDHB11	2.2577991	up	protocadherin beta 11
8028652	ZFP36	2.2577658	up	zinc finger protein 36, C3H type, homolog (mouse)
8069668	CYR1	2.2569406	up	cysteine/tyrosine-rich 1
8061013	C20orf82	2.2550323	up	chromosome 20 open reading frame 82
8106743	VCAN	2.2536616	up	versican
8083221	PBX2	2.2509305	up	pre-B-cell leukemia homeobox 2
7938154	ILK ILK-2	2.2479815	up	integrin-linked kinase   integrin-linked kinase-2
7952641	RICS	2.2474952	up	Rho GTPase-activating protein
7976816	SNORD114-3	2.245155	up	small nucleolar RNA, C/D box 114-3
7909568	DTL	2.2431705	up	denticleless homolog (Drosophila)

Supplemental Table 1a  
eMSC vs. eEP

8108693	PCDHB4	2.2402294	up	protocadherin beta 4
7942135	TMEM16A	2.2381935	up	transmembrane protein 16A
8057959	PGAP1	2.2380276	up	post-GPI attachment to proteins 1
7985016	SNX33	2.2359664	up	sorting nexin 33
7906400	IFI16	2.234832	up	interferon, gamma-inducible protein 16
7908694	NAV1	2.2342021	up	neuron navigator 1
7976826	SNORD114-26	2.2331498	up	small nucleolar RNA, C/D box 114-26
7950473	ARRB1	2.23227	up	arrestin, beta 1
7971159	TNAP	2.230432	up	TRAFs and NIK-associated protein
8106494	BHMT2	2.2300603	up	betaine-homocysteine methyltransferase 2
8115651	GABRB2	2.2286506	up	gamma-aminobutyric acid (GABA) A receptor, beta 2
7973727	KIAA1305	2.226227	up	
7957338	SYT1	2.2244172	up	synaptotagmin I
8114797	SPRY4	2.2244022	up	sprouty homolog 4 (Drosophila)
8091402	TM4SF18	2.2229052	up	transmembrane 4 L six family member 18
7917182	ELTD1	2.21397	up	EGF, latrophilin and seven transmembrane domain contain
7971922	PCDH9	2.211669	up	protocadherin 9
8038347	TEAD2	2.2083998	up	TEA domain family member 2
7919642	HIST2H2AB	2.2067032	up	histone cluster 2, H2ab
8117372	HIST1H2AC	2.2065785	up	histone cluster 1, H2ac
8143040	SLC35B4	2.2037296	up	solute carrier family 35, member B4
8152867	DDEF1	2.2004945	up	development and differentiation enhancing factor 1
8095080	PDGFRA	2.1994188	up	platelet-derived growth factor receptor, alpha polypeptide
8124385	HIST1H4B HIST4H4	2.1974046	up	histone cluster 1, H4b   histone cluster 4, H4   histone clu
7979400	C14orf37	2.1943402	up	chromosome 14 open reading frame 37
8112890	MED27 LOC441089	2.1943254	up	mediator complex subunit 27   CRSP8 pseudogene
8074168	FLJ39632	2.1930661	up	hypothetical LOC642477
7982564	SPRED1	2.1908576	up	sprouty-related, EVH1 domain containing 1
8098870	SPON2	2.1906059	up	spondin 2, extracellular matrix protein
8107594	SNCAIP	2.1876748	up	synuclein, alpha interacting protein (synphilin)
7931479	INPP5A	2.18727	up	inositol polyphosphate-5-phosphatase, 40kDa
7947230	BDNF	2.1872332	up	brain-derived neurotrophic factor
8021442	ZNF532	2.1870604	up	zinc finger protein 532

Supplemental Table 1a  
eMSC vs. eEP

7907079	RCSD1	2.183021	up	RCSD domain containing 1
7954312	SLCO1C1	2.1803222	up	solute carrier organic anion transporter family, member 1
8102482	SEC24D	2.1793907	up	SEC24 related gene family, member D ( <i>S. cerevisiae</i> )
8138527	MGC87042	2.177809	up	similar to Six transmembrane epithelial antigen of prostat
8124040	ATXN1	2.1754553	up	ataxin 1
8167125	USP11	2.1746001	up	ubiquitin specific peptidase 11
8083240	AGTR1	2.1725905	up	angiotensin II receptor, type 1
7977452	FLJ39632	2.1710541	up	hypothetical LOC642477
8127854	ME1	2.1698456	up	malic enzyme 1, NADP(+)-dependent, cytosolic
8167965	MSN	2.168824	up	moesin
8108688	PCDHB3	2.1676881	up	protocadherin beta 3
8020090	TWSG1	2.166591	up	twisted gastrulation homolog 1 ( <i>Drosophila</i> )
7946401	ST5	2.1652663	up	suppression of tumorigenicity 5
7945132	FLI1 EWSR1	2.163173	up	Friend leukemia virus integration 1   Ewing sarcoma brea
8138735	HOXA5	2.1607187	up	homeobox A5
8148448	KHDRBS3	2.1566188	up	KH domain containing, RNA binding, signal transduction a
8133459	CLIP2	2.155802	up	CAP-GLY domain containing linker protein 2
7972021	TBC1D4	2.1540914	up	TBC1 domain family, member 4
8059470	IRS1	2.153985	up	insulin receptor substrate 1
8043909	NPAS2	2.1533518	up	neuronal PAS domain protein 2
7930194	CNNM2	2.152243	up	cyclin M2
7936242	KIAA1754	2.151906	up	
8109528	CYFIP2	2.150678	up	cytoplasmic FMR1 interacting protein 2
7952243	C1QTNF5 MFRP	2.1494782	up	C1q and tumor necrosis factor related protein 5   membr
8000574	NUPR1	2.1487586	up	nuclear protein 1
8161648	KLF9	2.148386	up	Kruppel-like factor 9
8160718	PTENP1	2.1472297	up	phosphatase and tensin homolog (mutated in multiple ad
7947681	ARHGAP1	2.1408312	up	Rho GTPase activating protein 1
8091723	RARRES1	2.1404169	up	retinoic acid receptor responder (tazarotene induced) 1
8171205	NLGN4X	2.1393178	up	neuroligin 4, X-linked
8117377	HIST1H1E	2.1390915	up	histone cluster 1, H1e
8101788	UNC5C	2.1331258	up	unc-5 homolog C ( <i>C. elegans</i> )
7950906	CTSC	2.132616	up	cathepsin C

Supplemental Table 1a  
eMSC vs. eEP

7953385	GAPDH	2.13124	up	glyceraldehyde-3-phosphate dehydrogenase
8172395	SSX10 LOC1001306	2.1301937	up	synovial sarcoma, X breakpoint 10   similar to Synovial sarcoma
7932584	PRTFDC1	2.1297908	up	phosphoribosyl transferase domain containing 1
8166289	CDKL5	2.1293948	up	cyclin-dependent kinase-like 5
8052798	AAK1	2.127706	up	AP2 associated kinase 1
8122038	TMEM200A	2.123317	up	transmembrane protein 200A
8117422	HIST1H4F HIST4H4	2.1221716	up	histone cluster 1, H4f   histone cluster 4, H4   histone cluster 4
7990643	LINGO1	2.1209245	up	leucine rich repeat and Ig domain containing 1
8144378	AGPAT5	2.119403	up	1-acylglycerol-3-phosphate O-acyltransferase 5 (lysophosphatidyl acyltransferase)
7990636	C15orf5	2.1138425	up	chromosome 15 open reading frame 5
7964579	CTDSP2	2.113458	up	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide domain 2)
7959827	TMEM132C	2.1128197	up	transmembrane protein 132C
8108683	PCDHB2	2.1125488	up	protocadherin beta 2
7919305	PRKAB2	2.11197	up	protein kinase, AMP-activated, beta 2 non-catalytic subunit
8133233	AUTS2	2.1116865	up	autism susceptibility candidate 2
8006779	ARHGAP23	2.1109715	up	Rho GTPase activating protein 23
7908041	LAMC1	2.1096928	up	laminin, gamma 1 (formerly LAMB2)
8050537	MATN3	2.1061661	up	matrilin 3
8108737	PCDHB13	2.1055374	up	protocadherin beta 13
8139131	AMPH	2.1038563	up	amphiphysin
8032730	EEF2	2.1021197	up	eukaryotic translation elongation factor 2
8048205	IGFBP2	2.100066	up	insulin-like growth factor binding protein 2, 36kDa
8121319	SOBP	2.0995567	up	sine oculis binding protein homolog (Drosophila)
7980044	PNMA1	2.097834	up	paraneoplastic antigen MA1
8103260	DCHS2	2.0960276	up	dachsous 2 (Drosophila)
8125360	PBX2	2.0939653	up	pre-B-cell leukemia homeobox 2
7901140	MAST2	2.0934813	up	microtubule associated serine/threonine kinase 2
7976812	SNORD113-4	2.092533	up	small nucleolar RNA, C/D box 113-4
7949496	CFL1	2.09113	up	cofilin 1 (non-muscle)
8165911	TBL1X	2.0903933	up	transducin (beta)-like 1X-linked
7936028	ACTR1A	2.0901902	up	ARP1 actin-related protein 1 homolog A, centractin alpha
8157804	OLFML2A	2.0889802	up	olfactomedin-like 2A
8102050	NHEDC2	2.0873578	up	Na <sup>+</sup> /H <sup>+</sup> exchanger domain containing 2



Supplemental Table 1a  
eMSC vs. eEP

8154381	C9orf150	2.0861585	up	chromosome 9 open reading frame 150
7903742	GSTM4 GSTM2	2.0860245	up	glutathione S-transferase M4   glutathione S-transferase I
8106350	NBLA11895	2.0832043	up	putative protein product of Nbla11895
8079037	TRAK1	2.081213	up	trafficking protein, kinesin binding 1
8171313	ARHGAP6	2.078208	up	Rho GTPase activating protein 6
7995206	TGFB111	2.076156	up	transforming growth factor beta 1 induced transcript 1
8178598	CLIC1	2.0742028	up	chloride intracellular channel 1
8008969	TBX2	2.0710258	up	T-box 2
7954899	CNTN1	2.0693629	up	contactin 1
7909027	NFASC	2.06904	up	neurofascin homolog (chicken)
7975095	PLEKHG3	2.067427	up	pleckstrin homology domain containing, family G (with Rh
8179827	CLIC1	2.0671172	up	chloride intracellular channel 1
8075462	SELM	2.0616798	up	selenoprotein M
8112803	LHFPL2	2.06073	up	lipoma HMGIC fusion partner-like 2
8001099	HERC2P4	2.0595734	up	hect domain and RLD 2 pseudogene 4
8033233	TUBB4	2.0583463	up	tubulin, beta 4
8141459	GAL3ST4	2.0575926	up	galactose-3-O-sulfotransferase 4
8164252	SH2D3C	2.0542502	up	SH2 domain containing 3C
8086125	LBA1	2.0531929	up	lupus brain antigen 1
7956261	RBMS2	2.0523272	up	RNA binding motif, single stranded interacting protein 2
7945245	HNT	2.0521615	up	neurotrimin
8041940	STON1-GTF2A1L	2.0520117	up	
8104378	POLS	2.051119	up	polymerase (DNA directed) sigma
7902913	CDC7	2.0508406	up	cell division cycle 7 homolog ( <i>S. cerevisiae</i> )
8046048	FAM130A2	2.048722	up	family with sequence similarity 130, member A2
7908732	IPO9	2.0476744	up	importin 9
8094778	UCHL1	2.0476468	up	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolest
7932227	NMT2	2.047371	up	N-myristoyltransferase 2
8169473	PLS3	2.0473535	up	plastin 3 (T isoform)
8153449	EEF1D	2.0472808	up	eukaryotic translation elongation factor 1 delta (guanine r
8169073	MGC39900 H2BFXI	2.0470636	up	thymosin beta15b   H2B histone family, member X, pseud
8002152	SLC12A4	2.0460188	up	solute carrier family 12 (potassium/chloride transporters)
7905754	ATP8B2	2.0458088	up	ATPase, class I, type 8B, member 2

Supplemental Table 1a  
eMSC vs. eEP

8138602	DFNA5	2.045554	up	deafness, autosomal dominant 5
7916843	GNG12	2.0451083	up	guanine nucleotide binding protein (G protein), gamma 12
8076241	MKL1	2.0450447	up	megakaryoblastic leukemia (translocation) 1
8133818	PHTF2	2.0438805	up	putative homeodomain transcription factor 2
8083223	C3orf58	2.0434024	up	chromosome 3 open reading frame 58
8014706	PCGF2	2.042617	up	polycomb group ring finger 2
8027778	FXYD5	2.0406787	up	FXYD domain containing ion transport regulator 5
7999468	LITAF	2.0405264	up	lipopolysaccharide-induced TNF factor
7943263	AMOTL1	2.0396068	up	angiomin like 1
8005132	MEIS3P1	2.0388978	up	Meis homeobox 3 pseudogene 1
8102587	C4orf31	2.0371604	up	chromosome 4 open reading frame 31
8167006	RP2	2.0362115	up	retinitis pigmentosa 2 (X-linked recessive)
8113433	EFNA5	2.035831	up	ephrin-A5
7993310	MKL2	2.035347	up	MKL/myocardin-like 2
8124430	HIST1H1D	2.0344305	up	histone cluster 1, H1d
8001133	SHCBP1	2.034085	up	SHC SH2-domain binding protein 1
7985809	ABHD2	2.0333686	up	abhydrolase domain containing 2
8132439	C7orf10	2.0331867	up	chromosome 7 open reading frame 10
7930927	INPP5F	2.0325382	up	inositol polyphosphate-5-phosphatase F
8052735	CNRIP1	2.0297089	up	cannabinoid receptor interacting protein 1
8145151	SORBS3	2.026915	up	sorbin and SH3 domain containing 3
8105348	LOC493869	2.0267737	up	similar to RIKEN cDNA 2310016C16
7995783	MT2A	2.025912	up	metallothionein 2A
8035465	ISYNA1	2.022044	up	myo-inositol 1-phosphate synthase A1
7968516	PDS5B	2.0217423	up	PDS5, regulator of cohesion maintenance, homolog B (S. c
8021286	C18orf54	2.0207999	up	chromosome 18 open reading frame 54
8115196	ZNF300	2.020634	up	zinc finger protein 300
8125059	CLIC1	2.0186634	up	chloride intracellular channel 1
8008588	HLF	2.0185475	up	hepatic leukemia factor
7948612	FADS1 FADS3	2.0185268	up	fatty acid desaturase 1   fatty acid desaturase 3
8040927	NRBP1	2.0179093	up	nuclear receptor binding protein 1
7916747	JAK1	2.017865	up	Janus kinase 1 (a protein tyrosine kinase)
8064415	C20orf46	2.0156214	up	chromosome 20 open reading frame 46

Supplemental Table 1a  
eMSC vs. eEP

7964388	NDUFA4L2	2.0149097	up	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 4
8116051	DBN1	2.0144134	up	drebrin 1
8113491	STARD4	2.0112624	up	StAR-related lipid transfer (START) domain containing 4
7933872	EGR2	2.0110977	up	early growth response 2 (Krox-20 homolog, Drosophila)
8179819	DDAH2	2.0098245	up	dimethylarginine dimethylaminohydrolase 2
7934690	C10orf56	2.0083141	up	chromosome 10 open reading frame 56
7915147	FHL3	2.0082026	up	four and a half LIM domains 3
8156897	C9orf30 TMEFF1	2.005747	up	chromosome 9 open reading frame 30   transmembrane
8178590	DDAH2	2.002057	up	dimethylarginine dimethylaminohydrolase 2
7966202	KCTD10	2.0018244	up	potassium channel tetramerisation domain containing 10
8001067	HERC2P4	1.9980351	up	hect domain and RLD 2 pseudogene 4
7899939	GJA4	1.9951727	up	gap junction protein, alpha 4, 37kDa
8176174	MPP1	1.9920744	up	membrane protein, palmitoylated 1, 55kDa
8108744	PCDHB14	1.9913814	up	protocadherin beta 14
7964522	CDK4	1.989845	up	cyclin-dependent kinase 4
8082965	MRAS	1.9889873	up	muscle RAS oncogene homolog
7984813	ISLR	1.9886656	up	immunoglobulin superfamily containing leucine-rich repeats
8172043	SRPX	1.9872857	up	sushi-repeat-containing protein, X-linked
8028656	PLEKHG2	1.9860514	up	pleckstrin homology domain containing, family G (with Rho)
8034151	DOCK6	1.9825404	up	dedicator of cytokinesis 6
7996908	SNTB2	1.9821875	up	syntrophin, beta 2 (dystrophin-associated protein A1, 59kDa)
8112045	ESM1	1.9806007	up	endothelial cell-specific molecule 1
8046461	ZAK	1.979665	up	sterile alpha motif and leucine zipper containing kinase A2
8072678	HMOX1	1.9783366	up	heme oxygenase (decycling) 1
7908597	NR5A2	1.9776566	up	nuclear receptor subfamily 5, group A, member 2
7913558	LUZP1	1.9755799	up	leucine zipper protein 1
8155754	MAMDC2	1.9712187	up	MAM domain containing 2
7975889	VASH1	1.9681243	up	vasohibin 1
8147469	PGCP	1.9664088	up	plasma glutamate carboxypeptidase
8157691	LOC729012	1.9630181	up	similar to Spindle and kinetochore-associated protein 2 (P)
7965979	ALDH1L2	1.962587	up	aldehyde dehydrogenase 1 family, member L2
8068100	C21orf109	1.9611108	up	chromosome 21 open reading frame 109
8163257	LPAR1	1.9583222	up	lysophosphatidic acid receptor 1

Supplemental Table 1a  
eMSC vs. eEP

7954469	RASSF8	1.9504704	up	Ras association (RalGDS/AF-6) domain family (N-terminal)
8078350	TGFBR2	1.9496756	up	transforming growth factor, beta receptor II (70/80kDa)
7921487	TAGLN2	1.9488231	up	transgelin 2
8146533	FAM110B	1.9468471	up	family with sequence similarity 110, member B
8138553	FAM126A	1.9453398	up	family with sequence similarity 126, member A
7951593	FLJ45803	1.9413723	up	
8083494	MME	1.9398677	up	membrane metallo-endopeptidase
8151931	TSPYL5	1.9366993	up	TSPY-like 5
8122637	SASH1	1.9342699	up	SAM and SH3 domain containing 1
8089145	ABI3BP	1.9332203	up	ABI gene family, member 3 (NESH) binding protein
7950885	FZD4	1.9325318	up	frizzled homolog 4 (Drosophila)
7968556	KL	1.9321364	up	klotho
7983145	STARD9	1.9303311	up	StAR-related lipid transfer (START) domain containing 9
8055220	A26C1A A26C1B	1.9259634	up	ANKRD26-like family C, member 1A   ANKRD26-like family
8095362	MT2A	1.9224522	up	metallothionein 2A
8088848	PDZRN3	1.9221985	up	PDZ domain containing RING finger 3
8122099	ENPP1	1.9162196	up	ectonucleotide pyrophosphatase/phosphodiesterase 1
7963328	FIGNL2	1.9130845	up	fidgetin-like 2
8120043	RUNX2	1.9128208	up	runt-related transcription factor 2
8065359	CD93	1.9114141	up	
8176234	CLIC2	1.9114133	up	chloride intracellular channel 2
8079140	SNRK	1.9104977	up	SNF related kinase
8113641	CDO1	1.9100168	up	cysteine dioxygenase, type I
8015590	STAT5B	1.9086711	up	signal transducer and activator of transcription 5B
7950671	GAB2	1.9083521	up	GRB2-associated binding protein 2
8123651	TUBB2B	1.9076422	up	tubulin, beta 2B
8019765	ARHGDI A	1.9047431	up	Rho GDP dissociation inhibitor (GDI) alpha
8083677	SCHIP1	1.9027995	up	schwannomin interacting protein 1
8058390	RAPH1	1.9027957	up	Ras association (RalGDS/AF-6) and pleckstrin homology dc
8049317	DGKD	1.8988801	up	diacylglycerol kinase, delta 130kDa
7949948	C11orf24	1.8975497	up	chromosome 11 open reading frame 24
8069178	ADARB1	1.8974665	up	adenosine deaminase, RNA-specific, B1 (RED1 homolog ra
7951910	BACE1	1.8970939	up	beta-site APP-cleaving enzyme 1

Supplemental Table 1a  
eMSC vs. eEP

8101957	EMCN	1.8969392	up	endomucin
8153021	ST3GAL1	1.8963989	up	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
7917649	TGFBR3	1.8960412	up	transforming growth factor, beta receptor III
7962842	ADCY6	1.894808	up	adenylate cyclase 6
8129254	MAN1A1	1.8945558	up	mannosidase, alpha, class 1A, member 1
7919340	GJA5	1.8927954	up	gap junction protein, alpha 5, 40kDa
8025672	SLC44A2	1.8915197	up	solute carrier family 44, member 2
8124531	HIST1H3I HIST1H2E	1.8875171	up	histone cluster 1, H3i   histone cluster 1, H2bn   histone c
8009417	KPNA2 LOC728860	1.8858365	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)   ka
8089714	LSAMP	1.8832543	up	limbic system-associated membrane protein
8108703	PCDHB6	1.8789738	up	protocadherin beta 6
7962312	ABCD2	1.8774362	up	ATP-binding cassette, sub-family D (ALD), member 2
7951535	KDEL2	1.8764759	up	KDEL (Lys-Asp-Glu-Leu) containing 2
7966026	NUAK1	1.875565	up	NUAK family, SNF1-like kinase, 1
8010161	9-Sep	1.8753836	up	septin 9
7980616	PTPN21	1.8721005	up	protein tyrosine phosphatase, non-receptor type 21
8161892	GNA14	1.866386	up	guanine nucleotide binding protein (G protein), alpha 14
8045889	TANC1	1.8657202	up	tetratricopeptide repeat, ankyrin repeat and coiled-coil cc
7903753	GSTM2	1.8653978	up	glutathione S-transferase M2 (muscle)
8099685	LGI2	1.8652658	up	leucine-rich repeat LGI family, member 2
8041447	CRIM1	1.8642153	up	cysteine rich transmembrane BMP regulator 1 (chordin-lik
8019737	KPNA2 LOC728860	1.8585296	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)   ka
8068105	BACH1	1.8583072	up	BTB and CNC homology 1, basic leucine zipper transcriptic
8028524	ACTN4	1.8579627	up	actinin, alpha 4
8167027	RGN	1.8567643	up	regucalcin (senescence marker protein-30)
8108733	PCDHB12	1.8564553	up	protocadherin beta 12
8104506	TRIO LOC10013174	1.8544658	up	triple functional domain (PTPRF interacting)   hypothetica
8030049	PSCD2	1.8523223	up	pleckstrin homology, Sec7 and coiled-coil domains 2 (cyto
8158183	DNM1	1.8514068	up	dynamain 1
8060850	BMP2	1.8494145	up	bone morphogenetic protein 2
8113914	FNIP1 RAPGEF6	1.8486491	up	folliculin interacting protein 1   Rap guanine nucleotide e
8083075	ACPL2	1.8457488	up	acid phosphatase-like 2
7986428	LOC400464	1.8443731	up	similar to FLJ43276 protein

Supplemental Table 1a  
eMSC vs. eEP

7901479	ZYG11B	1.844004	up	zyg-11 homolog B (C. elegans)
8167887	MAGEH1	1.838933	up	melanoma antigen family H, 1
7990054	UACA	1.8364694	up	uveal autoantigen with coiled-coil domains and ankyrin re
8100578	EPHA5	1.829849	up	EPH receptor A5
8095376	TMPRSS11E2 MT2/	1.8298099	up	transmembrane protease, serine 11E2   metallothionein 2
8167957	ZC3H12B	1.8297768	up	zinc finger CCCH-type containing 12B
7969736	FARP1	1.8254262	up	FERM, RhoGEF (ARHGEF) and pleckstrin domain protein 1
8088491	CADPS	1.8242335	up	Ca2+-dependent secretion activator
7929052	IFIT3	1.8239229	up	interferon-induced protein with tetratricopeptide repeats
7899153	SH3BGL3	1.8238728	up	SH3 domain binding glutamic acid-rich protein like 3
7909681	PROX1	1.823455	up	prospero homeobox 1
8157092	TMEM38B	1.8234142	up	transmembrane protein 38B
8127094	GSTA4	1.8214103	up	glutathione S-transferase A4
8019263	ARHGDI1	1.8193443	up	Rho GDP dissociation inhibitor (GDI) alpha
7975121	FNTB	1.8182924	up	farnesyltransferase, CAAX box, beta
8169145	MUM1L1	1.817203	up	melanoma associated antigen (mutated) 1-like 1
8156783	COL15A1	1.8167652	up	collagen, type XV, alpha 1
8096675	TET2	1.8164865	up	tet oncogene family member 2
8143772	RARRES2	1.8093233	up	retinoic acid receptor responder (tazarotene induced) 2
7969665	HS6ST3 LOC100134	1.8080257	up	heparan sulfate 6-O-sulfotransferase 3   similar to hepara
8037835	SLC1A5	1.806645	up	solute carrier family 1 (neutral amino acid transporter), m
8168146	KIF4A	1.8037452	up	kinesin family member 4A
7928630	EIF5AL1	1.8023704	up	eukaryotic translation initiation factor 5A-like 1   eukaryo
8174654	KLHL13	1.8021806	up	kelch-like 13 (Drosophila)
8097717	ARHGAP10	1.8021526	up	Rho GTPase activating protein 10
8048995	ITM2C	1.7943691	up	integral membrane protein 2C
8111255	CDH10	1.7887635	up	cadherin 10, type 2 (T2-cadherin)
8078262	UBE2E1	1.7886469	up	ubiquitin-conjugating enzyme E2E 1 (UBC4/5 homolog, ye
8088550	PRICKLE2	1.7872906	up	prickle homolog 2 (Drosophila)
7979671	MAX	1.7871692	up	MYC associated factor X
8101723	NAP1L5	1.7823602	up	nucleosome assembly protein 1-like 5
8091306	PLSCR4	1.7819209	up	phospholipid scramblase 4
8066431	ADA	1.779839	up	adenosine deaminase

Supplemental Table 1a  
eMSC vs. eEP

7901460	GPX7	1.7796448	up	glutathione peroxidase 7
7908125	RGL1	1.7757717	up	ral guanine nucleotide dissociation stimulator-like 1
7957260	GLIPR1	1.7722119	up	GLI pathogenesis-related 1 (glioma)
8108708	PCDHB7	1.76854	up	protocadherin beta 7
7899043	SEPN1	1.7664998	up	selenoprotein N, 1
8041763	PRKCE	1.7662565	up	protein kinase C, epsilon
8019183	ACTG1	1.7661406	up	actin, gamma 1
7978391	NOVA1	1.7643582	up	neuro-oncological ventral antigen 1
7931951	SFMBT2	1.7635555	up	Scm-like with four mbt domains 2
8046020	SCN2A	1.763358	up	sodium channel, voltage-gated, type II, alpha subunit
8131179	TTYH3	1.7625461	up	tweety homolog 3 (Drosophila)
7958749	SH2B3	1.7612516	up	SH2B adaptor protein 3
8079950	GNAI2	1.7609924	up	guanine nucleotide binding protein (G protein), alpha inhi
8017927	ABCA9	1.7605617	up	ATP-binding cassette, sub-family A (ABC1), member 9
7999909	GPRC5B	1.7603022	up	G protein-coupled receptor, family C, group 5, member B
8157524	TLR4	1.7595776	up	toll-like receptor 4
7932132	FRMD4A	1.7586479	up	FERM domain containing 4A
7934753	EIF5AL1	1.7579147	up	eukaryotic translation initiation factor 5A-like 1   eukaryo
8006736	DUSP14	1.7565751	up	dual specificity phosphatase 14
7996677	NUTF2	1.7562217	up	nuclear transport factor 2
8013341	MFAP4	1.7558458	up	microfibrillar-associated protein 4
7978718	SEC23A	1.7514216	up	Sec23 homolog A ( <i>S. cerevisiae</i> )
7928600	EIF5AL1	1.7512413	up	eukaryotic translation initiation factor 5A-like 1   eukaryo
7954090	EMP1	1.7511474	up	epithelial membrane protein 1
8091546	LOC645843	1.7511286	up	transmembrane protein 14-like
8173647	ZDHHC15	1.73923	up	zinc finger, DHHC-type containing 15
7999598	NTAN1	1.7390002	up	N-terminal asparagine amidase
8066716	ELMO2	1.735086	up	engulfment and cell motility 2
8154254	KIAA1432	1.7350814	up	
7958158	HCFC2	1.7332212	up	host cell factor C2
8092073	EIF5A2	1.7319684	up	eukaryotic translation initiation factor 5A2
7927681	BICC1	1.7305931	up	bicaudal C homolog 1 ( <i>Drosophila</i> )
8174235	TCEAL5	1.7287912	up	transcription elongation factor A (SII)-like 5

Supplemental Table 1a  
eMSC vs. eEP

8133983	ADAM22	1.7276335	up	ADAM metallopeptidase domain 22
8081375	FAM55C	1.7271112	up	family with sequence similarity 55, member C
8037847	AP2S1	1.7257938	up	adaptor-related protein complex 2, sigma 1 subunit
8136248	MEST	1.724375	up	mesoderm specific transcript homolog (mouse)
8106336	SV2C	1.7241048	up	synaptic vesicle glycoprotein 2C
7972055	KCTD12	1.7219536	up	potassium channel tetramerisation domain containing 12
8055606	GTDC1	1.7206812	up	glycosyltransferase-like domain containing 1
8122634	SAMD5	1.7200437	up	sterile alpha motif domain containing 5
8158317	SPTAN1	1.7186323	up	spectrin, alpha, non-erythrocytic 1 (alpha-fodrin)
7950838	PICALM	1.7142308	up	phosphatidylinositol binding clathrin assembly protein
8119088	CDKN1A	1.7137842	up	cyclin-dependent kinase inhibitor 1A (p21, Cip1)
7960464	VWF	1.7135745	up	von Willebrand factor
8014974	TOP2A	1.7118134	up	topoisomerase (DNA) II alpha 170kDa
8162531	MT1G	1.7112588	up	metallothionein 1G
8147837	ZFPM2	1.7109922	up	zinc finger protein, multitype 2
8065248	LOC100130264	1.7109283	up	similar to hCG2038397
7904000	DDX20	1.7095873	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 20
7965064	OSBPL8	1.7065396	up	oxysterol binding protein-like 8
7923824	SLC41A1	1.7059621	up	solute carrier family 41, member 1
7951077	SESN3	1.7040606	up	sestrin 3
8157105	ZNF462	1.7039714	up	zinc finger protein 462
7957386	ACSS3	1.7024195	up	acyl-CoA synthetase short-chain family member 3
7957665	ELK3	1.7024115	up	
8160168	FREM1	1.7006812	up	FRAS1 related extracellular matrix 1
8169350	LOC100134364	1.7002672	up	
7945573	POLR2L	1.699539	up	polymerase (RNA) II (DNA directed) polypeptide L, 7.6kDa
8045587	ACVR2A	1.6985806	up	activin A receptor, type IIA
8111677	LIFR	1.6972455	up	leukemia inhibitory factor receptor alpha
8108238	SMAD5	1.6963887	up	SMAD family member 5
7938231	PPFIBP2	1.6962452	up	PTPRF interacting protein, binding protein 2 (liprin beta 2)
8051547	PRKD3	1.693513	up	protein kinase D3
8019912	EMILIN2	1.6928838	up	elastin microfibril interfacier 2
8113358	ST8SIA4	1.6898153	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferas



Supplemental Table 1a  
eMSC vs. eEP

8104746	NPR3	1.6879762	up	natriuretic peptide receptor C/guanylate cyclase C (atrion
7946579	LYVE1	1.6879586	up	lymphatic vessel endothelial hyaluronan receptor 1
7916862	GPR177	1.6868939	up	G protein-coupled receptor 177
7986569	LOC283755 HERC2	1.684206	up	hypothetical protein LOC283755   hect domain and RLD 2
7996772	SLC7A6 TRPV6	1.6840407	up	solute carrier family 7 (cationic amino acid transporter, y+
7962327	SLC2A13	1.6829946	up	solute carrier family 2 (facilitated glucose transporter), m
8170390	IDS LOC727913	1.680294	up	iduronate 2-sulfatase (Hunter syndrome)   similar to idurc
8042211	B3GNT2	1.679966	up	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransf
8073775	FBLN1	1.6787312	up	fibulin 1
7991406	PRC1	1.6764103	up	protein regulator of cytokinesis 1
8003171	COTL1	1.6754365	up	coactosin-like 1 (Dictyostelium)
8066905	ZNFX1	1.6738375	up	zinc finger, NFX1-type containing 1
8078650	CTDSPL	1.6735886	up	CTD (carboxy-terminal domain, RNA polymerase II, polype
7958346	C12orf23	1.6717488	up	chromosome 12 open reading frame 23
8155673	PIP5K1B	1.6711348	up	phosphatidylinositol-4-phosphate 5-kinase, type I, beta
8101489	CCDC98	1.6708043	up	coiled-coil domain containing 98
8150143	PURG	1.6692485	up	purine-rich element binding protein G
7986411	MEF2A	1.6678901	up	myocyte enhancer factor 2A
7965048	NAP1L1	1.6671144	up	nucleosome assembly protein 1-like 1
8103415	C4orf18	1.6656787	up	chromosome 4 open reading frame 18
8069532	STCH	1.6646198	up	stress 70 protein chaperone, microsomal-associated, 60kD
8041048	FOSL2	1.6636785	up	FOS-like antigen 2
8109283	NDST1	1.6631229	up	N-deacetylase/N-sulfotransferase (heparan glucosaminyl)
8056837	GPR155	1.6622484	up	G protein-coupled receptor 155
7985662	PDE8A	1.662105	up	phosphodiesterase 8A
7979131	GNG2	1.6585479	up	guanine nucleotide binding protein (G protein), gamma 2
8164269	ENG	1.6554179	up	endoglin (Osler-Rendu-Weber syndrome 1)
8138824	SCRN1	1.6553221	up	secernin 1
7950248	FCHSD2	1.6551965	up	FCH and double SH3 domains 2
8004184	XAF1	1.6543316	up	XIAP associated factor 1
7982757	CASC5	1.6537023	up	cancer susceptibility candidate 5
7933010	PARD3	1.6533076	up	par-3 partitioning defective 3 homolog (C. elegans)
8122860	MYCT1	1.6530552	up	myc target 1

Supplemental Table 1a  
eMSC vs. eEP

8047272	LOC26010	1.6461486	up	viral DNA polymerase-transactivated protein 6
7957298	NAV3	1.6459184	up	neuron navigator 3
7996571	FAM65A	1.6454608	up	family with sequence similarity 65, member A
7928444	VCL	1.6453354	up	vinculin
8068238	IFNAR2	1.6428049	up	interferon (alpha, beta and omega) receptor 2
7933194	CXCL12	1.6393218	up	chemokine (C-X-C motif) ligand 12 (stromal cell-derived fa
7956759	SRGAP1	1.6356778	up	SLIT-ROBO Rho GTPase activating protein 1
8128123	RRAGD	1.6345689	up	Ras-related GTP binding D
8108166	TXNDC15	1.629749	up	thioredoxin domain containing 15
8168968	GPRASP1	1.6296244	up	G protein-coupled receptor associated sorting protein 1
8118455	C4A C4B	1.6273344	up	complement component 4A (Rodgers blood group)   com
7976012	NRXN3	1.6268969	up	neurexin 3
8118409	C4A C4B	1.6268592	up	complement component 4A (Rodgers blood group)   com
8179399	C4A C4B	1.620161	up	complement component 4A (Rodgers blood group)   com
8023497	ATP8B1	1.6145998	up	ATPase, class I, type 8B, member 1
8067985	NCAM2	1.614429	up	neural cell adhesion molecule 2
8013753	RAB34	1.6110588	up	
8099797	RELL1	1.6082281	up	RELT-like 1
7968154	ATP8A2	1.6041573	up	ATPase, aminophospholipid transporter-like, class I, type 1
7981320	MEG3	1.5956975	up	maternally expressed 3
8122660	UST	1.5943005	up	uronyl-2-sulfotransferase
7942791	LOC100008589 WIC	1.5935968	up	28S ribosomal RNA   WD repeat domain 88
8080810	PTPRG	1.5923679	up	protein tyrosine phosphatase, receptor type, G
7904131	DCLRE1B	1.5923527	up	DNA cross-link repair 1B (PSO2 homolog, <i>S. cerevisiae</i> )
8091422	WWTR1	1.5915848	up	WW domain containing transcription regulator 1
8109576	THG1L	1.591023	up	tRNA-histidine guanylyltransferase 1-like ( <i>S. cerevisiae</i> )
7986701	HERC2P2 LOC2837	1.5899861	up	hect domain and RLD 2 pseudogene 2   hypothetical prot
7926223	CAMK1D	1.5875316	up	calcium/calmodulin-dependent protein kinase ID
8100870	ADAMTS3	1.5854834	up	ADAM metallopeptidase with thrombospondin type 1 mo
7913582	ZNF436	1.5826675	up	zinc finger protein 436
8103630	SH3RF1	1.5808251	up	SH3 domain containing ring finger 1
8129482	SAMD3	1.5767437	up	sterile alpha motif domain containing 3
8049044	ARMC9	1.5733814	up	armadillo repeat containing 9

Supplemental Table 1a  
eMSC vs. eEP

8056102	CD302	1.5728132	up	
8147580	VPS13B	1.5692434	up	vacuolar protein sorting 13 homolog B (yeast)
8009301	PRKCA	1.5683299	up	protein kinase C, alpha
8130032	FBXO30	1.5682641	up	F-box protein 30
7943218	PANX1	1.5681849	up	pannexin 1
7978407	PRKD1	1.5673932	up	protein kinase D1
8133258	WBSCR17	1.5663092	up	Williams-Beuren syndrome chromosome region 17
7917370	COL24A1	1.5653907	up	collagen, type XXIV, alpha 1
7922229	SELE	1.5630802	up	selectin E (endothelial adhesion molecule 1)
7957570	PLXNC1	1.5594465	up	plexin C1
8128284	EPHA7	1.5587832	up	EPH receptor A7
7927732	ARID5B	1.5580089	up	AT rich interactive domain 5B (MRF1-like)
7982154	HERC2P2   LOC2837	1.5559611	up	hect domain and RLD 2 pseudogene 2   hypothetical prot
8072015	ADRBK2	1.552796	up	adrenergic, beta, receptor kinase 2
7919619	HIST2H2AA3   HIST2	1.5511969	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   histo
7905079	HIST2H2AA3   HIST2	1.550594	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
8062971	DBNDD2   SYS1-DBN	1.5474427	up	dysbindin (dystrobrevin binding protein 1) domain contain
8139656	GRB10	1.5465255	up	growth factor receptor-bound protein 10
8015759	VAT1	1.5459013	up	vesicle amine transport protein 1 homolog (T. californica)
8179519	HLA-DPB1	1.5457711	up	major histocompatibility complex, class II, DP beta 1
7953135	TULP3	1.543955	up	tubby like protein 3
7950883	OR7E13P	1.5436736	up	olfactory receptor, family 7, subfamily E, member 13 pseu
8088180	WNT5A	1.5435183	up	wingless-type MMTV integration site family, member 5A
8000811	MAPK3	1.541875	up	mitogen-activated protein kinase 3
7905116	PLEKHO1	1.5387826	up	pleckstrin homology domain containing, family O member
8008819	YPEL2	1.5378028	up	yippee-like 2 (Drosophila)
8114733	CENTD3	1.536488	up	centaurin, delta 3
8051605	HNRPLL	1.5361546	up	heterogeneous nuclear ribonucleoprotein L-like
8005847	TNFAIP1	1.534772	up	tumor necrosis factor, alpha-induced protein 1 (endotheli
7902425	ST6GALNAC3	1.5335995	up	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N
7983843	TCF12	1.5334768	up	transcription factor 12 (HTF4, helix-loop-helix transcriptio
8121916	RSPO3	1.5328665	up	R-spondin 3 homolog (Xenopus laevis)
7927799	REEP3	1.531367	up	receptor accessory protein 3

Supplemental Table 1a  
eMSC vs. eEP

8151101	MYBL1	1.5304925	up	v-myb myeloblastosis viral oncogene homolog (avian)-like
8040552	NCOA1	1.530044	up	nuclear receptor coactivator 1
8168984	BHLHB9	1.5284308	up	basic helix-loop-helix domain containing, class B, 9
8053315	LRRTM4	1.5272882	up	leucine rich repeat transmembrane neuronal 4
8055096	AMMECR1L	1.5265045	up	AMME chromosomal region gene 1-like
8059576	PID1	1.5260825	up	phosphotyrosine interaction domain containing 1
8046542	HOXD9	1.5251622	up	homeobox D9
7949765	PPP1CA	1.5238606	up	protein phosphatase 1, catalytic subunit, alpha isoform
8076046	TMEM184B	1.5238072	up	transmembrane protein 184B
8106602	ZFYVE16	1.523695	up	zinc finger, FYVE domain containing 16
8052355	EFEMP1	1.5228716	up	EGF-containing fibulin-like extracellular matrix protein 1
8170007	LOC644538	1.5205585	up	
7976818	SNORD114-6	1.5194167	up	small nucleolar RNA, C/D box 114-6
8112746	WDR41	1.5153995	up	WD repeat domain 41
8092691	BCL6	1.5125351	up	B-cell CLL/lymphoma 6 (zinc finger protein 51)
8047538	BMPR2	1.5100489	up	bone morphogenetic protein receptor, type II (serine/thre
8065353	THBD	1.5083665	up	thrombomodulin
8046906	GULP1	1.5080698	up	GULP, engulfment adaptor PTB domain containing 1
8057732	LOC100131211	1.506801	up	similar to hCG1646803
8017736	CCDC46	1.5043564	up	coiled-coil domain containing 46
7940028	SERPING1	1.5038261	up	serpin peptidase inhibitor, clade G (C1 inhibitor), member
8171481	AP1S2	1.5038023	up	adaptor-related protein complex 1, sigma 2 subunit
8092134	PLD1	1.5017741	up	phospholipase D1, phosphatidylcholine-specific
8139500	TNS3	1.50058	up	tensin 3
8062108	PROCR	1.4997659	up	protein C receptor, endothelial (EPCR)
8077499	LOH3CR2A	1.499074	up	loss of heterozygosity, 3, chromosomal region 2, gene A
8003298	SLC7A5	1.499045	up	solute carrier family 7 (cationic amino acid transporter, y+
8162373	OGN	1.4988964	up	osteoglycin
8061227	SLC24A3	1.4972069	up	solute carrier family 24 (sodium/potassium/calcium excha
8115814	SH3PXD2B	1.4961814	up	SH3 and PX domains 2B
8063382	SNAI1	1.4935888	up	snail homolog 1 (Drosophila)
8096669	TET2	1.4909766	up	tet oncogene family member 2
7956878	IRAK3	1.4909431	up	interleukin-1 receptor-associated kinase 3

Supplemental Table 1a  
eMSC vs. eEP

8085914	SLC4A7	1.4906591	up	solute carrier family 4, sodium bicarbonate cotransporter,
8034021	CDC37	1.4901567	up	cell division cycle 37 homolog ( <i>S. cerevisiae</i> )
8121927	RNF146	1.4883028	up	ring finger protein 146
8100393	KDR	1.4878427	up	kinase insert domain receptor (a type III receptor tyrosine
8083429	MBNL1	1.4871968	up	muscleblind-like ( <i>Drosophila</i> )
8140556	HGF	1.4854122	up	hepatocyte growth factor (hepapoietin A; scatter factor)
7971780	NEK3	1.4719753	up	NIMA (never in mitosis gene a)-related kinase 3
8120428	FKBP1A FKBP1C	1.4688172	up	FK506 binding protein 1A, 12kDa   FK506 binding protein
8147516	MATN2	1.4670447	up	matrilin 2
7974697	DAAM1	1.4632666	up	dishevelled associated activator of morphogenesis 1
8053668	EIF2AK3	1.4622983	up	eukaryotic translation initiation factor 2-alpha kinase 3
8163839	C5	1.4593109	up	complement component 5
8152656	ZHX1 C8orf76	1.4568627	up	zinc fingers and homeoboxes 1   chromosome 8 open rea
7902104	PDE4B	1.4549831	up	phosphodiesterase 4B, cAMP-specific (phosphodiesterase
8127778	FAM46A	1.4530183	up	family with sequence similarity 46, member A
7899627	TINAGL1	1.4517261	up	tubulointerstitial nephritis antigen-like 1
7943803	DIXDC1	1.4511987	up	DIX domain containing 1
8168976	GPRASP2	1.4500734	up	G protein-coupled receptor associated sorting protein 2
8137264	TMEM176A	1.44994	up	transmembrane protein 176A
7966150	SSH1	1.4496922	up	slingshot homolog 1 ( <i>Drosophila</i> )
8052721	PPP3R1 WDR92	1.4484042	up	protein phosphatase 3 (formerly 2B), regulatory subunit B
7932243	C10orf38	1.4462358	up	chromosome 10 open reading frame 38
7933821	RHOBTB1	1.4459108	up	Rho-related BTB domain containing 1
7963157	RACGAP1	1.4458302	up	Rac GTPase activating protein 1
7938629	PDE3B	1.4399852	up	phosphodiesterase 3B, cGMP-inhibited
8042416	ARHGAP25	1.4389627	up	Rho GTPase activating protein 25
7965156	LIN7A	1.4378325	up	lin-7 homolog A ( <i>C. elegans</i> )
8092654	RPL39L	1.4371461	up	ribosomal protein L39-like
8104321	ADAMTS16	1.4354517	up	ADAM metallopeptidase with thrombospondin type 1 mo
7984217	PLEKHO2	1.4348848	up	pleckstrin homology domain containing, family O member
8007348	RAMP2	1.4348432	up	receptor (G protein-coupled) activity modifying protein 2
7909175	SRGAP2	1.4344566	up	SLIT-ROBO Rho GTPase activating protein 2
8105121	GHR	1.4342594	up	growth hormone receptor

Supplemental Table 1a  
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8163444	ZFP37	1.4332004	up	zinc finger protein 37 homolog (mouse)
8107823	ADAMTS19	1.4330049	up	ADAM metalloproteinase with thrombospondin type 1 mo
7958913	OAS2	1.432479	up	2'-5'-oligoadenylate synthetase 2, 69/71kDa
8079305	CLEC3B	1.4323049	up	C-type lectin domain family 3, member B
8083757	NMD3	1.4292717	up	
8013399	ULK2	1.4291017	up	unc-51-like kinase 2 (C. elegans)
8077490	LMCD1	1.4275264	up	LIM and cysteine-rich domains 1
8102468	PRSS12	1.4271079	up	protease, serine, 12 (neurotrypsin, motopsin)
8089261	CBLB	1.4234124	up	Cas-Br-M (murine) ecotropic retroviral transforming sequ
8139488	IGFBP3	1.4230068	up	insulin-like growth factor binding protein 3
8067932	C21orf34	1.4221827	up	chromosome 21 open reading frame 34
8046546	HOXD8	1.4206376	up	homeobox D8
8112940	SSBP2	1.4202617	up	single-stranded DNA binding protein 2
8065566	DEFB124	1.4195621	up	defensin, beta 124
8135568	MDFIC	1.4190913	up	MyoD family inhibitor domain containing
8070557	ZNF295	1.4185884	up	zinc finger protein 295
8131339	FSCN1	1.4184617	up	fascin homolog 1, actin-bundling protein (Strongylocentro
8029489	BCAM	1.4177779	up	basal cell adhesion molecule (Lutheran blood group)
8153684	DGAT1 LOC727765	1.4176732	up	diacylglycerol O-acyltransferase homolog 1 (mouse)   sim
7996947	CYB5B	1.4159486	up	cytochrome b5 type B (outer mitochondrial membrane)
8172158	CASK	1.4156296	up	calcium/calmodulin-dependent serine protein kinase (MA
8108127	CAMLG	1.4153816	up	calcium modulating ligand
7932826	KIAA1462	1.4145446	up	
7954810	LRRK2	1.4126993	up	leucine-rich repeat kinase 2
8101839	EIF4E	1.4125108	up	eukaryotic translation initiation factor 4E
8059708	SNORA75	1.4122906	up	small nucleolar RNA, H/ACA box 75
8153939	DGAT1 LOC727765	1.4119972	up	diacylglycerol O-acyltransferase homolog 1 (mouse)   sim
7977397	CRIP2	1.4108747	up	cysteine-rich protein 2
8012475	MYH10	1.4085221	up	myosin, heavy chain 10, non-muscle
8113717	MGC32805	1.4083488	up	
7956522	KIF5A	1.4074355	up	kinesin family member 5A
7996264	CDH5	1.4048948	up	cadherin 5, type 2, VE-cadherin (vascular epithelium)
8094184	C1QTNF7	1.4045808	up	C1q and tumor necrosis factor related protein 7

Supplemental Table 1a  
eMSC vs. eEP

8056963	LOC100129455	1.403859	up	
8128818	WASF1	1.4033079	up	WAS protein family, member 1
7930857	EMX2	1.4014758	up	empty spiracles homeobox 2
8115734	LCP2	1.400918	up	lymphocyte cytosolic protein 2 (SH2 domain containing le
7955562	ACVRL1	1.4008809	up	activin A receptor type II-like 1
8175593	IDS	1.3996189	up	iduronate 2-sulfatase (Hunter syndrome)
8037614	GPR4	1.3988783	up	G protein-coupled receptor 4
8009183	MAP3K3	1.3964216	up	mitogen-activated protein kinase kinase kinase 3
8093304	CCRL2 LOC727811	1.396191	up	chemokine (C-C motif) receptor-like 2   similar to chemok
8128099	GABRR2	1.3960664	up	gamma-aminobutyric acid (GABA) receptor, rho 2
7909142	LOC100130123 NU	1.3944558	up	PRO2870   nuclear casein kinase and cyclin-dependent kin
7925257	LYST	1.3936497	up	lysosomal trafficking regulator
8127872	SNAP91	1.3934321	up	synaptosomal-associated protein, 91kDa homolog (mouse
7988789	DMXL2	1.3912047	up	Dmx-like 2
8027701	GRAMD1A	1.3895122	up	GRAM domain containing 1A
7932554	ARHGAP21	1.3894917	up	Rho GTPase activating protein 21
8171561	SCML2	1.3892655	up	sex comb on midleg-like 2 (Drosophila)
8151496	ZNF704	1.3890309	up	zinc finger protein 704
8155121	NPR2	1.3879814	up	natriuretic peptide receptor B/guanylate cyclase B (atrio
8046086	LASS6	1.3878258	up	LAG1 homolog, ceramide synthase 6
8118594	HLA-DPB1	1.387614	up	major histocompatibility complex, class II, DP beta 1
8025601	ICAM1	1.387099	up	intercellular adhesion molecule 1 (CD54), human rhinovir
7943998	NNMT	1.3862864	up	nicotinamide N-methyltransferase
7913450	HSPG2	1.385184	up	heparan sulfate proteoglycan 2
8042283	HSPC159	1.3844292	up	galectin-related protein
8177717	HLA-F	1.3839457	up	major histocompatibility complex, class I, F
8003814	ASPA	1.3831595	up	aspartoacylase (Canavan disease)
8057797	SDPR	1.3821771	up	serum deprivation response (phosphatidylserine binding p
8120362	C6orf65	1.3772615	up	chromosome 6 open reading frame 65
8134552	ARPC1B	1.3769895	up	actin related protein 2/3 complex, subunit 1B, 41kDa
8138504	RAPGEF5	1.3766053	up	Rap guanine nucleotide exchange factor (GEF) 5
7913237	CAMK2N1	1.3762689	up	calcium/calmodulin-dependent protein kinase II inhibitor
8094609	FAM114A1	1.3746897	up	family with sequence similarity 114, member A1

Supplemental Table 1a  
eMSC vs. eEP

8084794	IL1RAP	1.3742105	up	interleukin 1 receptor accessory protein
8051864	hCG_1645220	1.3738542	up	hCG1645220
8103092	LOC100129572	1.3730307	up	
8008646	SCPEP1	1.3715723	up	serine carboxypeptidase 1
8058614	LANCL1	1.3703821	up	LanC lantibiotic synthetase component C-like 1 (bacterial)
7966929	RAB35	1.3700752	up	
8084880	HES1	1.367758	up	hairy and enhancer of split 1, (Drosophila)
8042310	SLC1A4	1.3672003	up	solute carrier family 1 (glutamate/neutral amino acid tran
8173414	SLC7A3	1.3661531	up	solute carrier family 7 (cationic amino acid transporter, γ+
8078066	FGD5	1.364838	up	FYVE, RhoGEF and PH domain containing 5
7916493	PPAP2B	1.3647149	up	phosphatidic acid phosphatase type 2B
8094501	STIM2	1.3639723	up	stromal interaction molecule 2
8157976	GARNL3	1.363862	up	GTPase activating Rap/RanGAP domain-like 3
7968351	C13orf33	1.3631423	up	chromosome 13 open reading frame 33
8125556	HLA-DPA1	1.362264	up	major histocompatibility complex, class II, DP alpha 1
8019639	RNU2 RNU2B WDF	1.3592056	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019641	RNU2 RNU2B WDF	1.359098	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019705	RNU2 RNU2B WDF	1.3590268	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019633	RNU2 RNU2B WDF	1.3589807	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019635	RNU2 RNU2B WDF	1.3589357	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019703	RNU2 RNU2B WDF	1.3589143	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019707	RNU2 RNU2B WDF	1.3588865	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019637	RNU2 RNU2B WDF	1.3588136	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019631	RNU2 RNU2B WDF	1.3586055	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8121794	SMPDL3A	1.3583674	up	sphingomyelin phosphodiesterase, acid-like 3A
8180100	HLA-DPA1	1.3576096	up	major histocompatibility complex, class II, DP alpha 1
7969330	PCDH17	1.3570858	up	protocadherin 17
7927631	DKK1	1.3553244	up	dickkopf homolog 1 (Xenopus laevis)
8086953	SHISA5	1.3550421	up	shisa homolog 5 (Xenopus laevis)
8140782	ABCB1	1.354912	up	ATP-binding cassette, sub-family B (MDR/TAP), member 1
8029693	FOSB	1.3541696	up	FBJ murine osteosarcoma viral oncogene homolog B
8019802	RNU2 RNU2B WDF	1.352855	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8178891	HLA-DPA1	1.3513972	up	major histocompatibility complex, class II, DP alpha 1



Supplemental Table 1a  
eMSC vs. eEP

7983734	TMOD2	1.3506049	up	tropomodulin 2 (neuronal)
8079407	CCRL2 LOC727811	1.3483253	up	chemokine (C-C motif) receptor-like 2   similar to chemok
8147777	CTHRC1	1.3479023	up	collagen triple helix repeat containing 1
7960438	TMEM16B	1.3467722	up	transmembrane protein 16B
7906564	PEA15	1.3450563	up	phosphoprotein enriched in astrocytes 15
7956488	KIF5A	1.3443462	up	kinesin family member 5A
8094574	TBC1D1	1.3436024	up	TBC1 (tre-2/USP6, BUB2, cdc16) domain family, member 1
8179019	HLA-F	1.3426591	up	major histocompatibility complex, class I, F
8084955	PIGX	1.3421406	up	phosphatidylinositol glycan anchor biosynthesis, class X
8019709	RNU2 RNU2B WDF	1.3412735	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8112388	TRIM23	1.3410211	up	tripartite motif-containing 23
7933733	FAM13C1	1.3397324	up	family with sequence similarity 13, member C1
7972936	FAM70B	1.3382689	up	family with sequence similarity 70, member B
8011884	NLRP1	1.3377457	up	NLR family, pyrin domain containing 1
8021946	COLEC12	1.3363224	up	collectin sub-family member 12
8137244	GIMAP4	1.3355091	up	GTPase, IMAP family member 4
8046078	B3GALT1	1.3353442	up	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, poly
7917561	GBP4	1.329088	up	guanylate binding protein 4
8096415	MMRN1	1.3276001	up	multimerin 1
7917199	TTL7	1.3264588	up	tubulin tyrosine ligase-like family, member 7
7929032	FAS	1.3257651	up	Fas (TNF receptor superfamily, member 6)
7986293	MCTP2	1.3256637	up	multiple C2 domains, transmembrane 2
7926609	BMI1	1.3255241	up	
8165752	IL3RA	1.3251588	up	interleukin 3 receptor, alpha (low affinity)
8176323	IL3RA	1.3245533	up	interleukin 3 receptor, alpha (low affinity)
7939197	HIPK3	1.3213397	up	homeodomain interacting protein kinase 3
8141035	SGCE	1.3198678	up	sarcoglycan, epsilon
7947425	CD59	1.3198353	up	
7914516	LOC339483	1.319125	up	
8059680	HTR2B	1.317903	up	5-hydroxytryptamine (serotonin) receptor 2B
8063458	DOK5	1.3178868	up	docking protein 5
7902810	LMO4	1.3161712	up	LIM domain only 4
7946245	DCHS1	1.316159	up	dachsous 1 (Drosophila)

Supplemental Table 1a  
eMSC vs. eEP

7901272	CYP4X1	1.3152987	up	cytochrome P450, family 4, subfamily X, polypeptide 1
7907611	RASAL2	1.3133739	up	RAS protein activator like 2
7927786	REEP3	1.3132545	up	receptor accessory protein 3
8070194	RUNX1	1.3122132	up	runt-related transcription factor 1 (acute myeloid leukemia)
7960383	PARP11	1.3121034	up	poly (ADP-ribose) polymerase family, member 11
7975361	KIAA0247	1.3111852	up	
8041995	SPTBN1	1.3104081	up	spectrin, beta, non-erythrocytic 1
8067554	TCFL5	1.3088001	up	transcription factor-like 5 (basic helix-loop-helix)
8117800	HLA-A HLA-H HLA-	1.308092	up	major histocompatibility complex, class I, A   major histoc
8008113	CALCOCO2	1.3077911	up	calcium binding and coiled-coil domain 2
7919095	NOTCH2	1.3040698	up	Notch homolog 2 (Drosophila)
7939559	TSPAN18	1.3024431	up	tetraspanin 18
7955578	GRASP	1.3013465	up	GRP1 (general receptor for phosphoinositides 1)-associate
8027604	KIAA0355	1.3004856	up	
7959893	GPR133	1.300163	up	G protein-coupled receptor 133
7968976	LRCH1	1.299728	up	leucine-rich repeats and calponin homology (CH) domain
8056217	MXRA7	1.2989582	up	matrix-remodelling associated 7
8167998	AR	1.2980133	up	androgen receptor (dihydrotestosterone receptor; testicu
8003357	FAM38A	1.2965999	up	family with sequence similarity 38, member A
7965436	EEA1	1.29592	up	early endosome antigen 1
8098103	FNIP2	1.295195	up	folliculin interacting protein 2
8149749	TNFRSF10D	1.2926607	up	tumor necrosis factor receptor superfamily, member 10d,
8083523	GMPS	1.2892846	up	guanine monophosphate synthetase
8124397	HIST1H1C	1.2892258	up	histone cluster 1, H1c
8157216	UGCG	1.288173	up	UDP-glucose ceramide glucosyltransferase
7903358	VCAM1	1.2848344	up	vascular cell adhesion molecule 1
8178867	TAP1	1.2843163	up	transporter 1, ATP-binding cassette, sub-family B (MDR/T,
8125512	TAP1	1.2832881	up	transporter 1, ATP-binding cassette, sub-family B (MDR/T,
8180061	TAP1	1.2832333	up	transporter 1, ATP-binding cassette, sub-family B (MDR/T,
8058477	KLF7	1.2830293	up	Kruppel-like factor 7 (ubiquitous)
8177732	HLA-A HLA-H HLA-	1.2821686	up	major histocompatibility complex, class I, A   major histoc
7908940	ATP2B4	1.2803975	up	ATPase, Ca <sup>++</sup> transporting, plasma membrane 4
8059642	SLC16A14	1.2803386	up	solute carrier family 16, member 14 (monocarboxylic acid

Supplemental Table 1a  
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8030133	NUCB1	1.2802414	up	nucleobindin 1
8164665	RAPGEF1	1.2799482	up	Rap guanine nucleotide exchange factor (GEF) 1
8178220	HLA-DPB1	1.2793446	up	major histocompatibility complex, class II, DP beta 1
8101376	SEC31A	1.2781311	up	SEC31 homolog A ( <i>S. cerevisiae</i> )
8137280	NOS3	1.2780052	up	nitric oxide synthase 3 (endothelial cell)
7925229	B3GALNT2	1.2778598	up	beta-1,3-N-acetylgalactosaminyltransferase 2
8163618	TNFSF15	1.2777691	up	tumor necrosis factor (ligand) superfamily, member 15
7962375	PRICKLE1	1.2769608	up	prickle homolog 1 ( <i>Drosophila</i> )
7995813	MT1DP	1.2755494	up	metallothionein 1D (pseudogene)
7921099	CRABP2	1.2750822	up	cellular retinoic acid binding protein 2
7935660	DNMBP	1.2746736	up	dynamamin binding protein
8102232	LEF1	1.2743907	up	lymphoid enhancer-binding factor 1
7965652	PCK2	1.272076	up	PCK2 protein kinase 2
7918379	GSTM3	1.2716043	up	glutathione S-transferase M3 (brain)
7917912	DPYD	1.2703297	up	dihydropyrimidine dehydrogenase
8175696	GABRA3	1.2691646	up	gamma-aminobutyric acid (GABA) A receptor, alpha 3
7900658	TIE1	1.2689179	up	tyrosine kinase with immunoglobulin-like and EGF-like do
8081362	CEP97	1.2678857	up	centrosomal protein 97kDa
8130191	RMND1	1.267517	up	required for meiotic nuclear division 1 homolog ( <i>S. cerevis</i>
8078619	ITGA9	1.2648084	up	integrin, alpha 9
7989365	RORA	1.2640651	up	RAR-related orphan receptor A
8114920	DPYSL3	1.2620513	up	dihydropyrimidinase-like 3
8117890	HLA-E	1.2612883	up	major histocompatibility complex, class I, E
8174103	GK GK3P	1.2610196	up	glycerol kinase   glycerol kinase 3 pseudogene
8113981	P4HA2	1.2610106	up	procollagen-proline, 2-oxoglutarate 4-dioxygenase (prolin
7897378	PER3	1.2601062	up	period homolog 3 ( <i>Drosophila</i> )
8091537	IGSF10	1.2583579	up	immunoglobulin superfamily, member 10
7947553	LRRC4C	1.2570409	up	leucine rich repeat containing 4C
8080938	MITF	1.2566226	up	microphthalmia-associated transcription factor
8179103	HLA-E	1.2564752	up	major histocompatibility complex, class I, E
8177788	HLA-E	1.2558414	up	major histocompatibility complex, class I, E
8006415	TMEM98	1.2532042	up	transmembrane protein 98
8109120	AFAP1L1	1.2507285	up	actin filament associated protein 1-like 1

Supplemental Table 1a  
eMSC vs. eEP

7961440	FLJ22662	1.250457	up	
7910706	LGALS8	1.2503686	up	lectin, galactoside-binding, soluble, 8 (galectin 8)
8156604	C9orf102	1.2499194	up	chromosome 9 open reading frame 102
8117760	HLA-F	1.2435741	up	major histocompatibility complex, class I, F
8117054	CAP2	1.2427746	up	CAP, adenylate cyclase-associated protein, 2 (yeast)
8145454	BNIP3L LOC440258	1.2426776	up	BCL2/adenovirus E1B 19kDa interacting protein 3-like   si
7953626	CLSTN3	1.242149	up	calyculin 3
7933933	DNAJC12	1.2411793	up	DnaJ (Hsp40) homolog, subfamily C, member 12
8072603	LOC100130269	1.2403529	up	similar to Putative uncharacterized protein FLJ36925
8052125	ASB3	1.2403139	up	ankyrin repeat and SOCS box-containing 3
8129231	C6orf60	1.2396274	up	chromosome 6 open reading frame 60
7935180	PDLIM1	1.2392159	up	PDZ and LIM domain 1 (elfin)
7927964	SRGN	1.2370424	up	serglycin
8138922	KBTBD2	1.2369118	up	kelch repeat and BTB (POZ) domain containing 2
7968703	NHLRC3	1.2356367	up	NHL repeat containing 3
8022612	ZNF521	1.2348222	up	zinc finger protein 521
7909890	HLX	1.2346371	up	H2.0-like homeobox
8007620	GRN	1.2338976	up	granulin
8102713	NUDT6	1.2338192	up	nudix (nucleoside diphosphate linked moiety X)-type moti
8089759	TMEM39A	1.2336054	up	transmembrane protein 39A
8088548	LOC401070	1.2332942	up	FLJ43791 protein
7922130	DPT	1.2324172	up	dermatopontin
8136954	FAM139B LOC6527	1.2319319	up	family with sequence similarity 139, member B   similar to
7959834	GLT1D1	1.2317847	up	glycosyltransferase 1 domain containing 1
8147030	STMN2	1.231756	up	stathmin-like 2
8171392	ASB9	1.229995	up	ankyrin repeat and SOCS box-containing 9
8077472	GRM7	1.2279714	up	glutamate receptor, metabotropic 7
8035297	PLVAP	1.2273285	up	plasmalemma vesicle associated protein
8132897	LANCL2	1.2273242	up	LanC lantibiotic synthetase component C-like 2 (bacterial)
7967386	MPHOSPH9	1.2272475	up	M-phase phosphoprotein 9
8172254	CXorf36	1.2255652	up	chromosome X open reading frame 36
8017547	ICAM2	1.2230746	up	intercellular adhesion molecule 2
7909603	NENF	1.2226738	up	neuron derived neurotrophic factor

Supplemental Table 1a  
eMSC vs. eEP

8123739	NRN1	1.2224438	up	neuritin 1
8156581	C9orf102	1.2220603	up	chromosome 9 open reading frame 102
8142424	GPR85	1.2215178	up	G protein-coupled receptor 85
7948167	AGTRL1	1.2214355	up	angiotensin II receptor-like 1
8085788	NKIRAS1	1.2211095	up	NFKB inhibitor interacting Ras-like 1
8121861	NCOA7	1.2205312	up	nuclear receptor coactivator 7
7964868	LOC100131613	1.2202399	up	PRO1454
8096899	C4orf32	1.2156615	up	chromosome 4 open reading frame 32
8173755	ITM2A	1.2145816	up	integral membrane protein 2A
8085556	SH3BP5	1.2127568	up	SH3-domain binding protein 5 (BTK-associated)
8102567	PRDM5	1.2124048	up	PR domain containing 5
8115783	STK10	1.2122697	up	serine/threonine kinase 10
8109141	GRPEL2	1.2111751	up	GrpE-like 2, mitochondrial (E. coli)
8156601	C9orf102	1.2080792	up	chromosome 9 open reading frame 102
8042356	MEIS1	1.2078882	up	Meis homeobox 1
8155898	PCSK5	1.2078042	up	proprotein convertase subtilisin/kexin type 5
7977674	SUPT16H	1.2071964	up	suppressor of Ty 16 homolog (S. cerevisiae)
8096361	HERC5	1.2060475	up	hect domain and RLD 5
8153002	NDRG1	1.205737	up	N-myc downstream regulated gene 1
8080847	C3orf14	1.2054077	up	chromosome 3 open reading frame 14
7946635	ZBED5	1.2036942	up	zinc finger, BED-type containing 5
8054580	BUB1	1.2032727	up	
8125415	C6orf10	1.2012327	up	chromosome 6 open reading frame 10
8068644	IGSF5	1.200043	up	immunoglobulin superfamily, member 5
8132118	AQP1	1.1998973	up	aquaporin 1 (Colton blood group)
8001387	SALL1	1.197518	up	sal-like 1 (Drosophila)
7918223	C1orf59	1.1972767	up	chromosome 1 open reading frame 59
8097657	SMAD1	1.1963772	up	SMAD family member 1
7933186	ZNF32	1.195302	up	zinc finger protein 32
7995787	MT1M	1.1944797	up	metallothionein 1M
7968789	C13orf15	1.1943934	up	chromosome 13 open reading frame 15
8004691	TMEM88	1.1941319	up	transmembrane protein 88
8163672	DIPAS	1.1927478	up	DIPLA1-antisense expressed

Supplemental Table 1a  
eMSC vs. eEP

8111569	RANBP3L	1.1887969	up	RAN binding protein 3-like
8114829	YIPF5	1.1882704	up	Yip1 domain family, member 5
8112584	ZNF366	1.187984	up	zinc finger protein 366
8089830	LRRC58	1.1870124	up	leucine rich repeat containing 58
7960764	RBP5	1.1867131	up	retinol binding protein 5, cellular
8136940	FAM139A	1.1841366	up	family with sequence similarity 139, member A
7941104	ARL2 SNX15	1.1834809	up	ADP-ribosylation factor-like 2   sorting nexin 15
7934842	MMRN2	1.183389	up	multimerin 2
7983763	MAPK6	1.1827784	up	mitogen-activated protein kinase 6
7972713	EFNB2	1.1817658	up	ephrin-B2
8022572	OSBPL1A	1.1811393	up	oxysterol binding protein-like 1A
8042637	DYSF	1.1754683	up	dysferlin, limb girdle muscular dystrophy 2B (autosomal r
8010271	PGS1	1.1748359	up	phosphatidylglycerophosphate synthase 1
8112857	MTX3	1.1742446	up	metaxin 3
7951363	CASP12	1.1723851	up	caspace 12 (gene/pseudogene)
7971950	DACH1	1.1717203	up	dachshund homolog 1 (Drosophila)
8102655	BBS7	1.1705302	up	Bardet-Biedl syndrome 7
8065403	CST3	1.1700764	up	cystatin C
8101587	MAPK10	1.1695263	up	mitogen-activated protein kinase 10
8126853	C6orf138	1.1682895	up	chromosome 6 open reading frame 138
8038655	KLK4	1.1665795	up	kallikrein-related peptidase 4
8009353	PITPNC1	1.1662353	up	phosphatidylinositol transfer protein, cytoplasmic 1
8137257	GIMAP5	1.1652551	up	GTPase, IMAP family member 5
8113726	PPIC	1.1636559	up	peptidylprolyl isomerase C (cyclophilin C)
7914270	LAPTM5	1.1610736	up	lysosomal associated multispinning membrane protein 5
8138930	RP9P	1.1596901	up	retinitis pigmentosa 9 pseudogene
7958000	CHPT1	1.1590838	up	choline phosphotransferase 1
8101624	KLHL8	1.1579603	up	kelch-like 8 (Drosophila)
8171762	RPS6KA3	1.156728	up	ribosomal protein S6 kinase, 90kDa, polypeptide 3
7980547	SEL1L	1.1564127	up	sel-1 suppressor of lin-12-like (C. elegans)
7947496	SLC1A2	1.1552231	up	solute carrier family 1 (glial high affinity glutamate transp
7995907	CETP	1.1530349	up	cholesteryl ester transfer protein, plasma
8178489	HLA-C XXbac-BPG1	1.15298	up	major histocompatibility complex, class I, C   MHC class I

Supplemental Table 1a  
eMSC vs. eEP

7902074	LEPR LEPROT	1.152524	up	leptin receptor   leptin receptor overlapping transcript
8099218	PPP2R2C	1.1523161	up	protein phosphatase 2 (formerly 2A), regulatory subunit B
8146934	LY96	1.152137	up	lymphocyte antigen 96
7923453	JARID1B	1.148511	up	jumonji, AT rich interactive domain 1B
7996954	NFAT5	1.1481563	up	nuclear factor of activated T-cells 5, tonicity-responsive
8132055	C7orf41	1.1475054	up	chromosome 7 open reading frame 41
7950933	NOX4	1.1469808	up	NADPH oxidase 4
8098214	TLL1	1.1469355	up	tolloid-like 1
8131205	SDK1	1.1465801	up	sidekick homolog 1, cell adhesion molecule (chicken)
7922846	FAM129A	1.1464074	up	family with sequence similarity 129, member A
7978712	CLEC14A	1.1435224	up	C-type lectin domain family 14, member A
7969916	BIVM	1.1433336	up	basic, immunoglobulin-like variable motif containing
7952453	ROBO4	1.1430576	up	roundabout homolog 4, magic roundabout (Drosophila)
8169603	LONRF3	1.1423532	up	LON peptidase N-terminal domain and ring finger 3
7923662	PIK3C2B	1.1415364	up	phosphoinositide-3-kinase, class 2, beta polypeptide
8128650	SEC63	1.1415106	up	
8124901	HLA-C XXbac-BPG1	1.1413704	up	major histocompatibility complex, class I, C   MHC class I
8079198	ZNF660	1.141202	up	zinc finger protein 660
8080344	STAB1	1.1408857	up	stabilin 1
8069744	RWDD2B	1.1397637	up	RWD domain containing 2B
8145766	MST131	1.1394179	up	MSTP131
8017210	AP1S2 LOC653653	1.1390878	up	adaptor-related protein complex 1, sigma 2 subunit   hyp
7929536	CC2D2B LOC10013	1.138432	up	coiled-coil and C2 domain containing 2B   hypothetical pr
8033362	INSR	1.1373404	up	insulin receptor
7951408	COP1	1.1371324	up	caspase-1 dominant-negative inhibitor pseudo-ICE
8180166	TAPBP	1.1368719	up	TAP binding protein (tapasin)
8070411	C21orf88 LOC1001	1.1361749	up	chromosome 21 open reading frame 88   similar to C21or
7964987	KCNC2	1.135062	up	potassium voltage-gated channel, Shaw-related subfamily
7928491	MYST4	1.1343415	up	MYST histone acetyltransferase (monocytic leukemia) 4
7961111	CLEC1A	1.133947	up	C-type lectin domain family 1, member A
8059279	EPHA4	1.1338499	up	EPH receptor A4
8114780	PCDH12	1.132214	up	protocadherin 12
8020973	FHOD3	1.1316191	up	formin homology 2 domain containing 3

Supplemental Table 1a  
eMSC vs. eEP

8173059	WNK3	1.131248	up	WNK lysine deficient protein kinase 3
8111772	DAB2	1.1306509	up	disabled homolog 2, mitogen-responsive phosphoprotein
8009502	KCNJ2	1.1301936	up	potassium inwardly-rectifying channel, subfamily J, memb
8008185	ABI3	1.1287409	up	ABI gene family, member 3
7964602	LRIG3	1.1287314	up	leucine-rich repeats and immunoglobulin-like domains 3
8070819	PTTG1P	1.126918	up	pituitary tumor-transforming 1 interacting protein
7915286	PPT1	1.1266754	up	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, ne
8056943	KIAA1715	1.1232297	up	
8082597	COL6A6	1.1230943	up	collagen type VI alpha 6
8117120	ID4	1.1228985	up	inhibitor of DNA binding 4, dominant negative helix-loop-l
8168622	KLHL4	1.1224619	up	kelch-like 4 (Drosophila)
8038163	RASIP1	1.1222223	up	Ras interacting protein 1
8142471	WNT2	1.1216063	up	wingless-type MMTV integration site family member 2
7933877	JMJD1C	1.1212856	up	jumonji domain containing 1C
7971565	P2RY5	1.1205043	up	purinergic receptor P2Y, G-protein coupled, 5
7926451	MRC1 MRC1L1	1.1203061	up	mannose receptor, C type 1   mannose receptor, C type 1
8074131	SHANK3	1.119677	up	SH3 and multiple ankyrin repeat domains 3
7926410	MRC1 MRC1L1	1.1193243	up	mannose receptor, C type 1   mannose receptor, C type 1
7918457	KCNA3	1.1190807	up	potassium voltage-gated channel, shaker-related subfamil
8179034	HLA-G HLA-A	1.1190083	up	major histocompatibility complex, class I, G   major histoc
7982854	DLL4	1.1185601	up	delta-like 4 (Drosophila)
8034227	RGL3	1.1185179	up	ral guanine nucleotide dissociation stimulator-like 3
8029465	BCL3	1.1181731	up	B-cell CLL/lymphoma 3
8177725	HLA-G HLA-A	1.1181476	up	major histocompatibility complex, class I, G   major histoc
7939341	CD44	1.117627	up	
7926239	OPTN	1.1174141	up	optineurin
7946641	GALNTL4	1.1169469	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8112822	DMGDH	1.1167421	up	dimethylglycine dehydrogenase
7985044	UBE2Q2	1.1154053	up	ubiquitin-conjugating enzyme E2Q family member 2
8123246	SLC22A3	1.113727	up	solute carrier family 22 (extraneuronal monoamine transp
8143781	GIMAP6	1.1122766	up	GTPase, IMAP family member 6
7920506	SHE	1.1105938	up	Src homology 2 domain containing E
8154295	IL33	1.1098799	up	interleukin 33



Supplemental Table 1a  
eMSC vs. eEP

7903893	CD53	1.1094248	up	
7929525	LOC100127889	1.1092646	up	
8105828	CCNB1	1.1091349	up	cyclin B1
8178977	TAPBP	1.1082605	up	TAP binding protein (tapasin)
8060765	PRND	1.1082317	up	prion protein 2 (dublet)
8010078	SNORD1C	1.1057247	up	small nucleolar RNA, C/D box 1C
7931097	HTRA1	1.1040177	up	HtrA serine peptidase 1
8121749	GJA1	1.1035298	up	gap junction protein, alpha 1, 43kDa
8004955	LOC284033	1.1024567	up	
8114653	TAF7	1.1013014	up	
8157487	PAPPA	1.101031	up	pregnancy-associated plasma protein A, pappalysin 1
7943398	YAP1	1.0999944	up	Yes-associated protein 1, 65kDa
8166355	CNKSR2	1.0998749	up	connector enhancer of kinase suppressor of Ras 2
8146625	NKAIN3	1.0978614	up	Na <sup>+</sup> /K <sup>+</sup> transporting ATPase interacting 3
7971486	C13orf18 LOC7289	1.097079	up	chromosome 13 open reading frame 18   hypothetical LO
8042519	PCYOX1	1.096842	up	prenylcysteine oxidase 1
8100382	CHIC2	1.095617	up	cysteine-rich hydrophobic domain 2
8062557	PPP1R16B	1.0952356	up	protein phosphatase 1, regulatory (inhibitor) subunit 16B
7929533	CC2D2B LOC10013	1.0926914	up	coiled-coil and C2 domain containing 2B   hypothetical pr
8049246	INPP5D	1.0925627	up	inositol polyphosphate-5-phosphatase, 145kDa
8132860	EGFR	1.0909194	up	epidermal growth factor receptor (erythroblastic leukemia)
8138977	DPY19L1	1.090303	up	dpy-19-like 1 (C. elegans)
8111739	FYB	1.0865718	up	
8042402	C2orf13 PROKR1	1.0852361	up	chromosome 2 open reading frame 13   prokineticin rece
8023575	CCBE1	1.0846729	up	collagen and calcium binding EGF domains 1
8057377	CCDC141 LOC2850	1.0839792	up	coiled-coil domain containing 141   hypothetical protein L
8116859	TMEM14C	1.0836254	up	transmembrane protein 14C
8019643	DOC2B	1.0814595	up	double C2-like domains, beta
8060758	PRNP	1.0812738	up	prion protein (p27-30) (Creutzfeldt-Jakob disease, Gerstm
7946454	SCUBE2	1.080315	up	signal peptide, CUB domain, EGF-like 2
7943442	DYNC2H1	1.080222	up	dynein, cytoplasmic 2, heavy chain 1
8137232	GIMAP8	1.0791861	up	GTPase, IMAP family member 8
8104394	ADCY2	1.078592	up	adenylate cyclase 2 (brain)

Supplemental Table 1a  
eMSC vs. eEP

8121569	FLJ34503	1.0782439	up	
8121392	C6orf182 C6orf182	1.0780228	up	chromosome 6 open reading frame 182   chromosome 6
8103951	ACSL1	1.0779812	up	acyl-CoA synthetase long-chain family member 1
7905881	ADAM15	1.0777858	up	ADAM metallopeptidase domain 15
7980246	MLH3	1.0774862	up	mutL homolog 3 (E. coli)
7986092	FURIN	1.0739028	up	furin (paired basic amino acid cleaving enzyme)
8037505	TRAPPC6A	1.0732433	up	trafficking protein particle complex 6A
7932285	C10orf97	1.072957	up	chromosome 10 open reading frame 97
8062748	IFT52	1.0728487	up	intraflagellar transport 52 homolog (Chlamydomonas)
8078360	STT3B	1.0726222	up	STT3, subunit of the oligosaccharyltransferase complex, h
8083090	ZBTB38	1.0724565	up	zinc finger and BTB domain containing 38
7997396	ATMIN	1.0717317	up	ATM interactor
7976084	SPATA7	1.0700438	up	spermatogenesis associated 7
8080781	PXK	1.0698822	up	PX domain containing serine/threonine kinase
7954388	GOLT1B	1.0696388	up	golgi transport 1 homolog B (S. cerevisiae)
8004255	BCL6B	1.0684698	up	B-cell CLL/lymphoma 6, member B (zinc finger protein)
7943620	ATM NPAT	1.0682803	up	ataxia telangiectasia mutated   nuclear protein, ataxia-tel
7991216	DET1	1.067839	up	de-etiolated homolog 1 (Arabidopsis)
8097628	HHIP	1.0672698	up	hedgehog interacting protein
7950544	PRKRIR	1.0659505	up	protein-kinase, interferon-inducible double stranded RNA
8125383	NOTCH4 GPSM3	1.0655469	up	Notch homolog 4 (Drosophila)   G-protein signaling modu
7995797	MT1E	1.0650668	up	metallothionein 1E
7922200	SELP	1.06423	up	selectin P (granule membrane protein 140kDa, antigen CD
8096771	DC2	1.0638107	up	
8132725	UPP1	1.0627799	up	uridine phosphorylase 1
7916185	ZCCHC11	1.0619105	up	zinc finger, CCHC domain containing 11
8091354	HLTF	1.0618551	up	helicase-like transcription factor
8014349	CCL14 CCL15	1.0611529	up	chemokine (C-C motif) ligand 14   chemokine (C-C motif) l
7929282	HHEX	1.0611184	up	hematopoietically expressed homeobox
7900395	RLF	1.0608078	up	rearranged L-myc fusion
8069574	C21orf91	1.0608062	up	chromosome 21 open reading frame 91
7903565	GPSM2	1.0607222	up	G-protein signaling modulator 2 (AGS3-like, C. elegans)
8105061	FYB	1.0603098	up	

Supplemental Table 1a  
eMSC vs. eEP

7994280	IL4R	1.0601845	up	interleukin 4 receptor
7899750	C1orf90	1.0599947	up	chromosome 1 open reading frame 90
8037430	ZNF404	1.0599301	up	zinc finger protein 404
8131583	BZW2	1.0595874	up	basic leucine zipper and W2 domains 2
8117777	HLA-G HLA-A HLA-	1.0591531	up	major histocompatibility complex, class I, G   major histoc
7977497	CCNB1IP1	1.0563238	up	cyclin B1 interacting protein 1
8175076	ZNF280C	1.0546824	up	zinc finger protein 280C
8005809	LGALS9	1.0522342	up	lectin, galactoside-binding, soluble, 9 (galectin 9)
8122865	VIP	1.0515262	up	vasoactive intestinal peptide
8112841	HOMER1	1.0504162	up	homer homolog 1 (Drosophila)
8156919	MURC	1.0503144	up	muscle-restricted coiled-coil protein
8137483	FLJ16734	1.0501323	up	hypothetical LOC641928
8020898	ZNF271	1.0494194	up	zinc finger protein 271
7906435	DARC	1.0489006	up	Duffy blood group, chemokine receptor
8156575	ATMIN	1.0484099	up	ATM interactor
7946275	GVIN1	1.0474993	up	GTPase, very large interferon inducible 1
8055952	NR4A2	1.0472345	up	nuclear receptor subfamily 4, group A, member 2
7997427	CMIP	1.0470752	up	c-Maf-inducing protein
7903393	S1PR1	1.045497	up	sphingosine-1-phosphate receptor 1
7902861	LRRC8B	1.0444772	up	leucine rich repeat containing 8 family, member B
8105778	PIK3R1	1.0434889	up	phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
7939137	EIF3M	1.043402	up	eukaryotic translation initiation factor 3, subunit M
8111998	HCN1	1.0433987	up	hyperpolarization activated cyclic nucleotide-gated potass
7905339	MGC29891	1.0424936	up	
8144786	SLC7A2	1.0410416	up	solute carrier family 7 (cationic amino acid transporter, y+
7990714	CHRNA3	1.0409076	up	cholinergic receptor, nicotinic, alpha 3
7901426	ZFYVE9	1.0393485	up	zinc finger, FYVE domain containing 9
8050608	C2orf43	1.0391083	up	chromosome 2 open reading frame 43
8110147	C5orf25	1.0390276	up	chromosome 5 open reading frame 25
8135363	PIK3CG	1.0384835	up	phosphoinositide-3-kinase, catalytic, gamma polypeptide
7917283	MCOLN2	1.0377162	up	mucolipin 2
7930380	ADD3	1.0361836	up	adducin 3 (gamma)
8066822	SULF2	1.0355225	up	sulfatase 2

Supplemental Table 1a  
eMSC vs. eEP

8038029	CARD8	1.0351881	up	caspase recruitment domain family, member 8
8052731	WDR92	1.0348538	up	WD repeat domain 92
8128683	SNX3	1.0343161	up	sorting nexin 3
8109912	KCNIP1	1.0336957	up	Kv channel interacting protein 1
8129677	SGK1	1.033361	up	serum/glucocorticoid regulated kinase 1
8057887	STK17B	1.0331534	up	serine/threonine kinase 17b
8175492	ATP11C	1.0325606	up	ATPase, class VI, type 11C
8044919	RALB	1.0323721	up	v-ral simian leukemia viral oncogene homolog B (ras related)
8124307	CMAH	1.0311133	up	cytidine monophosphate-N-acetylneuraminic acid hydroxylase
7943498	DYNC2H1	1.0308558	up	dynein, cytoplasmic 2, heavy chain 1
7965956	NFYB	1.0306685	up	nuclear transcription factor Y, beta
8001531	MT1G	1.0301051	up	metallothionein 1G
7953924	CLEC9A	1.0298265	up	C-type lectin domain family 9, member A
7899160	CD52	1.0290067	up	
8145977	PLEKHA2	1.0278245	up	pleckstrin homology domain containing, family A (phosphoinositide dependent kinase-1)
8156848	NR4A3	1.0275431	up	nuclear receptor subfamily 4, group A, member 3
7960411	C12orf4	1.0272794	up	chromosome 12 open reading frame 4
7926875	BAMBI	1.0269666	up	BMP and activin membrane-bound inhibitor homolog (Xenopus)
7998952	TIGD7	1.0269182	up	tigger transposable element derived 7
7949454	MAP3K11	1.026104	up	mitogen-activated protein kinase kinase kinase 11
7956697	MON2	1.0254987	up	
7951271	MMP1	1.0203469	up	matrix metalloproteinase 1 (interstitial collagenase)
7971813	THSD1	1.0197326	up	thrombospondin, type I, domain containing 1
8111153	MYO10	1.0196205	up	myosin X
8061247	RIN2	1.0188884	up	Ras and Rab interactor 2
7967002	PXN	1.018856	up	paxillin
8157246	KIAA1958	1.016342	up	
8167592	PAGE4	1.0160311	up	P antigen family, member 4 (prostate associated)
8056545	STK39	1.0157199	up	serine threonine kinase 39 (STE20/SPS1 homolog, yeast)
8034342	ZNF625   ZNF20	1.0155596	up	zinc finger protein 625   zinc finger protein 20
7942964	TMEM135	1.015337	up	transmembrane protein 135
8075569	SLC5A4	1.0151366	up	solute carrier family 5 (low affinity glucose cotransporter)
8120613	RIMS1	1.0147535	up	regulating synaptic membrane exocytosis 1

Supplemental Table 1a  
eMSC vs. eEP

8103789	GPM6A	1.0143462	up	glycoprotein M6A
8156263	SPIN1	1.0141531	up	spindlin 1
8035304	BST2	1.0129316	up	bone marrow stromal cell antigen 2
8173217	ARHGEF9	1.0122744	up	Cdc42 guanine nucleotide exchange factor (GEF) 9
8138454	TWISTNB	1.0094198	up	TWIST neighbor
8179041	HLA-A HLA-H HLA-	1.008796	up	major histocompatibility complex, class I, A   major histoc
7917304	MCOLN3	1.008474	up	mucolipin 3
8148124	MTBP	1.0079249	up	Mdm2, transformed 3T3 cell double minute 2, p53 binding
8162388	OMD	1.0076872	up	osteomodulin
7952341	ASAM	1.0067987	up	adipocyte-specific adhesion molecule
8095110	KIT	1.0062107	up	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene hc
8054766	bA395L14.13	1.0056667	up	acrosin-like protease
8017597	hCG_1793136	1.0054761	up	similar to ribosomal protein L31
8060988	BTBD3	1.0049121	up	BTB (POZ) domain containing 3
7965060	BBS10	1.0038494	up	Bardet-Biedl syndrome 10
8098263	PALLD	1.003806	up	palladin, cytoskeletal associated protein
8178498	HLA-B HLA-C XXba	1.0017506	up	major histocompatibility complex, class I, B   major histoc
7916669	DOCK7	1.0014141	up	dedicator of cytokinesis 7
8080964	GLT8D4	1.0013046	up	glycosyltransferase 8 domain containing 4
7972239	SLITRK6	1.0002923	up	SLIT and NTRK-like family, member 6
8114287	SPOCK1	-1.0003262	down	sparc/osteonectin, cwcv and kazal-like domains proteogly
8172698	SHROOM4	-1.0022463	down	shroom family member 4
8068361	SLC5A3	-1.0022811	down	solute carrier family 5 (inositol transporters), member 3
8160260	BNC2	-1.0023329	down	basonuclin 2
7939158	QSER1	-1.0039887	down	glutamine and serine rich 1
8068713	MX1	-1.0047777	down	myxovirus (influenza virus) resistance 1, interferon-inducib
8111993	FGF10	-1.0055721	down	fibroblast growth factor 10
7995793	MT1L	-1.0056576	down	metallothionein 1L (gene/pseudogene)
8087485	UBA7	-1.0067507	down	ubiquitin-like modifier activating enzyme 7
8031640	ZNF583	-1.0072265	down	zinc finger protein 583
7977615	RNASE1	-1.0075938	down	ribonuclease, RNase A family, 1 (pancreatic)
8117813	HLA-H HLA-A HLA-	-1.0078427	down	major histocompatibility complex, class I, H (pseudogene)
8142415	FLJ31818	-1.0083368	down	

Supplemental Table 1a  
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7914218	TAF12	-1.0114684	down	
7977409	CRIP1 LOC1001279	-1.0120811	down	cysteine-rich protein 1 (intestinal)   hypothetical protein I
8013860	MYO18A TIAF1	-1.0133947	down	myosin XVIIIa   TGFB1-induced anti-apoptotic factor 1
7977621	NDRG2	-1.0142537	down	NDRG family member 2
7934870	ATAD1	-1.0143111	down	ATPase family, AAA domain containing 1
8077198	FLJ43315	-1.0148536	down	similar to Asparagine synthetase [glutamine-hydrolyzing]
8054479	MALL	-1.0152537	down	mal, T-cell differentiation protein-like
7912145	TNFRSF9	-1.015933	down	tumor necrosis factor receptor superfamily, member 9
7951351	PDGFD	-1.0164747	down	platelet derived growth factor D
8055688	RND3	-1.0172999	down	Rho family GTPase 3
7918255	CLCC1	-1.0200593	down	chloride channel CLIC-like 1
8081959	STXBP5L	-1.0203412	down	syntaxin binding protein 5-like
8068202	C21orf63	-1.0205954	down	chromosome 21 open reading frame 63
8179731	HLA-B HLA-C XXba	-1.0222505	down	major histocompatibility complex, class I, B   major histoc
8113773	ALDH7A1	-1.0226761	down	aldehyde dehydrogenase 7 family, member A1
8103341	MAP9	-1.0228847	down	microtubule-associated protein 9
7972369	UGCGL2	-1.024177	down	UDP-glucose ceramide glucosyltransferase-like 2
7909730	KCNK2	-1.0266643	down	potassium channel, subfamily K, member 2
7923991	PLXNA2	-1.0280216	down	plexin A2
7939411	C11orf74	-1.0281214	down	chromosome 11 open reading frame 74
8119898	VEGFA	-1.0302317	down	vascular endothelial growth factor A
8122464	UTRN	-1.0314653	down	utrophin
8121768	PKIB	-1.0337543	down	protein kinase (cAMP-dependent, catalytic) inhibitor beta
8102342	ELOVL6	-1.0340794	down	ELOVL family member 6, elongation of long chain fatty aci
7965510	TMCC3	-1.035081	down	transmembrane and coiled-coil domain family 3
8154512	ADAMTSL1	-1.0358821	down	ADAMTS-like 1
8162313	IARS	-1.0376608	down	isoleucyl-tRNA synthetase
8143065	C7orf49	-1.0411485	down	chromosome 7 open reading frame 49
8050507	WDR35	-1.0416186	down	WD repeat domain 35
8076355	PMM1	-1.042349	down	phosphomannomutase 1
8088803	EIF4E3	-1.0424067	down	eukaryotic translation initiation factor 4E family member :
8124911	HLA-B XXbac-BPG1	-1.0438244	down	major histocompatibility complex, class I, B   MHC class I
7926037	PFKFB3	-1.0438986	down	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3

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7925457	RGS7	-1.0439577	down	regulator of G-protein signaling 7
8063536	TFAP2C	-1.0467259	down	transcription factor AP-2 gamma (activating enhancer bini
8073015	KDEL3	-1.0467561	down	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein ret
7907893	MR1	-1.0483043	down	major histocompatibility complex, class I-related
8073662	PARVB	-1.0493209	down	parvin, beta
8113733	CCDC100	-1.0517426	down	coiled-coil domain containing 100
8106516	JMY	-1.0518099	down	junction-mediating and regulatory protein
8068353	SLC5A3 MRPS6	-1.052037	down	solute carrier family 5 (inositol transporters), member 3
8004842	ARHGEF15	-1.0529537	down	Rho guanine nucleotide exchange factor (GEF) 15
8042942	HK2	-1.0535498	down	hexokinase 2
8178419	FLOT1	-1.0545422	down	flotillin 1
8131631	HDAC9	-1.0552	down	histone deacetylase 9
8093145	C3orf34	-1.0554159	down	chromosome 3 open reading frame 34
7999387	EMP2	-1.0572796	down	epithelial membrane protein 2
8124828	FLOT1	-1.0579566	down	flotillin 1
8044225	SULT1C4	-1.0580063	down	sulfotransferase family, cytosolic, 1C, member 4
8178211	PSMB9	-1.0584898	down	proteasome (prosome, macropain) subunit, beta type, 9 (l
8122365	GPR126	-1.0597464	down	G protein-coupled receptor 126
8056611	LRP2	-1.060351	down	low density lipoprotein-related protein 2
8151066	ARMC1	-1.0603888	down	armadillo repeat containing 1
8068583	KCNJ15	-1.0609354	down	potassium inwardly-rectifying channel, subfamily J, memb
7936871	OAT	-1.0615324	down	ornithine aminotransferase (gyrate atrophy)
8123274	MAP3K4	-1.0620213	down	mitogen-activated protein kinase kinase kinase 4
8179688	FLOT1	-1.0625035	down	flotillin 1
8077441	BHLHB2	-1.064929	down	basic helix-loop-helix domain containing, class B, 2
8083471	SGEF	-1.0659019	down	Src homology 3 domain-containing guanine nucleotide exi
8179495	PSMB9	-1.0659635	down	proteasome (prosome, macropain) subunit, beta type, 9 (l
8118571	PSMB9	-1.0662701	down	proteasome (prosome, macropain) subunit, beta type, 9 (l
8134257	GNG11	-1.066593	down	guanine nucleotide binding protein (G protein), gamma 11
8129181	GOPC ROS1	-1.0680561	down	golgi associated PDZ and coiled-coil motif containing   c-r
8099593	KCNIP4	-1.0683935	down	Kv channel interacting protein 4
7956819	RASSF3	-1.0694687	down	Ras association (RalGDS/AF-6) domain family member 3
8083092	ZBTB38	-1.0699059	down	zinc finger and BTB domain containing 38

Supplemental Table 1a  
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7927288	FAM35A	-1.0699521	down	family with sequence similarity 35, member A
8179049	HLA-A HLA-B HLA-	-1.0700992	down	major histocompatibility complex, class I, A   major histoc
8088680	C3orf64	-1.0710377	down	chromosome 3 open reading frame 64
8088776	FOXP1	-1.0715257	down	forkhead box P1
8041519	FAM82A	-1.0717558	down	family with sequence similarity 82, member A
8082869	PPP2R3A	-1.0721112	down	protein phosphatase 2 (formerly 2A), regulatory subunit B
7922301	MYOC	-1.0725905	down	myocilin, trabecular meshwork inducible glucocorticoid re
8113623	TICAM2 TMED7	-1.0726227	down	toll-like receptor adaptor molecule 2   transmembrane er
8102415	CAMK2D	-1.0737487	down	calcium/calmodulin-dependent protein kinase (CaM kinas
8106660	RASGRF2	-1.0746174	down	Ras protein-specific guanine nucleotide-releasing factor 2
8109001	SPINK5	-1.0747365	down	serine peptidase inhibitor, Kazal type 5
7929976	RP11-529I10.4	-1.0761079	down	deleted in a mouse model of primary ciliary dyskinesia
7991640	TARSL2	-1.0761691	down	threonyl-tRNA synthetase-like 2
7973756	KIAA1333	-1.0767127	down	
8072360	TCN2	-1.0771441	down	transcobalamin II; macrocytic anemia
8057056	TTN	-1.0780598	down	titin
7995838	MT1X	-1.0786551	down	metallothionein 1X
8111490	PRLR	-1.0792084	down	prolactin receptor
8131067	GPR146	-1.0796975	down	G protein-coupled receptor 146
7973036	PARP2	-1.0809883	down	poly (ADP-ribose) polymerase family, member 2
8068522	TTC3	-1.0816542	down	tetratricopeptide repeat domain 3
8101762	SNCA	-1.0825005	down	synuclein, alpha (non A4 component of amyloid precursor
8144802	PDGFRL	-1.0851576	down	platelet-derived growth factor receptor-like
8144528	TNKS	-1.0856401	down	tankyrase, TRF1-interacting ankyrin-related ADP-ribose pc
8157193	ZNF483	-1.0864087	down	zinc finger protein 483
8112081	DHX29	-1.0874827	down	DEAH (Asp-Glu-Ala-His) box polypeptide 29
8115261	CCDC69	-1.0878115	down	coiled-coil domain containing 69
8102440	ARSJ	-1.0883831	down	arylsulfatase family, member J
7962151	MGC24039	-1.0901399	down	
7917347	DDAH1	-1.0918115	down	dimethylarginine dimethylaminohydrolase 1
8103289	PLRG1	-1.0920376	down	pleiotropic regulator 1 (PRL1 homolog, Arabidopsis)
8131815	KLHL7	-1.0929885	down	kelch-like 7 (Drosophila)
8112967	TMEM167	-1.0936928	down	transmembrane protein 167



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8116818	BMP6	-1.0950071	down	bone morphogenetic protein 6
7975799	FLVCR2	-1.0951374	down	feline leukemia virus subgroup C cellular receptor family, member 2
8081138	EPHA6	-1.0954831	down	EPH receptor A6
8008566	STXBP4	-1.0962641	down	syntaxin binding protein 4
8022803	FAM59A	-1.0973089	down	family with sequence similarity 59, member A
8017651	SMURF2	-1.0973854	down	SMAD specific E3 ubiquitin protein ligase 2
8137250	GIMAP2	-1.1001049	down	GTPase, IMAP family member 2
7950796	CREBZF	-1.1011021	down	CREB/ATF bZIP transcription factor
8005549	LOC400581	-1.1020803	down	GRB2-related adaptor protein-like
8122426	PHACTR2	-1.1037134	down	phosphatase and actin regulator 2
8046502	SCRN3	-1.1046917	down	secernin 3
7912750	FBXO42	-1.1051126	down	F-box protein 42
8096116	AGPAT9	-1.1059242	down	1-acylglycerol-3-phosphate O-acyltransferase 9
8137240	GIMAP7	-1.1068612	down	GTPase, IMAP family member 7
8047174	SLC39A10	-1.1069373	down	solute carrier family 39 (zinc transporter), member 10
8169186	TBC1D8B	-1.1072265	down	TBC1 domain family, member 8B (with GRAM domain)
8144230	ZNF596	-1.1078743	down	zinc finger protein 596
8135218	LRRC17	-1.1083145	down	leucine rich repeat containing 17
8152703	FBXO32	-1.1084993	down	F-box protein 32
8115368	NMUR2	-1.1100628	down	neuromedin U receptor 2
8142407	TMEM168	-1.1101944	down	transmembrane protein 168
8157027	NIPSNAP3B	-1.1105568	down	nipsnap homolog 3B (C. elegans)
7936041	ARL3	-1.1118777	down	ADP-ribosylation factor-like 3
8091648	SSR3	-1.1134382	down	signal sequence receptor, gamma (translocon-associated)
8138834	FKBP14	-1.1139234	down	FK506 binding protein 14, 22 kDa
7961230	CSDA	-1.1141279	down	cold shock domain protein A
8149574	CSGALNACT1	-1.1157382	down	chondroitin sulfate N-acetylgalactosaminyltransferase 1
7974771	C14orf135   LOC100	-1.1171662	down	chromosome 14 open reading frame 135   hypothetical protein
8146930	TMEM70	-1.1186553	down	transmembrane protein 70
8046680	PLEKHA3	-1.1188576	down	pleckstrin homology domain containing, family A (phosphoinositide 3-kinase binding)
8139057	ELMO1	-1.1194639	down	engulfment and cell motility 1
7918323	SORT1	-1.1195252	down	sortilin 1
8130129	NUP43	-1.1206653	down	nucleoporin 43kDa

Supplemental Table 1a  
eMSC vs. eEP

8013319	GRAP	-1.1229072	down	GRB2-related adaptor protein
7969179	RNASEH2B	-1.1229712	down	ribonuclease H2, subunit B
7948896	SNORD22 SNHG1	-1.1230901	down	small nucleolar RNA, C/D box 22   small nucleolar RNA ho
8048835	C2orf33	-1.1240065	down	chromosome 2 open reading frame 33
8033667	ZNF558	-1.1256043	down	zinc finger protein 558
7981142	CLMN	-1.1264523	down	calmin (calponin-like, transmembrane)
7987192	SLC12A6	-1.1279472	down	solute carrier family 12 (potassium/chloride transporters)
8147019	C8orf70	-1.1284109	down	chromosome 8 open reading frame 70
7975136	FUT8	-1.1287842	down	fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
7959807	TMEM132B	-1.1290283	down	transmembrane protein 132B
8133938	CROT	-1.1296942	down	carnitine O-octanoyltransferase
7918026	EXTL2	-1.1303434	down	exostoses (multiple)-like 2
8084717	ST6GAL1	-1.1327735	down	ST6 beta-galactosamide alpha-2,6-sialyltransferase 1
8129562	CTGF	-1.1330503	down	connective tissue growth factor
8029437	PVR	-1.1332978	down	poliovirus receptor
8096301	SPP1	-1.1337478	down	secreted phosphoprotein 1 (osteopontin, bone sialoprotei
8124622	ZNF311	-1.1343168	down	zinc finger protein 311
8013788	FLOT2	-1.1351519	down	flotillin 2
8040292	GREB1	-1.135626	down	
7924351	EPRS	-1.1364328	down	glutamyl-prolyl-tRNA synthetase
8138842	NOD1	-1.1366601	down	nucleotide-binding oligomerization domain containing 1
8107234	MAN2A1	-1.137101	down	mannosidase, alpha, class 2A, member 1
8178275	ZNF311	-1.1375217	down	zinc finger protein 311
8085815	TOP2B	-1.1378459	down	topoisomerase (DNA) II beta 180kDa
8143629	OR2A9P OR2A20P	-1.1379335	down	olfactory receptor, family 2, subfamily A, member 9 pseuc
8102065	BDH2	-1.1395537	down	3-hydroxybutyrate dehydrogenase, type 2
8013450	LGALS9 LOC284194	-1.1400082	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   galecti
7964701	GNS	-1.1409631	down	glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID
8149590	LOC100130604	-1.141059	down	
8011945	KIAA0753	-1.1416118	down	
8146550	SDCBP	-1.1424357	down	syndecan binding protein (syntenin)
8136177	KIAA0265	-1.1430203	down	
7927267	FAM35A	-1.1457653	down	family with sequence similarity 35, member A

Supplemental Table 1a  
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7964872	PTPRB	-1.1466012	down	protein tyrosine phosphatase, receptor type, B
8179704	IER3	-1.1472031	down	immediate early response 3
8089911	HCLS1	-1.1483791	down	hematopoietic cell-specific Lyn substrate 1
8098556	CCDC111	-1.1487561	down	coiled-coil domain containing 111
8124848	IER3	-1.1493039	down	immediate early response 3
7909862	C1orf115	-1.1495024	down	chromosome 1 open reading frame 115
7933092	ZNF248	-1.1499296	down	zinc finger protein 248
8164810	RALGDS	-1.1504844	down	ral guanine nucleotide dissociation stimulator
7980958	LGMN	-1.1511449	down	legumain
8168179	DLG3	-1.1511985	down	discs, large homolog 3 (neuroendocrine-dlg, Drosophila)
8089203	SEN7	-1.1526016	down	SUMO1/sentrin specific peptidase 7
8125436	HLA-DRB5 LOC100:	-1.1532885	down	
8151952	NPAL2	-1.1544958	down	NIPA-like domain containing 2
7909801	LYPLAL1	-1.1552556	down	lysophospholipase-like 1
7965523	NR2C1	-1.1568432	down	nuclear receptor subfamily 2, group C, member 1
8174029	TAF7L	-1.156953	down	TAF7-like RNA polymerase II, TATA box binding protein (TI
7902687	CYR61	-1.1579391	down	cysteine-rich, angiogenic inducer, 61
8138805	CPVL	-1.1584306	down	carboxypeptidase, vitellogenic-like
8094476	TBC1D19	-1.1596503	down	TBC1 domain family, member 19
8138370	ANKMY2	-1.161113	down	ankyrin repeat and MYND domain containing 2
8021984	YES1	-1.1614934	down	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1
8082750	UBA5	-1.1619861	down	ubiquitin-like modifier activating enzyme 5
8052626	VPS54	-1.1621064	down	vacuolar protein sorting 54 homolog (S. cerevisiae)
7898057	PDPN	-1.1624026	down	podoplanin
7984704	NEO1	-1.1648005	down	neogenin homolog 1 (chicken)
8147172	CPNE3	-1.1648778	down	copine III
8094874	LOC402175	-1.1656929	down	hypothetical gene supported by AF044957; NM_004547
8152119	NCALD	-1.1671994	down	neurocalcin delta
8075106	TPST2	-1.1673533	down	tyrosylprotein sulfotransferase 2
7930714	ATRNL1	-1.167797	down	attractin-like 1
7950731	PRCP	-1.1692275	down	prolylcarboxypeptidase (angiotensinase C)
8068761	ABCG1	-1.1713853	down	ATP-binding cassette, sub-family G (WHITE), member 1
7971124	UFM1	-1.1727107	down	ubiquitin-fold modifier 1

Supplemental Table 1a  
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8007745	HEXIM1	-1.1731495	down	hexamethylene bis-acetamide inducible 1
7915870	ATPAF1	-1.1739227	down	ATP synthase mitochondrial F1 complex assembly factor 1
8078962	EIF1B	-1.1749271	down	eukaryotic translation initiation factor 1B
7949931	SUV420H1	-1.1762947	down	suppressor of variegation 4-20 homolog 1 (Drosophila)
8023646	BCL2	-1.1781377	down	B-cell CLL/lymphoma 2
8144726	TUSC3	-1.1802497	down	tumor suppressor candidate 3
7973826	NUBPL	-1.1803997	down	nucleotide binding protein-like
8005458	LGALS9 LOC654346	-1.181457	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   similar
7930614	NHLRC2	-1.1818064	down	NHL repeat containing 2
7952484	LOC219854	-1.1823711	down	
8055496	LRP1B	-1.1851009	down	low density lipoprotein-related protein 1B (deleted in tumor)
8112865	SERINC5	-1.1858202	down	serine incorporator 5
8096109	MRPS18C	-1.1862259	down	mitochondrial ribosomal protein S18C
7958352	BTBD11	-1.1866908	down	BTB (POZ) domain containing 11
7907370	DNM3	-1.1872581	down	dynamitin 3
7926385	STAM	-1.1873544	down	signal transducing adaptor molecule (SH3 domain and ITA)
7922137	NME7	-1.187367	down	non-metastatic cells 7, protein expressed in (nucleoside-diphosphate)
7974781	PPM1A	-1.1879582	down	protein phosphatase 1A (formerly 2C), magnesium-dependent
7951397	CASP1	-1.1887298	down	caspase 1, apoptosis-related cysteine peptidase (interleukin-1)
8178435	IER3	-1.1888735	down	immediate early response 3
8121144	MANEA	-1.1903409	down	mannosidase, endo-alpha
8097356	PLK4	-1.1904868	down	polo-like kinase 4 (Drosophila)
8173955	SYTL4	-1.1905072	down	synaptotagmin-like 4 (granuphilin-a)
8046726	SSFA2	-1.1912063	down	sperm specific antigen 2
8085954	AZI2	-1.191741	down	5-azacytidine induced 2
8151999	RGS22	-1.191968	down	regulator of G-protein signaling 22
8020267	CEP192	-1.1977153	down	centrosomal protein 192kDa
8040163	IAH1	-1.2025464	down	isoamyl acetate-hydrolyzing esterase 1 homolog (S. cerevisiae)
8123467	C6orf70	-1.2036824	down	chromosome 6 open reading frame 70
7984517	GLCE	-1.2040412	down	glucuronic acid epimerase
7906469	DUSP23	-1.2045898	down	dual specificity phosphatase 23
8154128	DSERG1	-1.205124	down	Down syndrome encephalopathy related protein 1
8094190	CC2D2A	-1.2071165	down	coiled-coil and C2 domain containing 2A

Supplemental Table 1a  
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8051637	DHX57	-1.2073407	down	DEAH (Asp-Glu-Ala-Asp/His) box polypeptide 57
7912292	LZIC	-1.2080694	down	leucine zipper and CTNNBIP1 domain containing
8102938	RNF150	-1.2087687	down	ring finger protein 150
7936891	METTL10	-1.2124538	down	methyltransferase like 10
8128894	REV3L	-1.2156886	down	REV3-like, catalytic subunit of DNA polymerase zeta (yeast variant gene 6 (TEL oncogene))
7953981	ETV6	-1.216876	down	lymphoid-restricted membrane protein
7954436	LRMP	-1.218619	down	ADP-ribosylation factor 4
8088339	ARF4	-1.218634	down	ras homolog gene family, member T1
8006345	RHOT1	-1.2188152	down	multiple C2 domains, transmembrane 1
8113130	MCTP1	-1.2199246	down	ADP-ribosylation factor-like 1
7965789	ARL1	-1.2207946	down	Rab15 effector protein
7954589	REP15	-1.2213464	down	Src homology 2 domain containing adaptor protein B   cytochrome b5
8161255	SHB CKAP2	-1.2220731	down	HBS1-like ( <i>S. cerevisiae</i> )
8129706	HBS1L	-1.2231332	down	peptidylprolyl isomerase (cyclophilin)-like 3
8058147	PPIL3	-1.2254865	down	bone morphogenetic protein receptor, type IA
7928855	BMPR1A	-1.2286855	down	cell division cycle associated 7
8046488	CDCA7	-1.2298441	down	
8097066	KIAA1627	-1.2304577	down	
8124502	ZNF184	-1.234252	down	zinc finger protein 184
8126135	GLO1	-1.2374792	down	glyoxalase I
7952069	C11orf60	-1.2377696	down	chromosome 11 open reading frame 60
8096704	NPNT	-1.2380562	down	nephronectin
8166784	TSPAN7	-1.2430425	down	tetraspanin 7
8042737	ALMS1	-1.2453402	down	Alstrom syndrome 1
8021169	LIPG	-1.2459713	down	lipase, endothelial
8100145	COMMD8	-1.248665	down	COMM domain containing 8
8098006	GLRB	-1.2491612	down	glycine receptor, beta
8105579	IPO11	-1.2495819	down	importin 11
8100318	SGCB	-1.249764	down	sarcoglycan, beta (43kDa dystrophin-associated glycoprotein)
7968658	EXOSC8	-1.2512971	down	exosome component 8
8042259	MDH1	-1.2529694	down	malate dehydrogenase 1, NAD (soluble)
8112121	SLC38A9	-1.2532167	down	solute carrier family 38, member 9
7917850	ARHGAP29	-1.2532715	down	Rho GTPase activating protein 29

Supplemental Table 1a  
eMSC vs. eEP

8165486	TMEM203   LOC653	-1.2537291	down	transmembrane protein 203   hypothetical LOC653383
8141206	BAIAP2L1   LOC1001	-1.2545604	down	BAI1-associated protein 2-like 1   hypothetical protein LO
7928354	FAM149B1	-1.255299	down	family with sequence similarity 149, member B1
7909610	ATF3	-1.2562622	down	activating transcription factor 3
8171516	RBBP7	-1.2568998	down	retinoblastoma binding protein 7
7938951	TMEM16E	-1.2574637	down	transmembrane protein 16E
8106689	CKMT2	-1.2576809	down	creatine kinase, mitochondrial 2 (sarcomeric)
8129458	ARHGAP18	-1.2578067	down	Rho GTPase activating protein 18
7974461	LGALS3	-1.2587019	down	lectin, galactoside-binding, soluble, 3
8087985	GLT8D1	-1.2594014	down	glycosyltransferase 8 domain containing 1
8171837	KLHL15	-1.2617614	down	kelch-like 15 (Drosophila)
7973770	SCFD1	-1.265062	down	sec1 family domain containing 1
7974587	ACTR10	-1.265811	down	actin-related protein 10 homolog ( <i>S. cerevisiae</i> )
8106702	ZCCHC9	-1.2661263	down	zinc finger, CCHC domain containing 9
7961798	SOX5	-1.266294	down	SRY (sex determining region Y)-box 5
8107814	ISOC1	-1.2665076	down	isochorismatase domain containing 1
7952305	LOC283155	-1.267618	down	
8047069	INPP1	-1.2689201	down	inositol polyphosphate-1-phosphatase
8175432	SNORD61	-1.2691993	down	small nucleolar RNA, C/D box 61
8081277	NIT2	-1.2692014	down	nitrilase family, member 2
8105353	SKIV2L2	-1.2692889	down	superkiller viralicidic activity 2-like 2 ( <i>S. cerevisiae</i> )
8129273	C6orf170	-1.2718209	down	chromosome 6 open reading frame 170
7969228	ALG11   UTP14C	-1.2733392	down	asparagine-linked glycosylation 11 homolog ( <i>S. cerevisiae</i> ,
8042270	UGP2	-1.2738283	down	UDP-glucose pyrophosphorylase 2
7936567	RAB11FIP2	-1.2752262	down	RAB11 family interacting protein 2 (class I)
8097529	ELMOD2	-1.2758883	down	ELMO/CED-12 domain containing 2
8002778	MLKL	-1.2762129	down	mixed lineage kinase domain-like
8149825	STC1	-1.2768147	down	stanniocalcin 1
7904254	ATP1A1	-1.2792269	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide
7923119	ZBTB41	-1.2795517	down	zinc finger and BTB domain containing 41
8132369	EPDR1	-1.2818351	down	ependymin related protein 1 (zebrafish)
7925954	NET1	-1.2847489	down	neuroepithelial cell transforming gene 1
7909332	CD55	-1.2883604	down	

Supplemental Table 1a  
eMSC vs. eEP

8020806	RNF125	-1.2884446	down	ring finger protein 125
8046685	UBE2E3 UBE2E4P	-1.2911731	down	ubiquitin-conjugating enzyme E2E 3 (UBC4/5 homolog, ye
8092905	LSG1	-1.2931345	down	large subunit GTPase 1 homolog ( <i>S. cerevisiae</i> )
7989023	RAB27A	-1.2954972	down	
8114193	SAR1B	-1.2967756	down	SAR1 gene homolog B ( <i>S. cerevisiae</i> )
8121461	CDC40	-1.2970669	down	cell division cycle 40 homolog ( <i>S. cerevisiae</i> )
8106556	CMYA5	-1.2971118	down	cardiomyopathy associated 5
8127756	LCA5	-1.2978547	down	Leber congenital amaurosis 5
8131539	TMEM106B	-1.3002381	down	transmembrane protein 106B
7958620	IFT81	-1.3015317	down	intraflagellar transport 81 homolog ( <i>Chlamydomonas</i> )
7902541	IFI44L	-1.3028382	down	interferon-induced protein 44-like
8066848	PREX1	-1.3028696	down	phosphatidylinositol 3,4,5-trisphosphate-dependent RAC 1
7964810	MDM1	-1.303622	down	Mdm1 nuclear protein homolog (mouse)
8156905	TMEFF1	-1.3038124	down	transmembrane protein with EGF-like and two follistatin-l
8068024	JAM2	-1.3055013	down	junctional adhesion molecule 2
8129363	HDCC2	-1.3060324	down	HD domain containing 2
7969935	ERCC5	-1.3066361	down	excision repair cross-complementing rodent repair deficie
8142697	POT1	-1.3072798	down	
8086555	LZTFL1	-1.3075504	down	leucine zipper transcription factor-like 1
8091778	SCARNA7	-1.3097407	down	small Cajal body-specific RNA 7
7983173	CCNDBP1	-1.3099308	down	cyclin D-type binding-protein 1
7942830	LOC100130425 GC	-1.3133626	down	hypothetical protein LOC100130425   GCRG-P224
8154692	TEK	-1.3134123	down	
8036341	ZNF461	-1.3144367	down	zinc finger protein 461
8061035	MACROD2	-1.3151985	down	MACRO domain containing 2
7995755	OGFOD1	-1.3173511	down	2-oxoglutarate and iron-dependent oxygenase domain co
8127841	PGM3	-1.3178887	down	phosphoglucomutase 3
7907466	DARS2	-1.3181647	down	aspartyl-tRNA synthetase 2, mitochondrial
8117476	BTN3A3	-1.3185102	down	butyrophilin, subfamily 3, member A3
7919139	LOC375010	-1.3185152	down	
8129071	FRK	-1.3190879	down	fyn-related kinase
7908988	SNRPE	-1.3195244	down	small nuclear ribonucleoprotein polypeptide E
7932530	PIP4K2A	-1.3205106	down	phosphatidylinositol-5-phosphate 4-kinase, type II, alpha

Supplemental Table 1a  
eMSC vs. eEP

8103601	DDX60L	-1.3209469	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60-like
8128837	C6orf186 DDO	-1.3239576	down	chromosome 6 open reading frame 186   D-aspartate oxidase
8111101	ANKH	-1.3258337	down	ankylosis, progressive homolog (mouse)
7921987	TMCO1	-1.3272218	down	transmembrane and coiled-coil domains 1
8105633	PPWD1	-1.327579	down	peptidylprolyl isomerase domain and WD repeat containing protein
7966321	GPN3	-1.328954	down	GPN-loop GTPase 3
8161701	TMEM2	-1.3328879	down	transmembrane protein 2
8160284	FAM29A	-1.3339344	down	family with sequence similarity 29, member A
7984298	DIS3L	-1.3340898	down	DIS3 mitotic control homolog ( <i>S. cerevisiae</i> )-like
8086451	HIGD1A	-1.3342491	down	HIG1 domain family, member 1A
8115600	LOC63920	-1.3345921	down	transposon-derived Buster3 transposase-like
8043278	MRPL35	-1.3346764	down	mitochondrial ribosomal protein L35
8129974	FUCA2	-1.3350346	down	fucosidase, alpha-L-2, plasma
8091446	PFN2	-1.3353914	down	profilin 2
8147396	INTS8	-1.3357229	down	integrator complex subunit 8
8102464	TRAM1L1	-1.3381596	down	translocation associated membrane protein 1-like 1
8121734	ASF1A	-1.3383777	down	ASF1 anti-silencing function 1 homolog A ( <i>S. cerevisiae</i> )
8158671	ASS1	-1.3384975	down	argininosuccinate synthetase 1
8051963	SRBD1	-1.3385649	down	S1 RNA binding domain 1
7922598	ANGPTL1	-1.3392743	down	angiopoietin-like 1
8107164	HISPPD1	-1.339578	down	histidine acid phosphatase domain containing 1
8002692	ZFHX3	-1.3405024	down	zinc finger homeobox 3
8122348	VTA1	-1.3419082	down	Vps20-associated 1 homolog ( <i>S. cerevisiae</i> )
8089867	RABL3	-1.3450894	down	RAB, member of RAS oncogene family-like 3
8000375	ARHGAP17	-1.3470281	down	Rho GTPase activating protein 17
7919226	POLR3C	-1.3470713	down	polymerase (RNA) III (DNA directed) polypeptide C (62kD)
7902553	IFI44	-1.347556	down	interferon-induced protein 44
7962112	CAPRIN2	-1.3479297	down	caprin family member 2
7984686	BBS4	-1.3513168	down	Bardet-Biedl syndrome 4
8162039	C9orf64	-1.3523868	down	chromosome 9 open reading frame 64
8042223	EHBP1	-1.3527943	down	EH domain binding protein 1
8138489	CDCA7L	-1.355367	down	cell division cycle associated 7-like
7983890	Gcom1 GRINL1A	-1.3561852	down	GRINL1A combined protein   glutamate receptor, ionotropic



Supplemental Table 1a  
eMSC vs. eEP

7978666	MBIP	-1.3578956	down	MAP3K12 binding inhibitory protein 1
8096224	AFF1	-1.3596942	down	AF4/FMR2 family, member 1
8108475	LOC492311	-1.3620758	down	similar to bovine IgA regulatory protein
7901895	ATG4C	-1.3670208	down	ATG4 autophagy related 4 homolog C ( <i>S. cerevisiae</i> )
8075310	LIF	-1.3680023	down	leukemia inhibitory factor (cholinergic differentiation factor)
8137566	RNF32	-1.3691077	down	ring finger protein 32
8112302	DKFZP686E2158	-1.3694408	down	hypothetical protein LOC643155
7992917	CLUAP1	-1.3705096	down	clusterin associated protein 1
8022118	EPB41L3	-1.370762	down	erythrocyte membrane protein band 4.1-like 3
8090133	CCDC14	-1.3708227	down	coiled-coil domain containing 14
7966448	TMEM116	-1.3711271	down	transmembrane protein 116
7987772	EHD4	-1.3714747	down	EH-domain containing 4
8052762	GFPT1	-1.371963	down	glutamine-fructose-6-phosphate transaminase 1
8154491	ADAMTSL1	-1.3722565	down	ADAMTS-like 1
7961767	KIAA0528	-1.3733302	down	
7962274	KIF21A	-1.3743861	down	kinesin family member 21A
8023191	SMAD2	-1.375696	down	SMAD family member 2
7974725	C14orf100	-1.375927	down	chromosome 14 open reading frame 100
8166098	RAB9A	-1.3762361	down	
8107859	LYRM7	-1.3763521	down	Lym7 homolog (mouse)
7967863	ZNF605	-1.3771318	down	zinc finger protein 605
7924476	TAF1A	-1.377675	down	TATA box binding protein (TBP)-associated factor, RNA polymerase II, 2
7921344	ELL2	-1.3807797	down	elongation factor, RNA polymerase II, 2
8146462	SOX17	-1.3826641	down	SRY (sex determining region Y)-box 17
7988859	GNB5	-1.382665	down	guanine nucleotide binding protein (G protein), beta 5
8117045	RBM24	-1.3847276	down	RNA binding motif protein 24
8113073	ARRDC3	-1.3858271	down	arrestin domain containing 3
7974214	KLHDC1	-1.3866223	down	kelch domain containing 1
8171901	MAP3K7IP3	-1.3866282	down	mitogen-activated protein kinase kinase kinase 7 interacting protein 3
7972297	ABCC4	-1.3877958	down	ATP-binding cassette, sub-family C (CFTR/MRP), member 4
7980146	NPC2	-1.388765	down	Niemann-Pick disease, type C2
8150908	IMPAD1	-1.3893621	down	inositol monophosphatase domain containing 1
8113220	ELL2	-1.3895227	down	elongation factor, RNA polymerase II, 2

Supplemental Table 1a  
eMSC vs. eEP

8014115	MYO1D	-1.3897444	down	myosin ID
8081386	NFKBIZ	-1.3911669	down	nuclear factor of kappa light polypeptide gene enhancer i
8103011	OTUD4	-1.3930774	down	OTU domain containing 4
8027402	CCNE1	-1.3962305	down	cyclin E1
8139228	C7orf25	-1.3963447	down	chromosome 7 open reading frame 25
8047596	ALS2CR16	-1.397266	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
7954481	SSPN	-1.397948	down	sarcospan (Kras oncogene-associated gene)
8044127	C2orf49	-1.4004248	down	chromosome 2 open reading frame 49
7918034	DPH5	-1.4011533	down	
7974125	KIAA0423	-1.4015329	down	
7976160	TDP1	-1.4024478	down	tyrosyl-DNA phosphodiesterase 1
7922104	GCSH LOC730107	-1.4038596	down	glycine cleavage system protein H (aminomethyl carrier)
7918857	TSPAN2	-1.4044185	down	tetraspanin 2
8151254	NCOA2	-1.4061308	down	nuclear receptor coactivator 2
8002999	GCSH LOC730107	-1.4067203	down	glycine cleavage system protein H (aminomethyl carrier)
8107909	SLC22A4	-1.4085057	down	solute carrier family 22 (organic cation/ergothioneine trar
8116932	PHACTR1	-1.4096295	down	phosphatase and actin regulator 1
8052934	MCEE	-1.4103217	down	methylmalonyl CoA epimerase
7938370	SWAP70	-1.4159012	down	SWAP-70 protein
7954503	MED21	-1.4172621	down	mediator complex subunit 21
7969576	MIRHG1	-1.4185796	down	microRNA host gene (non-protein coding) 1
8154178	JAK2	-1.4186318	down	Janus kinase 2 (a protein tyrosine kinase)
7909586	PPP2R5A	-1.4188911	down	protein phosphatase 2, regulatory subunit B', alpha isofo
7925480	FH	-1.4205031	down	fumarate hydratase
8018082	SLC39A11	-1.4223021	down	solute carrier family 39 (metal ion transporter), member 1
7903803	AHCYL1	-1.4231822	down	S-adenosylhomocysteine hydrolase-like 1
8009255	CCDC45	-1.424579	down	coiled-coil domain containing 45
7909841	MARK1	-1.4270138	down	MAP/microtubule affinity-regulating kinase 1
8039144	TMC4	-1.4286828	down	transmembrane channel-like 4
8074969	DDT	-1.429444	down	D-dopachrome tautomerase
8044278	CCDC138	-1.431061	down	coiled-coil domain containing 138
8073799	ATXN10	-1.4311225	down	ataxin 10
8046628	RBM45	-1.4318275	down	RNA binding motif protein 45

Supplemental Table 1a  
eMSC vs. eEP

7939298	CAT	-1.4368341	down	catalase
7903972	ATP5F1	-1.4371623	down	ATP synthase, H <sup>+</sup> transporting, mitochondrial F0 complex,
8144089	LMBR1	-1.4384778	down	limb region 1 homolog (mouse)
8036324	ZNF260	-1.4389437	down	zinc finger protein 260
7989315	GTF2A2	-1.4390198	down	general transcription factor IIA, 2, 12kDa
8167603	CLCN5	-1.441496	down	chloride channel 5 (nephrolithiasis 2, X-linked, Dent disea
8142585	CADPS2	-1.4425759	down	Ca <sup>2+</sup> -dependent activator protein for secretion 2
7911155	SCCPDH	-1.4428976	down	saccharopine dehydrogenase (putative)
8105741	MAST4 LOC100128	-1.4435835	down	microtubule associated serine/threonine kinase family me
8122756	PLEKHG1	-1.4446923	down	pleckstrin homology domain containing, family G (with Rh
8091737	IFT80	-1.4452908	down	intraflagellar transport 80 homolog (Chlamydomonas)
7904693	FLJ21272	-1.4468074	down	
7972487	DOCK9	-1.4469134	down	dedicator of cytokinesis 9
7974166	FANCM	-1.4475721	down	Fanconi anemia, complementation group M
7964347	TMEM194	-1.4476789	down	transmembrane protein 194
8092009	LRRC34	-1.4489276	down	leucine rich repeat containing 34
8023165	HDHD2	-1.4505451	down	haloacid dehalogenase-like hydrolase domain containing :
8064967	MKKS	-1.4508684	down	McKusick-Kaufman syndrome
8054281	LONRF2	-1.4556528	down	LON peptidase N-terminal domain and ring finger 2
8114778	GCSH LOC730107	-1.4586083	down	glycine cleavage system protein H (aminomethyl carrier)
7939329	PDHX	-1.4600253	down	pyruvate dehydrogenase complex, component X
8078933	MYRIP	-1.4620398	down	myosin VIIA and Rab interacting protein
8122672	MAP3K7IP2	-1.4636493	down	mitogen-activated protein kinase kinase kinase 7 interacti
7990700	WDR61	-1.4641552	down	WD repeat domain 61
7983191	ADAL	-1.4650124	down	adenosine deaminase-like
7914550	ZBTB8OS	-1.4654039	down	zinc finger and BTB domain containing 8 opposite strand
8001876	NAE1	-1.4661947	down	NEDD8 activating enzyme E1 subunit 1
8016476	HOXB9	-1.4676336	down	homeobox B9
8155883	OSTF1	-1.46826	down	osteoclast stimulating factor 1
7909561	C1orf97	-1.4690036	down	chromosome 1 open reading frame 97
7911989	RPL22	-1.4698169	down	ribosomal protein L22
7974851	HIF1A	-1.4698815	down	hypoxia-inducible factor 1, alpha subunit (basic helix-loop
8108099	SEC24A	-1.4705848	down	SEC24 related gene family, member A (S. cerevisiae)

Supplemental Table 1a  
eMSC vs. eEP

8090277	OSBPL11	-1.4718635	down	oxysterol binding protein-like 11
8051928	PREPL	-1.4723917	down	prolyl endopeptidase-like
8013906	TWF1	-1.4749534	down	twinfilin, actin-binding protein, homolog 1 (Drosophila)
7922268	KIFAP3	-1.4751164	down	kinesin-associated protein 3
7987454	BMF	-1.4756079	down	Bcl2 modifying factor
8120239	TMEM14A	-1.476326	down	transmembrane protein 14A
8129379	ECHDC1	-1.4766415	down	enoyl Coenzyme A hydratase domain containing 1
7926596	COMMD3	-1.4776882	down	COMM domain containing 3
8121002	C6orf162	-1.4781631	down	chromosome 6 open reading frame 162
7938890	PRMT3	-1.4794463	down	protein arginine methyltransferase 3
7962183	AK3L1 AK3L2	-1.4809706	down	adenylate kinase 3-like 1   adenylate kinase 3-like 2
8120552	FAM135A	-1.4821521	down	family with sequence similarity 135, member A
8175755	CETN2	-1.4840578	down	centrin, EF-hand protein, 2
7996081	GPR56	-1.4844601	down	G protein-coupled receptor 56
8101086	NAAA	-1.4854661	down	N-acylethanolamine acid amidase
8096753	HADH	-1.4883931	down	hydroxyacyl-Coenzyme A dehydrogenase
7970624	CENPJ	-1.4899201	down	centromere protein J
8083282	HPS3	-1.4909155	down	Hermansky-Pudlak syndrome 3
8090678	MRPL3	-1.4909741	down	mitochondrial ribosomal protein L3
8167897	RRAGB	-1.4912609	down	Ras-related GTP binding B
8147079	LRRCC1	-1.4915656	down	leucine rich repeat and coiled-coil domain containing 1
8142143	COG5	-1.4934503	down	component of oligomeric golgi complex 5
7968800	DGKH	-1.494282	down	diacylglycerol kinase, eta
8089993	WDR5B	-1.4946134	down	WD repeat domain 5B
7930882	FAM45A FAM45B	-1.4952828	down	family with sequence similarity 45, member A   family wit
8099612	GPR125	-1.4976578	down	G protein-coupled receptor 125
8157144	C9orf6	-1.4982285	down	chromosome 9 open reading frame 6
7970162	ATP11A	-1.4984995	down	ATPase, class VI, type 11A
8042066	CCDC104	-1.5006877	down	coiled-coil domain containing 104
8124166	MBOAT1	-1.5007976	down	membrane bound O-acyltransferase domain containing 1
8083616	MLF1	-1.5043609	down	myeloid leukemia factor 1
8080562	IL17RB	-1.5054121	down	interleukin 17 receptor B
8047356	NIF3L1	-1.5069389	down	NIF3 NGG1 interacting factor 3-like 1 (S. pombe)

Supplemental Table 1a  
eMSC vs. eEP

8157058	FSD1L	-1.5070359	down	fibronectin type III and SPRY domain containing 1-like
8044417	TMEM87B	-1.5073688	down	transmembrane protein 87B
8077513	THUMPD3	-1.5078511	down	THUMP domain containing 3
8173933	PCDH19	-1.5080086	down	protocadherin 19
8083901	FNDC3B	-1.5085324	down	fibronectin type III domain containing 3B
8054092	TMEM131	-1.5095174	down	transmembrane protein 131
7983638	DTWD1	-1.5096835	down	DTW domain containing 1
7994237	LCMT1	-1.5103016	down	leucine carboxyl methyltransferase 1
8083136	ATP1B3	-1.5117466	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 3 polypeptide
8010139	SEC14L1	-1.5124122	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
8070458	PLAC4	-1.5138899	down	placenta-specific 4
8175177	MBNL3	-1.5152102	down	muscleblind-like 3 ( <i>Drosophila</i> )
8147375	DPY19L4	-1.5208033	down	dpy-19-like 4 ( <i>C. elegans</i> )
7965022	KRR1	-1.5208656	down	
7948656	FTH1	-1.5278897	down	ferritin, heavy polypeptide 1
7955063	TMEM106C	-1.5299432	down	transmembrane protein 106C
8138912	LSM5	-1.5300612	down	
7901336	ALS2CR2	-1.5306246	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
7985268	FAH	-1.5328639	down	fumarylacetoacetate hydrolase (fumarylacetoacetase)
8146544	LOC137886	-1.5348014	down	
8126860	MUT	-1.5352131	down	methylmalonyl Coenzyme A mutase
8042503	MXD1	-1.5358657	down	MAX dimerization protein 1
7990879	EFTUD1	-1.536972	down	elongation factor Tu GTP binding domain containing 1
8154135	SLC1A1	-1.5380774	down	solute carrier family 1 (neuronal/epithelial high affinity glu
8168873	LOC653354	-1.5396796	down	
8121895	TRMT11	-1.5413247	down	tRNA methyltransferase 11 homolog ( <i>S. cerevisiae</i> )
7943387	C11orf70	-1.5427047	down	chromosome 11 open reading frame 70
7948900	SNORD30	-1.5430652	down	small nucleolar RNA, C/D box 30
8152764	MTSS1	-1.5435582	down	metastasis suppressor 1
8163063	CTNNAL1	-1.5442554	down	catenin (cadherin-associated protein), alpha-like 1
8059801	USP40	-1.5487918	down	ubiquitin specific peptidase 40
8054135	MGAT4A	-1.5509247	down	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglu
8117382	HIST1H2BD	-1.5512514	down	histone cluster 1, H2bd

Supplemental Table 1a  
eMSC vs. eEP

8168855	ARMCX4	-1.5520729	down	armadillo repeat containing, X-linked 4
7977933	SLC7A8	-1.5528482	down	solute carrier family 7 (cationic amino acid transporter, y+
8047443	ALS2CR2	-1.5535972	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
8091715	LXN	-1.5544732	down	latexin
7926821	MASTL	-1.5546927	down	microtubule associated serine/threonine kinase-like
8105077	CARD6	-1.5548233	down	caspase recruitment domain family, member 6
8041676	DYNC2L1	-1.5549374	down	dynein, cytoplasmic 2, light intermediate chain 1
8121850	HEY2	-1.5556004	down	hairy/enhancer-of-split related with YRPW motif 2
7943376	KIAA1377	-1.5569931	down	
8165642	TMEM203	-1.5586116	down	transmembrane protein 203
7928471	ADK	-1.5597891	down	adenosine kinase
8120943	CYB5R4	-1.560813	down	cytochrome b5 reductase 4
8040655	SELI	-1.5608494	down	selenoprotein I
8138941	NT5C3	-1.5614762	down	5'-nucleotidase, cytosolic III
8062211	BXDC1	-1.5626175	down	brix domain containing 1
7922162	SLC19A2	-1.5634266	down	solute carrier family 19 (thiamine transporter), member 2
7914603	RNF19B	-1.5670288	down	ring finger protein 19B
8022393	PTPN2	-1.567887	down	protein tyrosine phosphatase, non-receptor type 2
8169617	PGRMC1	-1.5683683	down	progesterone receptor membrane component 1
8049512	LRRFIP1	-1.569298	down	leucine rich repeat (in FLII) interacting protein 1
7980773	CCDC88C	-1.5709348	down	coiled-coil domain containing 88C
7897522	RBP7	-1.5718249	down	retinol binding protein 7, cellular
8081343	RG9MTD1	-1.5737323	down	RNA (guanine-9-) methyltransferase domain containing 1
8132399	C7orf36	-1.5748241	down	chromosome 7 open reading frame 36
7920291	S100A16	-1.5751691	down	S100 calcium binding protein A16
8046099	NOSTRIN	-1.577147	down	nitric oxide synthase trafficker
8173825	RPS6KA6	-1.5782294	down	ribosomal protein S6 kinase, 90kDa, polypeptide 6
8099897	UGDH	-1.5793176	down	UDP-glucose dehydrogenase
8090433	MGLL	-1.5796832	down	monoglyceride lipase
8091327	PLSCR1	-1.5805731	down	phospholipid scramblase 1
8044008	IL1RL2	-1.5829027	down	interleukin 1 receptor-like 2
8093191	DLG1	-1.5830042	down	discs, large homolog 1 (Drosophila)
8060940	C20orf103	-1.5830816	down	chromosome 20 open reading frame 103

Supplemental Table 1a  
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7968711	COG6	-1.5836173	down	component of oligomeric golgi complex 6
7975971	C14orf174	-1.5845109	down	chromosome 14 open reading frame 174
8161774	TRPM6	-1.5858049	down	transient receptor potential cation channel, subfamily M,
7948987	HRASLS3	-1.5875801	down	HRAS-like suppressor 3
8113097	KIAA0825	-1.5892498	down	
8123044	TULP4	-1.5894037	down	tubby like protein 4
8075182	XBP1	-1.5896189	down	X-box binding protein 1
8114300	KLHL3	-1.5906851	down	kelch-like 3 (Drosophila)
8121578	NT5DC1	-1.5921782	down	5'-nucleotidase domain containing 1
8027354	LOC388524	-1.5953957	down	ribosomal protein SA pseudogene
8022338	DISP2 LOC728211	-1.596162	down	dispatched homolog 2 (Drosophila)   hypothetical LOC728
8152222	AZIN1	-1.597482	down	antizyme inhibitor 1
8064868	RP5-1022P6.2	-1.5977604	down	hypothetical protein KIAA1434
7961386	GPRC5D	-1.6008775	down	G protein-coupled receptor, family C, group 5, member D
8146000	ADAM9	-1.6009736	down	ADAM metallopeptidase domain 9 (meltrin gamma)
7902957	ABHD7	-1.602258	down	abhydrolase domain containing 7
7936408	DCLRE1A	-1.6025038	down	DNA cross-link repair 1A (PSO2 homolog, <i>S. cerevisiae</i> )
8096411	TIGD2	-1.6037327	down	tigger transposable element derived 2
7910030	C1orf67 DNAH14 F	-1.6074111	down	chromosome 1 open reading frame 67   dynein, axonema
7902345	TYW3	-1.6118524	down	tRNA-yW synthesizing protein 3 homolog ( <i>S. cerevisiae</i> )
8117081	AOF1	-1.6127933	down	amine oxidase (flavin containing) domain 1
7974229	KLHDC2	-1.6134654	down	kelch domain containing 2
8103822	VEGFC	-1.6144567	down	vascular endothelial growth factor C
8095139	SRD5A3	-1.6146643	down	steroid 5 alpha-reductase 3
8068671	BACE2	-1.6165712	down	beta-site APP-cleaving enzyme 2
8083000	FAIM	-1.6167853	down	Fas apoptotic inhibitory molecule
8135235	PMPCB	-1.6175681	down	peptidase (mitochondrial processing) beta
8140915	PEX1	-1.6180142	down	peroxisome biogenesis factor 1
7902367	ACADM	-1.6187764	down	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight cha
7923141	DENND1B C1orf21	-1.6190917	down	DENN/MADD domain containing 1B   chromosome 1 ope
8141872	NAPEPLD	-1.6216376	down	N-acyl phosphatidylethanolamine phospholipase D
8066074	DSN1	-1.6231328	down	
8157233	HSDL2	-1.6259452	down	hydroxysteroid dehydrogenase like 2

Supplemental Table 1a  
eMSC vs. eEP

8149733	TNFRSF10B	-1.6264291	down	tumor necrosis factor receptor superfamily, member 10b
8155563	LOC100132139 LOC100132139	-1.6272979	down	similar to methylenetetrahydrofolate dehydrogenase (NADPH-dependent)
7917896	ALG14	-1.627834	down	asparagine-linked glycosylation 14 homolog (S. cerevisiae)
8027268	ZNF66	-1.6304593	down	zinc finger protein 66
8071981	CTA-221G9.4	-1.630956	down	KIAA1671 protein
7928046	TSPAN15	-1.6323874	down	tetraspanin 15
7946288	ZNF214	-1.6329081	down	zinc finger protein 214
8116867	TMEM14B	-1.6331478	down	transmembrane protein 14B
8001423	RPGRIP1L	-1.6337868	down	RPGRIP1-like
8041967	C2orf30	-1.6354345	down	chromosome 2 open reading frame 30
8004133	RPAIN	-1.6355857	down	RPA interacting protein
8166442	FAM3C	-1.6362963	down	family with sequence similarity 3, member C
7915926	STIL	-1.6377181	down	SCL/TAL1 interrupting locus
7909285	PFKFB2	-1.6392354	down	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
7917875	F3	-1.6397603	down	coagulation factor III (thromboplastin, tissue factor)
7979196	GNPNAT1	-1.6399581	down	glucosamine-phosphate N-acetyltransferase 1
8142540	FAM3C	-1.6402923	down	family with sequence similarity 3, member C
8166219	SYAP1	-1.6404054	down	synapse associated protein 1, SAP47 homolog (Drosophila)
8055445	DARS	-1.6405139	down	aspartyl-tRNA synthetase
8171024	LOC401622	-1.6407721	down	similar to LINE-1 reverse transcriptase homolog
8149248	LRLE1 LOC1001278	-1.6417075	down	liver-related low express protein 1   similar to liver-related protein 1
7924309	ESRRG	-1.6434529	down	estrogen-related receptor gamma
8081503	DZIP3	-1.6441531	down	DAZ interacting protein 3, zinc finger
8010243	SYNGR2	-1.6445947	down	synaptogyrin 2
8111286	RNASEN	-1.6451744	down	ribonuclease type III, nuclear
7987642	NDUFAF1	-1.6457435	down	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 1
8161484	LOC100132139 LOC100132139	-1.6469268	down	similar to methylenetetrahydrofolate dehydrogenase (NADPH-dependent)
8140170	GTF2IRD2 GTF2IRD2	-1.6476035	down	GTF2I repeat domain containing 2   GTF2I repeat domain
8058927	TMBIM1	-1.6478248	down	transmembrane BAX inhibitor motif containing 1
8147313	TMEM67	-1.6480367	down	transmembrane protein 67
8078319	ZCWPW2	-1.6484993	down	zinc finger, CW type with PWWP domain 2
7956989	MDM2	-1.6500368	down	Mdm2 p53 binding protein homolog (mouse)
8140971	SAMD9L	-1.6513201	down	sterile alpha motif domain containing 9-like



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7945873	ZNF195	-1.6521081	down	zinc finger protein 195
8138789	JAZF1	-1.6538566	down	JAZF zinc finger 1
8119000	MAPK14	-1.6563836	down	mitogen-activated protein kinase 14
7986359	IGF1R	-1.6577399	down	insulin-like growth factor 1 receptor
7980580	GALC	-1.6583539	down	galactosylceramidase
8046833	FLJ44048	-1.6651497	down	
8133549	GTF2IRD2 GTF2IRD	-1.6652004	down	GTF2I repeat domain containing 2   GTF2I repeat domain
8081903	C3orf15	-1.6684846	down	chromosome 3 open reading frame 15
8094226	LOC285550	-1.6693025	down	
8097388	LARP2	-1.669425	down	La ribonucleoprotein domain family, member 2
8142468	TPM3	-1.6710186	down	tropomyosin 3
7929288	EXOC6	-1.6711259	down	exocyst complex component 6
8121489	AMD1	-1.6715388	down	adenosylmethionine decarboxylase 1
8041745	C2orf34	-1.6721036	down	chromosome 2 open reading frame 34
7965335	DUSP6	-1.6738247	down	dual specificity phosphatase 6
8150962	TOX	-1.6750001	down	thymocyte selection-associated high mobility group box
8140500	TMEM60	-1.6757617	down	transmembrane protein 60
8081219	ST3GAL6	-1.6761692	down	ST3 beta-galactoside alpha-2,3-sialyltransferase 6
8098084	ETFDH	-1.6771572	down	electron-transferring-flavoprotein dehydrogenase
8122818	C6orf211	-1.6796938	down	chromosome 6 open reading frame 211
7988286	SPG11	-1.6820352	down	spastic paraplegia 11 (autosomal recessive)
7987361	ZNF770	-1.6824383	down	zinc finger protein 770
7943231	ANKRD49	-1.6829104	down	ankyrin repeat domain 49
8141024	BET1	-1.6833831	down	blocked early in transport 1 homolog ( <i>S. cerevisiae</i> )
8051707	MAP4K3	-1.6846651	down	mitogen-activated protein kinase kinase kinase 3
8041179	CLIP4	-1.6891083	down	CAP-GLY domain containing linker protein family, member
7918008	DBT	-1.6900685	down	dihydro-lipoamide branched chain transacylase E2
8042574	OR7E37P LOC4414	-1.690918	down	olfactory receptor, family 7, subfamily E, member 37 pseudogene
8085033	LMLN	-1.6914914	down	leishmanolysin-like (metallopeptidase M8 family)
8136516	tcag7.1228	-1.691564	down	hypothetical protein FLJ25778
8143279	ZC3HAV1	-1.6931958	down	zinc finger CCCH-type, antiviral 1
7928534	C10orf11	-1.6940762	down	chromosome 10 open reading frame 11
8155487	KGFLP1 KGFLP2 FC	-1.6949714	down	keratinocyte growth factor-like protein 1   keratinocyte growth factor-like protein 2

Supplemental Table 1a  
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8093053	TFRC	-1.6950567	down	transferrin receptor (p90, CD71)
8121510	BXDC1	-1.6957577	down	brix domain containing 1
7940191	STX3	-1.6960616	down	syntaxin 3
7944803	LOH11CR2A	-1.6961296	down	loss of heterozygosity, 11, chromosomal region 2, gene A
8174076	GLA	-1.6965504	down	galactosidase, alpha
7925500	CHML	-1.698053	down	choroideremia-like (Rab escort protein 2)
8161455	KGFLP2 KGFLP1 FC	-1.6991593	down	keratinocyte growth factor-like protein 2   keratinocyte g
8068593	ETS2	-1.6995907	down	v-ets erythroblastosis virus E26 oncogene homolog 2 (avia
8155630	LOC100132139 LO	-1.7005061	down	similar to methylenetetrahydrofolate dehydrogenase (NA
8161423	KGFLP2 KGFLP1 FC	-1.7013551	down	keratinocyte growth factor-like protein 2   keratinocyte g
7983111	SNAP23	-1.7031573	down	synaptosomal-associated protein, 23kDa
8144699	LRLE1 LOC1001278	-1.703201	down	liver-related low express protein 1   similar to liver-relate
8161377	LOC100132139 LO	-1.705734	down	similar to methylenetetrahydrofolate dehydrogenase (NA
8122933	TIAM2	-1.705912	down	T-cell lymphoma invasion and metastasis 2
7911038	ZNF238	-1.7077118	down	zinc finger protein 238
8039692	LOC730051	-1.7077358	down	similar to hCG2044798
8155707	TJP2	-1.7091576	down	tight junction protein 2 (zona occludens 2)
8107632	SNX24	-1.7098348	down	sorting nexin 24
8095760	THAP6	-1.7107135	down	THAP domain containing 6
8156043	PSAT1	-1.7110233	down	phosphoserine aminotransferase 1
8120165	CENPQ	-1.7133045	down	centromere protein Q
7954717	BICD1	-1.7136468	down	bicaudal D homolog 1 (Drosophila)
7922408	SNORD78	-1.7146802	down	small nucleolar RNA, C/D box 78
8094169	CPEB2	-1.7166612	down	cytoplasmic polyadenylation element binding protein 2
7915775	IPP	-1.716806	down	intracisternal A particle-promoted polypeptide
7904830	ZNF364	-1.7200435	down	zinc finger protein 364
7962013	ERGIC2	-1.7239302	down	ERGIC and golgi 2
8143988	MLL3	-1.7240986	down	myeloid/lymphoid or mixed-lineage leukemia 3
8028194	ZNF382	-1.7241402	down	zinc finger protein 382
8030950	ZNF701	-1.7249916	down	zinc finger protein 701
7962884	RND1	-1.7252101	down	Rho family GTPase 1
8020930	ELP2	-1.7256753	down	elongation protein 2 homolog (S. cerevisiae)
8132376	STARD3NL	-1.7261627	down	STARD3 N-terminal like

Supplemental Table 1a  
eMSC vs. eEP

7917482	CCBL2	-1.7280462	down	cysteine conjugate-beta lyase 2
8110971	CMBL	-1.7284634	down	carboxymethylenebutenolidase homolog (Pseudomonas)
7928671	C10orf57	-1.7291976	down	chromosome 10 open reading frame 57
8111339	MTMR12	-1.730932	down	myotubularin related protein 12
7968787	OR7E37P OR7E47P	-1.7334876	down	olfactory receptor, family 7, subfamily E, member 37 pseudogene
8145835	ERLIN2	-1.7357312	down	ER lipid raft associated 2
8142663	NDUFA5	-1.7359114	down	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, mitochondrial
8014100	C17orf75	-1.7380934	down	chromosome 17 open reading frame 75
7979158	TXNDC16	-1.7388202	down	thioredoxin domain containing 16
8123038	GTF2H5	-1.739286	down	general transcription factor IIH, polypeptide 5
8082607	ATP2C1	-1.7399735	down	ATPase, Ca <sup>++</sup> transporting, type 2C, member 1
7948113	OR7E5P	-1.740497	down	olfactory receptor, family 7, subfamily E, member 5 pseudogene
8094936	LOC280665	-1.7436291	down	putative anti-CNG alpha 1 cation channel translation product
8038998	ZNF468	-1.7439225	down	zinc finger protein 468
8159984	C9orf46	-1.744415	down	chromosome 9 open reading frame 46
8129901	REPS1	-1.7447518	down	RALBP1 associated Eps domain containing 1
7971241	OR7E37P OR7E47P	-1.7453598	down	olfactory receptor, family 7, subfamily E, member 37 pseudogene
8007493	ARL4D	-1.7469335	down	ADP-ribosylation factor-like 4D
8118142	TNF	-1.7469841	down	
8177983	TNF	-1.7473786	down	
7989968	CALML4	-1.7479737	down	calmodulin-like 4
7954613	CCDC91	-1.749439	down	coiled-coil domain containing 91
8179263	TNF	-1.7494617	down	
8148049	NOV	-1.7495326	down	nephroblastoma overexpressed gene
8083941	ECT2	-1.7496902	down	epithelial cell transforming sequence 2 oncogene
8057933	GTF3C3	-1.7498211	down	general transcription factor IIIC, polypeptide 3, 102kDa
7984843	ARID3B	-1.7500128	down	AT rich interactive domain 3B (BRIGHT-like)
8094342	C4orf28	-1.7504267	down	chromosome 4 open reading frame 28
8151436	PXMP3	-1.7516198	down	peroxisomal membrane protein 3, 35kDa (Zellweger syndrome)
7982256	GOLGA9P	-1.7517991	down	golgi autoantigen, golgin subfamily a, 9 pseudogene
8082066	C3orf28	-1.7519397	down	chromosome 3 open reading frame 28
7910600	KIAA1804	-1.7521856	down	mixed lineage kinase 4
8127787	IBTK	-1.7530736	down	inhibitor of Bruton agammaglobulinemia tyrosine kinase

Supplemental Table 1a  
eMSC vs. eEP

7987405	RASGRP1	-1.7544268	down	RAS guanyl releasing protein 1 (calcium and DAG-regulate
8045887	OR7E37P	-1.7562159	down	olfactory receptor, family 7, subfamily E, member 37 pseu
8129888	NHSL1	-1.7571294	down	NHS-like 1
8045499	HNMT	-1.7573835	down	histamine N-methyltransferase
7976443	IFI27	-1.7575939	down	interferon, alpha-inducible protein 27
8156319	GADD45G	-1.7580396	down	growth arrest and DNA-damage-inducible, gamma
8159850	FLJ35024	-1.7596585	down	hypothetical LOC401491
8038993	ZNF28	-1.7604997	down	zinc finger protein 28
8103399	PDGFC	-1.7620579	down	platelet derived growth factor C
8044700	DPP10	-1.762064	down	dipeptidyl-peptidase 10
7927915	STOX1	-1.7621182	down	storkhead box 1
7986383	IGF1R	-1.7622306	down	insulin-like growth factor 1 receptor
8082673	ACPP	-1.7632068	down	acid phosphatase, prostate
7980742	LOC283588	-1.7637546	down	
8130102	KATNA1	-1.7650516	down	katanin p60 (ATPase-containing) subunit A 1
7972269	TGDS	-1.7652947	down	TDP-glucose 4,6-dehydratase
8143433	MRPS33	-1.7703512	down	mitochondrial ribosomal protein S33
7950683	NARS2	-1.7705259	down	asparaginyl-tRNA synthetase 2, mitochondrial (putative)
7924029	LAMB3	-1.7719584	down	laminin, beta 3
8048081	SPAG16	-1.7749729	down	sperm associated antigen 16
7997158	MARVELD3	-1.7751701	down	MARVEL domain containing 3
7936673	RGS10	-1.7768664	down	regulator of G-protein signaling 10
7943795	C11orf52	-1.7778007	down	chromosome 11 open reading frame 52
7960984	PZP	-1.7782712	down	pregnancy-zone protein
8097307	INTU	-1.7782791	down	inturned planar cell polarity effector homolog (Drosophila
7970810	SLC7A1	-1.7786069	down	solute carrier family 7 (cationic amino acid transporter, y+
8069620	MRPL39	-1.7786666	down	mitochondrial ribosomal protein L39
8100478	AASDH	-1.7797648	down	aminoadipate-semialdehyde dehydrogenase
8066939	B4GALT5	-1.7808596	down	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, poly
8082244	OR7E37P	-1.7810464	down	olfactory receptor, family 7, subfamily E, member 37 pseu
8044849	PTPN4	-1.7810518	down	protein tyrosine phosphatase, non-receptor type 4 (mega
8025828	LDLR	-1.7814898	down	low density lipoprotein receptor (familial hypercholesterol
8017150	TUBD1	-1.7820812	down	tubulin, delta 1

Supplemental Table 1a  
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7932885	ARHGAP12	-1.7822552	down	Rho GTPase activating protein 12
7929562	ZNF518A	-1.7828622	down	zinc finger protein 518A
8111129	ZNF622	-1.7831303	down	zinc finger protein 622
7898693	ALPL	-1.7879657	down	alkaline phosphatase, liver/bone/kidney
8018264	C17orf28	-1.7893447	down	chromosome 17 open reading frame 28
8081001	ROBO2	-1.7899853	down	roundabout, axon guidance receptor, homolog 2 (Drosophila)
8113103	KIAA0825	-1.7909367	down	
7986350	ARRDC4	-1.7918159	down	arrestin domain containing 4
7970546	EFHA1	-1.793897	down	EF-hand domain family, member A1
8121043	ORC3L	-1.7948099	down	origin recognition complex, subunit 3-like (yeast)
8128013	RARS2	-1.794933	down	arginyl-tRNA synthetase 2, mitochondrial
8094456	LOC389203	-1.7953464	down	hypothetical gene supported by BC032431
8151369	RPESP	-1.79556	down	RPE-spondin
8021275	POLI	-1.7975384	down	polymerase (DNA directed) iota
7932637	ANKRD26	-1.7986891	down	ankyrin repeat domain 26
7918725	TRIM33	-1.7989401	down	tripartite motif-containing 33
7967456	RILPL2	-1.8009397	down	Rab interacting lysosomal protein-like 2
8030991	LOC147804	-1.8018204	down	tropomyosin 3 pseudogene
8041257	SLC30A6	-1.8039382	down	solute carrier family 30 (zinc transporter), member 6
8152597	MRPL13	-1.8041054	down	mitochondrial ribosomal protein L13
8081953	GTF2E1	-1.8056154	down	general transcription factor IIE, polypeptide 1, alpha 56kD
8034315	ZNF823	-1.805636	down	zinc finger protein 823
8056829	CIR	-1.8069685	down	CBF1 interacting corepressor
7916343	YIPF1	-1.8073807	down	Yip1 domain family, member 1
7954559	PPFIBP1	-1.8086171	down	PTPRF interacting protein, binding protein 1 (liprin beta 1)
7930818	DKFZp781N1041	-1.8092387	down	similar to RIKEN cDNA 6430537H07 gene
8120431	PTP4A1	-1.8111018	down	protein tyrosine phosphatase type IVA, member 1
7982829	SPINT1	-1.8117577	down	serine peptidase inhibitor, Kunitz type 1
7909689	SMYD2	-1.8118833	down	SET and MYND domain containing 2
7959638	TCTN2	-1.8126259	down	tectonic family member 2
7973840	ARHGAP5	-1.8144679	down	Rho GTPase activating protein 5
7904907	BCL9	-1.8160702	down	B-cell CLL/lymphoma 9
7922523	LOC730167	-1.8162538	down	similar to protein tyrosine phosphatase 4a1

Supplemental Table 1a  
eMSC vs. eEP

8069553	NRIP1	-1.8168925	down	nuclear receptor interacting protein 1
8096938	LARP7	-1.8173314	down	La ribonucleoprotein domain family, member 7
7932000	KIN	-1.8177536	down	
8119184	RNF8	-1.8179958	down	ring finger protein 8
7919596	LOC440570	-1.8183243	down	
7955613	KRT7	-1.8186858	down	keratin 7
7919580	LOC440570	-1.8187	down	
8160332	MLLT3	-1.8272307	down	myeloid/lymphoid or mixed-lineage leukemia (trithorax h
8122396	AIG1	-1.8284647	down	androgen-induced 1
8138145	LOC441453	-1.8292893	down	similar to olfactory receptor, family 7, subfamily A, memb
8177674	GTF2H2 DKFZP686	-1.8296415	down	general transcription factor IIH, polypeptide 2, 44kDa   ge
8147101	E2F5	-1.8303909	down	E2F transcription factor 5, p130-binding
8058373	WDR12	-1.8307624	down	WD repeat domain 12
8123303	PACRG	-1.8309108	down	PARK2 co-regulated
7964997	CAPS2	-1.8311653	down	calcyphosine 2
7967107	C12orf27	-1.8329985	down	chromosome 12 open reading frame 27
8000003	THUMPD1	-1.8345221	down	THUMP domain containing 1
8171708	CXorf23	-1.8351507	down	chromosome X open reading frame 23
8052250	MTIF2	-1.8353008	down	mitochondrial translational initiation factor 2
7941401	OVOL1	-1.8359685	down	ovo-like 1(Drosophila)
8116494	ZFP62	-1.8380637	down	zinc finger protein 62 homolog (mouse)
7916356	C1orf41	-1.8436604	down	chromosome 1 open reading frame 41
7900159	DNALI1	-1.843699	down	dynein, axonemal, light intermediate chain 1
8017162	RNFT1	-1.8443304	down	ring finger protein, transmembrane 1
8089026	STX19	-1.846077	down	syntaxin 19
7915170	MYCBP GJA9	-1.8486081	down	c-myc binding protein   gap junction protein, alpha 9, 59k
7991453	LOC400451	-1.8491899	down	hypothetical gene supported by AK075564; BC060873
8067113	ZNF217	-1.8531001	down	zinc finger protein 217
7959123	PRKAB1	-1.8560698	down	protein kinase, AMP-activated, beta 1 non-catalytic subun
8070297	ERG	-1.8566804	down	v-ets erythroblastosis virus E26 oncogene homolog (avian
8156167	MAK10	-1.8586307	down	
8096091	THAP9	-1.8588698	down	THAP domain containing 9
8161575	CBWD5 CBWD3 C	-1.8592019	down	COBW domain containing 5   COBW domain containing 3

Supplemental Table 1a  
eMSC vs. eEP

7954382	PYROXD1	-1.8633435	down	pyridine nucleotide-disulphide oxidoreductase domain 1
7904930	GPR89B GPR89A C	-1.8637071	down	G protein-coupled receptor 89B   G protein-coupled receptor
7955637	KRT18	-1.8637285	down	keratin 18
8110520	LOC729595	-1.8642236	down	similar to high-mobility group box 3
7983478	C15orf48	-1.8643346	down	chromosome 15 open reading frame 48
7954985	TMEM117	-1.8656995	down	transmembrane protein 117
8092726	CLDN1	-1.8668498	down	claudin 1
8089954	IQCB1	-1.8670518	down	IQ motif containing B1
8001547	PLLP	-1.8696543	down	plasma membrane proteolipid (plasmolipin)
8054517	FLJ38359 LOC4408	-1.8699552	down	hypothetical protein FLJ38359   hypothetical protein LOC
8172035	DYNLT3	-1.8699923	down	dynein, light chain, Tctex-type 3
8166049	PRPS2	-1.8708905	down	phosphoribosyl pyrophosphate synthetase 2
7954245	PLEKHA5	-1.8720016	down	pleckstrin homology domain containing, family A member
8163437	SLC46A2	-1.8751997	down	solute carrier family 46, member 2
7919251	GPR89B GPR89A C	-1.8753003	down	G protein-coupled receptor 89B   G protein-coupled receptor
8105918	GTF2H2 DKFZP686I	-1.8764366	down	general transcription factor IIH, polypeptide 2, 44kDa   gene
8107942	RAD50	-1.877261	down	
8031825	ZNF587	-1.8785805	down	zinc finger protein 587
7914996	C1orf149	-1.8801843	down	chromosome 1 open reading frame 149
8053648	KRCC1	-1.8804975	down	lysine-rich coiled-coil 1
8112202	PLK2	-1.8811617	down	polo-like kinase 2 (Drosophila)
7954077	KIAA1467	-1.8826741	down	
8123342	FGFR1OP CCR6	-1.8830514	down	FGFR1 oncogene partner   chemokine (C-C motif) receptor
8015412	JUP	-1.8831033	down	junction plakoglobin
7969390	PIBF1	-1.8848864	down	progesterone immunomodulatory binding factor 1
8105970	GTF2H2 DKFZP686I	-1.8854207	down	general transcription factor IIH, polypeptide 2, 44kDa   gene
8150565	RNF170	-1.885468	down	ring finger protein 170
7938348	WEE1	-1.8860885	down	
7932023	USP6NL	-1.8869536	down	USP6 N-terminal like
8125537	HLA-DMA	-1.8911299	down	major histocompatibility complex, class II, DM alpha
7985089	RCN2	-1.8922012	down	reticulocalbin 2, EF-hand calcium binding domain
8152453	TRPS1	-1.8942027	down	trichorhinophalangeal syndrome I
8046428	RAPGEF4	-1.8963798	down	Rap guanine nucleotide exchange factor (GEF) 4

Supplemental Table 1a  
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8112538	GTF2H2 DKFZP686I	-1.8971602	down	general transcription factor IIH, polypeptide 2, 44kDa   ge
7923967	YOD1	-1.8978543	down	
8161537	CBWD3 CBWD1 CF	-1.899326	down	COBW domain containing 3   COBW domain containing 1
8002481	HYDIN HYDIN2	-1.9010184	down	hydrocephalus inducing homolog (mouse)   hydrocephalu
7917255	SSX2IP	-1.9020945	down	synovial sarcoma, X breakpoint 2 interacting protein
8044613	CBWD1 CBWD3 CF	-1.9030644	down	COBW domain containing 1   COBW domain containing 3
8009685	SLC9A3R1	-1.9043391	down	solute carrier family 9 (sodium/hydrogen exchanger), mer
8068612	WRB	-1.9048611	down	tryptophan rich basic protein
8136495	TTC26	-1.9052973	down	tetratricopeptide repeat domain 26
8088745	FRMD4B	-1.905645	down	FERM domain containing 4B
8177507	GTF2H2 DKFZP686I	-1.9057466	down	general transcription factor IIH, polypeptide 2, 44kDa   ge
8018922	PSCD1	-1.9077554	down	pleckstrin homology, Sec7 and coiled-coil domains 1(cytof
8130765	FAM103A1	-1.9079216	down	family with sequence similarity 103, member A1
8155636	CBWD3 CBWD1 CF	-1.9102414	down	COBW domain containing 3   COBW domain containing 1
8167305	EBP	-1.9107727	down	emopamil binding protein (sterol isomerase)
8097841	TRIM2	-1.9116656	down	tripartite motif-containing 2
8157021	NIPSNAP3A	-1.9132895	down	nipsnap homolog 3A (C. elegans)
8140140	CLDN3	-1.9133568	down	claudin 3
8130499	DYNLT1	-1.915354	down	dynein, light chain, Tctex-type 1
7904314	TTF2	-1.9169843	down	transcription termination factor, RNA polymerase II
8165024	C9orf116	-1.9197928	down	chromosome 9 open reading frame 116
8002283	TMED6	-1.92188	down	transmembrane emp24 protein transport domain contain
8070467	TMPRSS2	-1.9239621	down	transmembrane protease, serine 2
7969861	ITGBL1	-1.9256233	down	integrin, beta-like 1 (with EGF-like repeat domains)
8155422	CBWD5 CBWD2 CF	-1.9259285	down	COBW domain containing 5   COBW domain containing 2
8148280	SQLE	-1.9262713	down	squalene epoxidase
8131975	TAX1BP1	-1.9268616	down	Tax1 (human T-cell leukemia virus type I) binding protein :
8007176	TTC25	-1.927017	down	tetratricopeptide repeat domain 25
7934278	P4HA1	-1.9274147	down	procollagen-proline, 2-oxoglutarate 4-dioxygenase (prolin
8012450	SLC25A35	-1.9287472	down	solute carrier family 25, member 35
7993638	TMC5	-1.9297359	down	transmembrane channel-like 5
8129497	EPB41L2	-1.9313216	down	erythrocyte membrane protein band 4.1-like 2
8027254	ZNF90	-1.9332045	down	zinc finger protein 90



Supplemental Table 1a  
eMSC vs. eEP

8152041	RNF19A	-1.9363619	down	ring finger protein 19A
8044333	LIMS3 LOC729260	-1.9375298	down	LIM and senescent cell antigen-like domains 3   similar to
8054519	LIMS3 LOC729260	-1.938481	down	LIM and senescent cell antigen-like domains 3   similar to
8163002	KLF4	-1.9402674	down	Kruppel-like factor 4 (gut)
7974816	SLC38A6	-1.941838	down	solute carrier family 38, member 6
7926531	ARL5B	-1.9425013	down	ADP-ribosylation factor-like 5B
8121886	HINT3	-1.9427643	down	histidine triad nucleotide binding protein 3
8097704	TMEM34	-1.944568	down	transmembrane protein 34
8135405	GPR22	-1.944763	down	G protein-coupled receptor 22
7918467	C1orf103	-1.9453684	down	chromosome 1 open reading frame 103
7945204	ST14	-1.9464098	down	suppression of tumorigenicity 14 (colon carcinoma)
8044346	FLJ38359 LOC1001	-1.9470868	down	hypothetical protein FLJ38359   hypothetical protein LOC:
8121161	KIAA0776	-1.947465	down	
7907104	IQWD1	-1.9533352	down	IQ motif and WD repeats 1
7985488	FAM103A1	-1.9555191	down	family with sequence similarity 103, member A1
8127743	HMGN3	-1.9560317	down	high mobility group nucleosomal binding domain 3
7957793	ACTR6	-1.9578111	down	ARP6 actin-related protein 6 homolog (yeast)
7938683	LOC441453	-1.9585143	down	similar to olfactory receptor, family 7, subfamily A, memb
7918759	BCAS2 DENND2C	-1.9610305	down	breast carcinoma amplified sequence 2   DENN/MADD dc
8011832	NUP88	-1.9618627	down	nucleoporin 88kDa
8020037	KIAA0802	-1.9637893	down	
7943162	C11orf54	-1.9672064	down	chromosome 11 open reading frame 54
8103563	DDX60	-1.9674351	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60
8107673	GRAMD3	-1.9689674	down	GRAM domain containing 3
8048725	MOGAT1	-1.9704645	down	monoacylglycerol O-acyltransferase 1
7951429	KBTBD3	-1.9740396	down	kelch repeat and BTB (POZ) domain containing 3
7946815	PIK3C2A	-1.9757022	down	phosphoinositide-3-kinase, class 2, alpha polypeptide
7904853	GPR89C GPR89A	-1.9771951	down	G protein-coupled receptor 89C   G protein-coupled recep
7904361	FAM46C	-1.9781364	down	family with sequence similarity 46, member C
8123101	LOC100130967 C6c	-1.9795306	down	similar to hCG2044932   chromosome 6 open reading fran
8166455	PRDX4	-1.9810281	down	peroxiredoxin 4
8048733	ACSL3	-1.9822712	down	acyl-CoA synthetase long-chain family member 3
8178884	HLA-DMA	-1.9829843	down	major histocompatibility complex, class II, DM alpha

Supplemental Table 1a  
eMSC vs. eEP

8104901	IL7R	-1.9832705	down	interleukin 7 receptor
7969414	KLF5	-1.9836302	down	Kruppel-like factor 5 (intestinal)
8044882	EPB41L5	-1.9851134	down	erythrocyte membrane protein band 4.1 like 5
8058203	ALS2CR12	-1.9853202	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
7965918	NT5DC3	-1.9854958	down	5'-nucleotidase domain containing 3
8104066	SORBS2	-1.9863296	down	sorbin and SH3 domain containing 2
8063351	SLC9A8	-1.9873468	down	solute carrier family 9 (sodium/hydrogen exchanger), mer
7920128	S100A11	-1.988022	down	S100 calcium binding protein A11
7938834	NAV2	-1.9891105	down	neuron navigator 2
7975772	C14orf140	-1.9915373	down	chromosome 14 open reading frame 140
8122409	PEX3	-1.9924288	down	peroxisomal biogenesis factor 3
8151942	HRSP12	-1.9925671	down	heat-responsive protein 12
7907171	BLZF1	-1.992633	down	basic leucine zipper nuclear factor 1 (JEM-1)
7923578	FMOD	-1.9930636	down	fibromodulin
8178802	HLA-DRB3 HLA-DRI	-1.9935645	down	
7975081	C14orf50	-1.9943486	down	chromosome 14 open reading frame 50
8074286	MICAL3	-1.9954145	down	microtubule associated monooxygenase, calponin and LIM
8180086	HLA-DMA	-1.9972495	down	major histocompatibility complex, class II, DM alpha
7972157	EDNRB	-1.998324	down	endothelin receptor type B
8056222	DPP4	-2.0022898	down	dipeptidyl-peptidase 4 (CD26, adenosine deaminase com
8044080	SLC9A2	-2.0024483	down	solute carrier family 9 (sodium/hydrogen exchanger), mer
8150797	ATP6V1H	-2.003312	down	ATPase, H <sup>+</sup> transporting, lysosomal 50/57kDa, V1 subunit
8166925	MAOA	-2.0052044	down	monoamine oxidase A
8017057	C17orf47	-2.005595	down	chromosome 17 open reading frame 47
8058161	ORC2L	-2.0056148	down	origin recognition complex, subunit 2-like (yeast)
7917976	SASS6	-2.0070744	down	spindle assembly 6 homolog (C. elegans)
8160559	DDX58	-2.007794	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
7983828	TEX9	-2.0077953	down	testis expressed 9
8162570	HSD17B3	-2.0091763	down	hydroxysteroid (17-beta) dehydrogenase 3
7981439	BAG5	-2.0094109	down	BCL2-associated athanogene 5
7937079	BNIP3	-2.0094454	down	BCL2/adenovirus E1B 19kDa interacting protein 3
7968872	DNAJC15	-2.0113177	down	DnaJ (Hsp40) homolog, subfamily C, member 15
7979524	TMEM30B	-2.0114946	down	transmembrane protein 30B

Supplemental Table 1a  
eMSC vs. eEP

8134051	FLJ21062	-2.0115652	down	
8172220	NDP	-2.0118558	down	Norrie disease (pseudoglioma)
7971541	SUCLA2	-2.0122352	down	succinate-CoA ligase, ADP-forming, beta subunit
8138157	COL28A1	-2.0124388	down	collagen, type XXVIII, alpha 1
8039687	ZNF552	-2.013652	down	zinc finger protein 552
7988426	SLC30A4	-2.0144262	down	solute carrier family 30 (zinc transporter), member 4
8008040	LRRC46	-2.0155985	down	leucine rich repeat containing 46
8025255	STXBP2	-2.0164406	down	syntaxin binding protein 2
8149500	MTUS1	-2.0172305	down	mitochondrial tumor suppressor 1
8052233	C2orf63	-2.0177033	down	chromosome 2 open reading frame 63
8154132	C9orf70	-2.0181413	down	chromosome 9 open reading frame 70
8097435	C4orf33	-2.0200162	down	chromosome 4 open reading frame 33
8099912	C4orf34	-2.0202255	down	chromosome 4 open reading frame 34
8050719	ITSN2	-2.0233483	down	intersectin 2
8134122	AKAP9	-2.0233853	down	A kinase (PRKA) anchor protein (yotiao) 9
8023843	FBXO15	-2.0238945	down	F-box protein 15
8127549	SLC17A5	-2.0251713	down	solute carrier family 17 (anion/sugar transporter), membe
8039068	NDUFV2	-2.0252714	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24kDa
8089627	CCDC52	-2.0262263	down	coiled-coil domain containing 52
8169995	FAM122C	-2.0268786	down	family with sequence similarity 122C
8130664	C6orf118	-2.029842	down	chromosome 6 open reading frame 118
8160346	PTPLAD2	-2.0302205	down	protein tyrosine phosphatase-like A domain containing 2
7904211	VANGL1	-2.0303123	down	vang-like 1 (van gogh, Drosophila)
8113512	EPB41L4A	-2.0304105	down	erythrocyte membrane protein band 4.1 like 4A
8180003	HLA-DRB3 HLA-DRI	-2.0316806	down	
8118734	ITPR3	-2.032855	down	inositol 1,4,5-triphosphate receptor, type 3
8090630	TMCC1	-2.0351007	down	transmembrane and coiled-coil domain family 1
8090577	MBD4	-2.0353599	down	methyl-CpG binding domain protein 4
7995825	MT1F	-2.035451	down	metallothionein 1F
8053484	ST3GAL5	-2.035593	down	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
8139198	RWDD4A	-2.0360615	down	RWD domain containing 4A
8103881	RWDD4A	-2.0384223	down	RWD domain containing 4A
8126710	SUPT3H	-2.0397484	down	suppressor of Ty 3 homolog (S. cerevisiae)

Supplemental Table 1a  
eMSC vs. eEP

7984588	THSD4	-2.041924	down	thrombospondin, type I, domain containing 4
7943779	C11orf1	-2.0433896	down	chromosome 11 open reading frame 1
7980309	C14orf1	-2.0440583	down	chromosome 14 open reading frame 1
8028908	ITPKC	-2.04432	down	inositol 1,4,5-trisphosphate 3-kinase C
7945321	GLB1L2	-2.0481966	down	galactosidase, beta 1-like 2
8085852	NGLY1	-2.0482795	down	N-glycanase 1
8121429	FIG4	-2.0488482	down	
8120222	EFHC1	-2.0498464	down	EF-hand domain (C-terminal) containing 1
8159919	C9orf68	-2.0507953	down	chromosome 9 open reading frame 68
8085999	CMTM6	-2.0523536	down	CKLF-like MARVEL transmembrane domain containing 6
8134030	STEAP1	-2.0524542	down	six transmembrane epithelial antigen of the prostate 1
8058498	FZD5	-2.053836	down	frizzled homolog 5 (Drosophila)
7933760	CCDC6	-2.053872	down	coiled-coil domain containing 6
8090091	PTPLB	-2.0555034	down	protein tyrosine phosphatase-like (proline instead of catal
8109938	RANBP17	-2.0557587	down	RAN binding protein 17
8005289	LRRC48	-2.0563762	down	leucine rich repeat containing 48
8039010	ZNF765 LOC388559	-2.058345	down	zinc finger protein 765   similar to hCG1778601
8089988	CCDC58	-2.0587072	down	coiled-coil domain containing 58
8076113	RP1-199H16.1	-2.0594344	down	hypothetical LOC388900
8100251	FRYL	-2.0628777	down	FRY-like
7942489	DNAJB13	-2.063638	down	DnaJ (Hsp40) related, subfamily B, member 13
8031837	ZNF587	-2.065061	down	zinc finger protein 587
8168580	APOOL	-2.0662298	down	apolipoprotein O-like
7904965	PDE4DIP	-2.0675304	down	phosphodiesterase 4D interacting protein (myomegalin)
7962146	FAM60A	-2.069362	down	family with sequence similarity 60, member A
8107868	CDC42SE2	-2.070015	down	CDC42 small effector 2
8156126	RMI1	-2.070536	down	
8054308	TBC1D8	-2.0714953	down	TBC1 domain family, member 8 (with GRAM domain)
7909877	MOSC1	-2.0715575	down	MOCO sulphurase C-terminal domain containing 1
8061186	SEC23B	-2.0720303	down	Sec23 homolog B (S. cerevisiae)
8014172	CCT6B	-2.073076	down	chaperonin containing TCP1, subunit 6B (zeta 2)
7975238	PLEKHH1	-2.0746846	down	pleckstrin homology domain containing, family H (with M
7932703	ACBD5	-2.0750406	down	acyl-Coenzyme A binding domain containing 5

Supplemental Table 1a  
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8005638	ALDH3A2	-2.0767398	down	aldehyde dehydrogenase 3 family, member A2
7971126	STOML3	-2.077347	down	stomatin (EPB72)-like 3
8027312	ZNF429	-2.077431	down	zinc finger protein 429
8020058	NDUFV2	-2.077528	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24kDa
7930454	PDCD4	-2.080529	down	programmed cell death 4 (neoplastic transformation inhib
8106252	HEXB	-2.0807087	down	hexosaminidase B (beta polypeptide)
8126259	C6orf130	-2.081174	down	chromosome 6 open reading frame 130
8054513	FLJ38359 LOC1001	-2.081542	down	hypothetical protein FLJ38359   hypothetical protein LOC
8035095	CYP4F11	-2.08411	down	cytochrome P450, family 4, subfamily F, polypeptide 11
8041867	MSH2	-2.0888824	down	mutS homolog 2, colon cancer, nonpolyposis type 1 (E. co
8027748	FXD3	-2.0912669	down	FXD domain containing ion transport regulator 3
8095705	MTHFD2L	-2.0915983	down	methylenetetrahydrofolate dehydrogenase (NADP+ deper
7925452	GREM2	-2.0939999	down	gremlin 2, cysteine knot superfamily, homolog (Xenopus lae
7990818	BCL2A1	-2.0941863	down	BCL2-related protein A1
7927062	ZNF33A	-2.0949523	down	zinc finger protein 33A
8005661	SPECC1	-2.0952945	down	sperm antigen with calponin homology and coiled-coil do
8122279	KIAA1244 LOC2024	-2.099324	down	KIAA1244   hypothetical protein LOC202451
7995258	ZNF267	-2.1009588	down	zinc finger protein 267
8122843	ESR1	-2.1009731	down	estrogen receptor 1
8081055	CHMP2B	-2.1016269	down	chromatin modifying protein 2B
8001149	VPS35	-2.1037862	down	vacuolar protein sorting 35 homolog (S. cerevisiae)
8108435	UBE2D2	-2.103892	down	ubiquitin-conjugating enzyme E2D 2 (UBC4/5 homolog, ye
8070398	LCA5L	-2.1040168	down	Leber congenital amaurosis 5-like
7913787	C1orf201	-2.1044526	down	chromosome 1 open reading frame 201
7967933	IFT88	-2.1048377	down	intraflagellar transport 88 homolog (Chlamydomonas)
8146024	ADAM32	-2.1050131	down	ADAM metallopeptidase domain 32
8051785	KCNG3	-2.1056488	down	potassium voltage-gated channel, subfamily G, member 3
7953518	LOC171220	-2.105669	down	destrin-2 pseudogene
8111136	FAM134B	-2.1057281	down	family with sequence similarity 134, member B
7973067	NP	-2.105785	down	nucleoside phosphorylase
8150830	LYPLA1	-2.1073525	down	lysophospholipase I
7982271	FAM7A1 GOLGA9P	-2.1095293	down	family with sequence similarity 7, member A1   golgi auto
7916629	C1orf87	-2.109648	down	chromosome 1 open reading frame 87

Supplemental Table 1a  
eMSC vs. eEP

8022646	KCTD1	-2.1124191	down	potassium channel tetramerisation domain containing 1
8030931	ZNF528	-2.1146405	down	zinc finger protein 528
8097373	C4orf29	-2.114651	down	chromosome 4 open reading frame 29
8174474	ACSL4	-2.115634	down	acyl-CoA synthetase long-chain family member 4
7918694	BCL2L15	-2.116223	down	BCL2-like 15
8097920	LRAT	-2.117023	down	lecithin retinol acyltransferase (phosphatidylcholine--retir
8168412	LOC554203	-2.117059	down	
8144516	THEX1	-2.117252	down	three prime histone mRNA exonuclease 1
8173310	OPHN1	-2.1245327	down	oligophrenin 1
8016444	HOXB3	-2.1249688	down	homeobox B3
7969114	SETDB2	-2.127616	down	SET domain, bifurcated 2
8174779	LAMP2	-2.1278799	down	lysosomal-associated membrane protein 2
8169580	IL13RA1	-2.1280334	down	interleukin 13 receptor, alpha 1
8097670	MMAA	-2.1287634	down	methylmalonic aciduria (cobalamin deficiency) cblA type
8129666	SLC2A12	-2.1292226	down	solute carrier family 2 (facilitated glucose transporter), me
8068620	SH3BGR	-2.1311982	down	SH3 domain binding glutamic acid-rich protein
8073645	SAMM50 LOC1001	-2.131854	down	sorting and assembly machinery component 50 homolog (
8039006	ZNF320	-2.1324365	down	zinc finger protein 320
8095758	RCHY1	-2.133204	down	ring finger and CHY zinc finger domain containing 1
7977592	GAF1	-2.1344807	down	
7989037	CCPG1	-2.1362832	down	cell cycle progression 1
8122561	C6orf103	-2.139923	down	chromosome 6 open reading frame 103
7969544	NDFIP2	-2.1417475	down	Nedd4 family interacting protein 2
8070584	TMPRSS3	-2.1440527	down	transmembrane protease, serine 3
7968035	SPATA13 C1QTNF9	-2.1442225	down	spermatogenesis associated 13   C1q and tumor necrosis
7971335	CCDC122	-2.1454034	down	coiled-coil domain containing 122
8041422	RASGRP3	-2.146419	down	RAS guanyl releasing protein 3 (calcium and DAG-regulate
8105111	FBXO4	-2.1465728	down	F-box protein 4
8156321	SYK	-2.147875	down	spleen tyrosine kinase
8074845	ZNF280B	-2.1514041	down	zinc finger protein 280B
8004957	DNAH9	-2.1567118	down	dynein, axonemal, heavy chain 9
7905677	CREB3L4	-2.157248	down	cAMP responsive element binding protein 3-like 4
8035842	ZNF91	-2.1575184	down	zinc finger protein 91

Supplemental Table 1a  
eMSC vs. eEP

8175269	FAM122B	-2.1592274	down	family with sequence similarity 122B
8112596	ANKRA2	-2.1603987	down	ankyrin repeat, family A (RFXANK-like), 2
7983469	SPATA5L1	-2.1609104	down	spermatogenesis associated 5-like 1
7979732	VTI1B	-2.1611621	down	vesicle transport through interaction with t-SNAREs homo
8063729	EDN3	-2.1617076	down	endothelin 3
7903908	CEPT1	-2.1623158	down	choline/ethanolamine phosphotransferase 1
8034393	ZNF443	-2.1631234	down	zinc finger protein 443
8092392	KLHL6	-2.1633406	down	kelch-like 6 (Drosophila)
8172056	RPGR	-2.1653135	down	retinitis pigmentosa GTPase regulator
8178811	HLA-DRB3 HLA-DRI	-2.167779	down	
7953873	OVOS2	-2.1686404	down	ovostatin 2
8109773	WWC1	-2.170588	down	WW and C2 domain containing 1
7979378	C14orf105	-2.1709292	down	chromosome 14 open reading frame 105
8047403	CASP10	-2.1715834	down	caspace 10, apoptosis-related cysteine peptidase
7918902	CD58	-2.1719842	down	
8038967	ZNF83	-2.172646	down	zinc finger protein 83
8038981	ZNF611	-2.1736648	down	zinc finger protein 611
8128592	ATG5	-2.1761386	down	
8179351	CFB	-2.176709	down	complement factor B
8178470	POU5F1 POU5F1P1	-2.1769407	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseuc
8021496	KIAA1468	-2.1798277	down	
8091283	PLOD2	-2.1799712	down	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2
8097056	SNORA24	-2.1808267	down	small nucleolar RNA, H/ACA box 24
8081710	SIDT1	-2.181844	down	SID1 transmembrane family, member 1
7902290	CTH	-2.1838918	down	cystathionase (cystathionine gamma-lyase)
7931754	IDI1	-2.1843193	down	isopentenyl-diphosphate delta isomerase 1
8096061	C4orf22	-2.1848276	down	chromosome 4 open reading frame 22
8138857	C7orf24	-2.186006	down	chromosome 7 open reading frame 24
8044605	LOC654433	-2.1863284	down	
8108251	NPY6R	-2.187822	down	neuropeptide Y receptor Y6 (pseudogene)
8094132	DUB4 USP17 DUB4	-2.1878564	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid:
8094118	DUB4 USP17 DUB4	-2.1879153	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid:
8094120	DUB4 USP17 DUB4	-2.1886187	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid:

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8094126	DUB4 USP17 DUB3	-2.1899385	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
7925672	ZNF670	-2.1901755	down	zinc finger protein 670
8094116	CPZ USP17 DUB3	-2.1904156	down	carboxypeptidase Z   ubiquitin specific peptidase 17   deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
7965486	CCDC41	-2.1914768	down	coiled-coil domain containing 41
8094128	DUB4 USP17 DUB3	-2.192078	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
7997453	PLCG2	-2.1925657	down	phospholipase C, gamma 2 (phosphatidylinositol-specific)
8095894	MRPL1	-2.1965258	down	mitochondrial ribosomal protein L1
8094124	DUB4 USP17 DUB3	-2.1969182	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
8138277	FLJ14712	-2.197244	down	
8047577	ALS2CR8	-2.1983366	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome region
7914809	KIAA0319L	-2.2002604	down	KIAA0319-like
7925130	TARBP1	-2.2006347	down	TAR (HIV-1) RNA binding protein 1
8021966	ENOSF1	-2.200894	down	enolase superfamily member 1
8149521	FGL1	-2.2011855	down	fibrinogen-like 1
8094122	DUB4 USP17 DUB3	-2.203262	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
8157038	SLC44A1	-2.2056658	down	solute carrier family 44, member 1
7907297	FMO4	-2.207889	down	flavin containing monooxygenase 4
8122242	PEX7	-2.2087104	down	peroxisomal biogenesis factor 7
7976571	C14orf129	-2.2106316	down	chromosome 14 open reading frame 129
7938989	GAS2	-2.2110753	down	growth arrest-specific 2
7923131	DENND1B C1orf211	-2.2134604	down	DENN/MADD domain containing 1B   chromosome 1 open reading frame 211
8044236	GCC2	-2.2149239	down	GRIP and coiled-coil domain containing 2
7933750	SLC16A9	-2.2173684	down	solute carrier family 16, member 9 (monocarboxylic acid transporter)
7965573	NTN4	-2.2190282	down	netrin 4
8171006	BRCC3	-2.22025	down	BRCA1/BRCA2-containing complex, subunit 3
8052382	FANCL	-2.2206986	down	Fanconi anemia, complementation group L
8030914	ZNF610	-2.2209127	down	zinc finger protein 610
7952927	B4GALNT3	-2.2252185	down	beta-1,4-N-acetyl-galactosaminyl transferase 3
8147273	SLC26A7 LOC100131	-2.2259903	down	solute carrier family 26, member 7   similar to hCG20085
7973108	LOC643332	-2.22793	down	similar to Nonsecretory ribonuclease precursor (Ribonuclease H2B)
7959681	DNAH10	-2.228881	down	dynein, axonemal, heavy chain 10
8113413	NUDT12	-2.230367	down	nudix (nucleoside diphosphate linked moiety X)-type motif domain containing 12
7899455	PHACTR4	-2.2313352	down	phosphatase and actin regulator 4



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8088642	LRIG1	-2.2318642	down	leucine-rich repeats and immunoglobulin-like domains 1
8096556	METAP1	-2.23269	down	methionyl aminopeptidase 1
7935692	ERLIN1	-2.2343247	down	ER lipid raft associated 1
7946439	TMEM9B	-2.2358084	down	TMEM9 domain family, member B
7936346	ZDHHC6	-2.2364168	down	zinc finger, DHHC-type containing 6
7922243	C1orf156	-2.2366552	down	chromosome 1 open reading frame 156
8173812	NSBP1	-2.23803	down	nucleosomal binding protein 1
8113050	CETN3	-2.239932	down	centrin, EF-hand protein, 3 (CDC31 homolog, yeast)
8016457	HOXB5	-2.2415724	down	homeobox B5
7959330	WDR66	-2.2416337	down	WD repeat domain 66
8042086	VRK2	-2.2421515	down	vaccinia related kinase 2
7931081	PLEKHA1	-2.2441928	down	pleckstrin homology domain containing, family A (phospho)
8150112	GSR	-2.2463071	down	glutathione reductase
8128788	FLJ42177 C6orf199	-2.2466238	down	FLJ42177 protein   chromosome 6 open reading frame 19
8020495	CABLES1	-2.2500033	down	Cdk5 and Abl enzyme substrate 1
8174351	NUP62CL	-2.2502286	down	nucleoporin 62kDa C-terminal like
8039017	ZNF816A ZNF321	-2.2504916	down	zinc finger protein 816A   zinc finger protein 321
8137526	INSIG1	-2.2508724	down	insulin induced gene 1
8094130	DUB4 USP17 DUB3	-2.2512631	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase 17
7961075	CD69	-2.2525961	down	CD69
8074237	CECR1	-2.2540176	down	cat eye syndrome chromosome region, candidate 1
8143221	ATP6V0A4	-2.2556005	down	ATPase, H <sup>+</sup> transporting, lysosomal V0 subunit a4
7969428	UCHL3	-2.2562387	down	ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiolesterase)
8175023	ZDHHC9	-2.258673	down	zinc finger, DHHC-type containing 9
7947156	MUC15	-2.2600048	down	mucin 15, cell surface associated
8067055	ATP9A	-2.2626534	down	ATPase, class II, type 9A
7907657	RALGPS2	-2.263546	down	Ral GEF with PH domain and SH3 binding motif 2
8082100	PARP14	-2.2636003	down	poly (ADP-ribose) polymerase family, member 14
8168466	LOC100129513 LOC100129514	-2.263613	down	similar to PRO0756   magnesium transporter 1
8098500	CDKN2AIP	-2.2637765	down	CDKN2A interacting protein
8037374	PLAUR	-2.2642112	down	plasminogen activator, urokinase receptor
7902592	ARID3B	-2.2667058	down	AT rich interactive domain 3B (BRIGHT-like)
8169949	RP6-213H19.1	-2.2684596	down	serine/threonine protein kinase MST4

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8094759	NSUN7	-2.273977	down	NOL1/NOP2/Sun domain family, member 7
7970455	CRYL1	-2.2782273	down	crystallin, lambda 1
8094378	PI4K2B	-2.2797344	down	phosphatidylinositol 4-kinase type 2 beta
8097513	MGST2	-2.2803068	down	microsomal glutathione S-transferase 2
7950641	KCTD14	-2.2824385	down	potassium channel tetramerisation domain containing 14
7990810	MTHFS ST20	-2.2882729	down	5,10-methenyltetrahydrofolate synthetase (5-formyltetra
8116910	HIVEP1	-2.2884958	down	human immunodeficiency virus type I enhancer binding p
8163109	C9orf4	-2.2898967	down	chromosome 9 open reading frame 4
8056151	PLA2R1	-2.292011	down	phospholipase A2 receptor 1, 180kDa
7954065	GPRC5A	-2.2925377	down	G protein-coupled receptor, family C, group 5, member A
8130720	SFT2D1	-2.2933786	down	SFT2 domain containing 1
8112622	GFM2	-2.2997608	down	G elongation factor, mitochondrial 2
7944656	SC5DL	-2.299896	down	sterol-C5-desaturase (ERG3 delta-5-desaturase homolog, :
7989146	MNS1	-2.3032033	down	meiosis-specific nuclear structural 1
8161839	C9orf95	-2.3041525	down	chromosome 9 open reading frame 95
8130556	SOD2	-2.3049014	down	superoxide dismutase 2, mitochondrial
8089659	KIAA1407	-2.3067951	down	
7965855	NUP37	-2.3086555	down	nucleoporin 37kDa
7950654	ALG8	-2.3157907	down	asparagine-linked glycosylation 8 homolog ( <i>S. cerevisiae</i> , :
7979906	C14orf112	-2.3167827	down	chromosome 14 open reading frame 112
7961026	OVOS LOC728715	-2.3178778	down	ovostatin   similar to hCG38149
7962427	PUS7L	-2.318297	down	pseudouridylate synthase 7 homolog ( <i>S. cerevisiae</i> )-like
7932118	C10orf30	-2.3199763	down	chromosome 10 open reading frame 30
7933772	ANK3	-2.3200464	down	ankyrin 3, node of Ranvier (ankyrin G)
7916541	DAB1	-2.3233054	down	disabled homolog 1 ( <i>Drosophila</i> )
8161865	PRUNE2 LOC10012	-2.3235059	down	prune homolog 2 ( <i>Drosophila</i> )   similar to KIAA0367
7926708	THNSL1	-2.3248072	down	threonine synthase-like 1 ( <i>S. cerevisiae</i> )
7954208	PIK3C2G	-2.3308823	down	phosphoinositide-3-kinase, class 2, gamma polypeptide
7903239	AGL	-2.3319266	down	amylo-1, 6-glucosidase, 4-alpha-glucanotransferase (glyco
8101916	RG9MTD2	-2.332441	down	RNA (guanine-9-) methyltransferase domain containing 2
8078380	LOC344787	-2.3337526	down	similar to zinc finger protein 813
8067295	SLMO2	-2.3350043	down	slowmo homolog 2 ( <i>Drosophila</i> )
8023401	CCDC68	-2.3368452	down	coiled-coil domain containing 68

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7930148	SFXN2	-2.3389971	down	sideroflexin 2
7953520	LRRC23	-2.3401802	down	leucine rich repeat containing 23
8046604	AGPS	-2.3404233	down	alkylglycerone phosphate synthase
8163775	MEGF9	-2.3408105	down	multiple EGF-like-domains 9
7947138	FANCF	-2.340959	down	Fanconi anemia, complementation group F
8022666	CHST9	-2.3426325	down	carbohydrate (N-acetylgalactosamine 4-0) sulfotransferas
8101757	GPRIN3	-2.3428771	down	GPRIN family member 3
8089519	BTLA	-2.3437676	down	B and T lymphocyte associated
8146986	HNF4G	-2.34378	down	hepatocyte nuclear factor 4, gamma
8046380	ITGA6	-2.344376	down	integrin, alpha 6
7988970	KIAA1370	-2.345848	down	
7979510	SIX4	-2.3481774	down	SIX homeobox 4
7920472	TPM3	-2.348233	down	tropomyosin 3
7932765	MPP7	-2.348747	down	membrane protein, palmitoylated 7 (MAGUK p55 subfami
7903092	FNBP1L	-2.3489277	down	formin binding protein 1-like
7971191	SUGT1L1 LOC1001:	-2.3499198	down	SGT1, suppressor of G2 allele of SKP1 like 1 (S. cerevisiae)
8142332	IMMP2L	-2.3502607	down	IMP2 inner mitochondrial membrane peptidase-like (S. ce
8134407	DLX6	-2.350323	down	distal-less homeobox 6
7970716	LNX2	-2.3505542	down	ligand of numb-protein X 2
8171624	GPR64	-2.3612201	down	G protein-coupled receptor 64
8111019	DNAH5	-2.3616142	down	dynein, axonemal, heavy chain 5
8094789	LIMCH1	-2.36229	down	LIM and calponin homology domains 1
8038989	ZNF600	-2.3658218	down	zinc finger protein 600
7913694	FUCA1	-2.3669293	down	fucosidase, alpha-L- 1, tissue
8120833	SH3BGRL2	-2.3680105	down	SH3 domain binding glutamic acid-rich protein like 2
7934178	PCBD1	-2.3680453	down	pterin-4 alpha-carbinolamine dehydratase/dimerization c
7957032	YEATS4	-2.3713777	down	YEATS domain containing 4
8146115	C8orf4	-2.373936	down	chromosome 8 open reading frame 4
8120176	C6orf141	-2.37507	down	chromosome 6 open reading frame 141
8152812	FAM84B	-2.3759794	down	family with sequence similarity 84, member B
8043937	C2orf29	-2.381232	down	chromosome 2 open reading frame 29
8093839	D4S234E	-2.382046	down	DNA segment on chromosome 4 (unique) 234 expressed s
8151296	LACTB2	-2.3832183	down	lactamase, beta 2

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8117034	GMPR	-2.3850005	down	guanosine monophosphate reductase
8042291	AFTPH	-2.3858922	down	aftiphilin
7928171	SGPL1	-2.3865306	down	sphingosine-1-phosphate lyase 1
7915425	ZMYND12	-2.3868484	down	zinc finger, MYND-type containing 12
7919780	GOLPH3L	-2.3916805	down	golgi phosphoprotein 3-like
8179719	POU5F1 POU5F1P1	-2.397117	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseudogene
7936419	C10orf118	-2.4012094	down	chromosome 10 open reading frame 118
8043993	UNQ9419	-2.4024272	down	AHPA9419
8027247	ZNF93	-2.4036605	down	zinc finger protein 93
8154416	C9orf93	-2.405098	down	chromosome 9 open reading frame 93
8124889	POU5F1 POU5F1P1	-2.4053214	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseudogene
7962579	AMIGO2	-2.407887	down	adhesion molecule with Ig-like domain 2
8096489	PDLIM5	-2.4083598	down	PDZ and LIM domain 5
8118111	HCP5	-2.40997	down	HLA complex P5
8092552	IGF2BP2	-2.410234	down	insulin-like growth factor 2 mRNA binding protein 2
8020349	ANKRD20B CCDC29	-2.4115553	down	ankyrin repeat domain 20B   coiled-coil domain containing 29
7927694	PHYHIPL	-2.4130378	down	phytanoyl-CoA 2-hydroxylase interacting protein-like
8127903	KIAA1009	-2.4131947	down	
8117225	GMNN	-2.413587	down	geminin, DNA replication inhibitor
8103877	CLDN22	-2.4153738	down	claudin 22
8122327	CCDC28A	-2.4181721	down	coiled-coil domain containing 28A
8171297	MID1	-2.4204402	down	midline 1 (Opitz/BBB syndrome)
8133062	ZNF273	-2.4229765	down	zinc finger protein 273
8121525	KIAA1919	-2.4233766	down	
8022473	ESCO1	-2.4243498	down	establishment of cohesion 1 homolog 1 ( <i>S. cerevisiae</i> )
8055361	YSK4	-2.4269302	down	yeast Sps1/Ste20-related kinase 4 ( <i>S. cerevisiae</i> )
8002470	HYDIN HYDIN2	-2.4297926	down	hydrocephalus inducing homolog (mouse)   hydrocephalus inducing homolog 2
7902965	BTBD8	-2.4384499	down	BTB (POZ) domain containing 8
7961524	ERP27	-2.438521	down	endoplasmic reticulum protein 27 kDa
8100292	FRYL	-2.4385884	down	FRY-like
8096602	DAPP1	-2.4389577	down	dual adaptor of phosphotyrosine and 3-phosphoinositides
8154670	IFT74	-2.4390576	down	intraflagellar transport 74 homolog ( <i>Chlamydomonas</i> )
8106210	RGNEF	-2.4429927	down	Rho-guanine nucleotide exchange factor

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8105663	NLN	-2.4442089	down	neurolysin (metallopeptidase M3 family)
7905929	EFNA1	-2.446645	down	ephrin-A1
8094719	N4BP2	-2.4502435	down	NEDD4 binding protein 2
8084206	B3GNT5	-2.450478	down	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransf
8100984	CXCL3	-2.4515035	down	chemokine (C-X-C motif) ligand 3
7973918	C14orf24	-2.4516234	down	chromosome 14 open reading frame 24
8140620	PCLO	-2.4520679	down	piccolo (presynaptic cytomatrix protein)
7909866	MOSC2	-2.452234	down	MOCO sulphurase C-terminal domain containing 2
7938816	ZDHC13	-2.4527752	down	zinc finger, DHC-type containing 13
8030908	ZNF480	-2.45298	down	zinc finger protein 480
8022176	LAMA1	-2.4531386	down	laminin, alpha 1
8094361	GBA3	-2.4538372	down	glucosidase, beta, acid 3 (cytosolic)
8089743	B4GALT4	-2.4570904	down	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, poly
8146427	PCMTD1 LOC10012	-2.4596994	down	protein-L-isoaspartate (D-aspartate) O-methyltransferase
8173551	PHKA1	-2.4602025	down	phosphorylase kinase, alpha 1 (muscle)
8133057	ZNF138	-2.4661875	down	zinc finger protein 138
8088526	THOC7	-2.4663167	down	THO complex 7 homolog (Drosophila)
7953765	FAM80B	-2.470938	down	family with sequence similarity 80, member B
8113796	FLJ44606	-2.4719565	down	hypothetical gene supported by AK126569
7964745	TMBIM4 LOC10013	-2.4729125	down	transmembrane BAX inhibitor motif containing 4   hypoth
7950042	SHANK2	-2.477467	down	SH3 and multiple ankyrin repeat domains 2
8096617	BANK1	-2.4801269	down	B-cell scaffold protein with ankyrin repeats 1
7934898	ANKRD22	-2.4818478	down	ankyrin repeat domain 22
8001507	BBS2	-2.482159	down	Bardet-Biedl syndrome 2
8157632	C9orf18	-2.4836075	down	chromosome 9 open reading frame 18
8127425	LMBRD1	-2.4882965	down	LMBR1 domain containing 1
8104930	SLC1A3	-2.4894161	down	solute carrier family 1 (glial high affinity glutamate transp
8000013	EXOD1 DCUN1D3	-2.4895818	down	exonuclease domain containing 1   DCN1, defective in cul
8020384	KIAA1772	-2.4899232	down	
7927082	HSD17B7P2	-2.4909043	down	hydroxysteroid (17-beta) dehydrogenase 7 pseudogene 2
8018761	ST6GALNAC2	-2.4909506	down	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N
7993898	VWA3A	-2.4926913	down	von Willebrand factor A domain containing 3A
7934411	USP54	-2.494258	down	ubiquitin specific peptidase 54

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7962516	SLC38A1	-2.4968648	down	solute carrier family 38, member 1
8090823	SLCO2A1	-2.4975598	down	solute carrier organic anion transporter family, member 2
8105267	ITGA2	-2.4992602	down	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptc
8004889	WDR16	-2.5033834	down	WD repeat domain 16
8175052	AIFM1	-2.5051515	down	apoptosis-inducing factor, mitochondrion-associated, 1
7983811	PIGB	-2.5072641	down	phosphatidylinositol glycan anchor biosynthesis, class B
8107119	TMEM157	-2.5108583	down	transmembrane protein 157
7931930	PRKCQ	-2.511095	down	protein kinase C, theta
8176955	SPRY3	-2.513276	down	sprouty homolog 3 (Drosophila)
8147970	EBAG9	-2.5154908	down	estrogen receptor binding site associated, antigen, 9
8171034	SPRY3	-2.5175145	down	sprouty homolog 3 (Drosophila)
7956826	TBC1D30	-2.518193	down	TBC1 domain family, member 30
8151471	MRPS28 TPD52	-2.5199263	down	mitochondrial ribosomal protein S28   tumor protein D52
7906904	HSD17B7 HSD17B7	-2.520187	down	hydroxysteroid (17-beta) dehydrogenase 7   hydroxysterc
8159900	GLIS3	-2.5223453	down	GLIS family zinc finger 3
8135211	MGC35361	-2.5229971	down	
8089606	WDR52	-2.5255527	down	WD repeat domain 52
8114326	C5orf5	-2.5264041	down	chromosome 5 open reading frame 5
7937696	LOC338651	-2.531643	down	
8105862	CDK7	-2.5333939	down	cyclin-dependent kinase 7
7958211	C12orf45	-2.5345538	down	chromosome 12 open reading frame 45
8022927	SLC39A6	-2.5388863	down	solute carrier family 39 (zinc transporter), member 6
8034084	AP1M2	-2.5404027	down	adaptor-related protein complex 1, mu 2 subunit
8177462	CDK7	-2.5420153	down	cyclin-dependent kinase 7
8085062	IL5RA	-2.5423226	down	interleukin 5 receptor, alpha
8131452	RSPH10B LOC7281	-2.5434184	down	radial spoke head 10 homolog B (Chlamydomonas)   radi
7932744	ARMC4	-2.5493662	down	armadillo repeat containing 4
8089596	WDR52	-2.5536642	down	WD repeat domain 52
7979725	PIGH	-2.5577893	down	phosphatidylinositol glycan anchor biosynthesis, class H
8075709	APOL4	-2.5579014	down	apolipoprotein L, 4
8076612	EFCAB6	-2.5596855	down	EF-hand calcium binding domain 6
8171418	PIGA	-2.5671897	down	phosphatidylinositol glycan anchor biosynthesis, class A (p
8120783	MYO6	-2.5688682	down	myosin VI

Supplemental Table 1a  
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8044391	MERTK	-2.570091	down	c-mer proto-oncogene tyrosine kinase
7947947	AGBL2	-2.5705411	down	ATP/GTP binding protein-like 2
7970602	PARP4	-2.5727532	down	poly (ADP-ribose) polymerase family, member 4
8162586	SLC35D2	-2.5729609	down	solute carrier family 35, member D2
7947322	DCDC1 DCDC5	-2.576207	down	doublecortin domain containing 1   doublecortin domain
8145611	FZD3	-2.5769346	down	frizzled homolog 3 (Drosophila)
7934133	PPA1	-2.579838	down	pyrophosphatase (inorganic) 1
8143341	JHDM1D	-2.5806944	down	jumonji C domain containing histone demethylase 1 homc
8167287	PORCN	-2.5817735	down	porcupine homolog (Drosophila)
8146517	CHCHD7	-2.582073	down	coiled-coil-helix-coiled-coil-helix domain containing 7
7989055	DYX1C1	-2.5873404	down	dyslexia susceptibility 1 candidate 1
8144669	FDFT1	-2.5881126	down	farnesyl-diphosphate farnesyltransferase 1
8171823	APOO	-2.59156	down	apolipoprotein O
8066530	SPINT3	-2.5935462	down	serine peptidase inhibitor, Kunitz type, 3
8116848	PAK1IP1	-2.5959651	down	PAK1 interacting protein 1
8019831	CLUL1	-2.5966518	down	clusterin-like 1 (retinal)
8127087	GSTA3	-2.5975363	down	glutathione S-transferase A3
7957514	PLEKHG7	-2.6051557	down	pleckstrin homology domain containing, family G (with Rh
8131881	C7orf46	-2.6085994	down	chromosome 7 open reading frame 46
8146794	DEPDC2	-2.6090229	down	DEP domain containing 2
8124562	ZNF323	-2.6107335	down	zinc finger protein 323
8143961	PRKAG2	-2.6116707	down	protein kinase, AMP-activated, gamma 2 non-catalytic sub
8012918	CDRT4 FAM18B2	-2.6251476	down	CMT1A duplicated region transcript 4   family with sequen
8047161	OBFC2A	-2.6254086	down	oligonucleotide/oligosaccharide-binding fold containing 2.
8174201	BEX1	-2.6262953	down	brain expressed, X-linked 1
8017843	SLC16A6	-2.6289716	down	solute carrier family 16, member 6 (monocarboxylic acid t
7940775	RARRES3	-2.6303475	down	retinoic acid receptor responder (tazarotene induced) 3
7905428	TUFT1	-2.6387582	down	tuftelin 1
8102249	AGXT2L1	-2.643003	down	alanine-glyoxylate aminotransferase 2-like 1
8116402	MAPK9	-2.6444504	down	mitogen-activated protein kinase 9
8162147	ZCCHC6	-2.6447313	down	zinc finger, CCHC domain containing 6
7954460	LYRM5	-2.646394	down	LYR motif containing 5
8095697	CXCL1	-2.651633	down	chemokine (C-X-C motif) ligand 1 (melanoma growth stim

Supplemental Table 1a  
eMSC vs. eEP

8017061	TEX14	-2.6532483	down	testis expressed 14
7951207	TMEM123	-2.6535351	down	transmembrane protein 123
8078397	CMTM8	-2.6564088	down	CKLF-like MARVEL transmembrane domain containing 8
8059350	AP1S3	-2.6586752	down	adaptor-related protein complex 1, sigma 3 subunit
8122317	HEBP2	-2.6593654	down	heme binding protein 2
8020702	TAF4B	-2.6597228	down	TAF4b RNA polymerase II, TATA box binding protein (TBP)
8162502	FBP1	-2.662797	down	fructose-1,6-bisphosphatase 1
8016468	HOXB7	-2.6648707	down	homeobox B7
8169352	NXT2	-2.6654456	down	nuclear transport factor 2-like export factor 2
8117189	KAAG1	-2.665468	down	kidney associated antigen 1
8138009	RSPH10B LOC7281	-2.666645	down	radial spoke head 10 homolog B (Chlamydomonas)   radial
7912157	ERRFI1	-2.6700523	down	ERBB receptor feedback inhibitor 1
7901915	ALG6	-2.6735015	down	asparagine-linked glycosylation 6 homolog (S. cerevisiae, ;
8133961	RUNDC3B	-2.6761448	down	RUN domain containing 3B
8120679	DDX43	-2.6779547	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
7997556	LRRC50	-2.6885993	down	leucine rich repeat containing 50
7990757	CTSH	-2.7026978	down	cathepsin H
8124897	PSORS1C3 LOC100	-2.705114	down	psoriasis susceptibility 1 candidate 3   similar to psoriasis
8094520	PCDH7	-2.70603	down	protocadherin 7
8174527	CAPN6	-2.7109702	down	calpain 6
8146225	C8orf40	-2.7141528	down	chromosome 8 open reading frame 40
8091678	VEPH1	-2.7148342	down	ventricular zone expressed PH domain homolog 1 (zebrafi
7947282	DCDC5	-2.7172484	down	doublecortin domain containing 5
8154892	DNAI1	-2.718631	down	dynein, axonemal, intermediate chain 1
8098041	TMEM144	-2.7206244	down	transmembrane protein 144
8091009	PIK3CB	-2.721509	down	phosphoinositide-3-kinase, catalytic, beta polypeptide
7919326	ACP6	-2.7227533	down	acid phosphatase 6, lysophosphatidic
7979085	PYGL	-2.7235904	down	phosphorylase, glycogen; liver (Hers disease, glycogen sto
8152962	LRRC6	-2.727641	down	leucine rich repeat containing 6
7971757	NEK5	-2.729868	down	NIMA (never in mitosis gene a)-related kinase 5
7951485	SLC35F2	-2.7320383	down	solute carrier family 35, member F2
8092328	MCCC1	-2.7360299	down	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8179727	PSORS1C3 LOC100	-2.7406805	down	psoriasis susceptibility 1 candidate 3   similar to psoriasis



Supplemental Table 1a  
eMSC vs. eEP

8147112	CA13	-2.7419086	down	carbonic anhydrase XIII
7968883	C13orf31	-2.7422066	down	chromosome 13 open reading frame 31
8018774	ST6GALNAC1	-2.7435436	down	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N
8135576	TES	-2.7455409	down	testis derived transcript (3 LIM domains)
8123884	C6orf52	-2.7455623	down	chromosome 6 open reading frame 52
8157446	ORM1	-2.746588	down	orosomuroid 1
7918768	DENND2C	-2.7524877	down	DENN/MADD domain containing 2C
7970448	GJB6	-2.7533655	down	gap junction protein, beta 6, 30kDa
8107133	PAM	-2.7558734	down	peptidylglycine alpha-amidating monooxygenase
8058552	IDH1	-2.756597	down	isocitrate dehydrogenase 1 (NADP+), soluble
8100362	LNX1	-2.757501	down	ligand of numb-protein X 1
8081431	ALCAM	-2.760066	down	activated leukocyte cell adhesion molecule
7903334	CDC14A	-2.761189	down	CDC14 cell division cycle 14 homolog A ( <i>S. cerevisiae</i> )
7974799	MNAT1	-2.7635052	down	menage a trois homolog 1, cyclin H assembly factor (Xeno
8066786	ZMYND8	-2.7656498	down	zinc finger, MYND-type containing 8
8021301	RAB27B	-2.7660303	down	
8066402	C20orf111	-2.7703016	down	chromosome 20 open reading frame 111
8096733	SGMS2	-2.7742803	down	sphingomyelin synthase 2
7956120	ERBB3	-2.7757046	down	v-erb-b2 erythroblastic leukemia viral oncogene homolog
8079598	ZNF589	-2.7781968	down	zinc finger protein 589
8126784	PLA2G7	-2.7793026	down	phospholipase A2, group VII (platelet-activating factor ace
7910591	C1orf57	-2.7801127	down	chromosome 1 open reading frame 57
8129558	OR2A4 OR2A7	-2.7812924	down	olfactory receptor, family 2, subfamily A, member 4   olfa
8146839	C8orf34	-2.7822862	down	chromosome 8 open reading frame 34
8002446	HYDIN HYDIN2	-2.7862165	down	hydrocephalus inducing homolog (mouse)   hydrocephalu
8097903	TLR2	-2.7929125	down	toll-like receptor 2
7931108	DMBT1	-2.7932496	down	deleted in malignant brain tumors 1
8103834	AGA	-2.7939377	down	aspartylglucosaminidase
8104492	ROPN1L	-2.7942894	down	ropporin 1-like
8066117	SAMHD1	-2.7943268	down	SAM domain and HD domain 1
8040672	C2orf39	-2.796457	down	chromosome 2 open reading frame 39
7957417	TMTC2	-2.7964737	down	transmembrane and tetratricopeptide repeat containing 2
7925929	AKR1C3	-2.797386	down	aldo-keto reductase family 1, member C3 (3-alpha hydrox

Supplemental Table 1a  
eMSC vs. eEP

8054740	PAX8	-2.7989693	down	paired box 8
8091120	GK5	-2.7997243	down	glycerol kinase 5 (putative)
8100026	ATP8A1	-2.8015811	down	ATPase, aminophospholipid transporter (APLT), class I, type 8
8095834	SHROOM3	-2.8022447	down	shroom family member 3
8155460	CNTNAP3 CNTNAP3	-2.80335	down	contactin associated protein-like 3   contactin associated protein-like 3
8103106	LRBA	-2.8070893	down	LPS-responsive vesicle trafficking, beach and anchor containing protein
8061138	CSRP2BP	-2.8113704	down	CSRP2 binding protein
8121015	C6orf165 SLC35A1	-2.812975	down	chromosome 6 open reading frame 165   solute carrier family 35 member 1
8061305	C20orf19	-2.8133519	down	chromosome 20 open reading frame 19
7985398	FAM154B	-2.813426	down	family with sequence similarity 154, member B
8161288	CNTNAP3 CNTNAP3	-2.8167098	down	contactin associated protein-like 3   contactin associated protein-like 3
8127502	C6orf155	-2.8186145	down	chromosome 6 open reading frame 155
7975676	C14orf45	-2.8313494	down	chromosome 14 open reading frame 45
7975459	SIPA1L1	-2.8321774	down	signal-induced proliferation-associated 1 like 1
7961829	BCAT1	-2.8334572	down	branched chain aminotransferase 1, cytosolic
8066513	SDC4	-2.8337727	down	syndecan 4
7983393	SORD	-2.8369505	down	sorbitol dehydrogenase
8044212	SULT1C2	-2.8389554	down	sulfotransferase family, cytosolic, 1C, member 2
7983512	SQRDL	-2.8405907	down	sulfide quinone reductase-like (yeast)
8088602	MAGI1	-2.840682	down	membrane associated guanylate kinase, WW and PDZ domain containing 1
7903407	AMY2B	-2.841501	down	amylase, alpha 2B (pancreatic)
7960919	MFAP5	-2.8455546	down	microfibrillar associated protein 5
8104856	SPEF2 LOC100134025	-2.8554142	down	sperm flagellar 2   hypothetical protein LOC100134025
8168691	DIAPH2	-2.8568203	down	diaphanous homolog 2 (Drosophila)
7942941	CCDC81	-2.859064	down	coiled-coil domain containing 81
8045882	DAPL1	-2.8603559	down	death associated protein-like 1
8143633	OR2A7 OR2A4 LOC100134025	-2.8613842	down	olfactory receptor, family 2, subfamily A, member 7   olfactory receptor, family 2, subfamily A, member 7
8097449	PCDH10	-2.8629854	down	protocadherin 10
7920285	S100A2	-2.865523	down	S100 calcium binding protein A2
8005626	SNORA59A SNORA59A	-2.8656669	down	small nucleolar RNA, H/ACA box 59A   small nucleolar RNA, H/ACA box 59A
7957673	C12orf55 FLJ34470	-2.8663	down	chromosome 12 open reading frame 55   hypothetical protein FLJ34470
7897953	SNORA59A SNORA59A	-2.8690777	down	small nucleolar RNA, H/ACA box 59A   small nucleolar RNA, H/ACA box 59A
8154100	VLDLR	-2.870537	down	very low density lipoprotein receptor

Supplemental Table 1a  
eMSC vs. eEP

7933437	PTPN20B PTPN20A	-2.8725526	down	protein tyrosine phosphatase, non-receptor type 20B   pr
8065280	C20orf74	-2.8731444	down	chromosome 20 open reading frame 74
8162117	GOLM1	-2.875464	down	golgi membrane protein 1
8160637	B4GALT1	-2.878751	down	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, poly
8160138	NFIB	-2.8801398	down	nuclear factor I/B
7954527	ARNTL2	-2.8841496	down	aryl hydrocarbon receptor nuclear translocator-like 2
8017704	FLJ32065	-2.886613	down	
8138363	SOSTDC1	-2.8880365	down	sclerostin domain containing 1
8035779	LOC100128975	-2.88905	down	similar to Zinc finger protein 626
7964927	TSPAN8	-2.8938043	down	tetraspanin 8
8052940	PAIP2B	-2.8969932	down	poly(A) binding protein interacting protein 2B
7918517	WDR77	-2.8970082	down	WD repeat domain 77
7903162	TMEM56	-2.897959	down	transmembrane protein 56
7987145	FMN1	-2.9053535	down	formin 1
7938364	WEE1	-2.9122791	down	
8126905	CRISP3	-2.9211252	down	cysteine-rich secretory protein 3
8138258	FLJ14712	-2.9233375	down	
7917338	BCL10	-2.9268785	down	B-cell CLL/lymphoma 10
8130422	CNKSR3	-2.9302466	down	CNKSR family member 3
8136987	ARHGEF5 LOC7283	-2.931442	down	Rho guanine nucleotide exchange factor (GEF) 5   similar
8142646	IQUB	-2.933978	down	IQ motif and ubiquitin domain containing
8085732	EFHB	-2.9344146	down	EF-hand domain family, member B
7969640	CLDN10	-2.9361067	down	claudin 10
7974080	MIA2	-2.9380777	down	melanoma inhibitory activity 2
8045860	PKP4	-2.9432797	down	plakophilin 4
8095907	FRAS1	-2.948348	down	Fraser syndrome 1
8111941	HMGCS1	-2.9497216	down	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (solu
7936463	ABLIM1	-2.9570463	down	actin binding LIM protein 1
8147156	WWP1	-2.9586906	down	WW domain containing E3 ubiquitin protein ligase 1
8099467	FGFBP1	-2.9602487	down	fibroblast growth factor binding protein 1
8035773	ZNF506	-2.9606388	down	zinc finger protein 506
8098620	FAM149A	-2.9620457	down	family with sequence similarity 149, member A
8095819	STBD1 LOC100129!	-2.9633133	down	starch binding domain 1   similar to genethonin 1

Supplemental Table 1a  
eMSC vs. eEP

8122265	TNFAIP3	-2.9635043	down	tumor necrosis factor, alpha-induced protein 3
7959102	HSPB8	-2.9712865	down	heat shock 22kDa protein 8
8006531	SLFN5	-2.9731348	down	schlafen family member 5
8123893	MAK	-2.9733934	down	male germ cell-associated kinase
7958253	OCC-1	-2.9779656	down	overexpressed in colon carcinoma-1
8131479	FLJ20323	-2.9796736	down	
7924055	C1orf74	-2.9821372	down	chromosome 1 open reading frame 74
8058627	ERBB4	-2.9864533	down	v-erb-a erythroblastic leukemia viral oncogene homolog 4
8080487	PRKCD	-2.997948	down	protein kinase C, delta
8082003	EAF2	-2.9989026	down	ELL associated factor 2
8020468	RBBP8	-3.0012808	down	retinoblastoma binding protein 8
8035980	RHPN2	-3.0019374	down	rhophilin, Rho GTPase binding protein 2
8045835	GALNT5	-3.0046685	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8081890	PLA1A	-3.009719	down	phospholipase A1 member A
8125149	SLC44A4	-3.010626	down	solute carrier family 44, member 4
8123080	SYTL3	-3.012651	down	synaptotagmin-like 3
8162652	CTSL2	-3.0135057	down	cathepsin L2
7912347	CASZ1	-3.0146031	down	castor zinc finger 1
8178653	SLC44A4	-3.0177205	down	solute carrier family 44, member 4
8039025	ZNF702	-3.019107	down	zinc finger protein 702
8003060	HSPC105	-3.0245693	down	NAD(P) dependent steroid dehydrogenase-like
8112053	CDC20B	-3.0249846	down	cell division cycle 20 homolog B ( <i>S. cerevisiae</i> )
8179861	SLC44A4	-3.02573	down	solute carrier family 44, member 4
8018038	ABCA5	-3.0307858	down	ATP-binding cassette, sub-family A (ABC1), member 5
7930593	C10orf81	-3.0334198	down	chromosome 10 open reading frame 81
8084627	C3orf65	-3.0381594	down	chromosome 3 open reading frame 65
8111506	CAPSL	-3.0392563	down	calcyphosine-like
7957688	C12orf63	-3.0432699	down	chromosome 12 open reading frame 63
7902518	GIPC2	-3.0477827	down	GIPC PDZ domain containing family, member 2
8170364	AFF2	-3.0482082	down	AF4/FMR2 family, member 2
8082643	NEK11	-3.0507123	down	NIMA (never in mitosis gene a)- related kinase 11
8043055	DNAH6	-3.0515625	down	dynein, axonemal, heavy chain 6
8021453	SEC11C	-3.052112	down	SEC11 homolog C ( <i>S. cerevisiae</i> )

Supplemental Table 1a  
eMSC vs. eEP

8045857	LOC554201	-3.0531921	down	
8065607	PLAGL2	-3.0586207	down	pleiomorphic adenoma gene-like 2
8002492	HYDIN   HYDIN2	-3.0641012	down	hydrocephalus inducing homolog (mouse)   hydrocephalu
8130408	PIP3-E	-3.0657783	down	
7981460	PPP1R13B	-3.0760708	down	protein phosphatase 1, regulatory (inhibitor) subunit 13B
8113761	ZNF608	-3.07981	down	zinc finger protein 608
7944869	SPA17	-3.0844932	down	sperm autoantigenic protein 17
7997374	DYNLRB2	-3.0868294	down	dynein, light chain, roadblock-type 2
7929816	SCD	-3.0915298	down	stearoyl-CoA desaturase (delta-9-desaturase)
8080714	FLNB	-3.099427	down	filamin B, beta (actin binding protein 278)
8122827	C6orf97	-3.1020534	down	chromosome 6 open reading frame 97
8077270	CHL1	-3.1066425	down	cell adhesion molecule with homology to L1CAM (close ho
7934570	KCNMA1	-3.1085713	down	potassium large conductance calcium-activated channel, s
8034390	ZNF799	-3.1225677	down	zinc finger protein 799
7976578	AK7	-3.1284347	down	adenylate kinase 7
8175574	SLITRK4	-3.1326091	down	SLIT and NTRK-like family, member 4
8124134	TPMT	-3.1379354	down	thiopurine S-methyltransferase
8097801	LOC729830	-3.1407554	down	similar to CG3558-PA, isoform A
7951672	PIH1D2	-3.1427965	down	PIH1 domain containing 2
8135661	CFTR	-3.1438494	down	cystic fibrosis transmembrane conductance regulator (ATI
8021376	NEDD4L	-3.144104	down	neural precursor cell expressed, developmentally down-re
7975632	ZADH1	-3.1530766	down	zinc binding alcohol dehydrogenase, domain containing 1
8180078	HLA-DMB	-3.1595814	down	major histocompatibility complex, class II, DM beta
8041561	MORN2	-3.1680052	down	MORN repeat containing 2
7903281	SLC35A3	-3.173934	down	solute carrier family 35 (UDP-N-acetylglucosamine (UDP-C
8014591	HNF1B	-3.1759598	down	HNF1 homeobox B
8060895	RNU105B	-3.1771545	down	RNA, U105B small nucleolar
8043835	C2orf15   MRPL30	-3.1779413	down	chromosome 2 open reading frame 15   mitochondrial rib
8156160	LOC100129901	-3.1787758	down	similar to KIF27B
8139859	GUSB	-3.1804917	down	glucuronidase, beta
7988414	GATM	-3.215281	down	glycine amidinotransferase (L-arginine:glycine amidinotra
7983157	TMEM62	-3.2206168	down	transmembrane protein 62
8166690	CXorf59	-3.2240381	down	chromosome X open reading frame 59

Supplemental Table 1a  
eMSC vs. eEP

8128795	C6orf199	-3.2289455	down	chromosome 6 open reading frame 199
8066542	SPINLW1 WFDC6	-3.23006	down	serine peptidase inhibitor-like, with Kunitz and WAP domains
7916789	WDR78	-3.2397056	down	WD repeat domain 78
8150691	EFCAB1	-3.2400863	down	EF-hand calcium binding domain 1
7909455	TRAF3IP3 LOC1001	-3.2402422	down	TRAF3 interacting protein 3   hypothetical protein LOC1001
8144758	ZDHHC2	-3.240751	down	zinc finger, DHHC-type containing 2
7975268	ARG2	-3.2424545	down	arginase, type II
7938880	HTATIP2	-3.2450178	down	HIV-1 Tat interactive protein 2, 30kDa
8048864	CCL20	-3.2495148	down	chemokine (C-C motif) ligand 20
8014891	IKZF3	-3.2522275	down	IKAROS family zinc finger 3 (Aiolos)
7932407	ST8SIA6	-3.255644	down	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase
7951165	PGR	-3.2559552	down	progesterone receptor
8143766	ARP11	-3.2581067	down	actin-related Arp11
8080926	ARL6IP5	-3.2603688	down	ADP-ribosylation-like factor 6 interacting protein 5
8135585	LOC100128868	-3.2617717	down	testin-related protein TRG
8143610	FLJ43692 LOC7283	-3.2699845	down	ARHGEF5-like   similar to rho guanine nucleotide exchange
7964759	GRIP1	-3.275805	down	glutamate receptor interacting protein 1
8058462	MDH1B	-3.2774704	down	malate dehydrogenase 1B, NAD (soluble)
7931977	ITIH5	-3.282138	down	inter-alpha (globulin) inhibitor H5
8171435	PIR	-3.2863543	down	pirin (iron-binding nuclear protein)
8172225	EFHC2	-3.2892792	down	EF-hand domain (C-terminal) containing 2
7917954	FRRS1	-3.2966754	down	ferric-chelate reductase 1
8154823	ANKRD18B	-3.3053818	down	ankyrin repeat domain 18B
7944751	C11orf63	-3.3082159	down	chromosome 11 open reading frame 63
7974542	C14orf101	-3.3158112	down	chromosome 14 open reading frame 101
8046759	DNAJC10	-3.3165805	down	DnaJ (Hsp40) homolog, subfamily C, member 10
7980098	ALDH6A1	-3.3168252	down	aldehyde dehydrogenase 6 family, member A1
7950578	PAK1	-3.3236685	down	p21/Cdc42/Rac1-activated kinase 1 (STE20 homolog, yeast)
8125530	HLA-DMB	-3.3248403	down	major histocompatibility complex, class II, DM beta
7917503	GBP3	-3.3253586	down	guanylate binding protein 3
8129837	IL20RA	-3.3318198	down	interleukin 20 receptor, alpha
8131803	IL6	-3.3413908	down	interleukin 6 (interferon, beta 2)
8102362	TIFA	-3.3431907	down	TRAF-interacting protein with forkhead-associated domain

Supplemental Table 1a  
eMSC vs. eEP

7900555	RP4-692D3.1	-3.3437345	down	hypothetical protein LOC728621
8019988	PTPRM	-3.3465102	down	protein tyrosine phosphatase, receptor type, M
8089478	GCET2	-3.351599	down	germinal center expressed transcript 2
8133360	CLDN4	-3.357702	down	claudin 4
7899615	SERINC2 KIAA0746	-3.3618116	down	serine incorporator 2   KIAA0746 protein
7902660	WDR63	-3.3670294	down	WD repeat domain 63
8151824	RAD54B LOC10012	-3.3799765	down	RAD54 homolog B ( <i>S. cerevisiae</i> )   similar to fibrinogen sil
7921862	C1orf192	-3.382373	down	chromosome 1 open reading frame 192
8045736	FMNL2	-3.383241	down	formin-like 2
8121622	RSHL3	-3.3844845	down	radial spokehead-like 3
8097098	USP53	-3.390392	down	ubiquitin specific peptidase 53
8096682	FLJ20184	-3.4037678	down	
8162059	SLC28A3	-3.4084795	down	solute carrier family 28 (sodium-coupled nucleoside trans
8090180	MUC13	-3.4098163	down	mucin 13, cell surface associated
8094134	DUB4	-3.412291	down	
8088247	ARHGEF3	-3.4141111	down	Rho guanine nucleotide exchange factor (GEF) 3
7974835	PRKCH	-3.4160037	down	protein kinase C, eta
8107920	SLC22A5	-3.4161685	down	solute carrier family 22 (organic cation/carnitine transpor
8055702	NMI	-3.4246047	down	N-myc (and STAT) interactor
8054511	LOC205251	-3.4378133	down	
7926679	KIAA1217	-3.44678	down	
8057719	HIBCH	-3.4545183	down	3-hydroxyisobutyryl-Coenzyme A hydrolase
8056022	CCDC148	-3.458953	down	coiled-coil domain containing 148
7996198	CCDC113	-3.461543	down	coiled-coil domain containing 113
8056710	LOC129881	-3.4707088	down	
7961891	BHLHB3	-3.4707687	down	basic helix-loop-helix domain containing, class B, 3
8022711	DSC2	-3.4714332	down	desmocollin 2
7932453	NEBL	-3.4728525	down	nebullette
8122045	AKAP7	-3.475508	down	A kinase (PRKA) anchor protein 7
8123609	SERPINB9	-3.47739	down	serpin peptidase inhibitor, clade B (ovalbumin), member 9
8027260	ZNF486	-3.486245	down	zinc finger protein 486
8132013	CHN2	-3.4866245	down	chimerin (chimaerin) 2
7947147	SVIP	-3.4966807	down	small VCP/p97-interacting protein

Supplemental Table 1a  
eMSC vs. eEP

8100994	CXCL2	-3.5191553	down	chemokine (C-X-C motif) ligand 2
8021727	CNDP2	-3.521917	down	CNDP dipeptidase 2 (metallopeptidase M20 family)
8016847	TRIM25	-3.5243187	down	tripartite motif-containing 25
8116983	CD83	-3.5244668	down	
8015900	TMEM101	-3.525694	down	transmembrane protein 101
7933139	ZNF33B	-3.5295784	down	zinc finger protein 33B
8143601	CTAGE6 CTAGE4 L	-3.533298	down	CTAGE family, member 6   CTAGE family, member 4   sim
7952036	MPZL3	-3.537339	down	myelin protein zero-like 3
8115147	CD74	-3.5383148	down	
8058670	IKZF2	-3.5385306	down	IKAROS family zinc finger 2 (Helios)
7987369	ATPBD4	-3.5386364	down	ATP binding domain 4
8138613	OSBPL3	-3.5387251	down	oxysterol binding protein-like 3
8120102	CD2AP	-3.5416067	down	CD2-associated protein
7918973	SPAG17	-3.544177	down	sperm associated antigen 17
8124498	ZNF204	-3.5444064	down	zinc finger protein 204 (pseudogene)
8103695	MFAP3L	-3.5459661	down	microfibrillar-associated protein 3-like
7951686	IL18	-3.5493233	down	interleukin 18 (interferon-gamma-inducing factor)
8012126	CLDN7	-3.5554478	down	claudin 7
8078014	SLC6A6	-3.5607278	down	solute carrier family 6 (neurotransmitter transporter, taur
8105596	RGS7BP	-3.5622241	down	regulator of G-protein signaling 7 binding protein
8027241	ZNF253	-3.5627944	down	zinc finger protein 253
8060949	ANKRD5	-3.5666125	down	ankyrin repeat domain 5
8099834	TLR1	-3.5684474	down	toll-like receptor 1
7954729	FGD4	-3.577941	down	FYVE, RhoGEF and PH domain containing 4
8120279	LRRC1	-3.583445	down	leucine rich repeat containing 1
7932326	CUBN	-3.593314	down	cubilin (intrinsic factor-cobalamin receptor)
7970441	GJB2	-3.6141248	down	gap junction protein, beta 2, 26kDa
8056285	IFIH1	-3.6141431	down	interferon induced with helicase C domain 1
8046003	GCA	-3.6169035	down	grancalcin, EF-hand calcium binding protein
8130768	RNASET2 LOC1001	-3.6234715	down	ribonuclease T2   hypothetical protein LOC100131869
7932390	TRDMT1	-3.6276073	down	tRNA aspartic acid methyltransferase 1
8092177	AADACL1	-3.6284404	down	arylacetamide deacetylase-like 1
8136315	LRGUK	-3.630475	down	leucine-rich repeats and guanylate kinase domain contain



Supplemental Table 1a  
eMSC vs. eEP

8152845	FAM49B	-3.6336608	down	family with sequence similarity 49, member B
8078971	ENTPD3	-3.6417644	down	ectonucleoside triphosphate diphosphohydrolase 3
7932420	PTPLA	-3.650616	down	protein tyrosine phosphatase-like (proline instead of catal
7946365	STK33	-3.6609976	down	serine/threonine kinase 33
7979269	GCH1	-3.6649933	down	GTP cyclohydrolase 1 (dopa-responsive dystonia)
8169492	AGTR2	-3.6652412	down	angiotensin II receptor, type 2
8106280	HMGCR	-3.6662316	down	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
8093258	IQCG	-3.6695123	down	IQ motif containing G
8109629	FABP6	-3.6754816	down	fatty acid binding protein 6, ileal (gastrotropin)
8144880	SH2D4A	-3.6828976	down	SH2 domain containing 4A
8008564	OK/KNS-CL.3	-3.683015	down	
7932552	LOC100128663   PR	-3.6887503	down	similar to PRO3077   hypothetical protein PRO3077
8156770	GALNT12	-3.698201	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8108912	SH3RF2	-3.7133536	down	SH3 domain containing ring finger 2
8162019	KIF27   LOC389765	-3.7148216	down	kinesin family member 27   similar to KIF27C
8129649	C6orf192	-3.714878	down	chromosome 6 open reading frame 192
8080863	FLJ44379	-3.720138	down	similar to S-100 protein, alpha chain
8166104	OFD1	-3.7345388	down	oral-facial-digital syndrome 1
8045816	GPD2	-3.7394514	down	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
8128726	PPIL6	-3.7459543	down	peptidylprolyl isomerase (cyclophilin)-like 6
8166469	SAT1	-3.7470303	down	spermidine/spermine N1-acetyltransferase 1
8122202	MYB	-3.7506988	down	v-myb myeloblastosis viral oncogene homolog (avian)
8008629	DGKE	-3.7541726	down	diacylglycerol kinase, epsilon 64kDa
8074856	PRAME	-3.759315	down	preferentially expressed antigen in melanoma
8101126	CXCL10	-3.7664876	down	chemokine (C-X-C motif) ligand 10
8156164	LOC389765	-3.7679105	down	similar to KIF27C
8101992	SLC39A8	-3.7716918	down	solute carrier family 39 (zinc transporter), member 8
8150036	KIF13B	-3.784967	down	kinesin family member 13B
8117106	RNF144B	-3.787368	down	ring finger 144B
8160531	C9orf72	-3.788182	down	chromosome 9 open reading frame 72
7902977	KIAA1107	-3.7956362	down	
8129783	MAP7	-3.8011544	down	microtubule-associated protein 7
8120335	FAM83B	-3.8044436	down	family with sequence similarity 83, member B

Supplemental Table 1a  
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8136936	CTAGE6 CTAGE4 L	-3.8105626	down	CTAGE family, member 6   CTAGE family, member 4   sim
7923929	PIGR	-3.8143103	down	polymeric immunoglobulin receptor
8140668	SEMA3A	-3.8143985	down	sema domain, immunoglobulin domain (Ig), short basic dc
8057821	DNAH7	-3.8212845	down	dynein, axonemal, heavy chain 7
8063601	C20orf85	-3.825598	down	chromosome 20 open reading frame 85
8049969	SH3YL1	-3.8462174	down	SH3 domain containing, Ysc84-like 1 ( <i>S. cerevisiae</i> )
7980744	RPS6KA5	-3.851571	down	ribosomal protein S6 kinase, 90kDa, polypeptide 5
8023855	CYB5A	-3.8528388	down	cytochrome b5 type A (microsomal)
8088322	DNAH12L	-3.8617368	down	dynein, axonemal, heavy chain 12-like
8123936	NEDD9	-3.8621664	down	neural precursor cell expressed, developmentally down-re
8042468	ANXA4	-3.8707366	down	annexin A4
8077899	PPARG	-3.8955922	down	peroxisome proliferator-activated receptor gamma
7918134	AMY1A AMY1B AM	-3.8956962	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
8058824	MREG	-3.9052365	down	melanoregulin
7903440	AMY1A AMY1B AM	-3.910519	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
7903425	AMY1A AMY1B AM	-3.9114	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
7925492	OPN3	-3.912689	down	opsin 3
7971015	SMAD9	-3.9195738	down	SMAD family member 9
7965226	RASSF9	-3.9202087	down	Ras association (RalGDS/AF-6) domain family (N-terminal)
7971246	KIAA0564	-3.9250586	down	
8122336	C6orf115	-3.9282362	down	chromosome 6 open reading frame 115
7910611	KCNK1	-3.9305267	down	potassium channel, subfamily K, member 1
8096130	CDS1	-3.931983	down	CDP-diacylglycerol synthase (phosphatidate cytidyl)trans
7907861	XPR1	-3.9349308	down	xenotropic and polytropic retrovirus receptor
7926356	PTER	-3.967948	down	phosphotriesterase related
8092295	CCDC39	-3.9741	down	coiled-coil domain containing 39
8088315	ASB14 DNAH12	-3.9756691	down	ankyrin repeat and SOCS box-containing 14   dynein, axor
8138689	SKAP2	-3.9906092	down	src kinase associated phosphoprotein 2
7900635	hCG_23177	-3.9910336	down	hCG23177
8011713	CXCL16	-4.0024247	down	chemokine (C-X-C motif) ligand 16
8100768	UGT2B11 UGT2B1C	-4.011545	down	UDP glucuronosyltransferase 2 family, polypeptide B11   U
8174119	ZMAT1	-4.0152674	down	zinc finger, matrin type 1
8151475	TPD52	-4.016515	down	tumor protein D52

Supplemental Table 1a  
eMSC vs. eEP

8155540	CNTNAP3B LOC388	-4.029134	down	contactin associated protein-like 3B   similar to KIAA1714
7900365	MFSD2	-4.0312843	down	major facilitator superfamily domain containing 2
8146921	RDH10	-4.0382423	down	retinol dehydrogenase 10 (all-trans)
8161460	CNTNAP3B LOC388	-4.038605	down	contactin associated protein-like 3B   similar to KIAA1714
8096425	MGC48628	-4.0498066	down	similar to KIAA1680 protein
8083743	ARL14	-4.0534396	down	ADP-ribosylation factor-like 14
8043071	LOC200383	-4.0744824	down	similar to Dynein heavy chain at 16F
8023267	MYO5B	-4.0745792	down	myosin VB
8106950	FAM81B	-4.075667	down	family with sequence similarity 81, member B
8145365	DOCK5	-4.0847063	down	dedicator of cytokinesis 5
7931281	FANK1	-4.0932903	down	fibronectin type III and ankyrin repeat domains 1
7963212	SLC11A2	-4.095734	down	solute carrier family 11 (proton-coupled divalent metal ion)
7918504	OVGP1	-4.108554	down	oviductal glycoprotein 1, 120kDa (mucin 9, oviductin)
7916570	OMA1 DAB1	-4.144395	down	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   di-
8063410	PARD6B	-4.1467896	down	par-6 partitioning defective 6 homolog beta ( <i>C. elegans</i> )
7980828	CCDC88C	-4.150734	down	coiled-coil domain containing 88C
8145586	ELP3	-4.1532536	down	elongation protein 3 homolog ( <i>S. cerevisiae</i> )
7978376	STXBP6	-4.1581135	down	syntaxin binding protein 6 (amisyn)
7936529	KIAA1598	-4.167135	down	
7943740	FLJ46266	-4.172106	down	
8022145	L3MBTL4	-4.177389	down	l(3)mbt-like 4 ( <i>Drosophila</i> )
8147206	RIPK2	-4.1883526	down	receptor-interacting serine-threonine kinase 2
7962185	AMN1	-4.18951	down	antagonist of mitotic exit network 1 homolog ( <i>S. cerevisiae</i> )
8123695	PECI	-4.2023144	down	peroxisomal D3,D2-enoyl-CoA isomerase
8164013	STRBP	-4.2052503	down	spermatid perinuclear RNA binding protein
8147221	OSGIN2	-4.205299	down	oxidative stress induced growth inhibitor family member 2
8060997	SPTLC3	-4.216949	down	serine palmitoyltransferase, long chain base subunit 3
8167930	FAAH2	-4.219482	down	fatty acid amide hydrolase 2
8150002	FBXO16 ZNF395	-4.224798	down	F-box protein 16   zinc finger protein 395
7903144	SLC44A3	-4.2328176	down	solute carrier family 44, member 3
8035789	ZNF826 ZNF737	-4.2372394	down	zinc finger protein 826   zinc finger protein 737
8146717	SGK3 C8orf44	-4.2376595	down	serum/glucocorticoid regulated kinase family, member 3
8104035	SORBS2	-4.284807	down	sorbin and SH3 domain containing 2

Supplemental Table 1a  
eMSC vs. eEP

7995697	LPCAT2	-4.2979507	down	lysophosphatidylcholine acyltransferase 2
8155747	C9orf135	-4.2999597	down	chromosome 9 open reading frame 135
8081826	UPK1B	-4.308591	down	uroplakin 1B
8174141	BEX5	-4.3258023	down	BEX family member 5
7954711	C12orf35	-4.3483543	down	chromosome 12 open reading frame 35
7916616	CYP2J2	-4.348792	down	cytochrome P450, family 2, subfamily J, polypeptide 2
8105585	RNF180	-4.354467	down	ring finger protein 180
8131475	C1GALT1	-4.362079	down	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-be
8085164	SRGAP3	-4.369743	down	SLIT-ROBO Rho GTPase activating protein 3
8161945	RASEF	-4.374237	down	RAS and EF-hand domain containing
8005603	SLC47A1	-4.3841367	down	solute carrier family 47, member 1
8091922	WDR49	-4.388364	down	WD repeat domain 49
8131600	TSPAN13	-4.399378	down	tetraspanin 13
8066536	WFDC6 SPINLW1	-4.4064403	down	WAP four-disulfide core domain 6   serine peptidase inhib
8136979	CTAGE6 CTAGE4 L	-4.409724	down	CTAGE family, member 6   CTAGE family, member 4   CTA
7974090	CTAGE5	-4.4099107	down	CTAGE family, member 5
8126750	ENPP5	-4.411404	down	ectonucleotide pyrophosphatase/phosphodiesterase 5 (pi
8039013	ZNF321	-4.415701	down	zinc finger protein 321
8118345	CFB	-4.417442	down	complement factor B
8140468	tcag7.1314	-4.418157	down	hypothetical protein LOC54103
7926545	PLXDC2	-4.4191117	down	plexin domain containing 2
8090988	CEP70	-4.444928	down	centrosomal protein 70kDa
7899534	EPB41	-4.4452868	down	erythrocyte membrane protein band 4.1 (elliptocytosis 1,
8147439	PLEKHF2	-4.4607	down	pleckstrin homology domain containing, family F (with FY
8045539	KYNU	-4.4631953	down	kynureninase (L-kynurenine hydrolase)
8126729	CLIC5 LOC1001316	-4.4640923	down	chloride intracellular channel 5   similar to chloride intrac
7919800	CTSS	-4.4667253	down	cathepsin S
7902738	CLCA4	-4.4702916	down	chloride channel, calcium activated, family member 4
7898957	RCAN3	-4.4714055	down	RCAN family member 3
8103226	TMEM154	-4.473755	down	transmembrane protein 154
8015349	KRT19	-4.4823737	down	keratin 19
7950307	UCP2	-4.4896326	down	uncoupling protein 2 (mitochondrial, proton carrier)
8161270	ANKRD18A	-4.4918394	down	ankyrin repeat domain 18A

Supplemental Table 1a  
eMSC vs. eEP

8147848	OXR1	-4.502335	down	oxidation resistance 1
7944667	SORL1	-4.51197	down	sortilin-related receptor, L(DLR class) A repeats-containing
8021470	PMAIP1	-4.528649	down	phorbol-12-myristate-13-acetate-induced protein 1
7917037	CRYZ	-4.5344462	down	crystallin, zeta (quinone reductase)
7903414	AMY2A AMY1A AM	-4.5491996	down	amylase, alpha 2A (pancreatic)   amylase, alpha 1A (saliva
8156199	DAPK1	-4.5511155	down	death-associated protein kinase 1
7909494	SYT14	-4.5755076	down	synaptotagmin XIV
8102214	PAPSS1	-4.5755124	down	3'-phosphoadenosine 5'-phosphosulfate synthase 1
8037205	CEACAM1	-4.577798	down	carcinoembryonic antigen-related cell adhesion molecule
8130505	EZR	-4.5855556	down	ezrin
7903227	PALMD	-4.608903	down	palmdelphin
8098195	SC4MOL	-4.611501	down	sterol-C4-methyl oxidase-like
7918936	VTCN1	-4.6378508	down	V-set domain containing T cell activation inhibitor 1
7934334	TTC18	-4.645395	down	tetratricopeptide repeat domain 18
8118548	HLA-DRA	-4.6677375	down	major histocompatibility complex, class II, DR alpha
8150225	RAB11FIP1	-4.6775	down	RAB11 family interacting protein 1 (class I)
8142981	PODXL	-4.6896315	down	podocalyxin-like
7909768	SPATA17	-4.6913133	down	spermatogenesis associated 17
8008609	ANKFN1	-4.6934614	down	ankyrin-repeat and fibronectin type III domain containing
8107798	SLC27A6	-4.7093205	down	solute carrier family 27 (fatty acid transporter), member 6
8048717	SGPP2	-4.7217283	down	sphingosine-1-phosphate phosphatase 2
8178115	CFB	-4.7305408	down	complement factor B
7903959	C1orf88	-4.7397466	down	chromosome 1 open reading frame 88
8139680	COBL	-4.742825	down	cordon-bleu homolog (mouse)
8109194	SLC26A2	-4.7721863	down	solute carrier family 26 (sulfate transporter), member 2
7948058	FOLH1 PSMAL	-4.7742434	down	folate hydrolase (prostate-specific membrane antigen) 1
7960529	SCNN1A	-4.7891755	down	sodium channel, nonvoltage-gated 1 alpha
8099841	TLR6	-4.809997	down	toll-like receptor 6
8179481	HLA-DRA	-4.8122416	down	major histocompatibility complex, class II, DR alpha
8146967	CRISPLD1	-4.850576	down	cysteine-rich secretory protein LCCL domain containing 1
8166671	CXorf22	-4.8531785	down	chromosome X open reading frame 22
8028311	SPINT2 LOC100130	-4.864831	down	serine peptidase inhibitor, Kunitz type, 2   hypothetical pr
8072735	APOL1	-4.8845534	down	apolipoprotein L, 1

Supplemental Table 1a  
eMSC vs. eEP

7942998	PSMAL FOLH1	-4.886307	down	growth-inhibiting protein 26   folate hydrolase (prostate-
7980891	TC2N	-4.904226	down	tandem C2 domains, nuclear
8112274	ELOVL7	-4.9251075	down	ELOVL family member 7, elongation of long chain fatty aci
8117243	LRRC16A	-4.925721	down	leucine rich repeat containing 16A
8114006	FLJ44796	-4.926908	down	
8088299	DNHD2	-4.9279513	down	dynein heavy chain domain 2
7898623	UBXD3	-4.9358406	down	UBX domain containing 3
7957072	RAB3IP	-4.9414787	down	RAB3A interacting protein (rabin3)
8127158	GCLC	-4.945601	down	glutamate-cysteine ligase, catalytic subunit
8089299	CD47	-4.946408	down	
8042993	CTNNA2	-4.950772	down	catenin (cadherin-associated protein), alpha 2
8091991	MDS1	-4.951437	down	myelodysplasia syndrome 1
8014248	SLFN13	-4.960229	down	schlafen family member 13
8047062	MGC13057	-4.960816	down	
8149097	DEFB1	-4.978336	down	defensin, beta 1
7954196	MGST1	-5.010524	down	microsomal glutathione S-transferase 1
8131719	DNAH11	-5.0418124	down	dynein, axonemal, heavy chain 11
7935270	BLNK	-5.0468907	down	B-cell linker
8056408	GALNT3	-5.0804863	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8094533	FLJ16686	-5.081125	down	
8043043	DNHL1 LOC200383	-5.0821977	down	dynein heavy chain-like 1   similar to Dynein heavy chain ;
7963567	KRT8	-5.1055346	down	keratin 8
7926622	SPAG6	-5.1164575	down	sperm associated antigen 6
8015133	KRT23	-5.118476	down	keratin 23 (histone deacetylase inducible)
8155734	C9orf61	-5.120518	down	chromosome 9 open reading frame 61
8146579	CHD7	-5.121241	down	chromodomain helicase DNA binding protein 7
8178193	HLA-DRA	-5.1278806	down	major histocompatibility complex, class II, DR alpha
8121838	TPD52L1	-5.146699	down	tumor protein D52-like 1
8135341	FLJ23834	-5.1469307	down	
8112439	CCDC125	-5.16526	down	coiled-coil domain containing 125
8097017	UGT8	-5.1726265	down	UDP glycosyltransferase 8 (UDP-galactose ceramide galact
8059878	IQCA LOC1001292!	-5.209181	down	IQ motif containing with AAA domain   hypothetical prote
8132151	ADCYAP1R1	-5.2202806	down	adenylate cyclase activating polypeptide 1 (pituitary) rece

Supplemental Table 1a  
eMSC vs. eEP

8129560	CTAGE6 CTAGE4 L	-5.224629	down	CTAGE family, member 6   CTAGE family, member 4   CTA
8106068	MCCC2	-5.2372613	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
8177628	CCDC125	-5.2386684	down	coiled-coil domain containing 125
8177601	MCCC2	-5.239421	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
8114354	NME5	-5.249451	down	non-metastatic cells 5, protein expressed in (nucleoside-d
8095021	SPATA18	-5.2762012	down	spermatogenesis associated 18 homolog (rat)
8098328	GALNT7	-5.2849474	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8138202	ICA1	-5.2975593	down	islet cell autoantigen 1, 69kDa
8056113	LY75	-5.3531814	down	lymphocyte antigen 75
8102877	CLGN	-5.3561316	down	calmegin
8144712	C8orf79	-5.372137	down	chromosome 8 open reading frame 79
8099967	RBM47	-5.3915963	down	RNA binding motif protein 47
7917019	C1orf173	-5.3974695	down	chromosome 1 open reading frame 173
7922976	PTGS2	-5.4081454	down	prostaglandin-endoperoxide synthase 2 (prostaglandin G/
8086517	CDCP1	-5.425468	down	CUB domain containing protein 1
8123598	SERPINB1	-5.4347143	down	serpin peptidase inhibitor, clade B (ovalbumin), member 1
8121277	AIM1	-5.4550595	down	absent in melanoma 1
8120719	CD109	-5.4804854	down	
8152506	SAMD12	-5.484707	down	sterile alpha motif domain containing 12
7969533	SLAIN1	-5.524406	down	SLAIN motif family, member 1
8147661	SPAG1	-5.547193	down	sperm associated antigen 1
8177222	CD24	-5.5599446	down	
8109490	SGCD	-5.579811	down	sarcoglycan, delta (35kDa dystrophin-associated glycoprot
7976488	SERPINA5	-5.5842233	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
8140534	SEMA3C	-5.584299	down	sema domain, immunoglobulin domain (Ig), short basic dc
7901720	PRKAA2	-5.5856676	down	protein kinase, AMP-activated, alpha 2 catalytic subunit
7994058	SCNN1G	-5.5990777	down	sodium channel, nonvoltage-gated 1, gamma
8008547	TOM1L1	-5.611972	down	target of myb1 (chicken)-like 1
7947199	LGR4	-5.615606	down	leucine-rich repeat-containing G protein-coupled receptor
8083839	GPR160	-5.6230226	down	G protein-coupled receptor 160
7908793	ELF3	-5.637031	down	E74-like factor 3 (ets domain transcription factor, epitheli
7976496	SERPINA3	-5.6406646	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
7965964	SLC41A2	-5.647759	down	solute carrier family 41, member 2

Supplemental Table 1a  
eMSC vs. eEP

8113483	XIRP1 FLJ43080	-5.649401	down	xin actin-binding repeat containing 1   hypothetical protei
8016414	SKAP1	-5.653813	down	src kinase associated phosphoprotein 1
7968866	C13orf30	-5.672785	down	chromosome 13 open reading frame 30
7935776	PRO1933	-5.677565	down	
8141094	PDK4	-5.6797915	down	pyruvate dehydrogenase kinase, isozyme 4
8091411	TM4SF1	-5.6851807	down	transmembrane 4 L six family member 1
8106403	F2RL1	-5.702222	down	coagulation factor II (thrombin) receptor-like 1
8044818	hCG_17324	-5.7196517	down	primary ciliary dyskinesia protein 1
8023314	CCDC11	-5.7235436	down	coiled-coil domain containing 11
7953291	CD9	-5.7373643	down	
7916584	TACSTD2	-5.7535977	down	tumor-associated calcium signal transducer 2
8083978	NAALADL2	-5.7716784	down	N-acetylated alpha-linked acidic dipeptidase-like 2
7961365	MANSC1	-5.799054	down	MANSC domain containing 1
7965343	WDR51B GALNT4	-5.8106456	down	WD repeat domain 51B   UDP-N-acetyl-alpha-D-galactosa
8144701	LOC100131581	-5.8263845	down	
8140478	tcag7.1314	-5.8331976	down	hypothetical protein LOC54103
8120967	NT5E	-5.8415875	down	5'-nucleotidase, ecto (CD73)
8081645	C3orf52	-5.855621	down	chromosome 3 open reading frame 52
8146092	INDO	-5.985944	down	indoleamine-pyrrole 2,3 dioxygenase
8133770	CCDC146	-5.9902453	down	coiled-coil domain containing 146
8123407	MLLT4	-6.027612	down	myeloid/lymphoid or mixed-lineage leukemia (trithorax ho
8016463	HOXB6	-6.039854	down	homeobox B6
7957023	LYZ	-6.048667	down	lysozyme (renal amyloidosis)
8043059	LOC200383	-6.079528	down	similar to Dynein heavy chain at 16F
7916506	C1orf168	-6.0832405	down	chromosome 1 open reading frame 168
8056184	ITGB6	-6.1382856	down	integrin, beta 6
8054166	TSGA10	-6.1647973	down	testis specific, 10
8140686	SEMA3D	-6.1891494	down	sema domain, immunoglobulin domain (Ig), short basic dc
8166243	REPS2	-6.2121196	down	RALBP1 associated Eps domain containing 2
7932598	C10orf63	-6.2273626	down	chromosome 10 open reading frame 63
7957433	LRRIQ1	-6.244115	down	leucine-rich repeats and IQ motif containing 1
7981068	SERPINA1	-6.25211	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
8098021	GRIA2	-6.255166	down	glutamate receptor, ionotropic, AMPA 2



Supplemental Table 1a  
eMSC vs. eEP

8082012	SLC15A2	-6.2681	down	solute carrier family 15 (H <sup>+</sup> /peptide transporter), member 2
7921713	F11R hCG_20857 F11R	-6.287763	down	F11 receptor   hypothetical protein LOC100134860   KAT5
7917576	GBP5	-6.3273034	down	guanylate binding protein 5
8144481	DEFB4	-6.3506036	down	defensin, beta 4
8054712	IL1A	-6.372771	down	interleukin 1, alpha
8100298	OCIAD2	-6.37884	down	OCIA domain containing 2
8149169	DEFB4	-6.387553	down	defensin, beta 4
7920642	MUC1	-6.3971167	down	mucin 1, cell surface associated
8081657	CD200	-6.412391	down	
8095680	IL8	-6.4148207	down	interleukin 8
8155849	ANXA1	-6.5359907	down	annexin A1
7906079	RAB25	-6.632157	down	
8068383	CLIC6	-6.6434402	down	chloride intracellular channel 6
8106354	IQGAP2	-6.654801	down	IQ motif containing GTPase activating protein 2
8063187	EYA2	-6.7155037	down	eyes absent homolog 2 (Drosophila)
7989501	CA12	-6.7318544	down	carbonic anhydrase XII
8081758	GRAMD1C	-6.737047	down	GRAM domain containing 1C
8100210	TXK	-6.814838	down	
8094988	FLJ21511	-6.8947554	down	
8148059	DEPDC6	-6.910281	down	DEP domain containing 6
8033674	MUC16	-6.95542	down	mucin 16, cell surface associated
8129618	VNN1	-6.9749327	down	vanin 1
7918294	C1orf194	-7.0137053	down	chromosome 1 open reading frame 194
8040249	ATP6V1C2	-7.1116824	down	ATPase, H <sup>+</sup> transporting, lysosomal 42kDa, V1 subunit C2
7988990	WDR72	-7.154825	down	WD repeat domain 72
7973875	NPAS3	-7.1572957	down	neuronal PAS domain protein 3
8098611	TLR3	-7.18148	down	toll-like receptor 3
7951807	CADM1 LOC100132764	-7.248537	down	cell adhesion molecule 1   hypothetical LOC100132764
8117630	ZNF165	-7.2642727	down	zinc finger protein 165
8099121	STX18	-7.3058248	down	syntaxin 18
8116921	EDN1	-7.380295	down	endothelin 1
8099760	CENTD1	-7.397884	down	centaurin, delta 1
8019954	FLJ35776	-7.4434257	down	hypothetical protein LOC649446

Supplemental Table 1a  
eMSC vs. eEP

7961844	CASC1	-7.449282	down	cancer susceptibility candidate 1
7969288	OLFM4	-7.5190783	down	olfactomedin 4
8095736	AREG LOC727738	-7.580549	down	amphiregulin (schwannoma-derived growth factor)   simi
8083146	PLS1	-7.586306	down	plastin 1 (I isoform)
7917276	LPAR3	-7.630666	down	lysophosphatidic acid receptor 3
8088866	CNTN3	-7.6486616	down	contactin 3 (plasmacytoma associated)
8163908	GGTA1	-7.665645	down	glycoprotein, alpha-galactosyltransferase 1
8067955	CXADR	-7.677333	down	coxsackie virus and adenovirus receptor
7968678	FREM2	-7.6988683	down	FRAS1 related extracellular matrix protein 2
7951545	EXPH5	-7.700148	down	exophilin 5
7968637	CCNA1	-7.715602	down	cyclin A1
7907160	ATP1B1	-7.8649855	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 1 polypeptide
8147057	CHMP4C	-7.8958864	down	chromatin modifying protein 4C
8063000	WFDC2	-7.9160986	down	WAP four-disulfide core domain 2
8163149	PTPN3	-7.9232945	down	protein tyrosine phosphatase, non-receptor type 3
8116780	DSP	-7.954091	down	desmoplakin
7967993	FGF9	-7.975521	down	fibroblast growth factor 9 (glia-activating factor)
8099721	KIAA0746 SERINC2	-8.019043	down	KIAA0746 protein   serine incorporator 2
8043197	VAMP8	-8.027269	down	vesicle-associated membrane protein 8 (endobrevin)
8112649	KIAA0888	-8.041538	down	
7991034	HOMER2	-8.044038	down	homer homolog 2 (Drosophila)
8122071	ENPP3	-8.131689	down	ectonucleotide pyrophosphatase/phosphodiesterase 3
8099476	PROM1	-8.144364	down	prominin 1
8120961	C6orf117	-8.151552	down	chromosome 6 open reading frame 117
8147697	GRHL2	-8.16167	down	grainyhead-like 2 (Drosophila)
8095744	AREG LOC727738	-8.211863	down	amphiregulin (schwannoma-derived growth factor)   simi
8057677	SLC40A1	-8.216726	down	solute carrier family 40 (iron-regulated transporter), mem
7993756	ACSM3	-8.2574835	down	acyl-CoA synthetase medium-chain family member 3
8120061	ENPP4	-8.309228	down	ectonucleotide pyrophosphatase/phosphodiesterase 4 (pi
8131666	ITGB8	-8.477917	down	integrin, beta 8
8009476	MAP2K6	-8.552593	down	mitogen-activated protein kinase kinase 6
7936734	FGFR2	-8.583469	down	fibroblast growth factor receptor 2 (bacteria-expressed ki
7939150	PRRG4	-8.60348	down	proline rich Gla (G-carboxyglutamic acid) 4 (transmembra

Supplemental Table 1a  
eMSC vs. eEP

8094408	ANAPC4	-8.660345	down	anaphase promoting complex subunit 4
7988876	MYO5C	-8.694235	down	myosin VC
8091887	ZBBX	-8.760009	down	zinc finger, B-box domain containing
8110084	MSX2	-8.87491	down	msh homeobox 2
7901804	INADL	-8.988151	down	InaD-like (Drosophila)
8056327	GRB14	-9.030322	down	growth factor receptor-bound protein 14
8138392	AGR3	-9.091893	down	anterior gradient homolog 3 (Xenopus laevis)
7908351	PLA2G4A	-9.095145	down	phospholipase A2, group IVA (cytosolic, calcium-dependent)
8141140	DLX5	-9.135859	down	distal-less homeobox 5
8058591	ACADL	-9.239931	down	acyl-Coenzyme A dehydrogenase, long chain
8095986	ANXA3	-9.265662	down	annexin A3
8116835	GCNT2	-9.311799	down	glucosaminyl (N-acetyl) transferase 2, I-branching enzyme
7924058	IRF6	-9.35238	down	interferon regulatory factor 6
8147766	FZD6	-9.432483	down	frizzled homolog 6 (Drosophila)
7920123	S100A10	-9.572501	down	S100 calcium binding protein A10
8091600	PLCH1	-9.612876	down	phospholipase C, eta 1
7947274	MPPED2	-9.728099	down	metallophosphoesterase domain containing 2
8060897	PLCB4	-9.752255	down	phospholipase C, beta 4
7948662	SCGB1D4	-9.776157	down	secretoglobin, family 1D, member 4
7965357	GALNT4	-10.04099	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyltransferase 4
7936201	C10orf79	-10.095982	down	chromosome 10 open reading frame 79
7923875	C1orf186	-10.1279955	down	chromosome 1 open reading frame 186
8070603	RSPH1	-10.134895	down	radial spoke head 1 homolog (Chlamydomonas)
8060854	PLCB1	-10.241027	down	phospholipase C, beta 1 (phosphoinositide-specific)
8092169	TNFSF10	-10.284988	down	tumor necrosis factor (ligand) superfamily, member 10
7940323	MS4A8B	-10.319971	down	membrane-spanning 4-domains, subfamily A, member 8B
8150978	CA8	-10.391066	down	carbonic anhydrase VIII
8112342	ADAMTS6	-10.505463	down	ADAM metalloproteinase with thrombospondin type 1 motifs 6
7962212	PKP2	-10.562353	down	plakophilin 2
8142270	NRCAM	-10.565403	down	neuronal cell adhesion molecule
8141016	TFPI2	-10.709614	down	tissue factor pathway inhibitor 2
8094441	SLC34A2	-11.24467	down	solute carrier family 34 (sodium phosphate), member 2
8109926	GABRP	-11.333835	down	gamma-aminobutyric acid (GABA) A receptor, pi

Supplemental Table 1a  
eMSC vs. eEP

8093278	HGD LOC10013255	-11.392487	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)
8033257	C3	-11.398919	down	complement component 3
8155802	GDA	-11.573998	down	guanine deaminase
8089851	HGD LOC10013255	-11.575508	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)
8135601	MET	-11.685722	down	met proto-oncogene (hepatocyte growth factor receptor)
7926638	ARMC3	-11.688494	down	armadillo repeat containing 3
8140650	SEMA3E	-11.895387	down	sema domain, immunoglobulin domain (Ig), short basic dc
8134351	PPP1R9A	-11.901248	down	protein phosphatase 1, regulatory (inhibitor) subunit 9A
7957140	LGR5	-12.099313	down	leucine-rich repeat-containing G protein-coupled receptor
8138466	7A5	-12.235573	down	putative binding protein 7a5
8105908	OCLN	-13.0870495	down	occludin
7901175	TSPAN1	-13.152128	down	tetraspanin 1
7940643	ASRGL1	-13.506869	down	asparaginase like 1
7943413	BIRC3	-13.667165	down	baculoviral IAP repeat-containing 3
8096511	BMPR1B	-14.296102	down	bone morphogenetic protein receptor, type IB
8129880	PERP	-14.731975	down	
8177498	MARVELD2	-14.753873	down	MARVEL domain containing 2
8105899	MARVELD2	-14.817373	down	MARVEL domain containing 2
7930498	ACSL5	-14.982017	down	acyl-CoA synthetase long-chain family member 5
7908072	LAMC2	-15.611651	down	laminin, gamma 2
8147351	RBM35A	-15.644743	down	RNA binding motif protein 35A
7996837	CDH1	-16.34036	down	cadherin 1, type 1, E-cadherin (epithelial)
7952046	MPZL2	-16.450768	down	myelin protein zero-like 2
7901765	HOOK1	-16.532856	down	hook homolog 1 (Drosophila)
8020779	DSG2	-16.554302	down	desmoglein 2
8145293	ADAM28	-16.55486	down	ADAM metallopeptidase domain 28
8155930	GCNT1	-16.870516	down	glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1,6-N-
8138381	AGR2	-16.921066	down	anterior gradient homolog 2 (Xenopus laevis)
8041853	EPCAM	-16.945333	down	tumor-associated calcium signal transducer 1
8100231	TEC	-16.959017	down	tec protein tyrosine kinase
8147891	PKHD1L1	-16.993866	down	polycystic kidney and hepatic disease 1 (autosomal recess
8124196	DCDC2	-17.251457	down	doublecortin domain containing 2
8026490	UCA1	-17.358639	down	urothelial cancer associated 1

Supplemental Table 1a  
eMSC vs. eEP

8091385	CP	-17.40289	down	ceruloplasmin (ferroxidase)
7939314	EHF	-17.80539	down	ets homologous factor
8091972	EVI1   MDS1	-18.425968	down	ecotropic viral integration site 1   myelodysplasia syndron
7940626	SCGB2A1	-19.25159	down	secretoglobin, family 2A, member 1
7910950	KMO	-20.43491	down	kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
8066493	SLPI	-20.58204	down	secretory leukocyte peptidase inhibitor
7951217	MMP7	-20.736462	down	matrix metallopeptidase 7 (matrilysin, uterine)
7903592	KIAA1324	-21.852682	down	
7964834	CPM	-22.44159	down	carboxypeptidase M
8148040	MAL2	-22.674154	down	mal, T-cell differentiation protein 2
7940630	SCGB1D2	-23.479977	down	secretoglobin, family 1D, member 2
7937961	MMP26	-24.208563	down	matrix metallopeptidase 26

## Supplemental Table 1b

eMSC vs. eEN

Transcripts Cluster Id	Genesymbol	eMSC vs. eEN (Fold change)	Regulation	Gene description
7921916	RGS5	47.23495	up	regulator of G-protein signaling 5
7934906	ACTA2	45.75812	up	actin, alpha 2, smooth muscle, aorta
8104079	FAT	36.248432	up	
8059905	COL6A3	34.23763	up	collagen, type VI, alpha 3
7965403	LUM	31.335707	up	lumican
8097692	EDNRA	30.034561	up	endothelin receptor type A
8102792	PCDH18	29.849035	up	protocadherin 18
7965410	DCN	29.76501	up	decorin
7961710	ABCC9	29.663097	up	ATP-binding cassette, sub-family C (CFTR/MRP), member 9
8146863	SULF1	28.391926	up	sulfatase 1
8058857	IGFBP5	26.116526	up	insulin-like growth factor binding protein 5
7961546	EPS8	23.510674	up	epidermal growth factor receptor pathway substrate 8
8091511	P2RY14	22.952454	up	purinergic receptor P2Y, G-protein coupled, 14
8080511	CACNA1D	22.879908	up	calcium channel, voltage-dependent, L type, alpha 1D subunit
7921882	OLFML2B	21.83506	up	olfactomedin-like 2B
7949588	CD248	19.478756	up	
8097957	GUCY1A3	19.417921	up	guanylate cyclase 1, soluble, alpha 3
7907222	PRRX1	19.174202	up	paired related homeobox 1
8115099	PDGFRB	18.639086	up	platelet-derived growth factor receptor, beta polypeptide
8104663	CDH6	17.864933	up	cadherin 6, type 2, K-cadherin (fetal kidney)
8166079	EGFL6	17.494146	up	EGF-like-domain, multiple 6
8056363	SLC38A11	16.859652	up	solute carrier family 38, member 11
7951437	GUCY1A2	16.685898	up	guanylate cyclase 1, soluble, alpha 2
8097973	GUCY1B3	16.090158	up	guanylate cyclase 1, soluble, beta 3
8151816	GEM	15.776788	up	GTP binding protein overexpressed in skeletal muscle
8144917	LPL	15.521372	up	lipoprotein lipase
7951178	TRPC6	15.367178	up	transient receptor potential cation channel, subfamily C, member 6
8097080	SYNPO2	15.359883	up	synaptopodin 2
7906900	DDR2	15.290621	up	discoidin domain receptor tyrosine kinase 2
8098204	CPE	15.182883	up	carboxypeptidase E
8147461	SDC2	15.028996	up	syndecan 2
8007701	HIGD1B	14.706791	up	HIG1 domain family, member 1B

Supplemental Table 1b  
eMSC vs. eEN

8055624	ZEB2	14.311317	up	zinc finger E-box binding homeobox 2
8096875	ENPEP	14.2372465	up	glutamyl aminopeptidase (aminopeptidase A)
8129573	MOXD1	13.56968	up	monooxygenase, DBH-like 1
8057506	FRZB	13.360647	up	frizzled-related protein
8134263	COL1A2	13.313198	up	collagen, type I, alpha 2
8123920	ELOVL2	13.176566	up	elongation of very long chain fatty acids (FEN1/Elo2, SUR4
8143144	PTN	13.037138	up	pleiotrophin (heparin binding growth factor 8, neurite gro
8095751	DKFZP564O0823	12.9949045	up	
7952305	LOC283155	12.399506	up	
8155864	RORB	12.275504	up	RAR-related orphan receptor B
7997642	CRISPLD2	12.252128	up	cysteine-rich secretory protein LCCL domain containing 2
7951662	CRYAB	12.230132	up	crystallin, alpha B
7929388	PLCE1	12.219574	up	phospholipase C, epsilon 1
7961540	RERG	12.134418	up	RAS-like, estrogen-regulated, growth inhibitor
8113800	FBN2	11.916635	up	fibrillin 2 (congenital contractural arachnodactyly)
8046922	COL3A1	11.78957	up	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV
7928855	BMPR1A	11.422957	up	bone morphogenetic protein receptor, type IA
8110932	SEMA5A	11.323213	up	sema domain, seven thrombospondin repeats (type 1 and
8121949	LAMA2	11.094107	up	laminin, alpha 2 (merosin, congenital muscular dystrophy)
8042439	ANTXR1	11.079105	up	anthrax toxin receptor 1
7954293	PDE3A	11.035723	up	phosphodiesterase 3A, cGMP-inhibited
7965873	IGF1	10.920716	up	insulin-like growth factor 1 (somatomedin C)
7938225	OLFML1	10.762098	up	olfactomedin-like 1
7913237	CAMK2N1	10.6515	up	calcium/calmodulin-dependent protein kinase II inhibitor
7936968	ADAM12	10.611821	up	ADAM metallopeptidase domain 12 (meltrin alpha)
8171172	MXRA5	10.531265	up	matrix-remodelling associated 5
8123104	FNDC1	10.323929	up	fibronectin type III domain containing 1
8163202	SVEP1	10.249812	up	sushi, von Willebrand factor type A, EGF and pentraxin do
8042356	MEIS1	10.23689	up	Meis homeobox 1
8131844	GPNMB	9.938949	up	glycoprotein (transmembrane) nmb
8139212	GLI3	9.927582	up	
8162394	ASPN	9.877562	up	asporin
8146957	PI15	9.732605	up	peptidase inhibitor 15

## Supplemental Table 1b

eMSC vs. eEN

8096176	PTPN13	9.692788	up	protein tyrosine phosphatase, non-receptor type 13 (APO-
8078286	RARB LOC100130	9.63166	up	retinoic acid receptor, beta   hypothetical protein LOC10C
8046695	ITGA4	9.619892	up	integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4
8081067	HTR1F	9.538318	up	5-hydroxytryptamine (serotonin) receptor 1F
8069689	ADAMTS5	9.397467	up	ADAM metalloproteinase with thrombospondin type 1 mo
7947512	DKFZP586H2123	9.289168	up	regeneration associated muscle protease
8057486	PDE1A	9.282751	up	phosphodiesterase 1A, calmodulin-dependent
7937952	OR51E1	9.110945	up	olfactory receptor, family 51, subfamily E, member 1
8004545	ATP1B2	9.052464	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 2 polypeptide
7953603	C1S	9.013792	up	complement component 1, s subcomponent
7939365	FJX1	9.002764	up	four jointed box 1 (Drosophila)
7903214	LPPR4	8.723206	up	plasticity related gene 1
7937772	IGF2	8.615799	up	insulin-like growth factor 2 (somatomedin A)
7939341	CD44	8.523537	up	
7906878	DDR2	8.414169	up	discoidin domain receptor tyrosine kinase 2
7984704	NEO1	8.319982	up	neogenin homolog 1 (chicken)
8105013	EGFLAM	8.212859	up	EGF-like, fibronectin type III and laminin G domains
8145361	NEFM	8.2084	up	neurofilament, medium polypeptide 150kDa
8098263	PALLD	8.1852	up	palladin, cytoskeletal associated protein
7906919	RGS4	8.1137	up	regulator of G-protein signaling 4
8016094	GJC1	8.052961	up	gap junction protein, gamma 1, 45kDa
8124166	MBOAT1	8.048675	up	membrane bound O-acyltransferase domain containing 1
8041644	PLEKHH2	7.7951865	up	pleckstrin homology domain containing, family H (with M)
8162404	ECM2	7.788856	up	extracellular matrix protein 2, female organ and adipocyte
8102532	PDE5A	7.711654	up	phosphodiesterase 5A, cGMP-specific
8073775	FBLN1	7.449142	up	fibulin 1
8094301	SLIT2	7.3818426	up	slit homolog 2 (Drosophila)
8151686	MMP16	7.366915	up	matrix metalloproteinase 16 (membrane-inserted)
7961702	KCNJ8	7.298191	up	potassium inwardly-rectifying channel, subfamily J, memb
8151684	C8orf57 LOC1001	7.176603	up	chromosome 8 open reading frame 57   hypothetical LOC
7957260	GLIPR1	7.1683707	up	GLI pathogenesis-related 1 (glioma)
7915229	HEYL	7.158041	up	hairy/enhancer-of-split related with YRPW motif-like
8014768	PLXDC1	7.0811033	up	plexin domain containing 1



## Supplemental Table 1b

eMSC vs. eEN

7981142	CLMN	7.056515	up	calmin (calponin-like, transmembrane)
8148070	COL14A1	7.034416	up	collagen, type XIV, alpha 1
8057620	COL5A2	7.0170074	up	collagen, type V, alpha 2
8003667	SERPINF1	7.0121284	up	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pi
7976073	FLRT2	6.989078	up	fibronectin leucine rich transmembrane protein 2
7942135	TMEM16A	6.9822736	up	transmembrane protein 16A
8151512	PAG1	6.8578835	up	phosphoprotein associated with glycosphingolipid microd
8106573	THBS4	6.828644	up	thrombospondin 4
7980485	DIO2	6.7945547	up	deiodinase, iodothyronine, type II
7943369	TMEM133	6.7186975	up	transmembrane protein 133
8129071	FRK	6.7113934	up	fyn-related kinase
8117054	CAP2	6.628319	up	CAP, adenylate cyclase-associated protein, 2 (yeast)
8152453	TRPS1	6.623086	up	trichorhinophalangeal syndrome I
7972336	DZIP1	6.6116743	up	DAZ interacting protein 1
8127346	RAB23	6.462106	up	
8139087	SFRP4	6.3114643	up	secreted frizzled-related protein 4
8169541	DOCK11	6.3096733	up	dedicator of cytokinesis 11
8102950	INPP4B	6.304812	up	inositol polyphosphate-4-phosphatase, type II, 105kDa
8088979	VGLL3	6.2984524	up	vestigial like 3 (Drosophila)
8095303	LPHN3	6.257763	up	latrophilin 3
8163257	LPAR1	6.2531223	up	lysophosphatidic acid receptor 1
8174189	TMSL8   MGC39900	6.2492805	up	thymosin-like 8   thymosin beta15b
7919815	CTSK	6.1917715	up	cathepsin K
7972003	KLF12	6.093723	up	Kruppel-like factor 12
7919095	NOTCH2	6.0813336	up	Notch homolog 2 (Drosophila)
7927732	ARID5B	6.0648923	up	AT rich interactive domain 5B (MRF1-like)
7938608	SPON1	6.0363564	up	spondin 1, extracellular matrix protein
8162533	PTCH1	5.9965944	up	patched homolog 1 (Drosophila)
8160040	PTPRD	5.9447923	up	protein tyrosine phosphatase, receptor type, D
8134098	PFTK1	5.94471	up	PFTAIRE protein kinase 1
7943349	FLJ32810	5.9091783	up	
8106986	RHOBTB3	5.832805	up	Rho-related BTB domain containing 3
8140840	STEAP4	5.784329	up	STEAP family member 4

## Supplemental Table 1b

eMSC vs. eEN

8134869	PCOLCE	5.767883	up	procollagen C-endopeptidase enhancer
7969613	GPC6	5.6282716	up	glypican 6
8083779	SERPINI1	5.6154256	up	serpin peptidase inhibitor, clade I (neuroserpin), member
8064539	CPXM1	5.541311	up	carboxypeptidase X (M14 family), member 1
7951165	PGR	5.532133	up	progesterone receptor
8038319	HRC	5.527701	up	histidine rich calcium binding protein
8023598	RNF152	5.5246396	up	ring finger protein 152
7979133	NID2	5.523779	up	nidogen 2 (osteonidogen)
8090098	MYLK	5.4792576	up	myosin light chain kinase
8144786	SLC7A2	5.4684114	up	solute carrier family 7 (cationic amino acid transporter, y+
7962274	KIF21A	5.3772388	up	kinesin family member 21A
8067157	CBLN4	5.2411566	up	cerebellin 4 precursor
8135734	C7orf58	5.238458	up	chromosome 7 open reading frame 58
8036473	PPP1R14A	5.1911993	up	protein phosphatase 1, regulatory (inhibitor) subunit 14A
7933772	ANK3	5.132228	up	ankyrin 3, node of Ranvier (ankyrin G)
8059413	DOCK10	5.1230397	up	dedicator of cytokinesis 10
8092654	RPL39L	5.1128616	up	ribosomal protein L39-like
7984079	TPM1	5.105662	up	tropomyosin 1 (alpha)
8122099	ENPP1	5.082032	up	ectonucleotide pyrophosphatase/phosphodiesterase 1
8077323	CNTN4	5.071732	up	contactin 4
8041383	LTBP1	5.06609	up	latent transforming growth factor beta binding protein 1
8177222	CD24	5.051981	up	
8108217	TGFBI	5.0510535	up	transforming growth factor, beta-induced, 68kDa
8046461	ZAK	5.0384645	up	sterile alpha motif and leucine zipper containing kinase A $\bar{z}$
8170648	BGN	5.0071235	up	biglycan
7999674	MYH11	4.965221	up	myosin, heavy chain 11, smooth muscle
8115691	SLIT3	4.961352	up	slit homolog 3 (Drosophila)
7945680	H19	4.9454303	up	
7930857	EMX2	4.9230056	up	empty spiracles homeobox 2
8121850	HEY2	4.9220033	up	hairy/enhancer-of-split related with YRPW motif 2
8141035	SGCE	4.904978	up	sarcoglycan, epsilon
8050766	ADCY3	4.894349	up	adenylate cyclase 3
8057959	PGAP1	4.8688436	up	post-GPI attachment to proteins 1

Supplemental Table 1b  
eMSC vs. eEN

8083968	NLGN1	4.8533993	up	neuroligin 1
8022927	SLC39A6	4.843764	up	solute carrier family 39 (zinc transporter), member 6
7965941	GLT8D2	4.8325496	up	glycosyltransferase 8 domain containing 2
8122843	ESR1	4.8266234	up	estrogen receptor 1
7964660	AVPR1A	4.8187075	up	arginine vasopressin receptor 1A
7944082	TAGLN	4.7966576	up	transgelin
8095854	11-Sep	4.78431	up	septin 11
8058091	SATB2	4.764162	up	SATB homeobox 2
7906307	KIRREL	4.7616444	up	kin of IRRE like (Drosophila)
8080964	GLT8D4	4.755065	up	glycosyltransferase 8 domain containing 4
8133155	TPST1	4.754045	up	tyrosylprotein sulfotransferase 1
7976814	SNORD114-2	4.734532	up	small nucleolar RNA, C/D box 114-2
7950578	PAK1	4.706512	up	p21/Cdc42/Rac1-activated kinase 1 (STE20 homolog, yeas
8121588	DSE	4.685392	up	dermatan sulfate epimerase
8056343	COBLL1	4.663319	up	COBL-like 1
8081431	ALCAM	4.6632967	up	activated leukocyte cell adhesion molecule
8172708	NUDT11	4.654615	up	nudix (nucleoside diphosphate linked moiety X)-type moti
7932584	PRTFDC1	4.6450186	up	phosphoribosyl transferase domain containing 1
8072876	LGALS1	4.6423836	up	lectin, galactoside-binding, soluble, 1 (galectin 1)
7936439	AFAP1L2	4.621939	up	actin filament associated protein 1-like 2
8062312	MYL9	4.610285	up	myosin, light chain 9, regulatory
8006214	CENTA2	4.5857534	up	centaurin, alpha 2
7905220	ECM1	4.532341	up	extracellular matrix protein 1
8105596	RGS7BP	4.509744	up	regulator of G-protein signaling 7 binding protein
7974697	DAAM1	4.488054	up	dishevelled associated activator of morphogenesis 1
8016646	COL1A1	4.479305	up	collagen, type I, alpha 1
8008547	TOM1L1	4.4633327	up	target of myb1 (chicken)-like 1
7980891	TC2N	4.455918	up	tandem C2 domains, nuclear
8116418	GFPT2	4.4456887	up	glutamine-fructose-6-phosphate transaminase 2
8039607	PEG3 ZIM2	4.4400783	up	paternally expressed 3   zinc finger, imprinted 2
8085665	RFTN1	4.4065757	up	raftlin, lipid raft linker 1
7934936	SLC16A12	4.388173	up	solute carrier family 16, member 12 (monocarboxylic acid
8021685	CCDC102B	4.3765574	up	coiled-coil domain containing 102B

## Supplemental Table 1b

eMSC vs. eEN

7938231	PPFIBP2	4.370844	up	PTPRF interacting protein, binding protein 2 (liprin beta 2)
7936529	KIAA1598	4.3642945	up	
8063444	TSHZ2	4.323279	up	teashirt zinc finger homeobox 2
7902127	SGIP1	4.319416	up	SH3-domain GRB2-like (endophilin) interacting protein 1
7970954	DCLK1	4.3130727	up	doublecortin-like kinase 1
8122807	AKAP12	4.3054657	up	A kinase (PRKA) anchor protein (gravin) 12
7952641	RICS	4.3053746	up	Rho GTPase-activating protein
8155673	PIP5K1B	4.2810535	up	phosphatidylinositol-4-phosphate 5-kinase, type I, beta
7976810	SNORD113-3	4.2544303	up	small nucleolar RNA, C/D box 113-3
8047926	MAP2	4.251845	up	microtubule-associated protein 2
7904158	OLFML3	4.2326355	up	olfactomedin-like 3
8045470	THSD7B	4.130927	up	thrombospondin, type I, domain containing 7B
8121712	SLC35F1	4.111412	up	solute carrier family 35, member F1
8150509	PLAT	4.0975375	up	plasminogen activator, tissue
7974109	LRFN5	4.0496655	up	leucine rich repeat and fibronectin type III domain contain
8144742	EFHA2	4.0451875	up	EF-hand domain family, member A2
7974689	DACT1	4.0416746	up	dapper, antagonist of beta-catenin, homolog 1 (Xenopus l
8138765	HOXA11	4.037757	up	homeobox A11
7929012	STAMBPL1	4.0350666	up	STAM binding protein-like 1
8097717	ARHGAP10	4.0237565	up	Rho GTPase activating protein 10
8002969	MAF	4.0191236	up	v-maf musculoaponeurotic fibrosarcoma oncogene homol
8101788	UNC5C	3.9947023	up	unc-5 homolog C (C. elegans)
8072015	ADRBK2	3.9935703	up	adrenergic, beta, receptor kinase 2
8023727	DSEL	3.990228	up	dermatan sulfate epimerase-like
8088919	ROBO1	3.9735143	up	roundabout, axon guidance receptor, homolog 1 (Drosopl
8147573	OSR2	3.9680173	up	odd-skipped related 2 (Drosophila)
7997504	CDH13	3.9633517	up	cadherin 13, H-cadherin (heart)
8068651	PCP4	3.959489	up	Purkinje cell protein 4
8089544	CCDC80	3.9539561	up	coiled-coil domain containing 80
8020110	RAB31	3.9514105	up	
8138067	PSCD3	3.932177	up	pleckstrin homology, Sec7 and coiled-coil domains 3
8097991	TDO2	3.9284165	up	tryptophan 2,3-dioxygenase
7926875	BAMBI	3.919703	up	BMP and activin membrane-bound inhibitor homolog (Xe

## Supplemental Table 1b

eMSC vs. eEN

8149413	DLC1	3.9180992	up	deleted in liver cancer 1
8161964	FRMD3	3.9115689	up	FERM domain containing 3
8047272	LOC26010	3.902485	up	viral DNA polymerase-transactivated protein 6
8140579	CACNA2D1	3.9015455	up	calcium channel, voltage-dependent, alpha 2/delta subunit
7934997	PPP1R3C	3.9014618	up	protein phosphatase 1, regulatory (inhibitor) subunit 3C
8020551	LAMA3	3.8835678	up	laminin, alpha 3
8081288	TMEM45A	3.8682086	up	transmembrane protein 45A
7950810	SYTL2	3.8661385	up	synaptotagmin-like 2
7927681	BICC1	3.8657637	up	bicaudal C homolog 1 (Drosophila)
8057887	STK17B	3.8596969	up	serine/threonine kinase 17b
8044021	IL1RL1	3.8557804	up	interleukin 1 receptor-like 1
8042283	HSPC159	3.8529503	up	galectin-related protein
8161044	TPM2	3.8516884	up	tropomyosin 2 (beta)
8127767	ELOVL4	3.8397572	up	elongation of very long chain fatty acids (FEN1/Elo2, SUR4)
8047248	PLCL1	3.833105	up	phospholipase C-like 1
8096733	SGMS2	3.7873197	up	sphingomyelin synthase 2
8171205	NLGN4X	3.7653747	up	neuroligin 4, X-linked
8091867	BCHE	3.7582614	up	butyrylcholinesterase
8102468	PRSS12	3.7483747	up	protease, serine, 12 (neurotrypsin, motopsin)
8017133	FAM33A	3.7368617	up	family with sequence similarity 33, member A
7925320	NID1	3.720456	up	nidogen 1
7948900	SNORD30	3.7075722	up	small nucleolar RNA, C/D box 30
7976012	NRXN3	3.6740665	up	neurexin 3
8111387	ADAMTS12	3.6626337	up	ADAM metalloproteinase with thrombospondin type 1 motif 12
8148448	KHDRBS3	3.6561997	up	KH domain containing, RNA binding, signal transduction activator
8046333	CYBRD1	3.6466136	up	cytochrome b reductase 1
8149551	PSD3	3.6432562	up	pleckstrin and Sec7 domain containing 3
8120468	BAI3	3.6399636	up	brain-specific angiogenesis inhibitor 3
7972557	EBI2	3.6214726	up	Epstein-Barr virus induced gene 2 (lymphocyte-specific G protein-coupled receptor 2)
8156905	TMEFF1	3.6193907	up	transmembrane protein with EGF-like and two follistatin-like domains
8155192	C9orf19	3.61413	up	chromosome 9 open reading frame 19
7964665	DPY19L2	3.612895	up	dpy-19-like 2 (C. elegans)
8124380	HIST1H1A	3.606896	up	histone cluster 1, H1a

## Supplemental Table 1b

eMSC vs. eEN

8115543	EBF1	3.6040437	up	early B-cell factor 1
8081362	CEP97	3.599014	up	centrosomal protein 97kDa
8128284	EPHA7	3.584445	up	EPH receptor A7
8083166	TRPC1	3.5751057	up	transient receptor potential cation channel, subfamily C, r
8062251	EPB41L1	3.5747728	up	erythrocyte membrane protein band 4.1-like 1
7957386	ACSS3	3.5605772	up	acyl-CoA synthetase short-chain family member 3
8152119	NCALD	3.5536115	up	neurocalcin delta
7961900	ITPR2	3.5422564	up	inositol 1,4,5-triphosphate receptor, type 2
8042788	ACTG2	3.5236855	up	actin, gamma 2, smooth muscle, enteric
8108301	KIF20A	3.519362	up	kinesin family member 20A
8151768	RUNX1T1	3.492504	up	runt-related transcription factor 1; translocated to, 1 (cycl
8063437	TSHZ2	3.4864159	up	teashirt zinc finger homeobox 2
8174670	RP13-347D8.3	3.483375	up	KIAA1210 protein
7966749	TESC	3.4825978	up	tescalcin
7989199	ALDH1A2	3.4822736	up	aldehyde dehydrogenase 1 family, member A2
8112940	SSBP2	3.477196	up	single-stranded DNA binding protein 2
8014974	TOP2A	3.4689386	up	topoisomerase (DNA) II alpha 170kDa
7953428	CD4	3.4570253	up	
8157153	PALM2-AKAP2	3.4555535	up	
8162940	ABCA1	3.4461312	up	ATP-binding cassette, sub-family A (ABC1), member 1
8005661	SPECC1	3.442493	up	sperm antigen with calponin homology and coiled-coil doi
7991234	MFGE8	3.428283	up	milk fat globule-EGF factor 8 protein
8029006	AXL	3.426668	up	
7918379	GSTM3	3.4261594	up	glutathione S-transferase M3 (brain)
7946589	MRV1	3.4061584	up	murine retrovirus integration site 1 homolog
7935613	HPSE2	3.4025066	up	heparanase 2
7903777	GSTM5	3.3880713	up	glutathione S-transferase M5
7909789	TGFB2	3.3870914	up	transforming growth factor, beta 2
8171248	KAL1	3.384263	up	Kallmann syndrome 1 sequence
7917728	FAM69A RPL5	3.3799293	up	family with sequence similarity 69, member A   ribosomal
8138454	TWISTNB	3.3797245	up	TWIST neighbor
8150428	SFRP1	3.3757613	up	secreted frizzled-related protein 1
7956551	GEFT SLC26A10	3.3750367	up	RhoA/RAC/CDC42 exchange factor   solute carrier family :

## Supplemental Table 1b

eMSC vs. eEN

7980908	FBLN5	3.3733735	up	fibulin 5
8048749	KCNE4	3.3728895	up	potassium voltage-gated channel, Isk-related family, mem
7972826	C13orf29	3.366061	up	chromosome 13 open reading frame 29
8150698	SNAI2	3.3646626	up	snail homolog 2 (Drosophila)
7902808	HS2ST1	3.3584845	up	heparan sulfate 2-O-sulfotransferase 1
8171684	SH3KBP1	3.3543346	up	SH3-domain kinase binding protein 1
7923608	REN	3.348094	up	renin
7943398	YAP1	3.3402932	up	Yes-associated protein 1, 65kDa
8174654	KLHL13	3.337083	up	kelch-like 13 (Drosophila)
8048026	CPS1	3.3313432	up	carbamoyl-phosphate synthetase 1, mitochondrial
7912157	ERRFI1	3.3299026	up	ERBB receptor feedback inhibitor 1
7933488	C10orf72	3.323547	up	chromosome 10 open reading frame 72
8101587	MAPK10	3.317817	up	mitogen-activated protein kinase 10
8119357	DAAM2	3.317061	up	dishevelled associated activator of morphogenesis 2
8162908	GRIN3A	3.2837965	up	glutamate receptor, ionotropic, N-methyl-D-aspartate 3A
8069269	COL6A1	3.2749417	up	collagen, type VI, alpha 1
8123651	TUBB2B	3.2702975	up	tubulin, beta 2B
8105585	RNF180	3.261381	up	ring finger protein 180
7954481	SSPN	3.2600975	up	sarcospan (Kras oncogene-associated gene)
8109576	THG1L	3.2574933	up	tRNA-histidine guanylyltransferase 1-like ( <i>S. cerevisiae</i> )
8071758	MMP11	3.249196	up	matrix metalloproteinase 11 (stromelysin 3)
8140955	CDK6	3.244794	up	cyclin-dependent kinase 6
7945991	OR51E2	3.2375174	up	olfactory receptor, family 51, subfamily E, member 2
8007420	AOC3	3.2192302	up	amine oxidase, copper containing 3 (vascular adhesion pro
8151999	RGS22	3.1947818	up	regulator of G-protein signaling 22
7933872	EGR2	3.1921988	up	early growth response 2 (Krox-20 homolog, Drosophila)
8089112	FILIP1L	3.18969	up	filamin A interacting protein 1-like
7986293	MCTP2	3.1765914	up	multiple C2 domains, transmembrane 2
8123744	F13A1	3.1709926	up	coagulation factor XIII, A1 polypeptide
7901969	ROR1	3.1397932	up	receptor tyrosine kinase-like orphan receptor 1
8051762	SLC8A1	3.1365602	up	solute carrier family 8 (sodium/calcium exchanger), mem
8126428	TRERF1	3.1314447	up	transcriptional regulating factor 1
8099612	GPR125	3.1227958	up	G protein-coupled receptor 125

## Supplemental Table 1b

eMSC vs. eEN

8046048	FAM130A2	3.1082575	up	family with sequence similarity 130, member A2
7946401	ST5	3.0977676	up	suppression of tumorigenicity 5
8168749	SRPX2	3.0941334	up	sushi-repeat-containing protein, X-linked 2
8103951	ACSL1	3.0771797	up	acyl-CoA synthetase long-chain family member 1
7943051	NAALAD2	3.0476773	up	N-acetylated alpha-linked acidic dipeptidase 2
8017867	FAM20A	3.043881	up	family with sequence similarity 20, member A
7954065	GPRC5A	3.0386074	up	G protein-coupled receptor, family C, group 5, member A
7954245	PLEKHA5	3.0319355	up	pleckstrin homology domain containing, family A member
8086120	DCLK3	3.028032	up	doublecortin-like kinase 3
7900340	BMP8A	3.0278468	up	bone morphogenetic protein 8a
7905329	MLLT11	3.0258007	up	myeloid/lymphoid or mixed-lineage leukemia (trithorax ho
8129363	HDDC2	3.021133	up	HD domain containing 2
8131583	BZW2	3.0126538	up	basic leucine zipper and W2 domains 2
8144322	MYOM2	3.0122378	up	myomesin (M-protein) 2, 165kDa
8080938	MITF	3.0071645	up	microphthalmia-associated transcription factor
8045336	GPR39	3.00664	up	G protein-coupled receptor 39
8140668	SEMA3A	2.9931774	up	sema domain, immunoglobulin domain (Ig), short basic dc
8129985	PLAGL1	2.9928339	up	pleiomorphic adenoma gene-like 1
8167006	RP2	2.9866333	up	retinitis pigmentosa 2 (X-linked recessive)
8056943	KIAA1715	2.9834282	up	
7989146	MNS1	2.9832191	up	meiosis-specific nuclear structural 1
8117120	ID4	2.9772477	up	inhibitor of DNA binding 4, dominant negative helix-loop-l
8022338	DISP2 LOC728211	2.9757988	up	dispatched homolog 2 (Drosophila)   hypothetical LOC728
7909841	MARK1	2.971652	up	MAP/microtubule affinity-regulating kinase 1
8045499	HNMT	2.968367	up	histamine N-methyltransferase
8077366	LRRN1	2.9637413	up	leucine rich repeat neuronal 1
8017885	ABCA8	2.9634101	up	ATP-binding cassette, sub-family A (ABC1), member 8
7956301	LRP1	2.9575622	up	low density lipoprotein-related protein 1 (alpha-2-macrog
7940565	FADS2	2.9520428	up	fatty acid desaturase 2
7982366	SCG5	2.9469135	up	secretogranin V (7B2 protein)
8103630	SH3RF1	2.9422271	up	SH3 domain containing ring finger 1
8137670	PDGFA	2.9413345	up	platelet-derived growth factor alpha polypeptide
8047596	ALS2CR16	2.935519	up	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg



## Supplemental Table 1b

eMSC vs. eEN

7950555	LRRC32	2.9271216	up	leucine rich repeat containing 32
7972428	OXGR1	2.9244385	up	oxoglutarate (alpha-ketoglutarate) receptor 1
8131666	ITGB8	2.922994	up	integrin, beta 8
8102415	CAMK2D	2.9216201	up	calcium/calmodulin-dependent protein kinase (CaM kinase)
7930380	ADD3	2.9169872	up	adducin 3 (gamma)
8056890	CHN1	2.9026885	up	chimerin (chimaerin) 1
8046906	GULP1	2.8972085	up	GULP, engulfment adaptor PTB domain containing 1
8143397	DENND2A	2.8871655	up	DENN/MADD domain containing 2A
8168179	DLG3	2.884816	up	discs, large homolog 3 (neuroendocrine-dlg, Drosophila)
8112107	PPAP2A	2.8839638	up	phosphatidic acid phosphatase type 2A
8009301	PRKCA	2.878565	up	protein kinase C, alpha
8169389	PAK3	2.872287	up	p21 (CDKN1A)-activated kinase 3
7980616	PTPN21	2.8644822	up	protein tyrosine phosphatase, non-receptor type 21
7971150	LHFP	2.863706	up	lipoma HMGIC fusion partner
8152280	LRP12	2.8510003	up	low density lipoprotein-related protein 12
7909610	ATF3	2.8471522	up	activating transcription factor 3
8098441	ODZ3	2.8438275	up	odz, odd Oz/ten-m homolog 3 (Drosophila)
8127201	COL21A1	2.8356504	up	collagen, type XXI, alpha 1
8083090	ZBTB38	2.832253	up	zinc finger and BTB domain containing 38
7924996	C1orf198	2.8220685	up	chromosome 1 open reading frame 198
7986383	IGF1R	2.8219955	up	insulin-like growth factor 1 receptor
8055688	RND3	2.8200233	up	Rho family GTPase 3
8149248	LRLE1 LOC100127	2.8180451	up	liver-related low express protein 1   similar to liver-related
8021047	SETBP1	2.8120148	up	SET binding protein 1
7953135	TULP3	2.8054123	up	tubby like protein 3
7989069	PYGO1	2.8017983	up	pygopus homolog 1 (Drosophila)
7958253	OCC-1	2.7992046	up	overexpressed in colon carcinoma-1
8127646	FILIP1	2.7923725	up	filamin A interacting protein 1
8166289	CDKL5	2.7921937	up	cyclin-dependent kinase-like 5
8107673	GRAMD3	2.7904227	up	GRAM domain containing 3
8113433	EFNA5	2.7800963	up	ephrin-A5
8095080	PDGFRA	2.7781653	up	platelet-derived growth factor receptor, alpha polypeptide
8059470	IRS1	2.7756164	up	insulin receptor substrate 1

## Supplemental Table 1b

eMSC vs. eEN

7930714	ATRNL1	2.7731562	up	attractin-like 1
8088803	EIF4E3	2.772994	up	eukaryotic translation initiation factor 4E family member 3
7917875	F3	2.7654035	up	coagulation factor III (thromboplastin, tissue factor)
8144699	LRLE1 LOC100127	2.7638366	up	liver-related low express protein 1   similar to liver-related protein 1
8129120	C6orf189	2.759859	up	chromosome 6 open reading frame 189
8019912	EMILIN2	2.7546537	up	elastin microfibril interfacier 2
8102440	ARSJ	2.7532172	up	arylsulfatase family, member J
8042211	B3GNT2	2.7523675	up	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 2
7982757	CASC5	2.752337	up	cancer susceptibility candidate 5
7968015	TNFRSF19	2.7495298	up	tumor necrosis factor receptor superfamily, member 19
8100154	CORIN	2.743392	up	corin, serine peptidase
8152617	HAS2	2.7433486	up	hyaluronan synthase 2
8083749	PPM1L	2.7413507	up	protein phosphatase 1 (formerly 2C)-like 1
8027650	UBA2	2.7317104	up	ubiquitin-like modifier activating enzyme 2
8105828	CCNB1	2.7223308	up	cyclin B1
8151756	TMEM55A	2.7193038	up	transmembrane protein 55A
7965040	PHLDA1	2.710015	up	pleckstrin homology-like domain, family A, member 1
8077376	ITPR1	2.709102	up	inositol 1,4,5-triphosphate receptor, type 1
7986329	NR2F2	2.7087255	up	nuclear receptor subfamily 2, group F, member 2
7942417	ARHGEF17	2.708075	up	Rho guanine nucleotide exchange factor (GEF) 17
7901272	CYP4X1	2.7067106	up	cytochrome P450, family 4, subfamily X, polypeptide 1
8107823	ADAMTS19	2.7054582	up	ADAM metalloproteinase with thrombospondin type 1 motifs 19
8113220	ELL2	2.703414	up	elongation factor, RNA polymerase II, 2
8149555	PSD3	2.7029612	up	pleckstrin and Sec7 domain containing 3
8052654	PELI1	2.7011569	up	pellino homolog 1 (Drosophila)
8148317	MYC LOC1001305	2.6977782	up	v-myc myelocytomatosis viral oncogene homolog (avian)
8112857	MTX3	2.6957195	up	metaxin 3
8156848	NR4A3	2.6942282	up	nuclear receptor subfamily 4, group A, member 3
7988467	FBN1	2.6930206	up	fibrillin 1
8088848	PDZRN3	2.69051	up	PDZ domain containing RING finger 3
7938485	MICAL2	2.6892972	up	microtubule associated monooxygenase, calponin and LIM domain containing 2
8045289	RHOQ	2.6891403	up	ras homolog gene family, member Q
7983228	MAP1A	2.6882517	up	microtubule-associated protein 1A

## Supplemental Table 1b

eMSC vs. eEN

7920271	S100A4	2.6859303	up	S100 calcium binding protein A4
7929032	FAS	2.6828437	up	Fas (TNF receptor superfamily, member 6)
8119525	HCRP1	2.6790376	up	
8048995	ITM2C	2.6750944	up	integral membrane protein 2C
7957861	TMEM16D	2.6732206	up	transmembrane protein 16D
8156060	TLE4	2.6636274	up	transducin-like enhancer of split 4 (E(sp1) homolog, Drosophila)
7991406	PRC1	2.6612387	up	protein regulator of cytokinesis 1
7916669	DOCK7	2.6585746	up	dedicator of cytokinesis 7
7943562	ELMOD1	2.6559858	up	ELMO/CED-12 domain containing 1
7991186	NTRK3	2.6531844	up	neurotrophic tyrosine kinase, receptor, type 3
8136248	MEST	2.6519818	up	mesoderm specific transcript homolog (mouse)
8025918	CNN1	2.6518307	up	calponin 1, basic, smooth muscle
8026300	CD97	2.6517289	up	
7954997	TMEM16F	2.6354482	up	transmembrane protein 16F
8168146	KIF4A	2.633436	up	kinesin family member 4A
8088180	WNT5A	2.6298406	up	wingless-type MMTV integration site family, member 5A
8105778	PIK3R1	2.6292005	up	phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
7990632	SGK269	2.6231337	up	NKF3 kinase family member
7963946	MMP19	2.6205974	up	matrix metalloproteinase 19
8130867	THBS2	2.619607	up	thrombospondin 2
8055606	GTDC1	2.6185977	up	glycosyltransferase-like domain containing 1
8154381	C9orf150	2.617026	up	chromosome 9 open reading frame 150
8107814	ISOC1	2.616063	up	isochorismatase domain containing 1
7933010	PARD3	2.614539	up	par-3 partitioning defective 3 homolog (C. elegans)
8137485	DPP6	2.613813	up	dipeptidyl-peptidase 6
8170538	GABRQ	2.6074514	up	gamma-aminobutyric acid (GABA) receptor, theta
8117045	RBM24	2.6019156	up	RNA binding motif protein 24
7958620	IFT81	2.5911078	up	intraflagellar transport 81 homolog (Chlamydomonas)
7909603	NENF	2.5901713	up	neuron derived neurotrophic factor
8094911	ATP10D	2.585996	up	ATPase, class V, type 10D
8092520	LOC285382	2.5857673	up	hypothetical gene supported by AK091454
7965979	ALDH1L2	2.5854023	up	aldehyde dehydrogenase 1 family, member L2
8016841	TMEM100	2.5852265	up	transmembrane protein 100

## Supplemental Table 1b

eMSC vs. eEN

7903742	GSTM4 GSTM2	2.5844462	up	glutathione S-transferase M4   glutathione S-transferase I
8056545	STK39	2.583605	up	serine threonine kinase 39 (STE20/SPS1 homolog, yeast)
8141140	DLX5	2.5795555	up	distal-less homeobox 5
8095868	UNQ3028	2.575984	up	TSSP3028
8157691	LOC729012	2.573452	up	similar to Spindle and kinetochore-associated protein 2 (P
8069532	STCH	2.572989	up	stress 70 protein chaperone, microsome-associated, 60kD
7986359	IGF1R	2.5719109	up	insulin-like growth factor 1 receptor
7919305	PRKAB2	2.5708048	up	protein kinase, AMP-activated, beta 2 non-catalytic subun
8096160	ARHGAP24	2.570221	up	Rho GTPase activating protein 24
8102938	RNF150	2.5631487	up	ring finger protein 150
8135218	LRRC17	2.5620558	up	leucine rich repeat containing 17
7950906	CTSC	2.5608585	up	cathepsin C
8145977	PLEKHA2	2.5578613	up	pleckstrin homology domain containing, family A (phosph
8063536	TFAP2C	2.5513031	up	transcription factor AP-2 gamma (activating enhancer bin
8083075	ACPL2	2.5498872	up	acid phosphatase-like 2
8087935	NT5DC2	2.5477347	up	5'-nucleotidase domain containing 2
8127778	FAM46A	2.544478	up	family with sequence similarity 46, member A
8115234	ANXA6	2.541147	up	annexin A6
8107307	CAMK4	2.535864	up	calcium/calmodulin-dependent protein kinase IV
7968703	NHLRC3	2.5341444	up	NHL repeat containing 3
7943218	PANX1	2.5311704	up	pannexin 1
8049448	CENTG2	2.5306582	up	centaurin, gamma 2
8156134	NTRK2	2.522894	up	neurotrophic tyrosine kinase, receptor, type 2
7902810	LMO4	2.5168648	up	LIM domain only 4
8001387	SALL1	2.5143614	up	sal-like 1 (Drosophila)
7906061	SYT11	2.513235	up	synaptotagmin XI
8103341	MAP9	2.509036	up	microtubule-associated protein 9
7921344	ELL2	2.5055363	up	elongation factor, RNA polymerase II, 2
7944049	SIDT2	2.5012624	up	SID1 transmembrane family, member 2
7972157	EDNRB	2.4940317	up	endothelin receptor type B
8009417	KPNA2 LOC72886	2.493966	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)   ka
7902495	NEXN	2.4924867	up	nexilin (F actin binding protein)
7953040	CACNA1C	2.4853613	up	calcium channel, voltage-dependent, L type, alpha 1C sub

## Supplemental Table 1b

eMSC vs. eEN

7986350	ARRDC4	2.4799185	up	arrestin domain containing 4
8132860	EGFR	2.479257	up	epidermal growth factor receptor (erythroblastic leukemia)
8061572	COX4I2	2.4780135	up	cytochrome c oxidase subunit IV isoform 2 (lung)
8019737	KPNA2 LOC72886	2.475563	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)   ka
8017039	4-Sep	2.4741364	up	septin 4
8147469	PGCP	2.473023	up	plasma glutamate carboxypeptidase
8081081	EPHA3	2.4679875	up	EPH receptor A3
8046488	CDCA7	2.4595952	up	cell division cycle associated 7
8108749	PCDHB18	2.4583752	up	protocadherin beta 18 pseudogene
8099897	UGDH	2.4574623	up	UDP-glucose dehydrogenase
7977270	LOC388022	2.456932	up	hypothetical gene supported by AK131040
7992917	CLUAP1	2.4552097	up	clusterin associated protein 1
8176026	FLNA	2.4544795	up	filamin A, alpha (actin binding protein 280)
8138824	SCRN1	2.4541445	up	secernin 1
7977621	NDRG2	2.4539258	up	NDRG family member 2
8105229	PELO ITGA1	2.4500363	up	pelota homolog (Drosophila)   integrin, alpha 1
7968236	RASL11A	2.4498627	up	RAS-like, family 11, member A
8151496	ZNF704	2.447036	up	zinc finger protein 704
7923119	ZBTB41	2.442035	up	zinc finger and BTB domain containing 41
8115196	ZNF300	2.4406602	up	zinc finger protein 300
8165911	TBL1X	2.4394915	up	transducin (beta)-like 1X-linked
7897803	PLOD1 LOC10013	2.4376972	up	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1   hyp
7930194	CNNM2	2.434236	up	cyclin M2
8021695	DOK6	2.4219947	up	docking protein 6
8156278	S1PR3 C9orf47	2.4218514	up	sphingosine-1-phosphate receptor 3   chromosome 9 open
8143772	RARRES2	2.417713	up	retinoic acid receptor responder (tazarotene induced) 2
8086125	LBA1	2.4137568	up	lupus brain antigen 1
7945262	JAM3	2.4121907	up	junctional adhesion molecule 3
7970924	STARD13	2.4070475	up	StAR-related lipid transfer (START) domain containing 13
7979085	PYGL	2.4004998	up	phosphorylase, glycogen; liver (Hers disease, glycogen storage
8175593	IDS	2.4004467	up	iduronate 2-sulfatase (Hunter syndrome)
7903753	GSTM2	2.3924668	up	glutathione S-transferase M2 (muscle)
8138370	ANKMY2	2.3922408	up	ankyrin repeat and MYND domain containing 2

## Supplemental Table 1b

eMSC vs. eEN

8098344	NBLA00301	2.3904407	up	Nbla00301
7925500	CHML	2.3876133	up	choroideremia-like (Rab escort protein 2)
8104570	FAM105A	2.3853912	up	family with sequence similarity 105, member A
8122038	TMEM200A	2.3779905	up	transmembrane protein 200A
8097256	FGF2	2.3770373	up	fibroblast growth factor 2 (basic)
7954899	CNTN1	2.3766263	up	contactin 1
8097356	PLK4	2.3755062	up	polo-like kinase 4 (Drosophila)
7905339	MGC29891	2.3744543	up	
7903565	GPSM2	2.3714767	up	G-protein signaling modulator 2 (AGS3-like, C. elegans)
8151101	MYBL1	2.3698964	up	v-myb myeloblastosis viral oncogene homolog (avian)-like
7940160	DTX4	2.3601065	up	deltex 4 homolog (Drosophila)
8173917	NAP1L3	2.3534753	up	nucleosome assembly protein 1-like 3
8092578	ETV5	2.352916	up	ets variant gene 5 (ets-related molecule)
7923386	LMOD1	2.352422	up	leiomodoin 1 (smooth muscle)
8020183	IMPA2	2.3520787	up	inositol(myo)-1(or 4)-monophosphatase 2
7962000	PTHLH	2.3495505	up	parathyroid hormone-like hormone
7927606	PRKG1	2.348604	up	protein kinase, cGMP-dependent, type I
8020090	TWSG1	2.3455162	up	twisted gastrulation homolog 1 (Drosophila)
7956573	SLC26A10 GEFT	2.344196	up	solute carrier family 26, member 10   RhoA/RAC/CDC42 e
8139131	AMPH	2.340558	up	amphiphysin
8079037	TRAK1	2.3378618	up	trafficking protein, kinesin binding 1
8070194	RUNX1	2.3376195	up	runt-related transcription factor 1 (acute myeloid leukemia)
7929976	RP11-529I10.4	2.3324246	up	deleted in a mouse model of primary ciliary dyskinesia
8101828	TSPAN5	2.3302152	up	tetraspanin 5
8058614	LANCL1	2.3269923	up	LanC lantibiotic synthetase component C-like 1 (bacterial)
7982597	THBS1	2.3249438	up	thrombospondin 1
8133860	GNAI1	2.3194351	up	guanine nucleotide binding protein (G protein), alpha inhibitory
8041206	LBH	2.3172107	up	limb bud and heart development homolog (mouse)
8013753	RAB34	2.3165483	up	
8092707	LEPREL1	2.3147504	up	leprecan-like 1
8040292	GREB1	2.3134553	up	
8006736	DUSP14	2.3132832	up	dual specificity phosphatase 14
8124040	ATXN1	2.311611	up	ataxin 1

## Supplemental Table 1b

eMSC vs. eEN

7983393	SORD	2.3087034	up	sorbitol dehydrogenase
8007828	MAPT	2.3083363	up	microtubule-associated protein tau
7966690	TBX3	2.305589	up	T-box 3 (ulnar mammary syndrome)
8061013	C20orf82	2.305559	up	chromosome 20 open reading frame 82
8094190	CC2D2A	2.304897	up	coiled-coil and C2 domain containing 2A
7917037	CRYZ	2.3039362	up	crystallin, zeta (quinone reductase)
7943376	KIAA1377	2.2945864	up	
7976826	SNORD114-26	2.2927043	up	small nucleolar RNA, C/D box 114-26
8054281	LONRF2	2.2920182	up	LON peptidase N-terminal domain and ring finger 2
7979400	C14orf37	2.2906346	up	chromosome 14 open reading frame 37
8113981	P4HA2	2.290082	up	procollagen-proline, 2-oxoglutarate 4-dioxygenase (prolin
7988789	DMXL2	2.28493	up	Dmx-like 2
8044882	EPB41L5	2.28226	up	erythrocyte membrane protein band 4.1 like 5
8135705	KCND2	2.277837	up	potassium voltage-gated channel, Shal-related subfamily,
8160332	MLLT3	2.2774065	up	myeloid/lymphoid or mixed-lineage leukemia (trithorax ho
8067233	PMEPA1	2.2762015	up	prostate transmembrane protein, androgen induced 1
8099982	APBB2	2.2726645	up	amyloid beta (A4) precursor protein-binding, family B, me
8064978	JAG1	2.2711537	up	jagged 1 (Alagille syndrome)
8145611	FZD3	2.2706816	up	frizzled homolog 3 (Drosophila)
8112746	WDR41	2.2693467	up	WD repeat domain 41
7972682	KDELC1	2.2605104	up	KDEL (Lys-Asp-Glu-Leu) containing 1
8174692		2.2599142	up	septin 6
7963157	RACGAP1	2.2597415	up	Rac GTPase activating protein 1
7922717	RGS16	2.2595677	up	regulator of G-protein signaling 16
7975095	PLEKHG3	2.2593005	up	pleckstrin homology domain containing, family G (with Rh
7976816	SNORD114-3	2.2589717	up	small nucleolar RNA, C/D box 114-3
8102482	SEC24D	2.2560675	up	SEC24 related gene family, member D ( <i>S. cerevisiae</i> )
8117995	TUBB	2.2554436	up	tubulin, beta
8177858	TUBB	2.255005	up	tubulin, beta
8179174	TUBB	2.2549276	up	tubulin, beta
8163839	C5	2.2520294	up	complement component 5
7997712	IRF8	2.2504349	up	interferon regulatory factor 8
7951593	FLJ45803	2.2503383	up	

## Supplemental Table 1b

eMSC vs. eEN

8124280	C6orf32	2.2450812	up	chromosome 6 open reading frame 32
8112615	ENC1	2.24296	up	ectodermal-neural cortex (with BTB-like domain)
8097753	DCLK2	2.2396555	up	doublecortin-like kinase 2
8054580	BUB1	2.236014	up	
7949948	C11orf24	2.2278655	up	chromosome 11 open reading frame 24
8101701	PPM1K	2.224884	up	protein phosphatase 1K (PP2C domain containing)
8067305	SYCP2	2.2178705	up	synaptonemal complex protein 2
7947230	BDNF	2.2159224	up	brain-derived neurotrophic factor
8019964	ARHGAP28	2.2154784	up	Rho GTPase activating protein 28
8145365	DOCK5	2.2130265	up	dedicator of cytokinesis 5
7991335	ANPEP	2.2102418	up	alanyl (membrane) aminopeptidase (aminopeptidase N, a
7947363	WT1	2.2092564	up	Wilms tumor 1
8083757	NMD3	2.207797	up	
8151931	TSPYL5	2.207631	up	TSPY-like 5
7938528	PARVA	2.2067158	up	parvin, alpha
8112841	HOMER1	2.2036126	up	homer homolog 1 (Drosophila)
8130191	RMND1	2.2021904	up	required for meiotic nuclear division 1 homolog (S. cerevisiae)
8046086	LASS6	2.2000744	up	LAG1 homolog, ceramide synthase 6
8127841	PGM3	2.1982107	up	phosphoglucomutase 3
7969179	RNASEH2B	2.191911	up	ribonuclease H2, subunit B
7956401	SHMT2	2.1903126	up	serine hydroxymethyltransferase 2 (mitochondrial)
7975121	FNTB	2.1895485	up	farnesyltransferase, CAAX box, beta
8052762	GFPT1	2.1880841	up	glutamine-fructose-6-phosphate transaminase 1
8034940	NOTCH3	2.1876569	up	Notch homolog 3 (Drosophila)
7965956	NFYB	2.1870158	up	nuclear transcription factor Y, beta
8005132	MEIS3P1	2.1855595	up	Meis homeobox 3 pseudogene 1
7928444	VCL	2.183671	up	vinculin
8134030	STEAP1	2.1814744	up	six transmembrane epithelial antigen of the prostate 1
7923131	DENND1B C1orf2:	2.1806452	up	DENN/MADD domain containing 1B   chromosome 1 open reading frame 2
8106336	SV2C	2.18037	up	synaptic vesicle glycoprotein 2C
8120402	BAG2	2.180336	up	BCL2-associated athanogene 2
7970569	SACS	2.1796408	up	spastic ataxia of Charlevoix-Saguenay (sacsin)
8099172	CRMP1	2.1795685	up	collapsin response mediator protein 1



## Supplemental Table 1b

eMSC vs. eEN

8002403	ABBA-1	2.1794279	up	actin-bundling protein with BAIAP2 homology
8021169	LIPG	2.1779666	up	lipase, endothelial
8171516	RBBP7	2.1747248	up	retinoblastoma binding protein 7
7968417	FRY	2.1722558	up	furry homolog (Drosophila)
8126163	KCNK17	2.1717622	up	potassium channel, subfamily K, member 17
7971104	TRPC4	2.171385	up	transient receptor potential cation channel, subfamily C, r
8022803	FAM59A	2.1708407	up	family with sequence similarity 59, member A
8078650	CTDSPL	2.1691623	up	CTD (carboxy-terminal domain, RNA polymerase II, polype
8058390	RAPH1	2.1635306	up	Ras association (RalGDS/AF-6) and pleckstrin homology do
8167957	ZC3H12B	2.1615007	up	zinc finger CCCH-type containing 12B
7990545	CSPG4	2.159077	up	chondroitin sulfate proteoglycan 4
7908940	ATP2B4	2.155601	up	ATPase, Ca <sup>++</sup> transporting, plasma membrane 4
7922137	NME7	2.1515427	up	non-metastatic cells 7, protein expressed in (nucleoside-d
7999079	ADCY9	2.1489997	up	adenylate cyclase 9
8138489	CDCA7L	2.148699	up	cell division cycle associated 7-like
8067985	NCAM2	2.1449573	up	neural cell adhesion molecule 2
8053668	EIF2AK3	2.14312	up	eukaryotic translation initiation factor 2-alpha kinase 3
8138527	MGC87042	2.1430395	up	similar to Six transmembrane epithelial antigen of prostat
8132055	C7orf41	2.1424356	up	chromosome 7 open reading frame 41
8071768	SMARCB1	2.1403227	up	SWI/SNF related, matrix associated, actin dependent regu
7976812	SNORD113-4	2.139906	up	small nucleolar RNA, C/D box 113-4
8091648	SSR3	2.1392276	up	signal sequence receptor, gamma (translocon-associated
8160718	PTENP1	2.138676	up	phosphatase and tensin homolog (mutated in multiple ad'
8006415	TMEM98	2.1385286	up	transmembrane protein 98
7928171	SGPL1	2.137399	up	sphingosine-1-phosphate lyase 1
7985809	ABHD2	2.1357455	up	abhydrolase domain containing 2
7936041	ARL3	2.1348045	up	ADP-ribosylation factor-like 3
8157233	HSDL2	2.13216	up	hydroxysteroid dehydrogenase like 2
8091354	HLTF	2.129838	up	helicase-like transcription factor
8119898	VEGFA	2.1282637	up	vascular endothelial growth factor A
8063410	PARD6B	2.1260538	up	par-6 partitioning defective 6 homolog beta (C. elegans)
7952490	FEZ1	2.1247118	up	fasciculation and elongation protein zeta 1 (zygin I)
7912292	LZIC	2.1233947	up	leucine zipper and CTNNBIP1 domain containing

## Supplemental Table 1b

eMSC vs. eEN

7976795	MEG3 LOC100131	2.123335	up	maternally expressed 3   hypothetical protein LOC100131
8096771	DC2	2.1214964	up	
8013399	ULK2	2.1192396	up	unc-51-like kinase 2 (C. elegans)
7973336	MMP14	2.1180592	up	matrix metalloproteinase 14 (membrane-inserted)
8170390	IDS LOC727913	2.1177115	up	iduronate 2-sulfatase (Hunter syndrome)   similar to idurc
8043363	C2orf59 LOC5414	2.1143498	up	chromosome 2 open reading frame 59   hypothetical LOC
7904965	PDE4DIP	2.1126711	up	phosphodiesterase 4D interacting protein (myomegalin)
8092691	BCL6	2.1125078	up	B-cell CLL/lymphoma 6 (zinc finger protein 51)
7926821	MASTL	2.109497	up	microtubule associated serine/threonine kinase-like
8106350	NBLA11895	2.1084785	up	putative protein product of Nbla11895
8021129	C18orf23 RNF165	2.104774	up	chromosome 18 open reading frame 23   ring finger prote
8083092	ZBTB38	2.1021607	up	zinc finger and BTB domain containing 38
8142407	TMEM168	2.1017284	up	transmembrane protein 168
8172043	SRPX	2.0981677	up	sushi-repeat-containing protein, X-linked
7940626	SCGB2A1	2.0979328	up	secretoglobin, family 2A, member 1
8165642	TMEM203	2.0959458	up	transmembrane protein 203
8106098	MAP1B	2.0952227	up	microtubule-associated protein 1B
7921099	CRABP2	2.0938404	up	cellular retinoic acid binding protein 2
7974316	FRMD6	2.0901413	up	FERM domain containing 6
7935188	SORBS1	2.0898821	up	sorbin and SH3 domain containing 1
7973709	NFATC4	2.0893679	up	nuclear factor of activated T-cells, cytoplasmic, calcineurir
8172158	CASK	2.0848565	up	calcium/calmodulin-dependent serine protein kinase (MA
8007323	CNTNAP1	2.084573	up	contactin associated protein 1
8042259	MDH1	2.0830748	up	malate dehydrogenase 1, NAD (soluble)
7969665	HS6ST3 LOC100131	2.0826697	up	heparan sulfate 6-O-sulfotransferase 3   similar to hepara
8167815	MAGED2	2.078099	up	melanoma antigen family D, 2
8066716	ELMO2	2.0773559	up	engulfment and cell motility 2
8103399	PDGFC	2.0767581	up	platelet derived growth factor C
8175755	CETN2	2.076162	up	centrin, EF-hand protein, 2
8053484	ST3GAL5	2.074999	up	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
7904131	DCLRE1B	2.0748694	up	DNA cross-link repair 1B (PSO2 homolog, S. cerevisiae)
8068697	MX2	2.0706654	up	myxovirus (influenza virus) resistance 2 (mouse)
7950671	GAB2	2.06765	up	GRB2-associated binding protein 2

Supplemental Table 1b  
eMSC vs. eEN

7909142	LOC100130123 N	2.066897	up	PRO2870   nuclear casein kinase and cyclin-dependent kir
8089714	LSAMP	2.066814	up	limbic system-associated membrane protein
8170119	FHL1	2.0666223	up	four and a half LIM domains 1
8101839	EIF4E	2.0636563	up	eukaryotic translation initiation factor 4E
8105348	LOC493869	2.062975	up	similar to RIKEN cDNA 2310016C16
8042830	MTHFD2	2.0613186	up	methylenetetrahydrofolate dehydrogenase (NADP+ deper
8115814	SH3PXD2B	2.0609057	up	SH3 and PX domains 2B
8091537	IGSF10	2.0603764	up	immunoglobulin superfamily, member 10
8014233	SLFN11	2.0559113	up	schlafen family member 11
8111490	PRLR	2.0544977	up	prolactin receptor
8070557	ZNF295	2.0538585	up	zinc finger protein 295
8126839	TNFRSF21	2.0537121	up	tumor necrosis factor receptor superfamily, member 21
8108744	PCDHB14	2.0533898	up	protocadherin beta 14
8174103	GK GK3P	2.0532682	up	glycerol kinase   glycerol kinase 3 pseudogene
7907893	MR1	2.0506814	up	major histocompatibility complex, class I-related
8160168	FREM1	2.0502744	up	FRAS1 related extracellular matrix 1
7963880	ITGA7	2.0499918	up	integrin, alpha 7
8049187	EFHD1	2.0491438	up	EF-hand domain family, member D1
8068105	BACH1	2.045707	up	BTB and CNC homology 1, basic leucine zipper transcriptic
7927146	CSGALNACT2	2.0429697	up	chondroitin sulfate N-acetylgalactosaminyltransferase 2
8108688	PCDHB3	2.0421216	up	protocadherin beta 3
7914648	PHC2	2.041176	up	polyhomeotic homolog 2 (Drosophila)
8145865	GPR124	2.0407686	up	G protein-coupled receptor 124
8055096	AMMECR1L	2.0346012	up	AMME chromosomal region gene 1-like
8100318	SGCB	2.0342505	up	sarcoglycan, beta (43kDa dystrophin-associated glycoprot
8076355	PMM1	2.033128	up	phosphomannomutase 1
8017927	ABCA9	2.0324588	up	ATP-binding cassette, sub-family A (ABC1), member 9
8120043	RUNX2	2.0308304	up	runt-related transcription factor 2
8034342	ZNF625 ZNF20	2.028837	up	zinc finger protein 625   zinc finger protein 20
8146967	CRISPLD1	2.0283432	up	cysteine-rich secretory protein LCCL domain containing 1
7950743	RAB30	2.028309	up	
7971922	PCDH9	2.028291	up	protocadherin 9
8046530	HOXD11	2.0266235	up	homeobox D11

## Supplemental Table 1b

eMSC vs. eEN

7943442	DYNC2H1	2.0263352	up	dynein, cytoplasmic 2, heavy chain 1
7969736	FARP1	2.0248146	up	FERM, RhoGEF (ARHGEF) and pleckstrin domain protein 1
7995681	MMP2	2.0231397	up	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase
7919642	HIST2H2AB	2.0205243	up	histone cluster 2, H2ab
8169015	TCEAL7	2.0197153	up	transcription elongation factor A (SII)-like 7
8096675	TET2	2.0139556	up	tet oncogene family member 2
8029693	FOSB	2.01055	up	FBJ murine osteosarcoma viral oncogene homolog B
7989661	OAZ2	2.0074828	up	ornithine decarboxylase antizyme 2
8096669	TET2	2.0072231	up	tet oncogene family member 2
8001133	SHCBP1	2.0064428	up	SHC SH2-domain binding protein 1
8155754	MAMDC2	2.0047696	up	MAM domain containing 2
8126402	TRERF1	2.004398	up	transcriptional regulating factor 1
8124397	HIST1H1C	2.0036356	up	histone cluster 1, H1c
8047161	OBFC2A	2.0011382	up	oligonucleotide/oligosaccharide-binding fold containing 2.
8034227	RGL3	2.000977	up	ral guanine nucleotide dissociation stimulator-like 3
7904000	DDX20	2.0002663	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 20
8072626	TIMP3	1.9996583	up	TIMP metalloproteinase inhibitor 3 (Sorsby fundus dystrop
8156581	C9orf102	1.9985563	up	chromosome 9 open reading frame 102
8058221	TRAK2	1.9938765	up	trafficking protein, kinesin binding 2
7954312	SLCO1C1	1.9892976	up	solute carrier organic anion transporter family, member 1
8083223	C3orf58	1.9888023	up	chromosome 3 open reading frame 58
8041853	TACSTD1	1.9872744	up	tumor-associated calcium signal transducer 1
8167125	USP11	1.9853976	up	ubiquitin specific peptidase 11
8106743	VCAN	1.9846511	up	versican
8041179	CLIP4	1.9838941	up	CAP-GLY domain containing linker protein family, member
7909285	PFKFB2	1.9827803	up	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2
8081386	NFKBIZ	1.981119	up	nuclear factor of kappa light polypeptide gene enhancer ii
8084955	PIGX	1.9794303	up	phosphatidylinositol glycan anchor biosynthesis, class X
7923731	RIPK5	1.9793913	up	receptor interacting protein kinase 5
7990657	TBC1D2B	1.9791007	up	TBC1 domain family, member 2B
7997582	WFDC1	1.978806	up	WAP four-disulfide core domain 1
8054611	C2orf59 LOC5414	1.977809	up	chromosome 2 open reading frame 59   hypothetical LOC
7932227	NMT2	1.9764775	up	N-myristoyltransferase 2

## Supplemental Table 1b

eMSC vs. eEN

8120222	EFHC1	1.9753001	up	EF-hand domain (C-terminal) containing 1
8106280	HMGCR	1.9751363	up	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
7929026	LOC100132116	1.970656	up	
8136347	CALD1	1.9683148	up	caldesmon 1
7991216	DET1	1.9675393	up	de-etiolated homolog 1 (Arabidopsis)
8068620	SH3BGR	1.9655517	up	SH3 domain binding glutamic acid-rich protein
8035896	TSHZ3	1.9643707	up	teashirt zinc finger homeobox 3
8018754	CYGB	1.9640734	up	cytoglobin
7990643	LINGO1	1.9638884	up	leucine rich repeat and Ig domain containing 1
8155121	NPR2	1.9623313	up	natriuretic peptide receptor B/guanylate cyclase B (atrioventricular node)
7947681	ARHGAP1	1.9616666	up	Rho GTPase activating protein 1
8085788	NKIRAS1	1.9586078	up	NFKB inhibitor interacting Ras-like 1
8107850	CHSY3	1.9577262	up	chondroitin sulfate synthase 3
8108697	PCDHB5	1.956867	up	protocadherin beta 5
7959638	TCTN2	1.9567004	up	tectonic family member 2
8109528	CYFIP2	1.9564378	up	cytoplasmic FMR1 interacting protein 2
8146544	LOC137886	1.956064	up	
8163618	TNFSF15	1.9543116	up	tumor necrosis factor (ligand) superfamily, member 15
8111136	FAM134B	1.9533916	up	family with sequence similarity 134, member B
7933821	RHOBTB1	1.9525049	up	Rho-related BTB domain containing 1
7949503	EFEMP2	1.9521787	up	EGF-containing fibulin-like extracellular matrix protein 2
7986214	SLCO3A1	1.9519105	up	solute carrier organic anion transporter family, member 3
7939298	CAT	1.9516828	up	catalase
7936516	HSPA12A	1.9510367	up	heat shock 70kDa protein 12A
8106494	BHMT2	1.9507045	up	betaine-homocysteine methyltransferase 2
7986757	NDN	1.9454069	up	necdin homolog (mouse)
8083978	NAALADL2	1.9453716	up	N-acetylated alpha-linked acidic dipeptidase-like 2
8034130	KANK2	1.9437175	up	KN motif and ankyrin repeat domains 2
8156604	C9orf102	1.9416178	up	chromosome 9 open reading frame 102
8089743	B4GALT4	1.9408283	up	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide chain 4
8129254	MAN1A1	1.9383783	up	mannosidase, alpha, class 1A, member 1
8115651	GABRB2	1.9368081	up	gamma-aminobutyric acid (GABA) A receptor, beta 2
7995755	OGFOD1	1.9359403	up	2-oxoglutarate and iron-dependent oxygenase domain containing 1

## Supplemental Table 1b

eMSC vs. eEN

8008646	SCPEP1	1.9340013	up	serine carboxypeptidase 1
7938364	WEE1	1.9339514	up	
7982564	SPRED1	1.9335378	up	sprouty-related, EVH1 domain containing 1
7923141	DENND1B C1orf2:	1.931413	up	DENN/MADD domain containing 1B   chromosome 1 open
8021286	C18orf54	1.92882	up	chromosome 18 open reading frame 54
8046685	UBE2E3 UBE2E4P	1.928486	up	ubiquitin-conjugating enzyme E2E 3 (UBC4/5 homolog, ye
8115490	ADAM19	1.9275628	up	ADAM metallopeptidase domain 19 (meltrin beta)
8113641	CDO1	1.9251683	up	cysteine dioxygenase, type I
8120378	KIAA1586	1.9248428	up	
7907657	RALGPS2	1.9208546	up	Ral GEF with PH domain and SH3 binding motif 2
7971296	EPST11	1.920057	up	epithelial stromal interaction 1 (breast)
8042519	PCYOX1	1.9198077	up	prenylcysteine oxidase 1
8102342	ELOVL6	1.9194882	up	ELOVL family member 6, elongation of long chain fatty aci
8128991	LAMA4	1.919327	up	laminin, alpha 4
7952268	THY1	1.9176445	up	Thy-1 cell surface antigen
7951217	MMP7	1.9167758	up	matrix metallopeptidase 7 (matrilysin, uterine)
7936115	SH3PXD2A	1.9163363	up	SH3 and PX domains 2A
8022559	ANKRD29	1.9154146	up	ankyrin repeat domain 29
8049044	ARMC9	1.9152422	up	armadillo repeat containing 9
7959827	TMEM132C	1.9150875	up	transmembrane protein 132C
7970844	KATNAL1	1.914855	up	katanin p60 subunit A-like 1
8084794	IL1RAP	1.9134887	up	interleukin 1 receptor accessory protein
8146921	RDH10	1.9108905	up	retinol dehydrogenase 10 (all-trans)
8096753	HADH	1.9089295	up	hydroxyacyl-Coenzyme A dehydrogenase
8134051	FLJ21062	1.9087057	up	
7951535	KDEL2	1.9082066	up	KDEL (Lys-Asp-Glu-Leu) containing 2
7925257	LYST	1.9075414	up	lysosomal trafficking regulator
8021275	POLI	1.906689	up	polymerase (DNA directed) iota
7964522	CDK4	1.9029464	up	cyclin-dependent kinase 4
8156263	SPIN1	1.901868	up	spindlin 1
7944869	SPA17	1.8973817	up	sperm autoantigenic protein 17
8112302	DKFZP686E2158	1.8928131	up	hypothetical protein LOC643155
8156919	MURC	1.890882	up	muscle-restricted coiled-coil protein

## Supplemental Table 1b

eMSC vs. eEN

8116272	ADAMTS2	1.8871129	up	ADAM metallopeptidase with thrombospondin type 1 mo
8141459	GAL3ST4	1.8857996	up	galactose-3-O-sulfotransferase 4
8167185	TIMP1	1.8845903	up	TIMP metallopeptidase inhibitor 1
8101260	ANTXR2	1.883315	up	anthrax toxin receptor 2
8056257	FAP	1.8821706	up	fibroblast activation protein, alpha
7902687	CYR61	1.8815765	up	cysteine-rich, angiogenic inducer, 61
8106556	CMYA5	1.8803809	up	cardiomyopathy associated 5
7954469	RASSF8	1.8802737	up	Ras association (RalGDS/AF-6) domain family (N-terminal)
7968577	NBEA	1.8792051	up	neurobeachin
7965964	SLC41A2	1.8785399	up	solute carrier family 41, member 2
8002492	HYDIN HYDIN2	1.8742002	up	hydrocephalus inducing homolog (mouse)   hydrocephalu
8108720	PCDHB9	1.874148	up	protocadherin beta 9
8103260	DCHS2	1.8692164	up	dachsous 2 (Drosophila)
7912750	FBXO42	1.8681229	up	F-box protein 42
8121319	SOBP	1.8681097	up	sine oculis binding protein homolog (Drosophila)
8128737	MICAL1	1.8679926	up	microtubule associated monooxygenase, calponin and LIM
8139500	TNS3	1.8678768	up	tensin 3
8173217	ARHGEF9	1.8678054	up	Cdc42 guanine nucleotide exchange factor (GEF) 9
7974461	LGALS3	1.8635132	up	lectin, galactoside-binding, soluble, 3
8064766	RNF24	1.862141	up	ring finger protein 24
8143629	OR2A9P OR2A20F	1.8619837	up	olfactory receptor, family 2, subfamily A, member 9 pseuc
8108127	CAMLG	1.8584838	up	calcium modulating ligand
7977674	SUPT16H	1.8575556	up	suppressor of Ty 16 homolog (S. cerevisiae)
8131815	KLHL7	1.8550254	up	kelch-like 7 (Drosophila)
8133938	CROT	1.85486	up	carnitine O-octanoyltransferase
8110147	C5orf25	1.8539087	up	chromosome 5 open reading frame 25
8047659	ABI2	1.8535181	up	abl interactor 2
8023646	BCL2	1.852345	up	B-cell CLL/lymphoma 2
8026490	UCA1	1.8515705	up	urothelial cancer associated 1
7936871	OAT	1.8501805	up	ornithine aminotransferase (gyrate atrophy)
8158739	LAMC3	1.8490595	up	laminin, gamma 3
8157246	KIAA1958	1.8446517	up	
7961798	SOX5	1.8421392	up	SRY (sex determining region Y)-box 5

## Supplemental Table 1b

eMSC vs. eEN

8162039	C9orf64	1.8414762	up	chromosome 9 open reading frame 64
7960362	UNQ3104	1.8406576	up	ACAH3104
8130211	SYNE1 C6orf98	1.8392072	up	spectrin repeat containing, nuclear envelope 1   chromos
7918026	EXTL2	1.8344102	up	exostoses (multiple)-like 2
7904907	BCL9	1.8339018	up	B-cell CLL/lymphoma 9
8036341	ZNF461	1.8324908	up	zinc finger protein 461
7972239	SLITRK6	1.8301932	up	SLIT and NTRK-like family, member 6
8172395	SSX10 LOC10013C	1.8273444	up	synovial sarcoma, X breakpoint 10   similar to Synovial sar
8141016	TFPI2	1.8267922	up	tissue factor pathway inhibitor 2
8043278	MRPL35	1.824404	up	mitochondrial ribosomal protein L35
8152703	FBXO32	1.8217536	up	F-box protein 32
7960744	C1R	1.8198911	up	complement component 1, r subcomponent
8062971	DBNDD2 SYS1-DB	1.8182806	up	dysbindin (dystrobrevin binding protein 1) domain contain
7955078	PFKM	1.8180363	up	phosphofructokinase, muscle
7928471	ADK	1.8176742	up	adenosine kinase
8081503	DZIP3	1.817449	up	DAZ interacting protein 3, zinc finger
7951910	BACE1	1.8172195	up	beta-site APP-cleaving enzyme 1
8078252	UBE2E2	1.8150783	up	ubiquitin-conjugating enzyme E2E 2 (UBC4/5 homolog, ye
8086451	HIGD1A	1.8134251	up	HIG1 domain family, member 1A
8055445	DARS	1.8116426	up	aspartyl-tRNA synthetase
8001800	CDH11	1.8109806	up	cadherin 11, type 2, OB-cadherin (osteoblast)
8138749	HOXA9	1.8083297	up	homeobox A9
8112803	LHFPL2	1.8080331	up	lipoma HMGIC fusion partner-like 2
8083240	AGTR1	1.8078641	up	angiotensin II receptor, type 1
8126860	MUT	1.8076712	up	methylmalonyl Coenzyme A mutase
8145454	BNIP3L LOC44025	1.807234	up	BCL2/adenovirus E1B 19kDa interacting protein 3-like   sin
8121489	AMD1	1.806326	up	adenosylmethionine decarboxylase 1
8052269	CCDC88A	1.8046559	up	coiled-coil domain containing 88A
8091723	RARRES1	1.8021963	up	retinoic acid receptor responder (tazarotene induced) 1
8083523	GMPS	1.80126	up	guanine monphosphate synthetase
8149629	GFRA2	1.7988825	up	GDNF family receptor alpha 2
7902913	CDC7	1.7982246	up	cell division cycle 7 homolog (S. cerevisiae)
8166098	RAB9A	1.797892	up	



## Supplemental Table 1b

eMSC vs. eEN

8154100	VLDLR	1.7956	up	very low density lipoprotein receptor
7917347	DDAH1	1.7948732	up	dimethylarginine dimethylaminohydrolase 1
7927288	FAM35A	1.7941909	up	family with sequence similarity 35, member A
8108737	PCDHB13	1.7940896	up	protocadherin beta 13
7980044	PNMA1	1.7927135	up	paraneoplastic antigen MA1
7962013	ERGIC2	1.7919627	up	ERGIC and golgi 2
8121392	C6orf182 C6orf18	1.7910508	up	chromosome 6 open reading frame 182   chromosome 6 open reading frame 18
8094778	UCHL1	1.7901353	up	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)
8081277	NIT2	1.787144	up	nitrilase family, member 2
8128837	C6orf186 DDO	1.7870835	up	chromosome 6 open reading frame 186   D-aspartate oxidase
8101376	SEC31A	1.7857769	up	SEC31 homolog A ( <i>S. cerevisiae</i> )
8122827	C6orf97	1.7854165	up	chromosome 6 open reading frame 97
8101489	CCDC98	1.7848489	up	coiled-coil domain containing 98
8100578	EPHA5	1.7830865	up	EPH receptor A5
7939376	LDLRAD3	1.7804433	up	low density lipoprotein receptor class A domain containing 3
8021442	ZNF532	1.7752503	up	zinc finger protein 532
7928491	MYST4	1.7721095	up	MYST histone acetyltransferase (monocytic leukemia) 4
8174076	GLA	1.7713312	up	galactosidase, alpha
7938154	ILK ILK-2	1.7705803	up	integrin-linked kinase   integrin-linked kinase-2
8007745	HEXIM1	1.7701719	up	hexamethylene bis-acetamide inducible 1
8095760	THAP6	1.7697685	up	THAP domain containing 6
8061305	C20orf19	1.7685155	up	chromosome 20 open reading frame 19
8132151	ADCYAP1R1	1.7683165	up	adenylate cyclase activating polypeptide 1 (pituitary) receptor 1
8033233	TUBB4	1.7680738	up	tubulin, beta 4
8108716	PCDHB16	1.7671975	up	protocadherin beta 16
8068100	C21orf109	1.7655448	up	chromosome 21 open reading frame 109
7954029	CDKN1B	1.7648859	up	cyclin-dependent kinase inhibitor 1B (p27, Kip1)
8160284	FAM29A	1.7647337	up	family with sequence similarity 29, member A
8096411	TIGD2	1.7641861	up	tigger transposable element derived 2
8067932	C21orf34	1.7640496	up	chromosome 21 open reading frame 34
7907466	DARS2	1.7638948	up	aspartyl-tRNA synthetase 2, mitochondrial
8094609	FAM114A1	1.7610214	up	family with sequence similarity 114, member A1
7918223	C1orf59	1.7606351	up	chromosome 1 open reading frame 59

## Supplemental Table 1b

eMSC vs. eEN

8133818	PHTF2	1.7596807	up	putative homeodomain transcription factor 2
7939314	EHF	1.75848	up	ets homologous factor
8020898	ZNF271	1.7578791	up	zinc finger protein 271
7923453	JARID1B	1.756447	up	jumonji, AT rich interactive domain 1B
8042737	ALMS1	1.7542024	up	Alstrom syndrome 1
7929689	MARVELD1	1.7530203	up	MARVEL domain containing 1
8114653	TAF7	1.7515823	up	
8036252	CLIP3	1.7498376	up	CAP-GLY domain containing linker protein 3
8042270	UGP2	1.7472484	up	UDP-glucose pyrophosphorylase 2
8030007	EMP3	1.7469544	up	epithelial membrane protein 3
8040365	TRIB2	1.7464998	up	tribbles homolog 2 (Drosophila)
7927799	REEP3	1.745845	up	receptor accessory protein 3
7939137	EIF3M	1.7457753	up	eukaryotic translation initiation factor 3, subunit M
8077513	THUMPD3	1.7436866	up	THUMP domain containing 3
7934278	P4HA1	1.7431874	up	procollagen-proline, 2-oxoglutarate 4-dioxygenase (prolin
7936567	RAB11FIP2	1.7419652	up	RAB11 family interacting protein 2 (class I)
8161056	TLN1	1.741661	up	talin 1
7909027	NFASC	1.7388827	up	neurofascin homolog (chicken)
7977497	CCNB1IP1	1.7388226	up	cyclin B1 interacting protein 1
8116859	TMEM14C	1.7383395	up	transmembrane protein 14C
7984813	ISLR	1.738146	up	immunoglobulin superfamily containing leucine-rich repe
8122660	UST	1.7381421	up	uronyl-2-sulfotransferase
7899939	GJA4	1.7357072	up	gap junction protein, alpha 4, 37kDa
8156601	C9orf102	1.7336236	up	chromosome 9 open reading frame 102
8095139	SRD5A3	1.7334881	up	steroid 5 alpha-reductase 3
8008969	TBX2	1.7321483	up	T-box 2
7976160	TDP1	1.7314787	up	tyrosyl-DNA phosphodiesterase 1
7925229	B3GALNT2	1.7298194	up	beta-1,3-N-acetylgalactosaminyltransferase 2
8171837	KLHL15	1.7265447	up	kelch-like 15 (Drosophila)
7922268	KIFAP3	1.725297	up	kinesin-associated protein 3
8127854	ME1	1.7252966	up	malic enzyme 1, NADP(+)-dependent, cytosolic
8089759	TMEM39A	1.7215698	up	transmembrane protein 39A
7974229	KLHDC2	1.7214189	up	kelch domain containing 2

## Supplemental Table 1b

eMSC vs. eEN

8122348	VTA1	1.7213922	up	Vps20-associated 1 homolog ( <i>S. cerevisiae</i> )
8094456	LOC389203	1.720245	up	hypothetical gene supported by BC032431
8008564	OK/KNS-CL.3	1.7196785	up	
7914218	TAF12	1.7195872	up	
8126135	GLO1	1.718371	up	glyoxalase I
7917199	TTLL7	1.7171491	up	tubulin tyrosine ligase-like family, member 7
8145055	BMP1	1.716725	up	bone morphogenetic protein 1
8044133	NCK2	1.7151567	up	NCK adaptor protein 2
8121601	FAM26E	1.7150546	up	family with sequence similarity 26, member E
8090277	OSBPL11	1.7137263	up	oxysterol binding protein-like 11
7968516	PDS5B	1.7135239	up	PDS5, regulator of cohesion maintenance, homolog B ( <i>S. c</i>
8142194	LAMB1	1.7126809	up	laminin, beta 1
8091446	PFN2	1.7104732	up	profilin 2
8172035	DYNLT3	1.7099148	up	dynein, light chain, Tctex-type 3
8117594	HIST1H2BM	1.7088492	up	histone cluster 1, H2bm
7945245	HNT	1.7078651	up	neurotrimin
8091078	RBP1	1.7074453	up	retinol binding protein 1, cellular
7933933	DNAJC12	1.7072235	up	DnaJ (Hsp40) homolog, subfamily C, member 12
8120239	TMEM14A	1.7055631	up	transmembrane protein 14A
7973826	NUBPL	1.7038541	up	nucleotide binding protein-like
7970624	CENPJ	1.7034634	up	centromere protein J
8121927	RNF146	1.7032088	up	ring finger protein 146
7918622	SLC16A1	1.7026842	up	solute carrier family 16, member 1 (monocarboxylic acid t
8040655	SELI	1.7026229	up	selenoprotein I
8037430	ZNF404	1.7021723	up	zinc finger protein 404
8001423	RPGRIP1L	1.7011544	up	RPGRIP1-like
8061227	SLC24A3	1.7010183	up	solute carrier family 24 (sodium/potassium/calcium excha
8042942	HK2	1.6995534	up	hexokinase 2
8122818	C6orf211	1.6989648	up	chromosome 6 open reading frame 211
8097388	LARP2	1.6981344	up	La ribonucleoprotein domain family, member 2
7952205	MCAM	1.6960707	up	melanoma cell adhesion molecule
8018966	TIMP2	1.6940337	up	TIMP metalloproteinase inhibitor 2
8127094	GSTA4	1.6939518	up	glutathione S-transferase A4

## Supplemental Table 1b

eMSC vs. eEN

7957570	PLXNC1	1.6937612	up	plexin C1
8154416	C9orf93	1.6920223	up	chromosome 9 open reading frame 93
8097529	ELMOD2	1.6919516	up	ELMO/CED-12 domain containing 2
7927876	TET1	1.6905663	up	tet oncogene 1
8168589	ZNF711	1.6892453	up	zinc finger protein 711
8023497	ATP8B1	1.6875529	up	ATPase, class I, type 8B, member 1
7958211	C12orf45	1.6873863	up	chromosome 12 open reading frame 45
7922162	SLC19A2	1.6842902	up	solute carrier family 19 (thiamine transporter), member 2
8097867	KIAA0922	1.6840934	up	
8074168	FLJ39632	1.683421	up	hypothetical LOC642477
7961440	FLJ22662	1.6834149	up	
8120431	PTP4A1	1.683054	up	protein tyrosine phosphatase type IVA, member 1
7932554	ARHGAP21	1.6825569	up	Rho GTPase activating protein 21
8138602	DFNA5	1.6825422	up	deafness, autosomal dominant 5
8061035	MACROD2	1.682076	up	MACRO domain containing 2
7977452	FLJ39632	1.6819807	up	hypothetical LOC642477
8024111	CNN2	1.6809051	up	calponin 2
8088491	CADPS	1.6795446	up	Ca <sup>2+</sup> -dependent secretion activator
7928671	C10orf57	1.6780819	up	chromosome 10 open reading frame 57
8026407	SYDE1	1.6766487	up	synapse defective 1, Rho GTPase, homolog 1 (C. elegans)
8156897	C9orf30 TMEFF1	1.6755042	up	chromosome 9 open reading frame 30   transmembrane
7962058	TMTC1	1.6753321	up	transmembrane and tetratricopeptide repeat containing 1
8086555	LZTFL1	1.6750239	up	leucine zipper transcription factor-like 1
8099121	STX18	1.6746379	up	syntaxin 18
8042223	EHBP1	1.674521	up	EH domain binding protein 1
8100145	COMMD8	1.6742675	up	COMM domain containing 8
7962312	ABCD2	1.674267	up	ATP-binding cassette, sub-family D (ALD), member 2
8047127	MYO1B	1.6724898	up	myosin IB
8082869	PPP2R3A	1.669564	up	protein phosphatase 2 (formerly 2A), regulatory subunit B
8103092	LOC100129572	1.6691438	up	
8121144	MANEA	1.6691283	up	mannosidase, endo-alpha
8113773	ALDH7A1	1.6690428	up	aldehyde dehydrogenase 7 family, member A1
8169145	MUM1L1	1.668662	up	melanoma associated antigen (mutated) 1-like 1

## Supplemental Table 1b

eMSC vs. eEN

8148280	SQLE	1.6663609	up	squalene epoxidase
7911155	SCCPDH	1.6659365	up	saccharopine dehydrogenase (putative)
8013341	MFAP4	1.6658857	up	microfibrillar-associated protein 4
7971159	TNAP	1.6656728	up	TRAFs and NIK-associated protein
7962375	PRICKLE1	1.6605753	up	prickle homolog 1 (Drosophila)
7971486	C13orf18 LOC728	1.6586143	up	chromosome 13 open reading frame 18   hypothetical LO
7933186	ZNF32	1.6583251	up	zinc finger protein 32
7939411	C11orf74	1.6568905	up	chromosome 11 open reading frame 74
8046020	SCN2A	1.6549723	up	sodium channel, voltage-gated, type II, alpha subunit
7983763	MAPK6	1.653764	up	mitogen-activated protein kinase 6
8107942	RAD50	1.6534342	up	
8148124	MTBP	1.6529944	up	Mdm2, transformed 3T3 cell double minute 2, p53 binding
7936673	RGS10	1.6529828	up	regulator of G-protein signaling 10
8106393	F2R	1.6507386	up	coagulation factor II (thrombin) receptor
7983191	ADAL	1.650393	up	adenosine deaminase-like
8167973	HEPH	1.650063	up	hephaestin
8102214	PAPSS1	1.6498452	up	3'-phosphoadenosine 5'-phosphosulfate synthase 1
7932796	SVIL	1.6488696	up	supervillin
8112967	TMEM167	1.6481348	up	transmembrane protein 167
8152222	AZIN1	1.6475309	up	antizyme inhibitor 1
8147580	VPS13B	1.6456735	up	vacuolar protein sorting 13 homolog B (yeast)
7918255	CLCC1	1.6454108	up	chloride channel CLIC-like 1
8027402	CCNE1	1.6439681	up	cyclin E1
8006820	LASP1	1.6437551	up	LIM and SH3 protein 1
8066513	SDC4	1.6428791	up	syndecan 4
8047784	ZDBF2	1.642878	up	zinc finger, DBF-type containing 2
7958000	CHPT1	1.6428202	up	choline phosphotransferase 1
8123274	MAP3K4	1.6426394	up	mitogen-activated protein kinase kinase kinase 4
8059708	SNORA75	1.6413705	up	small nucleolar RNA, H/ACA box 75
8131205	SDK1	1.641338	up	sidekick homolog 1, cell adhesion molecule (chicken)
8069574	C21orf91	1.641065	up	chromosome 21 open reading frame 91
7908988	SNRPE	1.6410167	up	small nuclear ribonucleoprotein polypeptide E
7956856	MSRB3	1.6408082	up	methionine sulfoxide reductase B3

## Supplemental Table 1b

eMSC vs. eEN

8147019	C8orf70	1.6404066	up	chromosome 8 open reading frame 70
8167027	RGN	1.6376361	up	regucalcin (senescence marker protein-30)
8098870	SPON2	1.637176	up	spondin 2, extracellular matrix protein
8097435	C4orf33	1.6348909	up	chromosome 4 open reading frame 33
8094342	C4orf28	1.6336658	up	chromosome 4 open reading frame 28
7969288	OLFM4	1.6335306	up	olfactomedin 4
8162373	OGN	1.6329194	up	osteoglycin
7925954	NET1	1.6328648	up	neuroepithelial cell transforming gene 1
7908732	IPO9	1.632182	up	importin 9
7919619	HIST2H2AA3   HIST	1.6316295	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   histo
7952069	C11orf60	1.631596	up	chromosome 11 open reading frame 60
7969576	MIRHG1	1.6313314	up	microRNA host gene (non-protein coding) 1
8159850	FLJ35024	1.6311772	up	hypothetical LOC401491
8111286	RNASEN	1.6304736	up	ribonuclease type III, nuclear
7905079	HIST2H2AA3   HIST	1.6304048	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
7903803	AHCYL1	1.6289908	up	S-adenosylhomocysteine hydrolase-like 1
7932132	FRMD4A	1.6287345	up	FERM domain containing 4A
8041519	FAM82A	1.6280527	up	family with sequence similarity 82, member A
7961891	BHLHB3	1.6277673	up	basic helix-loop-helix domain containing, class B, 3
7987642	NDUFAF1	1.6273612	up	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, c
8152491	EXT1	1.6250218	up	exostoses (multiple) 1
8112081	DHX29	1.6244116	up	DEAH (Asp-Glu-Ala-His) box polypeptide 29
8169073	MGC39900   H2BF	1.6243275	up	thymosin beta15b   H2B histone family, member X, pseud
7900395	RLF	1.6231469	up	rearranged L-myc fusion
8152962	LRRC6	1.6223933	up	leucine rich repeat containing 6
8056327	GRB14	1.6213012	up	growth factor receptor-bound protein 14
7938348	WEE1	1.6201704	up	
7962327	SLC2A13	1.6196272	up	solute carrier family 2 (facilitated glucose transporter), me
8116494	ZFP62	1.6195779	up	zinc finger protein 62 homolog (mouse)
8066074	DSN1	1.6195143	up	
7955063	TMEM106C	1.6168102	up	transmembrane protein 106C
8158183	DNM1	1.6137059	up	dynamin 1
8138834	FKBP14	1.613186	up	FK506 binding protein 14, 22 kDa

## Supplemental Table 1b

eMSC vs. eEN

8129482	SAMD3	1.6121933	up	sterile alpha motif domain containing 3
8107632	SNX24	1.6115464	up	sorting nexin 24
8157092	TMEM38B	1.6106011	up	transmembrane protein 38B
7972369	UGCGL2	1.6094555	up	UDP-glucose ceramide glucosyltransferase-like 2
7979204	FERMT2	1.6086732	up	fermitin family homolog 2 (Drosophila)
7958346	C12orf23	1.6085316	up	chromosome 12 open reading frame 23
8051928	PREPL	1.608386	up	prolyl endopeptidase-like
8051864	hCG_1645220	1.6073661	up	hCG1645220
7925480	FH	1.603454	up	fumarate hydratase
8096314	PKD2	1.6030371	up	polycystic kidney disease 2 (autosomal dominant)
7922104	GCSH LOC730107	1.601196	up	glycine cleavage system protein H (aminomethyl carrier)
8010161	9-Sep	1.6004138	up	septin 9
8132557	AEBP1	1.599827	up	AE binding protein 1
8129497	EPB41L2	1.5994246	up	erythrocyte membrane protein band 4.1-like 2
7953200	CCND2	1.5992266	up	cyclin D2
8043909	NPAS2	1.5987662	up	neuronal PAS domain protein 2
8132399	C7orf36	1.5979302	up	chromosome 7 open reading frame 36
8112388	TRIM23	1.5977955	up	tripartite motif-containing 23
7904693	FLJ21272	1.5976168	up	
8174235	TCEAL5	1.5975618	up	transcription elongation factor A (SII)-like 5
7993458	C16orf45	1.5975238	up	chromosome 16 open reading frame 45
7924166	BATF3	1.5971713	up	basic leucine zipper transcription factor, ATF-like 3
8046502	SCRN3	1.5971017	up	secernin 3
8085033	LMLN	1.5970654	up	leishmanolysin-like (metallopeptidase M8 family)
8083000	FAIM	1.595031	up	Fas apoptotic inhibitory molecule
8113726	PPIC	1.5946329	up	peptidylprolyl isomerase C (cyclophilin C)
8124531	HIST1H3I HIST1H2	1.5934799	up	histone cluster 1, H3i   histone cluster 1, H2bn   histone c
8041676	DYNC2LI1	1.5931473	up	dynein, cytoplasmic 2, light intermediate chain 1
7965156	LIN7A	1.5924194	up	lin-7 homolog A (C. elegans)
7954388	GOLT1B	1.5916829	up	golgi transport 1 homolog B (S. cerevisiae)
8091737	IFT80	1.5907187	up	intraflagellar transport 80 homolog (Chlamydomonas)
7965918	NT5DC3	1.590668	up	5'-nucleotidase domain containing 3
8097307	INTU	1.5889112	up	inturned planar cell polarity effector homolog (Drosophila)

## Supplemental Table 1b

eMSC vs. eEN

7933092	ZNF248	1.5882683	up	zinc finger protein 248
7951077	SESN3	1.587949	up	sestrin 3
8113097	KIAA0825	1.5869929	up	
8144726	TUSC3	1.5859534	up	tumor suppressor candidate 3
8089867	RABL3	1.5858407	up	RAB, member of RAS oncogene family-like 3
7944493	CBL	1.5856375	up	Cas-Br-M (murine) ecotropic retroviral transforming sequ
7910680	GPR137B	1.58441	up	G protein-coupled receptor 137B
8065248	LOC100130264	1.5838599	up	similar to hCG2038397
7938890	PRMT3	1.5838358	up	protein arginine methyltransferase 3
7980547	SEL1L	1.5836039	up	sel-1 suppressor of lin-12-like ( <i>C. elegans</i> )
8102713	NUDT6	1.5833395	up	nudix (nucleoside diphosphate linked moiety X)-type moti
8075310	LIF	1.5817744	up	leukemia inhibitory factor (cholinergic differentiation fact
7971124	UFM1	1.578302	up	ubiquitin-fold modifier 1
8147101	E2F5	1.5764525	up	E2F transcription factor 5, p130-binding
7977409	CRIP1 LOC100127	1.5750898	up	cysteine-rich protein 1 (intestinal)   hypothetical protein l
7964388	NDUFA4L2	1.5749445	up	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 4
8173059	WNK3	1.5745622	up	WNK lysine deficient protein kinase 3
8114829	YIPF5	1.5736969	up	Yip1 domain family, member 5
7927267	FAM35A	1.572933	up	family with sequence similarity 35, member A
7990636	C15orf5	1.5703292	up	chromosome 15 open reading frame 5
8108238	SMAD5	1.5694219	up	SMAD family member 5
8128123	RRAGD	1.5684764	up	Ras-related GTP binding D
8045587	ACVR2A	1.5671169	up	activin A receptor, type IIA
8027254	ZNF90	1.5662762	up	zinc finger protein 90
8114778	GCSH LOC730107	1.5658228	up	glycine cleavage system protein H (aminomethyl carrier)
8035980	RHPN2	1.565693	up	rhopilin, Rho GTPase binding protein 2
8011945	KIAA0753	1.5652827	up	
7976818	SNORD114-6	1.564443	up	small nucleolar RNA, C/D box 114-6
8002999	GCSH LOC730107	1.5644186	up	glycine cleavage system protein H (aminomethyl carrier)
8048205	IGFBP2	1.5640637	up	insulin-like growth factor binding protein 2, 36kDa
7909568	DTL	1.5635216	up	denticleless homolog ( <i>Drosophila</i> )
7954613	CCDC91	1.5622635	up	coiled-coil domain containing 91
8093258	IQCG	1.561343	up	IQ motif containing G



## Supplemental Table 1b

eMSC vs. eEN

7962842	ADCY6	1.5611638	up	adenylate cyclase 6
7928944	PAPSS2	1.5609595	up	3'-phosphoadenosine 5'-phosphosulfate synthase 2
7963054	TUBA1A	1.5609523	up	tubulin, alpha 1a
8126784	PLA2G7	1.5609336	up	phospholipase A2, group VII (platelet-activating factor acetylhydrolase IIc)
7901140	MAST2	1.5603023	up	microtubule associated serine/threonine kinase 2
8113623	TICAM2 TMED7	1.5602158	up	toll-like receptor adaptor molecule 2   transmembrane protein 2
7968154	ATP8A2	1.5601913	up	ATPase, aminophospholipid transporter-like, class I, type 8A2
8147313	TMEM67	1.558858	up	transmembrane protein 67
8033667	ZNF558	1.5576869	up	zinc finger protein 558
8102655	BBS7	1.5567236	up	Bardet-Biedl syndrome 7
7974781	PPM1A	1.5557835	up	protein phosphatase 1A (formerly 2C), magnesium-dependent
8108729	PCDHB11	1.5548749	up	protocadherin beta 11
8088339	ARF4	1.554063	up	ADP-ribosylation factor 4
7937335	IFITM1	1.553923	up	interferon induced transmembrane protein 1 (9-27)
8046604	AGPS	1.5537748	up	alkylglycerone phosphate synthase
8132897	LANCL2	1.5531293	up	LanC lantibiotic synthetase component C-like 2 (bacterial)
7898957	RCAN3	1.5522586	up	RCAN family member 3
8117422	HIST1H4F HIST4H	1.5522348	up	histone cluster 1, H4f   histone cluster 4, H4   histone cluster 4
8030383	RCN3	1.5512613	up	reticulocalbin 3, EF-hand calcium binding domain
8113039	MEF2C	1.5510205	up	myocyte enhancer factor 2C
7960411	C12orf4	1.550383	up	chromosome 12 open reading frame 4
8129273	C6orf170	1.5501804	up	chromosome 6 open reading frame 170
8130129	NUP43	1.5492897	up	nucleoporin 43kDa
8107164	HISPPD1	1.5483356	up	histidine acid phosphatase domain containing 1
8081375	FAM55C	1.5478679	up	family with sequence similarity 55, member C
7934870	ATAD1	1.5474591	up	ATPase family, AAA domain containing 1
8090630	TMCC1	1.5470622	up	transmembrane and coiled-coil domain family 1
7926385	STAM	1.5468967	up	signal transducing adaptor molecule (SH3 domain and ITAM domain)
8135594	CAV1	1.5468752	up	caveolin 1, caveolae protein, 22kDa
7942957	PRSS23	1.546705	up	protease, serine, 23
8021181	SCARNA17	1.5459481	up	small Cajal body-specific RNA 17
8132439	C7orf10	1.5443417	up	chromosome 7 open reading frame 10
7935776	PRO1933	1.5436534	up	

## Supplemental Table 1b

eMSC vs. eEN

8046680	PLEKHA3	1.5424887	up	pleckstrin homology domain containing, family A (phospho
8044008	IL1RL2	1.5423032	up	interleukin 1 receptor-like 2
7946142	PRKCDBP	1.5417442	up	protein kinase C, delta binding protein
8097586	GAB1	1.5412208	up	GRB2-associated binding protein 1
8021470	PMAIP1	1.5407512	up	phorbol-12-myristate-13-acetate-induced protein 1
7918973	SPAG17	1.540527	up	sperm associated antigen 17
8128818	WASF1	1.5404946	up	WAS protein family, member 1
8085999	CMTM6	1.5403528	up	CKLF-like MARVEL transmembrane domain containing 6
7948896	SNORD22 SNHG1	1.5373441	up	small nucleolar RNA, C/D box 22   small nucleolar RNA ho
8140170	GTF2IRD2 GTF2IR	1.5368454	up	GTF2I repeat domain containing 2   GTF2I repeat domain
7976084	SPATA7	1.5366554	up	spermatogenesis associated 7
8129379	ECHDC1	1.5364823	up	enoyl Coenzyme A hydratase domain containing 1
8060940	C20orf103	1.5362123	up	chromosome 20 open reading frame 103
8041940	STON1-GTF2A1L	1.5361357	up	
8089830	LRR58	1.5354098	up	leucine rich repeat containing 58
7984686	BBS4	1.5352365	up	Bardet-Biedl syndrome 4
8117630	ZNF165	1.5346469	up	zinc finger protein 165
8047356	NIF3L1	1.5333555	up	NIF3 NGG1 interacting factor 3-like 1 (S. pombe)
8080847	C3orf14	1.5325297	up	chromosome 3 open reading frame 14
8090433	MGLL	1.5323877	up	monoglyceride lipase
8101723	NAP1L5	1.5319291	up	nucleosome assembly protein 1-like 5
7973036	PARP2	1.5311712	up	poly (ADP-ribose) polymerase family, member 2
8010078	SNORD1C	1.5301504	up	small nucleolar RNA, C/D box 1C
8003298	SLC7A5	1.5294734	up	solute carrier family 7 (cationic amino acid transporter, y+
7919226	POLR3C	1.5292271	up	polymerase (RNA) III (DNA directed) polypeptide C (62kD)
8008566	STXBP4	1.5278072	up	syntaxin binding protein 4
8091260	SLC9A9	1.5276299	up	solute carrier family 9 (sodium/hydrogen exchanger), mer
7984364	SMAD3	1.5264275	up	SMAD family member 3
8123303	PACRG	1.5262055	up	PARK2 co-regulated
8053315	LRRTM4	1.5258245	up	leucine rich repeat transmembrane neuronal 4
8074969	DDT	1.5254796	up	D-dopachrome tautomerase
7944722	UBASH3B	1.52514	up	ubiquitin associated and SH3 domain containing, B
8120362	C6orf65	1.5234783	up	chromosome 6 open reading frame 65

## Supplemental Table 1b

eMSC vs. eEN

8102065	BDH2	1.5227777	up	3-hydroxybutyrate dehydrogenase, type 2
7901479	ZYG11B	1.5222399	up	zyg-11 homolog B (C. elegans)
8107859	LYRM7	1.5213344	up	Lym7 homolog (mouse)
8075182	XBP1	1.5211945	up	X-box binding protein 1
7978666	MBIP	1.5189638	up	MAP3K12 binding inhibitory protein 1
7928354	FAM149B1	1.5182256	up	family with sequence similarity 149, member B1
7932082	CCDC3	1.5181006	up	coiled-coil domain containing 3
8173933	PCDH19	1.5177	up	protocadherin 19
8016390	COPZ2	1.5167905	up	coatamer protein complex, subunit zeta 2
8140915	PEX1	1.516462	up	peroxisome biogenesis factor 1
7999468	LITAF	1.5159705	up	lipopolysaccharide-induced TNF factor
8124430	HIST1H1D	1.5153223	up	histone cluster 1, H1d
8038998	ZNF468	1.514819	up	zinc finger protein 468
8101086	NAAA	1.5147839	up	N-acylethanolamine acid amidase
7969228	ALG11 UTP14C	1.5143709	up	asparagine-linked glycosylation 11 homolog (S. cerevisiae,
8105353	SKIV2L2	1.5140209	up	superkiller viralicidic activity 2-like 2 (S. cerevisiae)
7924773	CDC42BPA	1.5127022	up	CDC42 binding protein kinase alpha (DMPK-like)
7954631	MLSTD1	1.5118359	up	male sterility domain containing 1
8144528	TNKS	1.5113797	up	tankyrase, TRF1-interacting ankyrin-related ADP-ribose pc
7915870	ATPAF1	1.5107054	up	ATP synthase mitochondrial F1 complex assembly factor 1
8170891	GDI1	1.5106208	up	GDP dissociation inhibitor 1
7969935	ERCC5	1.5099567	up	excision repair cross-complementing rodent repair deficie
7977933	SLC7A8	1.5091356	up	solute carrier family 7 (cationic amino acid transporter, y+
7966321	GPN3	1.50903	up	GPN-loop GTPase 3
8128650	SEC63	1.508249	up	
8117402	HIST1H4E HIST4H	1.5082402	up	histone cluster 1, H4e   histone cluster 4, H4   histone clu
7989670	RBPM52	1.5065515	up	RNA binding protein with multiple splicing 2
8133549	GTF2IRD2 GTF2IR	1.5061748	up	GTF2I repeat domain containing 2   GTF2I repeat domain
7965064	OSBPL8	1.506165	up	oxysterol binding protein-like 8
8137264	TMEM176A	1.503396	up	transmembrane protein 176A
7948612	FADS1 FADS3	1.5023755	up	fatty acid desaturase 1   fatty acid desaturase 3
7931281	FANK1	1.5020711	up	fibronectin type III and ankyrin repeat domains 1
8109194	SLC26A2	1.5014122	up	solute carrier family 26 (sulfate transporter), member 2

## Supplemental Table 1b

eMSC vs. eEN

8094476	TBC1D19	1.5005277	up	TBC1 domain family, member 19
8099912	C4orf34	1.5004555	up	chromosome 4 open reading frame 34
7915926	STIL	1.5002669	up	SCL/TAL1 interrupting locus
8114050	8-Sep	1.4986658	up	septin 8
8140556	HGF	1.4985689	up	hepatocyte growth factor (hepapoietin A; scatter factor)
7978718	SEC23A	1.4981906	up	Sec23 homolog A ( <i>S. cerevisiae</i> )
7953564	C12orf57	1.4981282	up	chromosome 12 open reading frame 57
8005235	M-RIP	1.4975746	up	myosin phosphatase-Rho interacting protein
7904853	GPR89C GPR89A	1.4971049	up	G protein-coupled receptor 89C   G protein-coupled receptor 89A
7984112	RAB8B	1.4970806	up	
7943498	DYNC2H1	1.496817	up	dynein, cytoplasmic 2, heavy chain 1
8000574	NUPR1	1.4963411	up	nuclear protein 1
8097449	PCDH10	1.4962604	up	protocadherin 10
8135378	PRKAR2B	1.4957	up	protein kinase, cAMP-dependent, regulatory, type II, beta
7944803	LOH11CR2A	1.4950984	up	loss of heterozygosity, 11, chromosomal region 2, gene A
8009255	CCDC45	1.4945987	up	coiled-coil domain containing 45
8147079	LRRCC1	1.4922957	up	leucine rich repeat and coiled-coil domain containing 1
8093053	TFRC	1.4920214	up	transferrin receptor (p90, CD71)
8151254	NCOA2	1.4918009	up	nuclear receptor coactivator 2
8157058	FSD1L	1.4897517	up	fibronectin type III and SPRY domain containing 1-like
7927631	DKK1	1.4897147	up	dickkopf homolog 1 ( <i>Xenopus laevis</i> )
7900555	RP4-692D3.1	1.4888867	up	hypothetical protein LOC728621
7916356	C1orf41	1.4884669	up	chromosome 1 open reading frame 41
8108753	PCDHB15	1.4884356	up	protocadherin beta 15
8050507	WDR35	1.4877563	up	WD repeat domain 35
8044127	C2orf49	1.4868965	up	chromosome 2 open reading frame 49
8102587	C4orf31	1.4868798	up	chromosome 4 open reading frame 31
8121525	KIAA1919	1.4867059	up	
7964810	MDM1	1.4858654	up	Mdm1 nuclear protein homolog (mouse)
8162313	IARS	1.4858426	up	isoleucyl-tRNA synthetase
7983173	CCNDBP1	1.4858222	up	cyclin D-type binding-protein 1
7964834	CPM	1.485634	up	carboxypeptidase M
7961767	KIAA0528	1.4854782	up	

## Supplemental Table 1b

eMSC vs. eEN

7951565	ARHGAP20	1.4846442	up	Rho GTPase activating protein 20
7966448	TMEM116	1.4845537	up	transmembrane protein 116
8042503	MXD1	1.4833776	up	MAX dimerization protein 1
8167835	TRO	1.4828471	up	trophinin
8075673	RBM9	1.4817793	up	RNA binding motif protein 9
8050608	C2orf43	1.4815437	up	chromosome 2 open reading frame 43
8102848	SETD7	1.4812638	up	SET domain containing (lysine methyltransferase) 7
8042402	C2orf13 PROKR1	1.4803344	up	chromosome 2 open reading frame 13   prokineticin receptor
8147206	RIPK2	1.4796374	up	receptor-interacting serine-threonine kinase 2
7974771	C14orf135 LOC10	1.4790982	up	chromosome 14 open reading frame 135   hypothetical protein
8171313	ARHGAP6	1.4781775	up	Rho GTPase activating protein 6
8108099	SEC24A	1.4776293	up	SEC24 related gene family, member A ( <i>S. cerevisiae</i> )
8118409	C4A C4B	1.4776076	up	complement component 4A (Rodgers blood group)   complement component 4B
8118455	C4A C4B	1.47739	up	complement component 4A (Rodgers blood group)   complement component 4B
7946635	ZBED5	1.477035	up	zinc finger, BED-type containing 5
7908072	LAMC2	1.4769216	up	laminin, gamma 2
7917370	COL24A1	1.4764946	up	collagen, type XXIV, alpha 1
8146533	FAM110B	1.4748107	up	family with sequence similarity 110, member B
7968658	EXOSC8	1.474547	up	exosome component 8
8095834	SHROOM3	1.4738337	up	shroom family member 3
7969916	BIVM	1.4723452	up	basic, immunoglobulin-like variable motif containing
8133983	ADAM22	1.4720556	up	ADAM metallopeptidase domain 22
8157804	OLFML2A	1.470704	up	olfactomedin-like 2A
8043993	UNQ9419	1.4701947	up	AHPA9419
7964347	TMEM194	1.4693862	up	transmembrane protein 194
7975676	C14orf45	1.4692683	up	chromosome 14 open reading frame 45
8097704	TMEM34	1.469218	up	transmembrane protein 34
8179399	C4A C4B	1.4685934	up	complement component 4A (Rodgers blood group)   complement component 4B
8090678	MRPL3	1.4685848	up	mitochondrial ribosomal protein L3
8130765	FAM103A1	1.4683206	up	family with sequence similarity 103, member A1
8054092	TMEM131	1.4683145	up	transmembrane protein 131
8001876	NAE1	1.4666928	up	NEDD8 activating enzyme E1 subunit 1
8098556	CCDC111	1.4661099	up	coiled-coil domain containing 111

Supplemental Table 1b  
eMSC vs. eEN

7952484	LOC219854	1.4659117	up	
8068522	TTC3	1.4656372	up	tetratricopeptide repeat domain 3
7980246	MLH3	1.4655131	up	mutL homolog 3 (E. coli)
7932530	PIP4K2A	1.464496	up	phosphatidylinositol-5-phosphate 4-kinase, type II, alpha
7971541	SUCLA2	1.4643476	up	succinate-CoA ligase, ADP-forming, beta subunit
8143040	SLC35B4	1.4626882	up	solute carrier family 35, member B4
8113733	CCDC100	1.4624404	up	coiled-coil domain containing 100
8140500	TMEM60	1.4619188	up	transmembrane protein 60
7986527	C15orf51	1.4617845	up	chromosome 15 open reading frame 51
8157976	GARNL3	1.4614326	up	GTPase activating Rap/RanGAP domain-like 3
8124385	HIST1H4B HIST4H	1.4611648	up	histone cluster 1, H4b   histone cluster 4, H4   histone clu
7986509	LOC441734	1.4611379	up	similar to hypothetical protein DKFZp43411020
8082643	NEK11	1.4610437	up	NIMA (never in mitosis gene a)- related kinase 11
8154254	KIAA1432	1.4609227	up	
8012475	MYH10	1.4609052	up	myosin, heavy chain 10, non-muscle
8094184	C1QTNF7	1.4605445	up	C1q and tumor necrosis factor related protein 7
7966135	CORO1C	1.4602982	up	coronin, actin binding protein, 1C
7987145	FMN1	1.4584888	up	formin 1
7967993	FGF9	1.4582673	up	fibroblast growth factor 9 (glia-activating factor)
8101624	KLHL8	1.457568	up	kelch-like 8 (Drosophila)
8096109	MRPS18C	1.4575297	up	mitochondrial ribosomal protein S18C
8082750	UBA5	1.4571472	up	ubiquitin-like modifier activating enzyme 5
8058147	PPIL3	1.4566392	up	peptidylprolyl isomerase (cyclophilin)-like 3
8052798	AAK1	1.4563547	up	AP2 associated kinase 1
7954810	LRRK2	1.4557111	up	leucine-rich repeat kinase 2
7988859	GNB5	1.4552364	up	guanine nucleotide binding protein (G protein), beta 5
8044278	CCDC138	1.4548588	up	coiled-coil domain containing 138
7933733	FAM13C1	1.4528834	up	family with sequence similarity 13, member C1
8166219	SYAP1	1.4523864	up	synapse associated protein 1, SAP47 homolog (Drosophila)
8171024	LOC401622	1.4522791	up	similar to LINE-1 reverse transcriptase homolog
8168984	BHLHB9	1.452184	up	basic helix-loop-helix domain containing, class B, 9
7972750	COL4A1	1.4518222	up	collagen, type IV, alpha 1
7985044	UBE2Q2	1.451115	up	ubiquitin-conjugating enzyme E2Q family member 2

## Supplemental Table 1b

eMSC vs. eEN

7984588	THSD4	1.4508963	up	thrombospondin, type I, domain containing 4
7916789	WDR78	1.4504379	up	WD repeat domain 78
8152656	ZHX1 C8orf76	1.4503689	up	zinc fingers and homeoboxes 1   chromosome 8 open rea
8036324	ZNF260	1.4499766	up	zinc finger protein 260
7942596	SERPINH1	1.4493208	up	serpin peptidase inhibitor, clade H (heat shock protein 47)
7901336	ALS2CR2	1.4491795	up	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
8101126	CXCL10	1.448495	up	chemokine (C-X-C motif) ligand 10
8137483	FLJ16734	1.4484439	up	hypothetical LOC641928
7937696	LOC338651	1.4484208	up	
7926609	BMI1	1.4483058	up	
7956697	MON2	1.4477626	up	
8092726	CLDN1	1.4471848	up	claudin 1
7948662	SCGB1D4	1.4470826	up	secretoglobin, family 1D, member 4
8120967	NT5E	1.4467194	up	5'-nucleotidase, ecto (CD73)
7973770	SCFD1	1.4465574	up	sec1 family domain containing 1
8123342	FGFR1OP CCR6	1.4463013	up	FGFR1 oncogene partner   chemokine (C-C motif) recepto
8121916	RSPO3	1.4456718	up	R-spondin 3 homolog ( <i>Xenopus laevis</i> )
8120165	CENPQ	1.4447947	up	centromere protein Q
8080781	PXK	1.4444703	up	PX domain containing serine/threonine kinase
7969414	KLF5	1.4435148	up	Kruppel-like factor 5 (intestinal)
8157144	C9orf6	1.4422244	up	chromosome 9 open reading frame 6
7919251	GPR89B GPR89A	1.4417872	up	G protein-coupled receptor 89B   G protein-coupled recep
8041508	QPCT	1.4394065	up	glutaminyl-peptide cyclotransferase (glutaminyl cyclase)
7924351	EPRS	1.4389335	up	glutamyl-prolyl-tRNA synthetase
8057732	LOC100131211	1.438777	up	similar to hCG1646803
8163672	DIPAS	1.4374884	up	DIPLA1-antisense expressed
8142415	FLJ31818	1.4368485	up	
8058927	TMBIM1	1.4368105	up	transmembrane BAX inhibitor motif containing 1
7964997	CAPS2	1.4361359	up	calcyphosine 2
7915775	IPP	1.436098	up	intracisternal A particle-promoted polypeptide
7974587	ACTR10	1.4352666	up	actin-related protein 10 homolog ( <i>S. cerevisiae</i> )
7990879	EFTUD1	1.4349682	up	elongation factor Tu GTP binding domain containing 1
7985488	FAM103A1	1.434779	up	family with sequence similarity 103, member A1

## Supplemental Table 1b

eMSC vs. eEN

8089993	WDR5B	1.4346353	up	WD repeat domain 5B
8083471	SGEF	1.4341791	up	Src homology 3 domain-containing guanine nucleotide ex
7954503	MED21	1.4333324	up	mediator complex subunit 21
8097066	KIAA1627	1.4333276	up	
8094408	ANAPC4	1.43302	up	anaphase promoting complex subunit 4
7910611	KCNK1	1.4327792	up	potassium channel, subfamily K, member 1
8081903	C3orf15	1.4304885	up	chromosome 3 open reading frame 15
8138735	HOXA5	1.4298441	up	homeobox A5
7909236	MAPKAPK2	1.429509	up	mitogen-activated protein kinase-activated protein kinase
8111941	HMGCS1	1.4294896	up	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (solu
7907079	RCSD1	1.4291905	up	RCSD domain containing 1
8039144	TMC4	1.4291607	up	transmembrane channel-like 4
8108683	PCDHB2	1.428805	up	protocadherin beta 2
8136495	TTC26	1.4285406	up	tetratricopeptide repeat domain 26
8080487	PRKCD	1.4283608	up	protein kinase C, delta
7903972	ATP5F1	1.427441	up	ATP synthase, H+ transporting, mitochondrial F0 complex,
7939329	PDHX	1.427438	up	pyruvate dehydrogenase complex, component X
8020267	CEP192	1.4270886	up	centrosomal protein 192kDa
7970111	ARHGEF7	1.427082	up	Rho guanine nucleotide exchange factor (GEF) 7
8156126	RMI1	1.4267973	up	
7921014	MEF2D	1.4259325	up	myocyte enhancer factor 2D
8080562	IL17RB	1.4252399	up	interleukin 17 receptor B
8166049	PRPS2	1.4232712	up	phosphoribosyl pyrophosphate synthetase 2
8076113	RP1-199H16.1	1.4231066	up	hypothetical LOC388900
7947553	LRRC4C	1.4231038	up	leucine rich repeat containing 4C
8018082	SLC39A11	1.4224991	up	solute carrier family 39 (metal ion transporter), member 1
8001507	BBS2	1.4219475	up	Bardet-Biedl syndrome 2
8147172	CPNE3	1.4219315	up	copine III
7905088	HIST2H2AC BOLA:	1.421095	up	histone cluster 2, H2ac   bolA homolog 1 (E. coli)
8022646	KCTD1	1.4207357	up	potassium channel tetramerisation domain containing 1
7974542	C14orf101	1.4198831	up	chromosome 14 open reading frame 101
7904930	GPR89B GPR89A	1.4198104	up	G protein-coupled receptor 89B   G protein-coupled rece
8062211	BXDC1	1.419573	up	brix domain containing 1



## Supplemental Table 1b

eMSC vs. eEN

8114354	NME5	1.4190644	up	non-metastatic cells 5, protein expressed in (nucleoside-d
8127787	IBTK	1.4189165	up	inhibitor of Bruton agammaglobulinemia tyrosine kinase
7970033	COL4A2	1.4183819	up	collagen, type IV, alpha 2
8131539	TMEM106B	1.416578	up	transmembrane protein 106B
7909561	C1orf97	1.4138018	up	chromosome 1 open reading frame 97
7954985	TMEM117	1.413796	up	transmembrane protein 117
7945873	ZNF195	1.4132719	up	zinc finger protein 195
8027354	LOC388524	1.4119169	up	ribosomal protein SA pseudogene
7936891	METTL10	1.4117932	up	methyltransferase like 10
7980744	RPS6KA5	1.411442	up	ribosomal protein S6 kinase, 90kDa, polypeptide 5
8163775	MEGF9	1.4114116	up	multiple EGF-like-domains 9
8042066	CCDC104	1.4112461	up	coiled-coil domain containing 104
8064967	MKKS	1.4104887	up	McKusick-Kaufman syndrome
8129181	GOPC ROS1	1.4104124	up	golgi associated PDZ and coiled-coil motif containing   c-r
8157038	SLC44A1	1.4082135	up	solute carrier family 44, member 1
8050537	MATN3	1.4076514	up	matrilin 3
7948656	FTH1	1.4076289	up	ferritin, heavy polypeptide 1
8121461	CDC40	1.4070522	up	cell division cycle 40 homolog ( <i>S. cerevisiae</i> )
8102720	ANKRD50	1.4065002	up	ankyrin repeat domain 50
7958158	HCFC2	1.4058348	up	host cell factor C2
7968787	OR7E37P OR7E47	1.4041893	up	olfactory receptor, family 7, subfamily E, member 37 pseu
8119184	RNF8	1.4036722	up	ring finger protein 8
7938629	PDE3B	1.4030191	up	phosphodiesterase 3B, cGMP-inhibited
7909689	SMYD2	1.4029318	up	SET and MYND domain containing 2
8121015	C6orf165 SLC35A:	1.4028364	up	chromosome 6 open reading frame 165   solute carrier fa
7946365	STK33	1.4027703	up	serine/threonine kinase 33
7980742	LOC283588	1.4024429	up	
7944302	PHLDB1	1.4017289	up	pleckstrin homology-like domain, family B, member 1
8073015	KDEL3	1.4008865	up	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein ret
8015349	KRT19	1.399952	up	keratin 19
7918008	DBT	1.3997409	up	dihydrolipoamide branched chain transacylase E2
8063000	WFDC2	1.3993846	up	WAP four-disulfide core domain 2
8083616	MLF1	1.3990053	up	myeloid leukemia factor 1

## Supplemental Table 1b

eMSC vs. eEN

7932285	C10orf97	1.3989946	up	chromosome 10 open reading frame 97
7954717	BICD1	1.3974352	up	bicaudal D homolog 1 (Drosophila)
8168855	ARMCX4	1.3970581	up	armadillo repeat containing, X-linked 4
8064415	C20orf46	1.396548	up	chromosome 20 open reading frame 46
7971241	OR7E37P OR7E47	1.3957165	up	olfactory receptor, family 7, subfamily E, member 37 pseudogene
7947496	SLC1A2	1.395629	up	solute carrier family 1 (glial high affinity glutamate transporter)
7965789	ARL1	1.3939074	up	ADP-ribosylation factor-like 1
7901895	ATG4C	1.3931332	up	ATG4 autophagy related 4 homolog C ( <i>S. cerevisiae</i> )
8085815	TOP2B	1.3926146	up	topoisomerase (DNA) II beta 180kDa
7930614	NHLRC2	1.3924553	up	NHL repeat containing 2
8113413	NUDT12	1.3924251	up	nudix (nucleoside diphosphate linked moiety X)-type motif 12
8099218	PPP2R2C	1.3920369	up	protein phosphatase 2 (formerly 2A), regulatory subunit B
7972713	EFNB2	1.3917259	up	ephrin-B2
8007493	ARL4D	1.3904572	up	ADP-ribosylation factor-like 4D
8108693	PCDHB4	1.3902036	up	protocadherin beta 4
7971246	KIAA0564	1.390183	up	
8093145	C3orf34	1.3899596	up	chromosome 3 open reading frame 34
8045887	OR7E37P	1.3894676	up	olfactory receptor, family 7, subfamily E, member 37 pseudogene
7943620	ATM NPAT	1.3889908	up	ataxia telangiectasia mutated   nuclear protein, ataxia-telangiectasia
8175076	ZNF280C	1.3888154	up	zinc finger protein 280C
8023165	HDHD2	1.3872824	up	haloacid dehalogenase-like hydrolase domain containing 2
7950990	SLC36A4	1.3870509	up	solute carrier family 36 (proton/amino acid symporter), member 4
8115327	SPARC	1.3865601	up	secreted protein, acidic, cysteine-rich (osteonectin)
7986049	CRTC3	1.3858422	up	CREB regulated transcription coactivator 3
8121161	KIAA0776	1.3849546	up	
8083221	PBX2	1.3828983	up	pre-B-cell leukemia homeobox 2
7990700	WDR61	1.3827225	up	WD repeat domain 61
7918457	KCNA3	1.3826969	up	potassium voltage-gated channel, shaker-related subfamily 3
8106516	JMY	1.3815572	up	junction-mediating and regulatory protein
8123038	GTF2H5	1.3810762	up	general transcription factor IIH, polypeptide 5
7916862	GPR177	1.3805227	up	G protein-coupled receptor 177
8058824	MREG	1.3799897	up	melanoregulin
8088550	PRICKLE2	1.3799591	up	prickle homolog 2 (Drosophila)

## Supplemental Table 1b

eMSC vs. eEN

8127903	KIAA1009	1.3792998	up	
8122265	TNFAIP3	1.379191	up	tumor necrosis factor, alpha-induced protein 3
8165486	TMEM203 LOC65:	1.3781836	up	transmembrane protein 203   hypothetical LOC653383
8163149	PTPN3	1.3778771	up	protein tyrosine phosphatase, non-receptor type 3
8099259	AFAP1	1.3763336	up	actin filament associated protein 1
7919580	LOC440570	1.3754478	up	
8058765	FN1	1.374822	up	fibronectin 1
8058373	WDR12	1.37431	up	WD repeat domain 12
7967863	ZNF605	1.3734145	up	zinc finger protein 605
7919596	LOC440570	1.3726906	up	
7956522	KIF5A	1.3725189	up	kinesin family member 5A
7962112	CAPRIN2	1.3723768	up	caprin family member 2
7981320	MEG3	1.3717384	up	maternally expressed 3
7995206	TGFB111	1.371536	up	transforming growth factor beta 1 induced transcript 1
7967386	MPHOSPH9	1.3712494	up	M-phase phosphoprotein 9
8057045	FKBP7	1.370233	up	FK506 binding protein 7
8109926	GABRP	1.3700622	up	gamma-aminobutyric acid (GABA) A receptor, pi
8108166	TXNDC15	1.3699996	up	thioredoxin domain containing 15
7933194	CXCL12	1.3697807	up	chemokine (C-X-C motif) ligand 12 (stromal cell-derived fa
8076241	MKL1	1.3695763	up	megakaryoblastic leukemia (translocation) 1
8141872	NAPEPLD	1.3695195	up	N-acyl phosphatidylethanolamine phospholipase D
7930882	FAM45A FAM45B	1.3687565	up	family with sequence similarity 45, member A   family wit
8144669	FDFT1	1.3679696	up	farnesyl-diphosphate farnesyltransferase 1
8092970	APOD	1.3676301	up	apolipoprotein D
8013906	TWF1	1.3674499	up	twinfilin, actin-binding protein, homolog 1 (Drosophila)
8058869	TNS1	1.3673134	up	tensin 1
8140319	HIP1	1.3664142	up	huntingtin interacting protein 1
8136516	tcag7.1228	1.3659801	up	hypothetical protein FLJ25778
8061186	SEC23B	1.3654232	up	Sec23 homolog B ( <i>S. cerevisiae</i> )
7979196	GNPNAT1	1.3652252	up	glucosamine-phosphate N-acetyltransferase 1
8044462	TTL	1.3638617	up	tubulin tyrosine ligase
8167998	AR	1.3638353	up	androgen receptor (dihydrotestosterone receptor; testicu
7985016	SNX33	1.3637661	up	sorting nexin 33

## Supplemental Table 1b

eMSC vs. eEN

8171823	APOO	1.3632053	up	apolipoprotein O
8120961	C6orf117	1.3630135	up	chromosome 6 open reading frame 117
8145151	SORBS3	1.362534	up	sorbin and SH3 domain containing 3
7991640	TARSL2	1.3624642	up	threonyl-tRNA synthetase-like 2
7918467	C1orf103	1.3623972	up	chromosome 1 open reading frame 103
8003814	ASPA	1.361984	up	aspartoacylase (Canavan disease)
7983843	TCF12	1.3614131	up	transcription factor 12 (HTF4, helix-loop-helix transcriptio
8055952	NR4A2	1.3601993	up	nuclear receptor subfamily 4, group A, member 2
7976571	C14orf129	1.359659	up	chromosome 14 open reading frame 129
7984298	DIS3L	1.3596315	up	DIS3 mitotic control homolog ( <i>S. cerevisiae</i> )-like
7906085	LMNA	1.359489	up	lamin A/C
7914550	ZBTB8OS	1.358545	up	zinc finger and BTB domain containing 8 opposite strand
8113504	C5orf13	1.3578898	up	chromosome 5 open reading frame 13
8117225	GMNN	1.357299	up	geminin, DNA replication inhibitor
7988286	SPG11	1.3569458	up	spastic paraplegia 11 (autosomal recessive)
7943387	C11orf70	1.3564981	up	chromosome 11 open reading frame 70
8002152	SLC12A4	1.3562706	up	solute carrier family 12 (potassium/chloride transporters)
8028311	SPINT2 LOC10013	1.3560035	up	serine peptidase inhibitor, Kunitz type, 2   hypothetical pr
8038347	TEAD2	1.3557191	up	TEA domain family member 2
8112121	SLC38A9	1.3554838	up	solute carrier family 38, member 9
7950544	PRKRIR	1.3551826	up	protein-kinase, interferon-inducible double stranded RNA
8141206	BAIAP2L1 LOC100	1.3551203	up	BAI1-associated protein 2-like 1   hypothetical protein LO
8113103	KIAA0825	1.3550706	up	
8133258	WBSCR17	1.3547437	up	Williams-Beuren syndrome chromosome region 17
8128726	PPIL6	1.3536165	up	peptidylprolyl isomerase (cyclophilin)-like 6
8090988	CEP70	1.353404	up	centrosomal protein 70kDa
8062748	IFT52	1.3523512	up	intraflagellar transport 52 homolog ( <i>Chlamydomonas</i> )
7968711	COG6	1.351923	up	component of oligomeric golgi complex 6
8092073	EIF5A2	1.3518856	up	eukaryotic translation initiation factor 5A2
7901426	ZFYVE9	1.3507695	up	zinc finger, FYVE domain containing 9
8166442	FAM3C	1.3505092	up	family with sequence similarity 3, member C
8151066	ARMC1	1.3504286	up	armadillo repeat containing 1
8121510	BXDC1	1.3501837	up	brix domain containing 1

## Supplemental Table 1b

eMSC vs. eEN

8104321	ADAMTS16	1.3498982	up	ADAM metallopeptidase with thrombospondin type 1 mo
8142540	FAM3C	1.3492467	up	family with sequence similarity 3, member C
8040927	NRBP1	1.3472706	up	nuclear receptor binding protein 1
7961386	GPRC5D	1.3468412	up	G protein-coupled receptor, family C, group 5, member D
7921987	TMCO1	1.346595	up	transmembrane and coiled-coil domains 1
8017162	RNFT1	1.3465012	up	ring finger protein, transmembrane 1
8041745	C2orf34	1.3440576	up	chromosome 2 open reading frame 34
8094574	TBC1D1	1.3439965	up	TBC1 (tre-2/USP6, BUB2, cdc16) domain family, member 1
8129666	SLC2A12	1.3437668	up	solute carrier family 2 (facilitated glucose transporter), me
8124622	ZNF311	1.3434743	up	zinc finger protein 311
8129231	C6orf60	1.3434271	up	chromosome 6 open reading frame 60
8069744	RWDD2B	1.343423	up	RWD domain containing 2B
8104693	PDZD2	1.3433133	up	PDZ domain containing 2
8040163	IAH1	1.3428776	up	isoamyl acetate-hydrolyzing esterase 1 homolog ( <i>S. cerevi</i>
8125360	PBX2	1.3422072	up	pre-B-cell leukemia homeobox 2
8022393	PTPN2	1.3420341	up	protein tyrosine phosphatase, non-receptor type 2
8030049	PSCD2	1.3415715	up	pleckstrin homology, Sec7 and coiled-coil domains 2 (cyto
7915286	PPT1	1.340708	up	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, ne
8178275	ZNF311	1.3405516	up	zinc finger protein 311
8104856	SPEF2 LOC100134	1.3399086	up	sperm flagellar 2   hypothetical protein LOC100134025
8121578	NT5DC1	1.3397169	up	5'-nucleotidase domain containing 1
8000003	THUMPD1	1.3393975	up	THUMP domain containing 1
7917896	ALG14	1.339363	up	asparagine-linked glycosylation 14 homolog ( <i>S. cerevisiae</i> )
8079198	ZNF660	1.338568	up	zinc finger protein 660
8151824	RAD54B LOC1001	1.33849	up	RAD54 homolog B ( <i>S. cerevisiae</i> )   similar to fibrinogen sil
8031640	ZNF583	1.3380985	up	zinc finger protein 583
8081953	GTF2E1	1.3376069	up	general transcription factor IIE, polypeptide 1, alpha 56kD
8051605	HNRPLL	1.3365456	up	heterogeneous nuclear ribonucleoprotein L-like
7957298	NAV3	1.3346976	up	neuron navigator 3
8095907	FRAS1	1.334551	up	Fraser syndrome 1
7956989	MDM2	1.3340945	up	Mdm2 p53 binding protein homolog (mouse)
7943231	ANKRD49	1.333694	up	ankyrin repeat domain 49
8011832	NUP88	1.3333379	up	nucleoporin 88kDa

## Supplemental Table 1b

eMSC vs. eEN

8069301	COL6A2	1.3327274	up	collagen, type VI, alpha 2
7924476	TAF1A	1.3320304	up	TATA box binding protein (TBP)-associated factor, RNA po
8059801	USP40	1.3320031	up	ubiquitin specific peptidase 40
8052934	MCEE	1.3308051	up	methylmalonyl CoA epimerase
8116848	PAK1IP1	1.3306096	up	PAK1 interacting protein 1
7936856	GALNAC4S-6ST	1.3295503	up	B cell RAG associated protein
8092328	MCCC1	1.3283795	up	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8146000	ADAM9	1.3281201	up	ADAM metallopeptidase domain 9 (meltrin gamma)
8066493	SLPI	1.3280106	up	secretory leukocyte peptidase inhibitor
7980958	LGMN	1.327101	up	legumain
7974214	KLHDC1	1.3265924	up	kelch domain containing 1
8129706	HBS1L	1.3259535	up	HBS1-like ( <i>S. cerevisiae</i> )
7937961	MMP26	1.3256668	up	matrix metallopeptidase 26
7930927	INPP5F	1.325479	up	inositol polyphosphate-5-phosphatase F
8132369	EPDR1	1.3253161	up	ependymin related protein 1 (zebrafish)
7915444	LEPRE1	1.3249311	up	leucine proline-enriched proteoglycan (leprecan) 1
8007154	FKBP10	1.3236114	up	FK506 binding protein 10, 65 kDa
7979824	ACTN1	1.3230555	up	actinin, alpha 1
8117081	AOF1	1.3221014	up	amine oxidase (flavin containing) domain 1
8008113	CALCOCO2	1.3217403	up	calcium binding and coiled-coil domain 2
8168873	LOC653354	1.3204814	up	
8138466	7A5	1.3204263	up	putative binding protein 7a5
7970546	EFHA1	1.3200704	up	EF-hand domain family, member A1
7989315	GTF2A2	1.3200004	up	general transcription factor IIA, 2, 12kDa
8030950	ZNF701	1.3183942	up	zinc finger protein 701
8150691	EFCAB1	1.318161	up	EF-hand calcium binding domain 1
8166104	OFD1	1.3173949	up	oral-facial-digital syndrome 1
8117382	HIST1H2BD	1.3164684	up	histone cluster 1, H2bd
8047443	ALS2CR2	1.3161565	up	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
8138553	FAM126A	1.3155143	up	family with sequence similarity 126, member A
8169186	TBC1D8B	1.315486	up	TBC1 domain family, member 8B (with GRAM domain)
8006345	RHOT1	1.3151896	up	ras homolog gene family, member T1
8096938	LARP7	1.3138599	up	La ribonucleoprotein domain family, member 7

## Supplemental Table 1b

eMSC vs. eEN

8157021	NIPSNAP3A	1.3132747	up	nipsnap homolog 3A ( <i>C. elegans</i> )
8066822	SULF2	1.3126872	up	sulfatase 2
8144701	LOC100131581	1.3122176	up	
8133459	CLIP2	1.3120234	up	CAP-GLY domain containing linker protein 2
8141024	BET1	1.3108828	up	blocked early in transport 1 homolog ( <i>S. cerevisiae</i> )
7925672	ZNF670	1.3108215	up	zinc finger protein 670
8089627	CCDC52	1.3104377	up	coiled-coil domain containing 52
8127549	SLC17A5	1.3096482	up	solute carrier family 17 (anion/sugar transporter), membe
8109938	RANBP17	1.3092805	up	RAN binding protein 17
8121794	SMPDL3A	1.3083365	up	sphingomyelin phosphodiesterase, acid-like 3A
8088745	FRMD4B	1.307899	up	FERM domain containing 4B
8060988	BTBD3	1.30723	up	BTB (POZ) domain containing 3
8144802	PDGFRL	1.3069458	up	platelet-derived growth factor receptor-like
8133770	CCDC146	1.3067441	up	coiled-coil domain containing 146
7922598	ANGPTL1	1.3062438	up	angiopoietin-like 1
8052626	VPS54	1.3053739	up	vacuolar protein sorting 54 homolog ( <i>S. cerevisiae</i> )
8129974	FUCA2	1.3034136	up	fucosidase, alpha-L- 2, plasma
8041257	SLC30A6	1.3024833	up	solute carrier family 30 (zinc transporter), member 6
7931479	INPP5A	1.3012444	up	inositol polyphosphate-5-phosphatase, 40kDa
8155883	OSTF1	1.3008667	up	osteoclast stimulating factor 1
8127158	GCLC	1.3008093	up	glutamate-cysteine ligase, catalytic subunit
8114193	SAR1B	1.3005302	up	SAR1 gene homolog B ( <i>S. cerevisiae</i> )
7965048	NAP1L1	1.3001534	up	nucleosome assembly protein 1-like 1
8082244	OR7E37P	1.2999299	up	olfactory receptor, family 7, subfamily E, member 37 pseu
8120943	CYB5R4	1.2992886	up	cytochrome b5 reductase 4
8102464	TRAM1L1	1.2989926	up	translocation associated membrane protein 1-like 1
7903144	SLC44A3	1.298911	up	solute carrier family 44, member 3
7946288	ZNF214	1.2977383	up	zinc finger protein 214
7973756	KIAA1333	1.2972006	up	
8081343	RG9MTD1	1.297179	up	RNA (guanine-9-) methyltransferase domain containing 1
8124502	ZNF184	1.296991	up	zinc finger protein 184
8171708	CXorf23	1.2965248	up	chromosome X open reading frame 23
8122672	MAP3K7IP2	1.2963821	up	mitogen-activated protein kinase kinase kinase 7 interacti

## Supplemental Table 1b

eMSC vs. eEN

8175052	AIFM1	1.2960193	up	apoptosis-inducing factor, mitochondrion-associated, 1
7947138	FANCF	1.2944925	up	Fanconi anemia, complementation group F
8138145	LOC441453	1.2939185	up	similar to olfactory receptor, family 7, subfamily A, memb
8005638	ALDH3A2	1.2931604	up	aldehyde dehydrogenase 3 family, member A2
8078262	UBE2E1	1.2929091	up	ubiquitin-conjugating enzyme E2E 1 (UBC4/5 homolog, ye
8032730	EEF2	1.2919323	up	eukaryotic translation elongation factor 2
8029950	EHD2	1.2915933	up	EH-domain containing 2
7975136	FUT8	1.290089	up	fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
8000375	ARHGAP17	1.29004	up	Rho GTPase activating protein 17
8129677	SGK1	1.2893567	up	serum/glucocorticoid regulated kinase 1
8098084	ETFDH	1.2892834	up	electron-transferring-flavoprotein dehydrogenase
8005603	SLC47A1	1.2885565	up	solute carrier family 47, member 1
8149774	LOXL2 ENTPD4	1.2882721	up	lysyl oxidase-like 2   ectonucleoside triphosphate diphosp
7950796	CREBZF	1.2880563	up	CREB/ATF bZIP transcription factor
7907171	BLZF1	1.2875667	up	basic leucine zipper nuclear factor 1 (JEM-1)
7983828	TEX9	1.2873306	up	testis expressed 9
8000013	EXOD1 DCUN1D3	1.2871401	up	exonuclease domain containing 1   DCN1, defective in cul
8143610	FLJ43692 LOC728	1.2866902	up	ARHGEF5-like   similar to rho guanine nucleotide exchang
8162147	ZCCHC6	1.2862498	up	zinc finger, CCHC domain containing 6
8116867	TMEM14B	1.2853689	up	transmembrane protein 14B
8168466	LOC100129513 LC	1.2848058	up	similar to PRO0756   magnesium transporter 1
8107234	MAN2A1	1.2844722	up	mannosidase, alpha, class 2A, member 1
8038981	ZNF611	1.2844492	up	zinc finger protein 611
8107133	PAM	1.2840452	up	peptidylglycine alpha-amidating monooxygenase
8169617	PGRMC1	1.2833709	up	progesterone receptor membrane component 1
7960850	SLC2A14 SLC2A3	1.2832956	up	solute carrier family 2 (facilitated glucose transporter), me
8028656	PLEKHG2	1.2826436	up	pleckstrin homology domain containing, family G (with Rh
7922523	LOC730167	1.2819049	up	similar to protein tyrosine phosphatase 4a1
8138912	LSM5	1.281833	up	
7903592	KIAA1324	1.2807437	up	
8123044	TULP4	1.2803425	up	tubby like protein 4
8117377	HIST1H1E	1.2801802	up	histone cluster 1, H1e
7908041	LAMC1	1.2801348	up	laminin, gamma 1 (formerly LAMB2)



## Supplemental Table 1b

eMSC vs. eEN

7902861	LRRC8B	1.2800915	up	leucine rich repeat containing 8 family, member B
8043197	VAMP8	1.2797949	up	vesicle-associated membrane protein 8 (endobrevin)
7975971	C14orf174	1.2797562	up	chromosome 14 open reading frame 174
7983478	C15orf48	1.2783633	up	chromosome 15 open reading frame 48
7929052	IFIT3	1.2782679	up	interferon-induced protein with tetratricopeptide repeats
8027247	ZNF93	1.2782589	up	zinc finger protein 93
8142663	NDUFA5	1.2779627	up	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 5
8020930	ELP2	1.2778773	up	elongation protein 2 homolog ( <i>S. cerevisiae</i> )
8090133	CCDC14	1.2777513	up	coiled-coil domain containing 14
8048081	SPAG16	1.2771181	up	sperm associated antigen 16
7956488	KIF5A	1.2767279	up	kinesin family member 5A
8109773	WWC1	1.2764745	up	WW and C2 domain containing 1
8002481	HYDIN HYDIN2	1.2763075	up	hydrocephalus inducing homolog (mouse)   hydrocephalus
7998952	TIGD7	1.2760222	up	tigger transposable element derived 7
7936408	DCLRE1A	1.2759993	up	DNA cross-link repair 1A (PSO2 homolog, <i>S. cerevisiae</i> )
7929562	ZNF518A	1.2759643	up	zinc finger protein 518A
8151942	HRSP12	1.2752726	up	heat-responsive protein 12
8133360	CLDN4	1.2752415	up	claudin 4
8092009	LRRC34	1.2745901	up	leucine rich repeat containing 34
7958202	CHST11	1.2740906	up	carbohydrate (chondroitin 4) sulfotransferase 11
7951672	PIH1D2	1.2739512	up	PIH1 domain containing 2
8140650	SEMA3E	1.2732382	up	sema domain, immunoglobulin domain (Ig), short basic domain
8156319	GADD45G	1.2731973	up	growth arrest and DNA-damage-inducible, gamma
8135235	PMPCB	1.2727585	up	peptidase (mitochondrial processing) beta
7939158	QSER1	1.2726085	up	glutamine and serine rich 1
7949931	SUV420H1	1.2721734	up	suppressor of variegation 4-20 homolog 1 ( <i>Drosophila</i> )
7959893	GPR133	1.2706277	up	G protein-coupled receptor 133
7917482	CCBL2	1.270323	up	cysteine conjugate-beta lyase 2
7979158	TXNDC16	1.2701805	up	thioredoxin domain containing 16
8085954	AZI2	1.2700504	up	5-azacytidine induced 2
8130499	DYNLT1	1.2698394	up	dynein, light chain, Tctex-type 1
7902345	TYW3	1.2695982	up	tRNA-yW synthesizing protein 3 homolog ( <i>S. cerevisiae</i> )
7954382	PYROXD1	1.2690462	up	pyridine nucleotide-disulphide oxidoreductase domain 1

## Supplemental Table 1b

eMSC vs. eEN

8050007	PXDN	1.2679783	up	peroxidasin homolog (Drosophila)
8106702	ZCCHC9	1.2679771	up	zinc finger, CCHC domain containing 9
8052250	MTIF2	1.267657	up	mitochondrial translational initiation factor 2
7921821	ADAMTS4	1.2665036	up	ADAM metalloproteinase with thrombospondin type 1 mo
7953385	GAPDH	1.2661557	up	glyceraldehyde-3-phosphate dehydrogenase
8175696	GABRA3	1.265064	up	gamma-aminobutyric acid (GABA) A receptor, alpha 3
8117372	HIST1H2AC	1.2645053	up	histone cluster 1, H2ac
8023191	SMAD2	1.2644259	up	SMAD family member 2
8054517	FLJ38359 LOC440	1.2640973	up	hypothetical protein FLJ38359   hypothetical protein LOC
8061138	CSRP2BP	1.2635137	up	CSRP2 binding protein
8169352	NXT2	1.2631282	up	nuclear transport factor 2-like export factor 2
8105970	GTF2H2 DKFZP68	1.262789	up	general transcription factor IIF, polypeptide 2, 44kDa   ge
8128013	RARS2	1.262753	up	arginyl-tRNA synthetase 2, mitochondrial
8113050	CETN3	1.2625424	up	centrin, EF-hand protein, 3 (CDC31 homolog, yeast)
7901460	GPX7	1.2615486	up	glutathione peroxidase 7
7980720	TTC7B	1.2613114	up	tetratricopeptide repeat domain 7B
7934411	USP54	1.261246	up	ubiquitin specific peptidase 54
7967933	IFT88	1.2606587	up	intraflagellar transport 88 homolog (Chlamydomonas)
7960383	PARP11	1.2604735	up	poly (ADP-ribose) polymerase family, member 11
7924058	IRF6	1.2597055	up	interferon regulatory factor 6
8119000	MAPK14	1.2596898	up	mitogen-activated protein kinase 14
8103289	PLRG1	1.2596686	up	pleiotropic regulator 1 (PRL1 homolog, Arabidopsis)
7969640	CLDN10	1.2591984	up	claudin 10
7974725	C14orf100	1.2579762	up	chromosome 14 open reading frame 100
7904830	ZNF364	1.256239	up	zinc finger protein 364
8108733	PCDHB12	1.2555932	up	protocadherin beta 12
8129880	PERP	1.2555492	up	
8058627	ERBB4	1.2550743	up	v-erb-a erythroblastic leukemia viral oncogene homolog 4
8009476	MAP2K6	1.2545712	up	mitogen-activated protein kinase kinase 6
8145470	DPYSL2	1.2542615	up	dihydropyrimidinase-like 2
8065607	PLAGL2	1.2535521	up	pleiomorphic adenoma gene-like 2
8048835	C2orf33	1.253459	up	chromosome 2 open reading frame 33
8092552	IGF2BP2	1.2531804	up	insulin-like growth factor 2 mRNA binding protein 2

## Supplemental Table 1b

eMSC vs. eEN

8019183	ACTG1	1.2526746	up	actin, gamma 1
7934690	C10orf56	1.2515235	up	chromosome 10 open reading frame 56
8152597	MRPL13	1.251518	up	mitochondrial ribosomal protein L13
8027268	ZNF66	1.2510577	up	zinc finger protein 66
8125415	C6orf10	1.2509766	up	chromosome 6 open reading frame 10
8035465	ISYNA1	1.2505075	up	myo-inositol 1-phosphate synthase A1
8094226	LOC285550	1.2502469	up	
8035779	LOC100128975	1.2489778	up	similar to Zinc finger protein 626
8087985	GLT8D1	1.2487146	up	glycosyltransferase 8 domain containing 1
7950683	NARS2	1.2485344	up	asparaginyl-tRNA synthetase 2, mitochondrial (putative)
8054519	LIMS3 LOC729260	1.2484022	up	LIM and senescent cell antigen-like domains 3   similar to
8110971	CMBL	1.2479951	up	carboxymethylenebutenolidase homolog (Pseudomonas)
7932885	ARHGAP12	1.2478476	up	Rho GTPase activating protein 12
8108708	PCDHB7	1.2470703	up	protocadherin beta 7
8131719	DNAH11	1.2468809	up	dynein, axonemal, heavy chain 11
8044333	LIMS3 LOC729260	1.2462865	up	LIM and senescent cell antigen-like domains 3   similar to
7979524	TMEM30B	1.2460591	up	transmembrane protein 30B
7900159	DNALI1	1.245697	up	dynein, axonemal, light intermediate chain 1
7982256	GOLGA9P	1.2449512	up	golgi autoantigen, golgin subfamily a, 9 pseudogene
8143633	OR2A7 OR2A4 LC	1.244808	up	olfactory receptor, family 2, subfamily A, member 7   olfa
8122396	AIG1	1.2439578	up	androgen-induced 1
8175432	SNORD61	1.242679	up	small nucleolar RNA, C/D box 61
8122202	MYB	1.242606	up	v-myb myeloblastosis viral oncogene homolog (avian)
7922408	SNORD78	1.2417473	up	small nucleolar RNA, C/D box 78
8173647	ZDHHC15	1.2414727	up	zinc finger, DHHC-type containing 15
8004133	RPAIN	1.2414268	up	RPA interacting protein
8115600	LOC63920	1.2412683	up	transposon-derived Buster3 transposase-like
7914996	C1orf149	1.2408589	up	chromosome 1 open reading frame 149
8113709	LOX	1.2404315	up	lysyl oxidase
8048733	ACSL3	1.2399566	up	acyl-CoA synthetase long-chain family member 3
7983638	DTWD1	1.2398828	up	DTW domain containing 1
7936028	ACTR1A	1.239263	up	ARP1 actin-related protein 1 homolog A, cencentractin alpha
8106602	ZFYVE16	1.238506	up	zinc finger, FYVE domain containing 16

## Supplemental Table 1b

eMSC vs. eEN

7996837	CDH1	1.2379802	up	cadherin 1, type 1, E-cadherin (epithelial)
8075462	SELM	1.2377589	up	selenoprotein M
8169240	PRPS1	1.2372662	up	phosphoribosyl pyrophosphate synthetase 1
7944656	SC5DL	1.2372401	up	sterol-C5-desaturase (ERG3 delta-5-desaturase homolog, :)
8121043	ORC3L	1.2370117	up	origin recognition complex, subunit 3-like (yeast)
8051707	MAP4K3	1.2369258	up	mitogen-activated protein kinase kinase kinase 3
8112538	GTF2H2 DKFZP681	1.2359937	up	general transcription factor IIH, polypeptide 2, 44kDa   ge
7973840	ARHGAP5	1.2355093	up	Rho GTPase activating protein 5
8131479	FLJ20323	1.2354739	up	
7991581	CHSY1	1.234885	up	chondroitin sulfate synthase 1
8088548	LOC401070	1.2343246	up	FLJ43791 protein
8059680	HTR2B	1.234003	up	5-hydroxytryptamine (serotonin) receptor 2B
8063458	DOK5	1.2338628	up	docking protein 5
7927786	REEP3	1.2337396	up	receptor accessory protein 3
8172225	EFHC2	1.2334148	up	EF-hand domain (C-terminal) containing 2
8113914	FNIP1 RAPGEF6	1.2331762	up	folliculin interacting protein 1   Rap guanine nucleotide ex
8177507	GTF2H2 DKFZP681	1.2320875	up	general transcription factor IIH, polypeptide 2, 44kDa   ge
7928558	ZMIZ1	1.2318642	up	zinc finger, MIZ-type containing 1
7897953	SNORA59A SNOR,	1.2311267	up	small nucleolar RNA, H/ACA box 59A   small nucleolar RN,
8161892	GNA14	1.2305728	up	guanine nucleotide binding protein (G protein), alpha 14
8168968	GPRASP1	1.2302892	up	G protein-coupled receptor associated sorting protein 1
7988414	GATM	1.2301373	up	glycine amidinotransferase (L-arginine:glycine amidinotra
8114536	TMEM173	1.2300893	up	transmembrane protein 173
8005626	SNORA59A SNOR,	1.2300805	up	small nucleolar RNA, H/ACA box 59A   small nucleolar RN,
8042574	OR7E37P LOC441.	1.229904	up	olfactory receptor, family 7, subfamily E, member 37 pseu
8034315	ZNF823	1.2291913	up	zinc finger protein 823
8148501	PTP4A3 LOC1001:	1.228911	up	protein tyrosine phosphatase type IVA, member 3   simila
8129558	OR2A4 OR2A7	1.2286265	up	olfactory receptor, family 2, subfamily A, member 4   olfa
8020973	FHOD3	1.2278179	up	formin homology 2 domain containing 3
7974799	MNAT1	1.2266454	up	menage a trois homolog 1, cyclin H assembly factor (Xeno
8121429	FIG4	1.2257997	up	
8069620	MRPL39	1.2248781	up	mitochondrial ribosomal protein L39
8111129	ZNF622	1.2238488	up	zinc finger protein 622

## Supplemental Table 1b

eMSC vs. eEN

7969533	SLAIN1	1.2227827	up	SLAIN motif family, member 1
8105918	GTF2H2 DKFZP681	1.2227789	up	general transcription factor IIH, polypeptide 2, 44kDa   ge
8091120	GK5	1.222706	up	glycerol kinase 5 (putative)
7997396	ATMIN	1.2226615	up	ATM interactor
7904314	TTF2	1.2214165	up	transcription termination factor, RNA polymerase II
7994237	LCMT1	1.2206609	up	leucine carboxyl methyltransferase 1
8113717	MGC32805	1.2199558	up	
8122222	PDE7B	1.2193866	up	phosphodiesterase 7B
8136987	ARHGEF5 LOC728	1.2193546	up	Rho guanine nucleotide exchange factor (GEF) 5   similar t
8177674	GTF2H2 DKFZP681	1.2190729	up	general transcription factor IIH, polypeptide 2, 44kDa   ge
8082066	C3orf28	1.2190627	up	chromosome 3 open reading frame 28
8047577	ALS2CR8	1.2188945	up	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
8046759	DNAJC10	1.2188755	up	DnaJ (Hsp40) homolog, subfamily C, member 10
8161648	KLF9	1.2184311	up	Kruppel-like factor 9
8112622	GFM2	1.2184079	up	G elongation factor, mitochondrial 2
7942941	CCDC81	1.2179935	up	coiled-coil domain containing 81
8058462	MDH1B	1.2169449	up	malate dehydrogenase 1B, NAD (soluble)
8092134	PLD1	1.2165602	up	phospholipase D1, phosphatidylcholine-specific
7932000	KIN	1.2163188	up	
8099593	KCNIP4	1.2147555	up	Kv channel interacting protein 4
8161575	CBWD5 CBWD3 C	1.2135276	up	COBW domain containing 5   COBW domain containing 3
8094169	CPEB2	1.2122884	up	cytoplasmic polyadenylation element binding protein 2
8068612	WRB	1.2122834	up	tryptophan rich basic protein
7897378	PER3	1.2121097	up	period homolog 3 (Drosophila)
8150797	ATP6V1H	1.2114593	up	ATPase, H+ transporting, lysosomal 50/57kDa, V1 subunit
8121895	TRMT11	1.2110991	up	tRNA methyltransferase 11 homolog (S. cerevisiae)
8076612	EFCAB6	1.2109544	up	EF-hand calcium binding domain 6
8051637	DHX57	1.2100201	up	DEAH (Asp-Glu-Ala-Asp/His) box polypeptide 57
7918725	TRIM33	1.2099372	up	tripartite motif-containing 33
8147848	OXR1	1.2088538	up	oxidation resistance 1
7907104	IQWD1	1.2077471	up	IQ motif and WD repeats 1
8078962	EIF1B	1.2071073	up	eukaryotic translation initiation factor 1B
8144712	C8orf79	1.2067512	up	chromosome 8 open reading frame 79

Supplemental Table 1b  
eMSC vs. eEN

8139228	C7orf25	1.2063482	up	chromosome 7 open reading frame 25
7943263	AMOTL1	1.2056673	up	angiomin like 1
8157193	ZNF483	1.2048646	up	zinc finger protein 483
8104746	NPR3	1.2044513	up	natriuretic peptide receptor C/guanylate cyclase C (atrioventricular node, T-cell differentiation protein 2)
8148040	MAL2	1.2039803	up	mal, T-cell differentiation protein 2
8147891	PKHD1L1	1.2032725	up	polycystic kidney and hepatic disease 1 (autosomal recessive)
8144378	AGPAT5	1.2026782	up	1-acylglycerol-3-phosphate O-acyltransferase 5 (lysophospholipase)
8004955	LOC284033	1.201859	up	
8095545	RUFY3	1.2014122	up	RUN and FYVE domain containing 3
8028194	ZNF382	1.201273	up	zinc finger protein 382
8122933	TIAM2	1.2011946	up	T-cell lymphoma invasion and metastasis 2
8107594	SNCAIP	1.2010515	up	synuclein, alpha interacting protein (synphilin)
7938834	NAV2	1.200461	up	neuron navigator 2
8121734	ASF1A	1.2003055	up	ASF1 anti-silencing function 1 homolog A ( <i>S. cerevisiae</i> )
8089203	SENP7	1.2002517	up	SUMO1/sentrin specific peptidase 7
8150002	FBXO16 ZNF395	1.1998223	up	F-box protein 16   zinc finger protein 395
8143988	MLL3	1.1983167	up	myeloid/lymphoid or mixed-lineage leukemia 3
8127872	SNAP91	1.1976842	up	synaptosomal-associated protein, 91kDa homolog (mouse)
8127051	TRAM2	1.1975645	up	translocation associated membrane protein 2
7962427	PUS7L	1.1974084	up	pseudouridylate synthase 7 homolog ( <i>S. cerevisiae</i> )-like
7917954	FRRS1	1.1971829	up	ferric-chelate reductase 1
7922130	DPT	1.197072	up	dermatopontin
7975772	C14orf140	1.1969309	up	chromosome 14 open reading frame 140
7962151	MGC24039	1.1966858	up	
7937079	BNIP3	1.1951146	up	BCL2/adenovirus E1B 19kDa interacting protein 3
8094936	LOC280665	1.1949521	up	putative anti-CNG alpha 1 cation channel translation product
8018761	ST6GALNAC2	1.1942503	up	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylglucosaminyl transferase 2
8046833	FLJ44048	1.1933068	up	
8122242	PEX7	1.1928025	up	peroxisomal biogenesis factor 7
8153449	EEF1D	1.1922989	up	eukaryotic translation elongation factor 1 delta (guanine nucleotide exchange factor)
8096091	THAP9	1.1918571	up	THAP domain containing 9
7991453	LOC400451	1.1912296	up	hypothetical gene supported by AK075564; BC060873
7996198	CCDC113	1.1909566	up	coiled-coil domain containing 113

## Supplemental Table 1b

eMSC vs. eEN

8112596	ANKRA2	1.190736	up	ankyrin repeat, family A (RFXANK-like), 2
8017150	TUBD1	1.190638	up	tubulin, delta 1
7918034	DPH5	1.1905684	up	
8161945	RASEF	1.1901327	up	RAS and EF-hand domain containing
8142143	COG5	1.1889359	up	component of oligomeric golgi complex 5
7980580	GALC	1.1889162	up	galactosylceramidase
7927915	STOX1	1.1888788	up	storkhead box 1
8104378	POLS	1.1885954	up	polymerase (DNA directed) sigma
8089851	HGD LOC1001325	1.1883082	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
7926596	COMMD3	1.1873453	up	COMM domain containing 3
8065566	DEFB124	1.1871728	up	defensin, beta 124
8082607	ATP2C1	1.18568	up	ATPase, Ca <sup>++</sup> transporting, type 2C, member 1
7923578	FMOD	1.185464	up	fibromodulin
7985089	RCN2	1.1853005	up	reticulocalbin 2, EF-hand calcium binding domain
8068383	CLIC6	1.1836888	up	chloride intracellular channel 6
8157027	NIPSNAP3B	1.183347	up	nipsnap homolog 3B (C. elegans)
8159984	C9orf46	1.1832833	up	chromosome 9 open reading frame 46
8093278	HGD LOC1001325	1.1824374	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
7938683	LOC441453	1.18222	up	similar to olfactory receptor, family 7, subfamily A, memb
8040552	NCOA1	1.1817313	up	nuclear receptor coactivator 1
7988426	SLC30A4	1.1806382	up	solute carrier family 30 (zinc transporter), member 4
8130102	KATNA1	1.180367	up	katanin p60 (ATPase-containing) subunit A 1
8017704	FLJ32065	1.1802582	up	
8105121	GHR	1.1800748	up	growth hormone receptor
7940630	SCGB1D2	1.1797794	up	secretoglobin, family 1D, member 2
7999598	NTAN1	1.1793977	up	N-terminal asparagine amidase
8142554	AASS	1.1786193	up	aminoadipate-semialdehyde synthase
8129901	REPS1	1.1784756	up	RALBP1 associated Eps domain containing 1
8102982	GAB1	1.1783413	up	GRB2-associated binding protein 1
7943162	C11orf54	1.1783073	up	chromosome 11 open reading frame 54
8143279	ZC3HAV1	1.1780229	up	zinc finger CCCH-type, antiviral 1
7898057	PDPN	1.1776505	up	podoplanin
8056829	CIR	1.177197	up	CBF1 interacting corepressor

## Supplemental Table 1b

eMSC vs. eEN

8096511	BMPR1B	1.1767701	up	bone morphogenetic protein receptor, type IB
7948113	OR7E5P	1.1765193	up	olfactory receptor, family 7, subfamily E, member 5 pseud
8052233	C2orf63	1.1762946	up	chromosome 2 open reading frame 63
8124196	DCDC2	1.1758869	up	doublecortin domain containing 2
8163896	STOM	1.1746383	up	stomatin
7940323	MS4A8B	1.1746231	up	membrane-spanning 4-domains, subfamily A, member 8B
8162652	CTSL2	1.174022	up	cathepsin L2
8018038	ABCA5	1.173019	up	ATP-binding cassette, sub-family A (ABC1), member 5
8163444	ZFP37	1.1729252	up	zinc finger protein 37 homolog (mouse)
8107798	SLC27A6	1.1728077	up	solute carrier family 27 (fatty acid transporter), member 6
8157105	ZNF462	1.1724424	up	zinc finger protein 462
7932420	PTPLA	1.1722103	up	protein tyrosine phosphatase-like (proline instead of catal
7921088	NES	1.1717467	up	nestin
8002470	HYDIN HYDIN2	1.1717044	up	hydrocephalus inducing homolog (mouse)   hydrocephalu
8089954	IQCB1	1.1702994	up	IQ motif containing B1
8145766	MST131	1.1702685	up	MSTP131
8138613	OSBPL3	1.1698813	up	oxysterol binding protein-like 3
8121768	PKIB	1.1694052	up	protein kinase (cAMP-dependent, catalytic) inhibitor beta
7913357	ECE1	1.1693138	up	endothelin converting enzyme 1
8098006	GLRB	1.16891	up	glycine receptor, beta
8057933	GTF3C3	1.1675297	up	general transcription factor IIIC, polypeptide 3, 102kDa
7903162	TMEM56	1.1665443	up	transmembrane protein 56
8178435	IER3	1.1664504	up	immediate early response 3
8095680	IL8	1.166077	up	interleukin 8
8170364	AFF2	1.1659985	up	AF4/FMR2 family, member 2
8046628	RBM45	1.1657269	up	RNA binding motif protein 45
8077472	GRM7	1.1653037	up	glutamate receptor, metabotropic 7
8112822	DMGDH	1.165299	up	dimethylglycine dehydrogenase
8132376	STARD3NL	1.1652653	up	STARD3 N-terminal like
8060997	SPTLC3	1.1651267	up	serine palmitoyltransferase, long chain base subunit 3
8121257	PRDM1	1.1651187	up	PR domain containing 1, with ZNF domain
7969544	NDFIP2	1.1647054	up	Nedd4 family interacting protein 2
8052125	ASB3	1.1646881	up	ankyrin repeat and SOCS box-containing 3



## Supplemental Table 1b

eMSC vs. eEN

7952601	ETS1	1.164642	up	v-ets erythroblastosis virus E26 oncogene homolog 1 (avian)
8104901	IL7R	1.1639357	up	interleukin 7 receptor
8145835	ERLIN2	1.1627914	up	ER lipid raft associated 2
8122045	AKAP7	1.1627731	up	A kinase (PRKA) anchor protein 7
8007176	TTC25	1.1627678	up	tetratricopeptide repeat domain 25
8161755	ALDH1A1	1.1622264	up	aldehyde dehydrogenase 1 family, member A1
8151436	PXMP3	1.1617473	up	peroxisomal membrane protein 3, 35kDa (Zellweger syndrome)
7987361	ZNF770	1.1611929	up	zinc finger protein 770
8166455	PRDX4	1.1611854	up	peroxiredoxin 4
8100478	AASDH	1.1607978	up	aminoadipate-semialdehyde dehydrogenase
8093191	DLG1	1.1602947	up	discs, large homolog 1 (Drosophila)
7951977	FXYP6	1.1601815	up	FXYP domain containing ion transport regulator 6
7936734	FGFR2	1.1597931	up	fibroblast growth factor receptor 2 (bacteria-expressed kinase)
7923967	YOD1	1.1597773	up	
8129560	CTAGE6 CTAGE4	1.1597174	up	CTAGE family, member 6   CTAGE family, member 4   CTAGE family, member 6
7957140	LGR5	1.1595348	up	leucine-rich repeat-containing G protein-coupled receptor
7983811	PIGB	1.1593574	up	phosphatidylinositol glycan anchor biosynthesis, class B
8056151	PLA2R1	1.159201	up	phospholipase A2 receptor 1, 180kDa
8097841	TRIM2	1.1583229	up	tripartite motif-containing 2
8021946	COLEC12	1.157419	up	collectin sub-family member 12
8063187	EYA2	1.1573027	up	eyes absent homolog 2 (Drosophila)
8160346	PTPLAD2	1.1565727	up	protein tyrosine phosphatase-like A domain containing 2
8044346	FLJ38359 LOC100	1.1562654	up	hypothetical protein FLJ38359   hypothetical protein LOC100131150
8110520	LOC729595	1.1560808	up	similar to high-mobility group box 3
8041967	C2orf30	1.155077	up	chromosome 2 open reading frame 30
8014100	C17orf75	1.1544751	up	chromosome 17 open reading frame 75
7947947	AGBL2	1.1541947	up	ATP/GTP binding protein-like 2
8147030	STMN2	1.1539356	up	stathmin-like 2
7925492	OPN3	1.1538888	up	opsin 3
8089026	STX19	1.1536974	up	syntaxin 19
7928630	EIF5AL1	1.1529628	up	eukaryotic translation initiation factor 5A-like 1   eukaryotic translation initiation factor 5A-like 1
8067113	ZNF217	1.1528574	up	zinc finger protein 217
7968678	FREM2	1.1524881	up	FRAS1 related extracellular matrix protein 2

## Supplemental Table 1b

eMSC vs. eEN

8073799	ATXN10	1.151935	up	ataxin 10
7911989	RPL22	1.1513743	up	ribosomal protein L22
7946454	SCUBE2	1.1494939	up	signal peptide, CUB domain, EGF-like 2
7908793	ELF3	1.1489024	up	E74-like factor 3 (ets domain transcription factor, epitheli
8130720	SFT2D1	1.1488949	up	SFT2 domain containing 1
7959102	HSPB8	1.1487769	up	heat shock 22kDa protein 8
7909768	SPATA17	1.1480969	up	spermatogenesis associated 17
8123467	C6orf70	1.1478026	up	chromosome 6 open reading frame 70
8108703	PCDHB6	1.1475387	up	protocadherin beta 6
8108724	PCDHB10	1.1471899	up	protocadherin beta 10
8150143	PURG	1.146527	up	purine-rich element binding protein G
8157487	PAPPA	1.1459097	up	pregnancy-associated plasma protein A, pappalysin 1
7918323	SORT1	1.1458026	up	sortilin 1
7930818	DKFZp781N1041	1.1451409	up	similar to RIKEN cDNA 6430537H07 gene
8105908	OCLN	1.1435337	up	occludin
8146024	ADAM32	1.1434934	up	ADAM metallopeptidase domain 32
8142697	POT1	1.143258	up	
8044849	PTPN4	1.1430556	up	protein tyrosine phosphatase, non-receptor type 4 (mega
8038993	ZNF28	1.142829	up	zinc finger protein 28
8078319	ZCWPW2	1.1422269	up	zinc finger, CW type with PWWP domain 2
8051963	SRBD1	1.1414999	up	S1 RNA binding domain 1
7916343	YIPF1	1.1412954	up	Yip1 domain family, member 1
8033257	C3	1.1410179	up	complement component 3
8142471	WNT2	1.1404085	up	wingless-type MMTV integration site family member 2
8150225	RAB11FIP1	1.139688	up	RAB11 family interacting protein 1 (class I)
8143433	MRPS33	1.1395916	up	mitochondrial ribosomal protein S33
7927694	PHYHIPL	1.139372	up	phytanoyl-CoA 2-hydroxylase interacting protein-like
8150908	IMPAD1	1.1390694	up	inositol monophosphatase domain containing 1
8040249	ATP6V1C2	1.1385849	up	ATPase, H <sup>+</sup> transporting, lysosomal 42kDa, V1 subunit C2
8037374	PLAUR	1.1381333	up	plasminogen activator, urokinase receptor
7921862	C1orf192	1.1380515	up	chromosome 1 open reading frame 192
8143188	CREB3L2	1.1380501	up	cAMP responsive element binding protein 3-like 2
7969390	PIBF1	1.1380215	up	progesterone immunomodulatory binding factor 1

## Supplemental Table 1b

eMSC vs. eEN

7974125	KIAA0423	1.1364714	up	
8088642	LRIG1	1.1362857	up	leucine-rich repeats and immunoglobulin-like domains 1
7934753	EIF5AL1	1.1359674	up	eukaryotic translation initiation factor 5A-like 1   eukaryo
8167887	MAGEH1	1.1343926	up	melanoma antigen family H, 1
8020779	DSG2	1.1333939	up	desmoglein 2
8054166	TSGA10	1.1333244	up	testis specific, 10
8163109	C9orf4	1.1324052	up	chromosome 9 open reading frame 4
8041867	MSH2	1.1318642	up	mutS homolog 2, colon cancer, nonpolyposis type 1 (E. co
8114814	NR3C1	1.1316291	up	nuclear receptor subfamily 3, group C, member 1 (glucoccc
8095894	MRPL1	1.1305107	up	mitochondrial ribosomal protein L1
7928600	EIF5AL1	1.1304812	up	eukaryotic translation initiation factor 5A-like 1   eukaryo
7902367	ACADM	1.1301979	up	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight cha
8106950	FAM81B	1.1301856	up	family with sequence similarity 81, member B
8140686	SEMA3D	1.1301119	up	sema domain, immunoglobulin domain (Ig), short basic dc
8113483	XIRP1 FLJ43080	1.1299742	up	xin actin-binding repeat containing 1   hypothetical protei
8131975	TAX1BP1	1.1299205	up	Tax1 (human T-cell leukemia virus type I) binding protein :
7926037	PFKFB3	1.1297431	up	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
8121002	C6orf162	1.1291349	up	chromosome 6 open reading frame 162
8014172	CCT6B	1.129003	up	chaperonin containing TCP1, subunit 6B (zeta 2)
7978391	NOVA1	1.1283842	up	neuro-oncological ventral antigen 1
7983469	SPATA5L1	1.127522	up	spermatogenesis associated 5-like 1
7910950	KMO	1.1268159	up	kynurenine 3-monooxygenase (kynurenine 3-hydroxylase)
7918759	BCAS2 DENND2C	1.1260699	up	breast carcinoma amplified sequence 2   DENN/MADD do
8068644	IGSF5	1.1256188	up	immunoglobulin superfamily, member 5
8156575	ATMIN	1.1249665	up	ATM interactor
7918517	WDR77	1.1244829	up	WD repeat domain 77
8178298	GABBR1	1.1244774	up	gamma-aminobutyric acid (GABA) B receptor, 1
8122409	PEX3	1.1242898	up	peroxisomal biogenesis factor 3
8108435	UBE2D2	1.1239378	up	ubiquitin-conjugating enzyme E2D 2 (UBC4/5 homolog, ye
8103106	LRBA	1.122612	up	LPS-responsive vesicle trafficking, beach and anchor conta
8012126	CLDN7	1.1221703	up	claudin 7
8089478	GCET2	1.1221662	up	germinal center expressed transcript 2
7916843	GNG12	1.1216104	up	guanine nucleotide binding protein (G protein), gamma 12

## Supplemental Table 1b

eMSC vs. eEN

8060850	BMP2	1.1213578	up	bone morphogenetic protein 2
7923875	C1orf186	1.1212186	up	chromosome 1 open reading frame 186
8082965	MRAS	1.1206867	up	muscle RAS oncogene homolog
8084627	C3orf65	1.1204281	up	chromosome 3 open reading frame 65
7974166	FANCM	1.1203382	up	Fanconi anemia, complementation group M
7905754	ATP8B2	1.1199337	up	ATPase, class I, type 8B, member 2
8053648	KRCC1	1.1187487	up	lysine-rich coiled-coil 1
8116983	CD83	1.1180658	up	
8130032	FBXO30	1.117752	up	F-box protein 30
7965343	WDR51B GALNT4	1.1175606	up	WD repeat domain 51B   UDP-N-acetyl-alpha-D-galactosa
7982829	SPINT1	1.1172467	up	serine peptidase inhibitor, Kunitz type 1
8147697	GRHL2	1.1164383	up	grainyhead-like 2 (Drosophila)
8179595	GABBR1	1.1133842	up	gamma-aminobutyric acid (GABA) B receptor, 1
7959330	WDR66	1.1130704	up	WD repeat domain 66
7981068	SERPINA1	1.112728	up	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
8165217	NOTCH1	1.112598	up	Notch homolog 1, translocation-associated (Drosophila)
7980098	ALDH6A1	1.1125709	up	aldehyde dehydrogenase 6 family, member A1
7916570	OMA1 DAB1	1.1124575	up	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   di-
7919326	ACP6	1.1124163	up	acid phosphatase 6, lysophosphatidic
8166355	CNKS2	1.112025	up	connector enhancer of kinase suppressor of Ras 2
8155747	C9orf135	1.1117027	up	chromosome 9 open reading frame 135
8089145	ABI3BP	1.1111406	up	ABI gene family, member 3 (NESH) binding protein
7949765	PPP1CA	1.1077687	up	protein phosphatase 1, catalytic subunit, alpha isoform
8155898	PCSK5	1.1077588	up	proprotein convertase subtilisin/kexin type 5
8083941	ECT2	1.1070803	up	epithelial cell transforming sequence 2 oncogene
8156167	MAK10	1.1057768	up	
8022145	L3MBTL4	1.1056678	up	l(3)mbt-like 4 (Drosophila)
7917276	LPAR3	1.1053039	up	lysophosphatidic acid receptor 3
7957793	ACTR6	1.105212	up	ARP6 actin-related protein 6 homolog (yeast)
8174779	LAMP2	1.1050149	up	lysosomal-associated membrane protein 2
7965855	NUP37	1.104473	up	nucleoporin 37kDa
8120552	FAM135A	1.1039008	up	family with sequence similarity 135, member A
8112865	SERINC5	1.1020538	up	serine incorporator 5

## Supplemental Table 1b

eMSC vs. eEN

8105663	NLN	1.1012806	up	neurolysin (metallopeptidase M3 family)
8055220	A26C1A A26C1B	1.1012094	up	ANKRD26-like family C, member 1A   ANKRD26-like family
8179704	IER3	1.1011249	up	immediate early response 3
8042291	AFTPH	1.1003486	up	aftiphilin
8147396	INTS8	1.1001006	up	integrator complex subunit 8
8023267	MYO5B	1.0994185	up	myosin VB
8036284	COX7A1	1.0992781	up	cytochrome c oxidase subunit VIIa polypeptide 1 (muscle)
8124848	IER3	1.0989699	up	immediate early response 3
8144481	DEFB4	1.0987939	up	defensin, beta 4
7945371	IFITM3	1.0986768	up	interferon induced transmembrane protein 3 (1-8U)
8155422	CBWD5 CBWD2 C	1.0985296	up	COBW domain containing 5   COBW domain containing 2
8138977	DPY19L1	1.098528	up	dpy-19-like 1 (C. elegans)
8135211	MGC35361	1.0984441	up	
8083282	HPS3	1.0982811	up	Hermansky-Pudlak syndrome 3
7961514	MGP	1.0981915	up	matrix Gla protein
8056837	GPR155	1.0979977	up	G protein-coupled receptor 155
7932598	C10orf63	1.097523	up	chromosome 10 open reading frame 63
8142646	IQUB	1.0975006	up	IQ motif and ubiquitin domain containing
8076046	TMEM184B	1.0972912	up	transmembrane protein 184B
8118142	TNF	1.096794	up	
8167305	EBP	1.0966994	up	emopamil binding protein (sterol isomerase)
8159900	GLIS3	1.0966768	up	GLIS family zinc finger 3
8112274	ELOVL7	1.0965912	up	ELOVL family member 7, elongation of long chain fatty aci
8098620	FAM149A	1.0960851	up	family with sequence similarity 149, member A
8164252	SH2D3C	1.0958664	up	SH2 domain containing 3C
7918936	VTCN1	1.0952436	up	V-set domain containing T cell activation inhibitor 1
7949496	CFL1	1.0950478	up	cofilin 1 (non-muscle)
8065403	CST3	1.0946635	up	cystatin C
8174610	LRCH2	1.09415	up	leucine-rich repeats and calponin homology (CH) domain c
7961844	CASC1	1.0933815	up	cancer susceptibility candidate 1
8179263	TNF	1.0933722	up	
7901765	HOOK1	1.0931563	up	hook homolog 1 (Drosophila)
7901175	TSPAN1	1.0929533	up	tetraspanin 1

Supplemental Table 1b  
eMSC vs. eEN

8002446	HYDIN HYDIN2	1.0926648	up	hydrocephalus inducing homolog (mouse)   hydrocephalu
8160637	B4GALT1	1.0924369	up	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, poly
7951545	EXPH5	1.0921358	up	exophilin 5
7993756	ACSM3	1.0917546	up	acyl-CoA synthetase medium-chain family member 3
8094441	SLC34A2	1.091499	up	solute carrier family 34 (sodium phosphate), member 2
8117189	KAAG1	1.0912182	up	kidney associated antigen 1
8177983	TNF	1.0905267	up	
7926638	ARMC3	1.0901433	up	armadillo repeat containing 3
7924309	ESRRG	1.089519	up	estrogen-related receptor gamma
7965573	NTN4	1.0890783	up	netrin 4
8136177	KIAA0265	1.0890543	up	
7920285	S100A2	1.087966	up	S100 calcium binding protein A2
8114797	SPRY4	1.087697	up	sprouty homolog 4 (Drosophila)
8173414	SLC7A3	1.087506	up	solute carrier family 7 (cationic amino acid transporter, y+
7965523	NR2C1	1.0868652	up	nuclear receptor subfamily 2, group C, member 1
8147375	DPY19L4	1.0867447	up	dpy-19-like 4 (C. elegans)
8088866	CNTN3	1.0859832	up	contactin 3 (plasmacytoma associated)
8098021	GRIA2	1.0858274	up	glutamate receptor, ionotropic, AMPA 2
8149169	DEFB4	1.0856818	up	defensin, beta 4
8145586	ELP3	1.0851529	up	elongation protein 3 homolog (S. cerevisiae)
8020702	TAF4B	1.0850346	up	TAF4b RNA polymerase II, TATA box binding protein (TBP)
7955613	KRT7	1.0848558	up	keratin 7
7907160	ATP1B1	1.0835105	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 1 polypeptide
7987405	RASGRP1	1.0828125	up	RAS guanyl releasing protein 1 (calcium and DAG-regulate
7916506	C1orf168	1.0815399	up	chromosome 1 open reading frame 168
8155802	GDA	1.0811304	up	guanine deaminase
8002692	ZFH3	1.0810091	up	zinc finger homeobox 3
8157890	PBX3	1.078398	up	pre-B-cell leukemia homeobox 3
8044613	CBWD1 CBWD3 C	1.078224	up	COBW domain containing 1   COBW domain containing 3
7910030	C1orf67 DNAH14	1.0779796	up	chromosome 1 open reading frame 67   dynein, axonema
7989501	CA12	1.0778853	up	carbonic anhydrase XII
8150565	RNF170	1.077221	up	ring finger protein 170
8067955	CXADR	1.0769578	up	coxsackie virus and adenovirus receptor

## Supplemental Table 1b

eMSC vs. eEN

8144516	THEX1	1.0769507	up	three prime histone mRNA exonuclease 1
7902592	ARID3B	1.0768777	up	AT rich interactive domain 3B (BRIGHT-like)
8154132	C9orf70	1.0766503	up	chromosome 9 open reading frame 70
8135341	FLJ23834	1.0763476	up	
8091385	CP	1.0763342	up	ceruloplasmin (ferroxidase)
8035789	ZNF826 ZNF737	1.0760367	up	zinc finger protein 826   zinc finger protein 737
8171006	BRCC3	1.0758443	up	BRCA1/BRCA2-containing complex, subunit 3
8178590	DDAH2	1.0737779	up	dimethylarginine dimethylaminohydrolase 2
8041561	MORN2	1.0737575	up	MORN repeat containing 2
8124654	GABBR1	1.0736523	up	gamma-aminobutyric acid (GABA) B receptor, 1
8042310	SLC1A4	1.0734955	up	solute carrier family 1 (glutamate/neutral amino acid tran
8155636	CBWD3 CBWD1 C	1.073473	up	COBW domain containing 3   COBW domain containing 1
8105111	FBXO4	1.0733413	up	F-box protein 4
7974425	SAMD4A	1.0728984	up	sterile alpha motif domain containing 4A
8179819	DDAH2	1.0728464	up	dimethylarginine dimethylaminohydrolase 2
7972269	TGDS	1.0711393	up	TDP-glucose 4,6-dehydratase
8123893	MAK	1.0707695	up	male germ cell-associated kinase
8171624	GPR64	1.0707444	up	G protein-coupled receptor 64
7906079	RAB25	1.0706999	up	
8161537	CBWD3 CBWD1 C	1.0703462	up	COBW domain containing 3   COBW domain containing 1
8044605	LOC654433	1.0702918	up	
8040113	DDEF2	1.0701585	up	development and differentiation enhancing factor 2
8082673	ACPP	1.0700973	up	acid phosphatase, prostate
8167930	FAAH2	1.0700792	up	fatty acid amide hydrolase 2
8138789	JAZF1	1.0698787	up	JAZF zinc finger 1
8116051	DBN1	1.06937	up	drebrin 1
7938989	GAS2	1.0683091	up	growth arrest-specific 2
8091922	WDR49	1.0681971	up	WD repeat domain 49
8057677	SLC40A1	1.0679694	up	solute carrier family 40 (iron-regulated transporter), mem
8154670	IFT74	1.0672183	up	intraflagellar transport 74 homolog (Chlamydomonas)
7902977	KIAA1107	1.0670158	up	
8043055	DNAH6	1.066938	up	dynein, axonemal, heavy chain 6
8044236	GCC2	1.0661348	up	GRIP and coiled-coil domain containing 2

## Supplemental Table 1b

eMSC vs. eEN

8124798	KIAA1949	1.0659187	up	
7965357	GALNT4	1.0657066	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyl
8126259	C6orf130	1.0656943	up	chromosome 6 open reading frame 130
7931754	IDI1	1.0654281	up	isopentenyl-diphosphate delta isomerase 1
8120613	RIMS1	1.0647215	up	regulating synaptic membrane exocytosis 1
7986428	LOC400464	1.0639437	up	similar to FLJ43276 protein
7954196	MGST1	1.0638882	up	microsomal glutathione S-transferase 1
8033674	MUC16	1.0637853	up	mucin 16, cell surface associated
8142270	NRCAM	1.0623571	up	neuronal cell adhesion molecule
7917283	MCOLN2	1.0623395	up	mucoilin 2
8114326	C5orf5	1.0615804	up	chromosome 5 open reading frame 5
8156160	LOC100129901	1.0604179	up	similar to KIF27B
7918593	RHOC	1.0600333	up	ras homolog gene family, member C
7958352	BTBD11	1.0592738	up	BTB (POZ) domain containing 11
8063729	EDN3	1.0590492	up	endothelin 3
7937330	IFITM2	1.0589433	up	interferon induced transmembrane protein 2 (1-8D)
8062623	PLCG1	1.0587887	up	phospholipase C, gamma 1
8051785	KCNG3	1.058563	up	potassium voltage-gated channel, subfamily G, member 3
7951429	KBTBD3	1.0577184	up	kelch repeat and BTB (POZ) domain containing 3
8174029	TAF7L	1.0560924	up	TAF7-like RNA polymerase II, TATA box binding protein (Tl
8120335	FAM83B	1.0558075	up	family with sequence similarity 83, member B
8070411	C21orf88 LOC100	1.0551943	up	chromosome 21 open reading frame 88   similar to C21or
8086517	CDCP1	1.0551633	up	CUB domain containing protein 1
7898623	UBXD3	1.0548483	up	UBX domain containing 3
8165024	C9orf116	1.0545642	up	chromosome 9 open reading frame 116
7916616	CYP2J2	1.0539649	up	cytochrome P450, family 2, subfamily J, polypeptide 2
7918294	C1orf194	1.0539261	up	chromosome 1 open reading frame 194
8054511	LOC205251	1.0538187	up	
8172220	NDP	1.0534866	up	Norrie disease (pseudoglioma)
8109912	KCNIP1	1.0530261	up	Kv channel interacting protein 1
8096116	AGPAT9	1.0515584	up	1-acylglycerol-3-phosphate O-acyltransferase 9
8124134	TPMT	1.0508306	up	thiopurine S-methyltransferase
8044818	hCG_17324	1.0505567	up	primary ciliary dyskinesia protein 1



## Supplemental Table 1b

eMSC vs. eEN

7950307	UCP2	1.0494447	up	uncoupling protein 2 (mitochondrial, proton carrier)
8163908	GGTA1	1.0484526	up	glycoprotein, alpha-galactosyltransferase 1
8138392	AGR3	1.0480174	up	anterior gradient homolog 3 ( <i>Xenopus laevis</i> )
7952341	ASAM	1.0469728	up	adipocyte-specific adhesion molecule
7943795	C11orf52	1.0468811	up	chromosome 11 open reading frame 52
8144230	ZNF596	1.0468234	up	zinc finger protein 596
8088315	ASB14 DNAH12	1.0467855	up	ankyrin repeat and SOCS box-containing 14   dynein, axor
8081826	UPK1B	1.046652	up	uroplakin 1B
7951686	IL18	1.0464164	up	interleukin 18 (interferon-gamma-inducing factor)
7966202	KCTD10	1.0463146	up	potassium channel tetramerisation domain containing 10
8044700	DPP10	1.0460485	up	dipeptidyl-peptidase 10
8058498	FZD5	1.0459962	up	frizzled homolog 5 ( <i>Drosophila</i> )
8151296	LACTB2	1.0458243	up	lactamase, beta 2
8110084	MSX2	1.0455421	up	msh homeobox 2
7924029	LAMB3	1.0447453	up	laminin, beta 3
8087337	LAMB2	1.0446948	up	laminin, beta 2 (laminin 5)
8105862	CDK7	1.0446581	up	cyclin-dependent kinase 7
8178598	CLIC1	1.0445834	up	chloride intracellular channel 1
8136979	CTAGE6 CTAGE4	1.0442739	up	CTAGE family, member 6   CTAGE family, member 4   CTA
8100984	CXCL3	1.0439957	up	chemokine (C-X-C motif) ligand 3
8131475	C1GALT1	1.0439725	up	core 1 synthase, glycoprotein-N-acetylgalactosamine 3-be
7975632	ZADH1	1.0438294	up	zinc binding alcohol dehydrogenase, domain containing 1
7953520	LRRC23	1.0435469	up	leucine rich repeat containing 23
7945321	GLB1L2	1.0433909	up	galactosidase, beta 1-like 2
8177462	CDK7	1.0433762	up	cyclin-dependent kinase 7
8167592	PAGE4	1.0430903	up	P antigen family, member 4 (prostate associated)
8095758	RCHY1	1.0418653	up	ring finger and CHY zinc finger domain containing 1
7997374	DYNLRB2	1.041518	up	dynein, light chain, roadblock-type 2
8054513	FLJ38359 LOC100	1.0415084	up	hypothetical protein FLJ38359   hypothetical protein LOC:
8019802	RNU2 RNU2B WC	1.0408229	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
7963567	KRT8	1.0406803	up	keratin 8
8037005	TGFB1	1.0401458	up	transforming growth factor, beta 1
8079598	ZNF589	1.0397696	up	zinc finger protein 589

## Supplemental Table 1b

eMSC vs. eEN

8179827	CLIC1	1.0394876	up	chloride intracellular channel 1
7979510	SIX4	1.039308	up	SIX homeobox 4
7973727	KIAA1305	1.0391622	up	
8085062	IL5RA	1.0390668	up	interleukin 5 receptor, alpha
8123246	SLC22A3	1.0383193	up	solute carrier family 22 (extraneuronal monoamine transp
8043059	LOC200383	1.0383049	up	similar to Dynein heavy chain at 16F
8090577	MBD4	1.037167	up	methyl-CpG binding domain protein 4
8107119	TMEM157	1.0368681	up	transmembrane protein 157
8127743	HMG3	1.0367677	up	high mobility group nucleosomal binding domain 3
8147273	SLC26A7 LOC1001	1.0364054	up	solute carrier family 26, member 7   similar to hCG20085
8145293	ADAM28	1.0360076	up	ADAM metalloproteinase domain 28
8001149	VPS35	1.0356128	up	vacuolar protein sorting 35 homolog ( <i>S. cerevisiae</i> )
7932407	ST8SIA6	1.0351698	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferas
8085732	EFHB	1.0340235	up	EF-hand domain family, member B
7959807	TMEM132B	1.033926	up	transmembrane protein 132B
8175177	MBNL3	1.0331067	up	muscleblind-like 3 ( <i>Drosophila</i> )
7973875	NPAS3	1.0329647	up	neuronal PAS domain protein 3
8043071	LOC200383	1.0329591	up	similar to Dynein heavy chain at 16F
7898988	CLIC4	1.0329168	up	chloride intracellular channel 4
8125059	CLIC1	1.0328851	up	chloride intracellular channel 1
8157446	ORM1	1.032597	up	orosomuroid 1
8044417	TMEM87B	1.0324981	up	transmembrane protein 87B
8019705	RNU2 RNU2B WC	1.0323257	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019633	RNU2 RNU2B WC	1.0322895	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019703	RNU2 RNU2B WC	1.0322417	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019707	RNU2 RNU2B WC	1.0322407	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019641	RNU2 RNU2B WC	1.0320369	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019631	RNU2 RNU2B WC	1.0320191	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019635	RNU2 RNU2B WC	1.0318854	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019639	RNU2 RNU2B WC	1.0317967	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8019637	RNU2 RNU2B WC	1.0317225	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
7964987	KCNC2	1.0308174	up	potassium voltage-gated channel, Shaw-related subfamily
7990757	CTSH	1.0307306	up	cathepsin H

## Supplemental Table 1b

eMSC vs. eEN

7925452	GREM2	1.0295186	up	gremlin 2, cysteine knot superfamily, homolog (Xenopus laevis)
8171561	SCML2	1.0294921	up	sex comb on midleg-like 2 (Drosophila)
8039006	ZNF320	1.0293115	up	zinc finger protein 320
8077899	PPARG	1.0292542	up	peroxisome proliferator-activated receptor gamma
8088560	ADAMTS9	1.0291296	up	ADAM metalloproteinase with thrombospondin type 1 motifs
8090180	MUC13	1.029062	up	mucin 13, cell surface associated
8091887	ZBBX	1.0289779	up	zinc finger, B-box domain containing
8133233	AUTS2	1.0287218	up	autism susceptibility candidate 2
8095744	AREG   LOC727738	1.0285411	up	amphiregulin (schwannoma-derived growth factor)   similar
8097628	HHIP	1.0284569	up	hedgehog interacting protein
7915147	FHL3	1.0282667	up	four and a half LIM domains 3
7988990	WDR72	1.028182	up	WD repeat domain 72
8104492	ROPN1L	1.0281434	up	ropporin 1-like
8088322	DNAH12L	1.0276424	up	dynein, axonemal, heavy chain 12-like
8020037	KIAA0802	1.02707	up	
8089659	KIAA1407	1.026975	up	
8017061	TEX14	1.0268513	up	testis expressed 14
8173825	RPS6KA6	1.0265772	up	ribosomal protein S6 kinase, 90kDa, polypeptide 6
7905428	TUFT1	1.0263151	up	tuftelin 1
7903959	C1orf88	1.0260884	up	chromosome 1 open reading frame 88
8058591	ACADL	1.0259603	up	acyl-Coenzyme A dehydrogenase, long chain
8122071	ENPP3	1.0256827	up	ectonucleotide pyrophosphatase/phosphodiesterase 3
8146625	NKAIN3	1.0256166	up	Na <sup>+</sup> /K <sup>+</sup> transporting ATPase interacting 3
7964927	TSPAN8	1.0252675	up	tetraspanin 8
7909801	LYPLAL1	1.0250782	up	lysophospholipase-like 1
8154892	DNAI1	1.0250245	up	dynein, axonemal, intermediate chain 1
8121622	RSHL3	1.0247657	up	radial spokehead-like 3
7916747	JAK1	1.024451	up	Janus kinase 1 (a protein tyrosine kinase)
8129618	VNN1	1.0238112	up	vanin 1
8019709	RNU2   RNU2B   WC	1.0236245	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD rep
8028652	ZFP36	1.0234468	up	zinc finger protein 36, C3H type, homolog (mouse)
8135405	GPR22	1.0233841	up	G protein-coupled receptor 22
7926356	PTER	1.0231893	up	phosphotriesterase related

## Supplemental Table 1b

eMSC vs. eEN

8130664	C6orf118	1.0229734	up	chromosome 6 open reading frame 118
8112890	MED27 LOC44108	1.0228336	up	mediator complex subunit 27   CRSP8 pseudogene
8107920	SLC22A5	1.0225663	up	solute carrier family 22 (organic cation/carnitine transport)
8019765	ARHGDI A	1.022564	up	Rho GDP dissociation inhibitor (GDI) alpha
8111993	FGF10	1.0221804	up	fibroblast growth factor 10
8130768	RNASET2 LOC100	1.0218735	up	ribonuclease T2   hypothetical protein LOC100131869
8049969	SH3YL1	1.0218564	up	SH3 domain containing, Ysc84-like 1 ( <i>S. cerevisiae</i> )
8173955	SYTL4	1.0203685	up	synaptotagmin-like 4 (granuphilin-a)
8140620	PCLO	1.0202165	up	piccolo (presynaptic cytomatrix protein)
8083146	PLS1	1.0201046	up	plastin 1 (I isoform)
8066402	C20orf111	1.0187589	up	chromosome 20 open reading frame 111
8104394	ADCY2	1.0186934	up	adenylate cyclase 2 (brain)
8056710	LOC129881	1.0177464	up	
7930148	SFXN2	1.0175456	up	sideroflexin 2
8111255	CDH10	1.0173182	up	cadherin 10, type 2 (T2-cadherin)
8123101	LOC100130967 Cf	1.0164483	up	similar to hCG2044932   chromosome 6 open reading frame
8069553	NRIP1	1.0160273	up	nuclear receptor interacting protein 1
8063601	C20orf85	1.0159374	up	chromosome 20 open reading frame 85
7901720	PRKAA2	1.0157989	up	protein kinase, AMP-activated, alpha 2 catalytic subunit
7975238	PLEKHH1	1.0155703	up	pleckstrin homology domain containing, family H (with M)
8151369	RPESP	1.0154759	up	RPE-spondin
8150112	GSR	1.01513	up	glutathione reductase
7916541	DAB1	1.0148915	up	disabled homolog 1 ( <i>Drosophila</i> )
8035773	ZNF506	1.0148435	up	zinc finger protein 506
7965486	CCDC41	1.0147778	up	coiled-coil domain containing 41
8070603	RSPH1	1.0144693	up	radial spoke head 1 homolog ( <i>Chlamydomonas</i> )
8156770	GALNT12	1.0144129	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyl
8103877	CLDN22	1.0141245	up	claudin 22
8124498	ZNF204	1.0138518	up	zinc finger protein 204 (pseudogene)
8022711	DSC2	1.0133368	up	desmocollin 2
8096556	METAP1	1.0132054	up	methionyl aminopeptidase 1
8047062	MGC13057	1.0127742	up	
7917976	SASS6	1.0118657	up	spindle assembly 6 homolog ( <i>C. elegans</i> )

Supplemental Table 1b  
eMSC vs. eEN

8054712	IL1A	1.0112283	up	interleukin 1, alpha
8096602	DAPP1	1.0110184	up	dual adaptor of phosphotyrosine and 3-phosphoinositides
8056217	MXRA7	1.0108707	up	matrix-remodelling associated 7
7968866	C13orf30	1.0105304	up	chromosome 13 open reading frame 30
8045835	GALNT5	1.0104419	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyl
7918504	OVGP1	1.0102895	up	oviductal glycoprotein 1, 120kDa (mucin 9, oviductin)
7926708	THNSL1	1.0099031	up	threonine synthase-like 1 ( <i>S. cerevisiae</i> )
7935270	BLNK	1.0097604	up	B-cell linker
8082597	COL6A6	1.009521	up	collagen type VI alpha 6
8150978	CA8	1.0092129	up	carbonic anhydrase VIII
8149097	DEFB1	1.0088515	up	defensin, beta 1
7952243	C1QTNF5 MFRP	1.0088124	up	C1q and tumor necrosis factor related protein 5   membr
8081138	EPHA6	1.0081949	up	EPH receptor A6
8105633	PPWD1	1.0081522	up	peptidylprolyl isomerase domain and WD repeat containir
8094988	FLJ21511	1.0076138	up	
8089835	FSTL1	1.0074561	up	folliculin-like 1
8082003	EAF2	1.0074254	up	ELL associated factor 2
8129837	IL20RA	1.0066411	up	interleukin 20 receptor, alpha
7957023	LYZ	1.006499	up	lysozyme (renal amyloidosis)
7906904	HSD17B7 HSD17B	1.0064176	up	hydroxysteroid (17-beta) dehydrogenase 7   hydroxysterc
7909494	SYT14	1.0059943	up	synaptotagmin XIV
7917255	SSX2IP	1.0056758	up	synovial sarcoma, X breakpoint 2 interacting protein
7964759	GRIP1	1.0056522	up	glutamate receptor interacting protein 1
8102567	PRDM5	1.0047395	up	PR domain containing 5
7961524	ERP27	1.004675	up	endoplasmic reticulum protein 27 kDa
8099967	RBM47	1.0043464	up	RNA binding motif protein 47
7924055	C1orf74	1.0040729	up	chromosome 1 open reading frame 74
8023575	CCBE1	1.0038248	up	collagen and calcium binding EGF domains 1
8127087	GSTA3	1.0037085	up	glutathione S-transferase A3
8043835	C2orf15 MRPL30	1.0037063	up	chromosome 2 open reading frame 15   mitochondrial rib
7968556	KL	1.003576	up	klotho
7968883	C13orf31	1.0034871	up	chromosome 13 open reading frame 31
8142332	IMMP2L	1.002203	up	IMP2 inner mitochondrial membrane peptidase-like ( <i>S. ce</i>

## Supplemental Table 1b

eMSC vs. eEN

8131803	IL6	1.0021057	up	interleukin 6 (interferon, beta 2)
8083743	ARL14	1.0020446	up	ADP-ribosylation factor-like 14
8021496	KIAA1468	1.001515	up	
7974080	MIA2	1.0008153	up	melanoma inhibitory activity 2
8160531	C9orf72	1.0007925	up	chromosome 9 open reading frame 72
8078360	STT3B	1.0002722	up	STT3, subunit of the oligosaccharyltransferase complex, h
8056611	LRP2	-1.0004069	down	low density lipoprotein-related protein 2
8147351	RBM35A	-1.0005667	down	RNA binding motif protein 35A
8126750	ENPP5	-1.0010216	down	ectonucleotide pyrophosphatase/phosphodiesterase 5 (p
7915170	MYCBP GJA9	-1.0010635	down	c-myc binding protein   gap junction protein, alpha 9, 59k
7962579	AMIGO2	-1.0025002	down	adhesion molecule with Ig-like domain 2
8023314	CCDC11	-1.0025126	down	coiled-coil domain containing 11
8066542	SPINLW1 WFDC6	-1.0025325	down	serine peptidase inhibitor-like, with Kunitz and WAP dom
8070398	LCA5L	-1.0025425	down	Leber congenital amaurosis 5-like
8074856	PRAME	-1.0032185	down	preferentially expressed antigen in melanoma
8174351	NUP62CL	-1.0034317	down	nucleoporin 62kDa C-terminal like
8157632	C9orf18	-1.003483	down	chromosome 9 open reading frame 18
8019263	ARHGDI4	-1.0035332	down	Rho GDP dissociation inhibitor (GDI) alpha
8111998	HCN1	-1.0036273	down	hyperpolarization activated cyclic nucleotide-gated potass
8081001	ROBO2	-1.0036508	down	roundabout, axon guidance receptor, homolog 2 (Drosoph
8015133	KRT23	-1.0044975	down	keratin 23 (histone deacetylase inducible)
8124897	PSORS1C3 LOC100	-1.0046115	down	psoriasis susceptibility 1 candidate 3   similar to psoriasis
8058670	IKZF2	-1.0052077	down	IKAROS family zinc finger 2 (Helios)
7989055	DYX1C1	-1.0052565	down	dyslexia susceptibility 1 candidate 1
8179727	PSORS1C3 LOC100	-1.0053632	down	psoriasis susceptibility 1 candidate 3   similar to psoriasis
7903908	CEPT1	-1.0054888	down	choline/ethanolamine phosphotransferase 1
7990810	MTHFS ST20	-1.0056933	down	5,10-methenyltetrahydrofolate synthetase (5-formyltetra
7954208	PIK3C2G	-1.0058502	down	phosphoinositide-3-kinase, class 2, gamma polypeptide
7902738	CLCA4	-1.0063504	down	chloride channel, calcium activated, family member 4
8082012	SLC15A2	-1.006417	down	solute carrier family 15 (H <sup>+</sup> /peptide transporter), member
7925457	RGS7	-1.006498	down	regulator of G-protein signaling 7
8100362	LNK1	-1.0067172	down	ligand of numb-protein X 1
7947282	DCDC5	-1.0067708	down	doublecortin domain containing 5

## Supplemental Table 1b

eMSC vs. eEN

8056408	GALNT3	-1.0071926	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8147837	ZFPM2	-1.0074031	down	zinc finger protein, multitype 2
7981439	BAG5	-1.0077465	down	BCL2-associated athanogene 5
8096061	C4orf22	-1.0086219	down	chromosome 4 open reading frame 22
7959834	GLT1D1	-1.0086994	down	glycosyltransferase 1 domain containing 1
8022176	LAMA1	-1.0091918	down	laminin, alpha 1
8101916	RG9MTD2	-1.0092257	down	RNA (guanine-9-) methyltransferase domain containing 2
7957032	YEATS4	-1.0096657	down	YEATS domain containing 4
7943803	DIXDC1	-1.0101796	down	DIX domain containing 1
8054740	PAX8	-1.0112317	down	paired box 8
8131452	RSPH10B LOC728	-1.0113273	down	radial spoke head 10 homolog B (Chlamydomonas)   radia
7910600	KIAA1804	-1.0130869	down	mixed lineage kinase 4
7997158	MARVELD3	-1.0133135	down	MARVEL domain containing 3
8083901	FNDC3B	-1.013418	down	fibronectin type III domain containing 3B
8154178	JAK2	-1.0137166	down	Janus kinase 2 (a protein tyrosine kinase)
8100210	TXK	-1.0140479	down	
8138277	FLJ14712	-1.0143671	down	
8169492	AGTR2	-1.0148033	down	angiotensin II receptor, type 2
7947322	DCDC1 DCDC5	-1.014985	down	doublecortin domain containing 1   doublecortin domain
8151471	MRPS28 TPD52	-1.0158148	down	mitochondrial ribosomal protein S28   tumor protein D52
7925342	ERO1LB	-1.0161957	down	ERO1-like beta (S. cerevisiae)
8045539	KYNU	-1.0164272	down	kynureninase (L-kynurenine hydrolase)
7994058	SCNN1G	-1.0171453	down	sodium channel, nonvoltage-gated 1, gamma
8097017	UGT8	-1.0173956	down	UDP glycosyltransferase 8 (UDP-galactose ceramide galact
8089596	WDR52	-1.0176125	down	WD repeat domain 52
8126905	CRISP3	-1.0183907	down	cysteine-rich secretory protein 3
8094361	GBA3	-1.0189601	down	glucosidase, beta, acid 3 (cytosolic)
8039013	ZNF321	-1.0191499	down	zinc finger protein 321
8055361	YSK4	-1.0193878	down	yeast Sps1/Ste20-related kinase 4 (S. cerevisiae)
7974816	SLC38A6	-1.0193928	down	solute carrier family 38, member 6
8076481	CYB5R3	-1.0195593	down	cytochrome b5 reductase 3
8149521	FGL1	-1.019743	down	fibrinogen-like 1
8111506	CAPSL	-1.0199839	down	calcyphosine-like

## Supplemental Table 1b

eMSC vs. eEN

7991034	HOMER2	-1.0201622	down	homer homolog 2 (Drosophila)
7962212	PKP2	-1.0202091	down	plakophilin 2
8030931	ZNF528	-1.0202857	down	zinc finger protein 528
8146839	C8orf34	-1.0207546	down	chromosome 8 open reading frame 34
8138363	SOSTDC1	-1.0209144	down	sclerostin domain containing 1
7923929	PIGR	-1.0211791	down	polymeric immunoglobulin receptor
8138009	RSPH10B LOC728	-1.0214549	down	radial spoke head 10 homolog B (Chlamydomonas)   radial
7916185	ZCCHC11	-1.021962	down	zinc finger, CCHC domain containing 11
7985398	FAM154B	-1.0222496	down	family with sequence similarity 154, member B
8078971	ENTPD3	-1.0227866	down	ectonucleoside triphosphate diphosphohydrolase 3
8042993	CTNNA2	-1.0232346	down	catenin (cadherin-associated protein), alpha 2
7932703	ACBD5	-1.0235183	down	acyl-Coenzyme A binding domain containing 5
8093839	D4S234E	-1.0235803	down	DNA segment on chromosome 4 (unique) 234 expressed s
8147112	CA13	-1.0235814	down	carbonic anhydrase XIII
8080863	FLJ44379	-1.02365	down	similar to S-100 protein, alpha chain
8138157	COL28A1	-1.0238341	down	collagen, type XXVIII, alpha 1
8174527	CAPN6	-1.0242223	down	calpain 6
8171418	PIGA	-1.0246522	down	phosphatidylinositol glycan anchor biosynthesis, class A (p
8056184	ITGB6	-1.024661	down	integrin, beta 6
7979378	C14orf105	-1.0250391	down	chromosome 14 open reading frame 105
7965060	BBS10	-1.0257766	down	Bardet-Biedl syndrome 10
8120176	C6orf141	-1.0259165	down	chromosome 6 open reading frame 141
7982271	FAM7A1 GOLGA9	-1.0261452	down	family with sequence similarity 7, member A1   golgi auto
7933760	CCDC6	-1.0268899	down	coiled-coil domain containing 6
8058203	ALS2CR12	-1.0281159	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome reg
8027241	ZNF253	-1.028257	down	zinc finger protein 253
8075728	MYH9	-1.0287039	down	myosin, heavy chain 9, non-muscle
8142585	CADPS2	-1.0287995	down	Ca <sup>2+</sup> -dependent activator protein for secretion 2
8135585	LOC100128868	-1.0290847	down	testin-related protein TRG
7983157	TMEM62	-1.0299053	down	transmembrane protein 62
7900635	hCG_23177	-1.0300087	down	hCG23177
7916629	C1orf87	-1.0300745	down	chromosome 1 open reading frame 87
7909730	KCNK2	-1.0301217	down	potassium channel, subfamily K, member 2



## Supplemental Table 1b

eMSC vs. eEN

7942791	LOC100008589 W	-1.0302866	down	28S ribosomal RNA   WD repeat domain 88
8058552	IDH1	-1.0303808	down	isocitrate dehydrogenase 1 (NADP+), soluble
8162388	OMD	-1.0305705	down	osteomodulin
8127502	C6orf155	-1.0315229	down	chromosome 6 open reading frame 155
8081959	STXBP5L	-1.0319592	down	syntaxin binding protein 5-like
7918768	DENND2C	-1.0326551	down	DENN/MADD domain containing 2C
8048864	CCL20	-1.0326688	down	chemokine (C-C motif) ligand 20
8022666	CHST9	-1.0336107	down	carbohydrate (N-acetylgalactosamine 4-0) sulfotransferas
8162059	SLC28A3	-1.0337428	down	solute carrier family 28 (sodium-coupled nucleoside trans
8139859	GUSB	-1.0348132	down	glucuronidase, beta
8106403	F2RL1	-1.0350233	down	coagulation factor II (thrombin) receptor-like 1
8108475	LOC492311	-1.03518	down	similar to bovine IgA regulatory protein
7971126	STOML3	-1.0352658	down	stomatin (EPB72)-like 3
8039017	ZNF816A ZNF321	-1.0354158	down	zinc finger protein 816A   zinc finger protein 321
7902290	CTH	-1.0357533	down	cystathionase (cystathionine gamma-lyase)
8011713	CXCL16	-1.0358309	down	chemokine (C-X-C motif) ligand 16
8135661	CFTR	-1.0358562	down	cystic fibrosis transmembrane conductance regulator (ATF
8092295	CCDC39	-1.0365213	down	coiled-coil domain containing 39
7903239	AGL	-1.0366282	down	amylo-1, 6-glucosidase, 4-alpha-glucanotransferase (glyco
8166671	CXorf22	-1.0370085	down	chromosome X open reading frame 22
7938880	HTATIP2	-1.0370873	down	HIV-1 Tat interactive protein 2, 30kDa
7944667	SORL1	-1.0374252	down	sortilin-related receptor, L(DLR class) A repeats-containing
8081645	C3orf52	-1.0375787	down	chromosome 3 open reading frame 52
7975081	C14orf50	-1.0385411	down	chromosome 14 open reading frame 50
7920128	S100A11	-1.038563	down	S100 calcium binding protein A11
7960529	SCNN1A	-1.038713	down	sodium channel, nonvoltage-gated 1 alpha
8166690	CXorf59	-1.0394614	down	chromosome X open reading frame 59
8067295	SLMO2	-1.0397524	down	slowmo homolog 2 (Drosophila)
8167897	RRAGB	-1.0398408	down	Ras-related GTP binding B
8070467	TMPRSS2	-1.0399619	down	transmembrane protease, serine 2
8091678	VEPH1	-1.04036	down	ventricular zone expressed PH domain homolog 1 (zebrafi
8003060	HSPC105	-1.040394	down	NAD(P) dependent steroid dehydrogenase-like
8166243	REPS2	-1.0406203	down	RALBP1 associated Eps domain containing 2

## Supplemental Table 1b

eMSC vs. eEN

7934898	ANKRD22	-1.0406871	down	ankyrin repeat domain 22
8127425	LMBRD1	-1.0421021	down	LMBR1 domain containing 1
8140140	CLDN3	-1.042685	down	claudin 3
7965022	KRR1	-1.042918	down	
8103695	MFAP3L	-1.0430493	down	microfibrillar-associated protein 3-like
8089606	WDR52	-1.0433816	down	WD repeat domain 52
7963212	SLC11A2	-1.0437596	down	solute carrier family 11 (proton-coupled divalent metal ion)
8107868	CDC42SE2	-1.0438644	down	CDC42 small effector 2
7957688	C12orf63	-1.0442353	down	chromosome 12 open reading frame 63
8146986	HNF4G	-1.0448171	down	hepatocyte nuclear factor 4, gamma
8138381	AGR2	-1.0450076	down	anterior gradient homolog 2 ( <i>Xenopus laevis</i> )
8014591	HNF1B	-1.045185	down	HNF1 homeobox B
7967107	C12orf27	-1.0461326	down	chromosome 12 open reading frame 27
8008609	ANKFN1	-1.0462235	down	ankyrin-repeat and fibronectin type III domain containing
8023843	FBXO15	-1.0468174	down	F-box protein 15
8034084	AP1M2	-1.0474333	down	adaptor-related protein complex 1, mu 2 subunit
7942489	DNAJB13	-1.0475205	down	DnaJ (Hsp40) related, subfamily B, member 13
7932744	ARMC4	-1.0477736	down	armadillo repeat containing 4
8048725	MOGAT1	-1.0489637	down	monoacylglycerol O-acyltransferase 1
8156321	SYK	-1.0495405	down	spleen tyrosine kinase
8066530	SPINT3	-1.0495785	down	serine peptidase inhibitor, Kunitz type, 3
7917019	C1orf173	-1.0505872	down	chromosome 1 open reading frame 173
8078330	RBMS3	-1.0512072	down	RNA binding motif, single stranded interacting protein
8123080	SYTL3	-1.0512323	down	synaptotagmin-like 3
7964579	CTDSP2	-1.0513363	down	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide
8097801	LOC729830	-1.0523143	down	similar to CG3558-PA, isoform A
8038655	KLK4	-1.0526365	down	kallikrein-related peptidase 4
8094533	FLJ16686	-1.0527093	down	
8128592	ATG5	-1.05272	down	
8004889	WDR16	-1.0541935	down	WD repeat domain 16
8152867	DDEF1	-1.0541986	down	development and differentiation enhancing factor 1
8162586	SLC35D2	-1.0545307	down	solute carrier family 35, member D2
8122561	C6orf103	-1.0547687	down	chromosome 6 open reading frame 103

## Supplemental Table 1b

eMSC vs. eEN

8021376	NEDD4L	-1.0551963	down	neural precursor cell expressed, developmentally down-re
8035095	CYP4F11	-1.0552695	down	cytochrome P450, family 4, subfamily F, polypeptide 11
7909455	TRAF3IP3 LOC100	-1.0560024	down	TRAF3 interacting protein 3   hypothetical protein LOC100
8097670	MMAA	-1.0564631	down	methylmalonic aciduria (cobalamin deficiency) cblA type
8095736	AREG LOC727738	-1.0568016	down	amphiregulin (schwannoma-derived growth factor)   simil
8175574	SLITRK4	-1.058268	down	SLIT and NTRK-like family, member 4
8100768	UGT2B11 UGT2B1	-1.0583085	down	UDP glucuronosyltransferase 2 family, polypeptide B11   U
8111019	DNAH5	-1.05945	down	dynein, axonemal, heavy chain 5
7947274	MPPED2	-1.0594606	down	metallophosphoesterase domain containing 2
7984843	ARID3B	-1.0597447	down	AT rich interactive domain 3B (BRIGHT-like)
7993638	TMC5	-1.0599616	down	transmembrane channel-like 5
8081055	CHMP2B	-1.0605918	down	chromatin modifying protein 2B
7988970	KIAA1370	-1.0607082	down	
8098195	SC4MOL	-1.0611578	down	sterol-C4-methyl oxidase-like
8040672	C2orf39	-1.0615069	down	chromosome 2 open reading frame 39
7936201	C10orf79	-1.0619909	down	chromosome 10 open reading frame 79
7955663	TENC1	-1.0620785	down	tensin like C1 domain containing phosphatase (tensin 2)
8129783	MAP7	-1.0620998	down	microtubule-associated protein 7
8089519	BTLA	-1.0628619	down	B and T lymphocyte associated
8138258	FLJ14712	-1.063141	down	
7917576	GBP5	-1.0632586	down	guanylate binding protein 5
7913787	C1orf201	-1.0639281	down	chromosome 1 open reading frame 201
8108912	SH3RF2	-1.0639579	down	SH3 domain containing ring finger 2
7918694	BCL2L15	-1.0643474	down	BCL2-like 15
8169603	LONRF3	-1.0645753	down	LON peptidase N-terminal domain and ring finger 3
7973108	LOC643332	-1.0648488	down	similar to Nonsecretory ribonuclease precursor (Ribonucle
8162570	HSD17B3	-1.0654755	down	hydroxysteroid (17-beta) dehydrogenase 3
8142497	CTTNBP2	-1.0659869	down	cortactin binding protein 2
7983145	STARD9	-1.066127	down	StAR-related lipid transfer (START) domain containing 9
7941401	OVOL1	-1.0673544	down	ovo-like 1(Drosophila)
8089988	CCDC58	-1.0673804	down	coiled-coil domain containing 58
7950042	SHANK2	-1.0674543	down	SH3 and multiple ankyrin repeat domains 2
7957433	LRRIQ1	-1.0676215	down	leucine-rich repeats and IQ motif containing 1

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eMSC vs. eEN

8043937	C2orf29	-1.0683205	down	chromosome 2 open reading frame 29
8168580	APOOL	-1.0683863	down	apolipoprotein O-like
8099467	FGFBP1	-1.0684354	down	fibroblast growth factor binding protein 1
8139680	COBL	-1.06852	down	cordon-bleu homolog (mouse)
8134351	PPP1R9A	-1.0693569	down	protein phosphatase 1, regulatory (inhibitor) subunit 9A
8091600	PLCH1	-1.0696077	down	phospholipase C, eta 1
8054308	TBC1D8	-1.0696101	down	TBC1 domain family, member 8 (with GRAM domain)
8179719	POU5F1 POU5F1F	-1.0698702	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseud
8022473	ESCO1	-1.069887	down	establishment of cohesion 1 homolog 1 ( <i>S. cerevisiae</i> )
7969861	ITGBL1	-1.0700922	down	integrin, beta-like 1 (with EGF-like repeat domains)
8027312	ZNF429	-1.0701629	down	zinc finger protein 429
7919340	GJA5	-1.0704689	down	gap junction protein, alpha 5, 40kDa
7903407	AMY2B	-1.0709579	down	amylase, alpha 2B (pancreatic)
7943740	FLJ46266	-1.0717885	down	
8109629	FABP6	-1.0720123	down	fatty acid binding protein 6, ileal (gastrotropin)
7920642	MUC1	-1.0732265	down	mucin 1, cell surface associated
7902660	WDR63	-1.0733361	down	WD repeat domain 63
7960865	SLC2A3	-1.0734602	down	solute carrier family 2 (facilitated glucose transporter), me
8094759	NSUN7	-1.0735548	down	NOL1/NOP2/Sun domain family, member 7
8168976	GPRASP2	-1.0735708	down	G protein-coupled receptor associated sorting protein 2
8044080	SLC9A2	-1.0740702	down	solute carrier family 9 (sodium/hydrogen exchanger), mer
8108251	NPY6R	-1.074474	down	neuropeptide Y receptor Y6 (pseudogene)
8066536	WFDC6 SPINLW1	-1.0746136	down	WAP four-disulfide core domain 6   serine peptidase inhibi
8109490	SGCD	-1.0754365	down	sarcoglycan, delta (35kDa dystrophin-associated glycoprot
7936346	ZDHHC6	-1.0758381	down	zinc finger, DHHC-type containing 6
8112053	CDC20B	-1.0764923	down	cell division cycle 20 homolog B ( <i>S. cerevisiae</i> )
8124889	POU5F1 POU5F1F	-1.0765256	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseud
8004957	DNAH9	-1.077848	down	dynein, axonemal, heavy chain 9
7972021	TBC1D4	-1.0781118	down	TBC1 domain family, member 4
8045816	GPD2	-1.0789299	down	glycerol-3-phosphate dehydrogenase 2 (mitochondrial)
8167287	PORCN	-1.0790192	down	porcupine homolog ( <i>Drosophila</i> )
7962183	AK3L1 AK3L2	-1.0801783	down	adenylate kinase 3-like 1   adenylate kinase 3-like 2
8075709	APOL4	-1.0804948	down	apolipoprotein L, 4

## Supplemental Table 1b

eMSC vs. eEN

7959681	DNAH10	-1.0809081	down	dynein, axonemal, heavy chain 10
7960919	MFAP5	-1.081573	down	microfibrillar associated protein 5
7985268	FAH	-1.0815984	down	fumarylacetoacetate hydrolase (fumarylacetoacetase)
8085164	SRGAP3	-1.08214	down	SLIT-ROBO Rho GTPase activating protein 3
8030914	ZNF610	-1.0823863	down	zinc finger protein 610
8014891	IKZF3	-1.0827227	down	IKAROS family zinc finger 3 (Aiolos)
8009685	SLC9A3R1	-1.0831815	down	solute carrier family 9 (sodium/hydrogen exchanger), mer
7990818	BCL2A1	-1.0834712	down	BCL2-related protein A1
8102249	AGXT2L1	-1.0841334	down	alanine-glyoxylate aminotransferase 2-like 1
8077270	CHL1	-1.0841488	down	cell adhesion molecule with homology to L1CAM (close hc
8020384	KIAA1772	-1.0843941	down	
7903281	SLC35A3	-1.0849555	down	solute carrier family 35 (UDP-N-acetylglucosamine (UDP-C
7973918	C14orf24	-1.0853449	down	chromosome 14 open reading frame 24
7953409	PTMS	-1.0857309	down	parathymosin
8113796	FLJ44606	-1.0859864	down	hypothetical gene supported by AK126569
7957514	PLEKHG7	-1.0861106	down	pleckstrin homology domain containing, family G (with Rh
8097903	TLR2	-1.087842	down	toll-like receptor 2
8099841	TLR6	-1.0881305	down	toll-like receptor 6
8019831	CLUL1	-1.0881389	down	clusterin-like 1 (retinal)
7930593	C10orf81	-1.0896041	down	chromosome 10 open reading frame 81
7935180	PDLIM1	-1.0901597	down	PDZ and LIM domain 1 (elfin)
8039692	LOC730051	-1.0910797	down	similar to hCG2044798
8100994	CXCL2	-1.0917889	down	chemokine (C-X-C motif) ligand 2
8088299	DNHD2	-1.0920708	down	dynein heavy chain domain 2
8162502	FBP1	-1.0932063	down	fructose-1,6-bisphosphatase 1
8096682	FLJ20184	-1.0932066	down	
7915425	ZMYND12	-1.0939238	down	zinc finger, MYND-type containing 12
8016414	SKAP1	-1.0949599	down	src kinase associated phosphoprotein 1
7953518	LOC171220	-1.0953797	down	destrin-2 pseudogene
7979131	GNG2	-1.0971301	down	guanine nucleotide binding protein (G protein), gamma 2
7971335	CCDC122	-1.0972884	down	coiled-coil domain containing 122
8048717	SGPP2	-1.0981429	down	sphingosine-1-phosphate phosphatase 2
8027748	FXYD3	-1.0993372	down	FXYD domain containing ion transport regulator 3

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eMSC vs. eEN

7947156	MUC15	-1.0994629	down	mucin 15, cell surface associated
7905677	CREB3L4	-1.0994991	down	cAMP responsive element binding protein 3-like 4
8055496	LRP1B	-1.0996028	down	low density lipoprotein-related protein 1B (deleted in tum
7932390	TRDMT1	-1.1022617	down	tRNA aspartic acid methyltransferase 1
8106689	CKMT2	-1.1028247	down	creatine kinase, mitochondrial 2 (sarcomeric)
7916584	TACSTD2	-1.1028414	down	tumor-associated calcium signal transducer 2
8161270	ANKRD18A	-1.1030835	down	ankyrin repeat domain 18A
8078014	SLC6A6	-1.1033875	down	solute carrier family 6 (neurotransmitter transporter, taur
8104930	SLC1A3	-1.1043098	down	solute carrier family 1 (glial high affinity glutamate transp
7970441	GJB2	-1.1044713	down	gap junction protein, beta 2, 26kDa
7907297	FMO4	-1.1053159	down	flavin containing monooxygenase 4
8178470	POU5F1 POU5F1F	-1.1053237	down	POU class 5 homeobox 1   POU class 5 homeobox 1 pseuc
8081710	SIDT1	-1.1056983	down	SID1 transmembrane family, member 1
7931930	PRKCQ	-1.1063418	down	protein kinase C, theta
8038967	ZNF83	-1.1067264	down	zinc finger protein 83
8143221	ATP6V0A4	-1.1068206	down	ATPase, H <sup>+</sup> transporting, lysosomal V0 subunit a4
8128795	C6orf199	-1.1074275	down	chromosome 6 open reading frame 199
8164013	STRBP	-1.1081069	down	spermatid perinuclear RNA binding protein
8057821	DNAH7	-1.1081715	down	dynein, axonemal, heavy chain 7
8017057	C17orf47	-1.1082603	down	chromosome 17 open reading frame 47
8015900	TMEM101	-1.1085336	down	transmembrane protein 101
8157216	UGCG	-1.1088537	down	UDP-glucose ceramide glucosyltransferase
8095021	SPATA18	-1.1101149	down	spermatogenesis associated 18 homolog (rat)
8128894	REV3L	-1.1103929	down	REV3-like, catalytic subunit of DNA polymerase zeta (yeas
7985662	PDE8A	-1.1105564	down	phosphodiesterase 8A
8133062	ZNF273	-1.1113939	down	zinc finger protein 273
7956120	ERBB3	-1.1116753	down	v-erb-b2 erythroblastic leukemia viral oncogene homolog
7922243	C1orf156	-1.1126784	down	chromosome 1 open reading frame 156
7933437	PTPN20B PTPN20	-1.1132808	down	protein tyrosine phosphatase, non-receptor type 20B   pr
7990714	CHRNA3	-1.1138108	down	cholinergic receptor, nicotinic, alpha 3
8155487	KGFLP1 KGFLP2 F	-1.1142774	down	keratinocyte growth factor-like protein 1   keratinocyte gi
8039687	ZNF552	-1.1153382	down	zinc finger protein 552
8098328	GALNT7	-1.1156982	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety

## Supplemental Table 1b

eMSC vs. eEN

8064808	SLC23A2	-1.1186032	down	solute carrier family 23 (nucleobase transporters), member 2
8015590	STAT5B	-1.1192071	down	signal transducer and activator of transcription 5B
7963328	FIGNL2	-1.1203098	down	figidetin-like 2
8174201	BEX1	-1.1208389	down	brain expressed, X-linked 1
8162117	GOLM1	-1.1214739	down	golgi membrane protein 1
7926622	SPAG6	-1.1224886	down	sperm associated antigen 6
7978407	PRKD1	-1.1225468	down	protein kinase D1
7976578	AK7	-1.1226099	down	adenylate kinase 7
8070584	TMPRSS3	-1.1228299	down	transmembrane protease, serine 3
7979671	MAX	-1.1233404	down	MYC associated factor X
8161455	KGFLP2 KGFLP1 F	-1.1235567	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-like protein 1
7925130	TARBP1	-1.1237506	down	TAR (HIV-1) RNA binding protein 1
8147970	EBAG9	-1.1245941	down	estrogen receptor binding site associated, antigen, 9
8161423	KGFLP2 KGFLP1 F	-1.1248156	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-like protein 1
8039010	ZNF765 LOC388593	-1.1249925	down	zinc finger protein 765   similar to hCG1778601
8008040	LRRC46	-1.1266896	down	leucine rich repeat containing 46
8002283	TMED6	-1.1275047	down	transmembrane emp24 protein transport domain containing 6
8021453	SEC11C	-1.1276399	down	SEC11 homolog C ( <i>S. cerevisiae</i> )
8046078	B3GALT1	-1.1279249	down	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypeptide chain 1
7901804	INADL	-1.1290295	down	InaD-like ( <i>Drosophila</i> )
7971757	NEK5	-1.1296436	down	NIMA (never in mitosis gene a)-related kinase 5
8102877	CLGN	-1.1317992	down	calmegin
8059350	AP1S3	-1.1326549	down	adaptor-related protein complex 1, sigma 3 subunit
8097920	LRAT	-1.1334592	down	lecithin retinol acyltransferase (phosphatidylcholine--retinol acyltransferase)
8136936	CTAGE6 CTAGE4 CTAGE5	-1.1339768	down	CTAGE family, member 6   CTAGE family, member 4   similar to CTAGE family, member 5
7927082	HSD17B7P2	-1.1348433	down	hydroxysteroid (17-beta) dehydrogenase 7 pseudogene 2
8139488	IGFBP3	-1.1348766	down	insulin-like growth factor binding protein 3
8163437	SLC46A2	-1.1355519	down	solute carrier family 46, member 2
8130505	EZR	-1.1370822	down	ezrin
8154823	ANKRD18B	-1.1390915	down	ankyrin repeat domain 18B
7952927	B4GALNT3	-1.1391395	down	beta-1,4-N-acetyl-galactosaminyl transferase 3
8095819	STBD1 LOC100129259	-1.1406808	down	starch binding domain 1   similar to genethonin 1
8126710	SUPT3H	-1.1420187	down	suppressor of Ty 3 homolog ( <i>S. cerevisiae</i> )

Supplemental Table 1b  
eMSC vs. eEN

8126729	CLIC5 LOC100131	-1.1426694	down	chloride intracellular channel 5   similar to chloride intrac
8140534	SEMA3C	-1.143199	down	sema domain, immunoglobulin domain (Ig), short basic dc
8134122	AKAP9	-1.143359	down	A kinase (PRKA) anchor protein (yotiao) 9
7950654	ALG8	-1.143398	down	asparagine-linked glycosylation 8 homolog ( <i>S. cerevisiae</i> , a
8043043	DNHL1 LOC20038	-1.1445063	down	dynein heavy chain-like 1   similar to Dynein heavy chain a
8021966	ENOSF1	-1.1476862	down	enolase superfamily member 1
8005289	LRRC48	-1.1493567	down	leucine rich repeat containing 48
7904211	VANGL1	-1.1494157	down	vang-like 1 (van gogh, <i>Drosophila</i> )
7945204	ST14	-1.1496142	down	suppression of tumorigenicity 14 (colon carcinoma)
8045882	DAPL1	-1.1511014	down	death associated protein-like 1
8096617	BANK1	-1.1512785	down	B-cell scaffold protein with ankyrin repeats 1
7968637	CCNA1	-1.1520454	down	cyclin A1
8155930	GCNT1	-1.1524868	down	glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1,6-N-a
8169350	LOC100134364	-1.1528285	down	
7996677	NUTF2	-1.1531898	down	nuclear transport factor 2
8025255	STXBP2	-1.1568614	down	syntaxin binding protein 2
7902965	BTBD8	-1.1574725	down	BTB (POZ) domain containing 8
8143601	CTAGE6 CTAGE4	-1.1578242	down	CTAGE family, member 6   CTAGE family, member 4   sim
7961829	BCAT1	-1.1579108	down	branched chain aminotransferase 1, cytosolic
7958749	SH2B3	-1.159087	down	SH2B adaptor protein 3
8090091	PTPLB	-1.159115	down	protein tyrosine phosphatase-like (proline instead of catal
7997556	LRRC50	-1.1592221	down	leucine rich repeat containing 50
8059576	PID1	-1.1614156	down	phosphotyrosine interaction domain containing 1
8031825	ZNF587	-1.1621764	down	zinc finger protein 587
8066786	ZMYND8	-1.1622788	down	zinc finger, MYND-type containing 8
8146225	C8orf40	-1.1624982	down	chromosome 8 open reading frame 40
8041048	FOSL2	-1.1644267	down	FOS-like antigen 2
8099834	TLR1	-1.1658148	down	toll-like receptor 1
8123678	C6orf145	-1.1676378	down	chromosome 6 open reading frame 145
8030908	ZNF480	-1.1676867	down	zinc finger protein 480
8088526	THOC7	-1.1688278	down	THO complex 7 homolog ( <i>Drosophila</i> )
7967456	RILPL2	-1.1711466	down	Rab interacting lysosomal protein-like 2
8116402	MAPK9	-1.1713655	down	mitogen-activated protein kinase 9



## Supplemental Table 1b

eMSC vs. eEN

7950641	KCTD14	-1.1718276	down	potassium channel tetramerisation domain containing 14
7926531	ARL5B	-1.1721427	down	ADP-ribosylation factor-like 5B
8034393	ZNF443	-1.1724031	down	zinc finger protein 443
8167603	CLCN5	-1.1739932	down	chloride channel 5 (nephrolithiasis 2, X-linked, Dent disease)
8085852	NGLY1	-1.1740623	down	N-glycanase 1
8094719	N4BP2	-1.1741619	down	NEDD4 binding protein 2
7932637	ANKRD26	-1.1753364	down	ankyrin repeat domain 26
8018774	ST6GALNAC1	-1.1760254	down	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylglucosaminyl transferase 1
8146115	C8orf4	-1.1761435	down	chromosome 8 open reading frame 4
8131179	TTYH3	-1.1766561	down	tweety homolog 3 (Drosophila)
8012450	SLC25A35	-1.1770064	down	solute carrier family 25, member 35
7980146	NPC2	-1.1791391	down	Niemann-Pick disease, type C2
7968872	DNAJC15	-1.1795375	down	DnaJ (Hsp40) homolog, subfamily C, member 15
7942964	TMEM135	-1.1797376	down	transmembrane protein 135
7968800	DGKH	-1.179847	down	diacylglycerol kinase, eta
8120061	ENPP4	-1.1805133	down	ectonucleotide pyrophosphatase/phosphodiesterase 4 (platelet)
8113491	STARD4	-1.1812027	down	StAR-related lipid transfer (START) domain containing 4
7926545	PLXDC2	-1.1830933	down	plexin domain containing 2
8049317	DGKD	-1.1854929	down	diacylglycerol kinase, delta 130kDa
7945573	POLR2L	-1.1861126	down	polymerase (RNA) II (DNA directed) polypeptide L, 7.6kDa
8074237	CECR1	-1.1863614	down	cat eye syndrome chromosome region, candidate 1
8060758	PRNP	-1.1869422	down	prion protein (p27-30) (Creutzfeldt-Jakob disease, Gerstmann-Sträussler-Scheutler syndrome)
8066431	ADA	-1.1870186	down	adenosine deaminase
8155169	RECK	-1.1870914	down	reversion-inducing-cysteine-rich protein with kazal motifs
8041763	PRKCE	-1.1872807	down	protein kinase C, epsilon
8153021	ST3GAL1	-1.1882107	down	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
7993898	VWA3A	-1.188434	down	von Willebrand factor A domain containing 3A
7906564	PEA15	-1.1893588	down	phosphoprotein enriched in astrocytes 15
7918134	AMY1A AMY1B A	-1.1900933	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
8028908	ITPKC	-1.1901349	down	inositol 1,4,5-trisphosphate 3-kinase C
7904254	ATP1A1	-1.1904469	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide
7987369	ATPBD4	-1.1910547	down	ATP binding domain 4
8134407	DLX6	-1.1919495	down	distal-less homeobox 6

## Supplemental Table 1b

eMSC vs. eEN

7903425	AMY1A AMY1B A	-1.1935611	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
7903440	AMY1A AMY1B A	-1.1940725	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (salivary)
7970448	GJB6	-1.1960034	down	gap junction protein, beta 6, 30kDa
8050160	MBOAT2	-1.1963273	down	membrane bound O-acyltransferase domain containing 2
8148059	DEPDC6	-1.1983819	down	DEP domain containing 6
8066117	SAMHD1	-1.2001401	down	SAM domain and HD domain 1
7933139	ZNF33B	-1.2006835	down	zinc finger protein 33B
8039025	ZNF702	-1.2062731	down	zinc finger protein 702
8123884	C6orf52	-1.2101445	down	chromosome 6 open reading frame 52
8073645	SAMM50 LOC100	-1.2112434	down	sorting and assembly machinery component 50 homolog
7979725	PIGH	-1.2129021	down	phosphatidylinositol glycan anchor biosynthesis, class H
7899615	SERINC2 KIAA074	-1.2155529	down	serine incorporator 2   KIAA0746 protein
7972055	KCTD12	-1.2164353	down	potassium channel tetramerisation domain containing 12
8006531	SLFN5	-1.2167114	down	schlafen family member 5
8122317	HEBP2	-1.2186364	down	heme binding protein 2
7986411	MEF2A	-1.2189821	down	myocyte enhancer factor 2A
8103834	AGA	-1.2190759	down	aspartylglucosaminidase
8072678	HMOX1	-1.2191138	down	heme oxygenase (decycling) 1
8171901	MAP3K7IP3	-1.2193321	down	mitogen-activated protein kinase kinase kinase 7 interacti
8092177	AADAACL1	-1.2194414	down	arylacetamide deacetylase-like 1
8023855	CYB5A	-1.223933	down	cytochrome b5 type A (microsomal)
8019954	FLJ35776	-1.2247967	down	hypothetical protein LOC649446
7934178	PCBD1	-1.2248462	down	pterin-4 alpha-carbinolamine dehydratase/dimerization c
8121886	HINT3	-1.2249639	down	histidine triad nucleotide binding protein 3
7919780	GOLPH3L	-1.2266594	down	golgi phosphoprotein 3-like
8096425	MGC48628	-1.2284222	down	similar to KIAA1680 protein
8151952	NPAL2	-1.2288624	down	NIPA-like domain containing 2
8094520	PCDH7	-1.2299801	down	protocadherin 7
7932453	NEBL	-1.231977	down	nebulin
7954460	LYRM5	-1.2324158	down	LYR motif containing 5
7932326	CUBN	-1.2324632	down	cubilin (intrinsic factor-cobalamin receptor)
8046895	KIAA1946	-1.2327353	down	
8162019	KIF27 LOC389765	-1.2329789	down	kinesin family member 27   similar to KIF27C

## Supplemental Table 1b

eMSC vs. eEN

7938816	ZDHC13	-1.2338829	down	zinc finger, DHHC-type containing 13
8014706	PCGF2	-1.2352744	down	polycomb group ring finger 2
8158317	SPTAN1	-1.2361662	down	spectrin, alpha, non-erythrocytic 1 (alpha-fodrin)
7957673	C12orf55   FLJ3447	-1.2378263	down	chromosome 12 open reading frame 55   hypothetical protein
7979732	VTI1B	-1.237969	down	vesicle transport through interaction with t-SNAREs homolog
8106252	HEXB	-1.2382563	down	hexosaminidase B (beta polypeptide)
7983527	SEMA6D	-1.2390145	down	sema domain, transmembrane domain (TM), and cytoplasmic domain
7959123	PRKAB1	-1.2391624	down	protein kinase, AMP-activated, beta 1 non-catalytic subunit
8060949	ANKRD5	-1.2393012	down	ankyrin repeat domain 5
8063351	SLC9A8	-1.2400634	down	solute carrier family 9 (sodium/hydrogen exchanger), member 8
8057719	HIBCH	-1.2423652	down	3-hydroxyisobutyryl-Coenzyme A hydrolase
8037835	SLC1A5	-1.242371	down	solute carrier family 1 (neutral amino acid transporter), member 5
7979906	C14orf112	-1.2426038	down	chromosome 14 open reading frame 112
7908694	NAV1	-1.2428226	down	neuron navigator 1
8014115	MYO1D	-1.2432584	down	myosin ID
8173812	NSBP1	-1.2466629	down	nucleosomal binding protein 1
7899153	SH3BGL3	-1.2470957	down	SH3 domain binding glutamic acid-rich protein like 3
7963092	FMNL3	-1.2493135	down	formin-like 3
7971191	SUGT1L1   LOC100506150	-1.2533717	down	SGT1, suppressor of G2 allele of SKP1 like 1 (S. cerevisiae)
7970455	CRYL1	-1.2546651	down	crystallin, lambda 1
8175269	FAM122B	-1.2550098	down	family with sequence similarity 122B
7993310	MKL2	-1.2562299	down	MKL/myocardin-like 2
8123695	PECI	-1.2566954	down	peroxisomal D3,D2-enoyl-CoA isomerase
8052940	PAIP2B	-1.2569109	down	poly(A) binding protein interacting protein 2B
8095697	CXCL1	-1.2570984	down	chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity 1)
7934570	KCNMA1	-1.2574916	down	potassium large conductance calcium-activated channel, subunit 1
7975268	ARG2	-1.2581582	down	arginase, type II
8034151	DOCK6	-1.2596086	down	dedicator of cytokinesis 6
7913694	FUCA1	-1.26071	down	fucosidase, alpha-L-1, tissue
8012918	CDRT4   FAM18B2	-1.2611684	down	chromosome duplications region transcript 4   family with sequence similarity 18B2
8021301	RAB27B	-1.2626659	down	Rab GTPase 27B
8034390	ZNF799	-1.2645406	down	zinc finger protein 799
8175023	ZDHC9	-1.264762	down	zinc finger, DHHC-type containing 9

## Supplemental Table 1b

eMSC vs. eEN

8078380	LOC344787	-1.2652478	down	similar to zinc finger protein 813
8138857	C7orf24	-1.2660011	down	chromosome 7 open reading frame 24
8035842	ZNF91	-1.266098	down	zinc finger protein 91
7974090	CTAGE5	-1.2677878	down	CTAGE family, member 5
8143766	ARP11	-1.2684455	down	actin-related Arp11
7980309	C14orf1	-1.268661	down	chromosome 14 open reading frame 1
7903414	AMY2A AMY1A A	-1.2688522	down	amylase, alpha 2A (pancreatic)   amylase, alpha 1A (saliva
7969114	SETDB2	-1.2691721	down	SET domain, bifurcated 2
7932023	USP6NL	-1.2719635	down	USP6 N-terminal like
7909877	MOSC1	-1.2759672	down	MOCO sulphurase C-terminal domain containing 1
8100231	TEC	-1.2766205	down	tec protein tyrosine kinase
7934334	TTC18	-1.2793547	down	tetratricopeptide repeat domain 18
8177628	CCDC125	-1.2800319	down	coiled-coil domain containing 125
8066905	ZNFX1	-1.2801881	down	zinc finger, NFX1-type containing 1
8020349	ANKRD20B CCDC2	-1.2815697	down	ankyrin repeat domain 20B   coiled-coil domain containin
7910591	C1orf57	-1.2817796	down	chromosome 1 open reading frame 57
8025828	LDLR	-1.2823768	down	low density lipoprotein receptor (familial hypercholesterolo
8014248	SLFN13	-1.2842282	down	schlafen family member 13
7962185	AMN1	-1.2845501	down	antagonist of mitotic exit network 1 homolog (S. cerevisia
8080810	PTPRG	-1.2856802	down	protein tyrosine phosphatase, receptor type, G
8133057	ZNF138	-1.2857667	down	zinc finger protein 138
8168412	LOC554203	-1.2860453	down	
8079140	SNRK	-1.2861712	down	SNF related kinase
7943779	C11orf1	-1.288461	down	chromosome 11 open reading frame 1
7899455	PHACTR4	-1.2888045	down	phosphatase and actin regulator 4
7932765	MPP7	-1.2896317	down	membrane protein, palmitoylated 7 (MAGUK p55 subfami
8144880	SH2D4A	-1.289912	down	SH2 domain containing 4A
8130408	PIP3-E	-1.2909465	down	
7971015	SMAD9	-1.2929447	down	SMAD family member 9
8112439	CCDC125	-1.2951577	down	coiled-coil domain containing 125
7954729	FGD4	-1.2968122	down	FYVE, RhoGEF and PH domain containing 4
7957072	RAB3IP	-1.2987274	down	RAB3A interacting protein (rabin3)
8091283	PLOD2	-1.3027874	down	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2

## Supplemental Table 1b

eMSC vs. eEN

8097373	C4orf29	-1.303233	down	chromosome 4 open reading frame 29
7976496	SERPINA3	-1.3048133	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
7930454	PDCD4	-1.3053741	down	programmed cell death 4 (neoplastic transformation inhib
8159919	C9orf68	-1.3053894	down	chromosome 9 open reading frame 68
8143341	JHDM1D	-1.305722	down	jumonji C domain containing histone demethylase 1 homc
7934133	PPA1	-1.3059993	down	pyrophosphatase (inorganic) 1
8074845	ZNF280B	-1.3071594	down	zinc finger protein 280B
8094126	DUB4 USP17 DUE	-1.31021	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8094118	DUB4 USP17 DUE	-1.3102951	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8016457	HOXB5	-1.3104271	down	homeobox B5
8094120	DUB4 USP17 DUE	-1.310779	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
7953765	FAM80B	-1.310833	down	family with sequence similarity 80, member B
8094128	DUB4 USP17 DUE	-1.3115394	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8094116	CPZ USP17 DUB3	-1.3116701	down	carboxypeptidase Z   ubiquitin specific peptidase 17   del
8094132	DUB4 USP17 DUE	-1.3119437	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8095705	MTHFD2L	-1.3124224	down	methylenetetrahydrofolate dehydrogenase (NADP+ deper
8094378	PI4K2B	-1.3124722	down	phosphatidylinositol 4-kinase type 2 beta
8094124	DUB4 USP17 DUE	-1.312771	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8038989	ZNF600	-1.3130229	down	zinc finger protein 600
8091009	PIK3CB	-1.3134768	down	phosphoinositide-3-kinase, catalytic, beta polypeptide
8173551	PHKA1	-1.3155637	down	phosphorylase kinase, alpha 1 (muscle)
8042086	VRK2	-1.3168627	down	vaccinia related kinase 2
7927062	ZNF33A	-1.3180814	down	zinc finger protein 33A
7903092	FNBP1L	-1.320183	down	formin binding protein 1-like
8114006	FLJ44796	-1.3202596	down	
8095986	ANXA3	-1.320728	down	annexin A3
7935692	ERLIN1	-1.3224015	down	ER lipid raft associated 1
8140468	tcag7.1314	-1.3233359	down	hypothetical protein LOC54103
7955637	KRT18	-1.3256075	down	keratin 18
7990054	UACA	-1.3259848	down	uveal autoantigen with coiled-coil domains and ankyrin re
8094122	DUB4 USP17 DUE	-1.3271254	down	deubiquitinating enzyme DUB4   ubiquitin specific peptid
8104506	TRIO LOC1001317	-1.3289486	down	triple functional domain (PTPRF interacting)   hypothetica
8021727	CNDP2	-1.3291808	down	CNDP dipeptidase 2 (metallopeptidase M20 family)

Supplemental Table 1b  
eMSC vs. eEN

8155707	TJP2	-1.3311296	down	tight junction protein 2 (zona occludens 2)
8001547	PLLP	-1.3312646	down	plasma membrane proteolipid (plasmolipin)
8039068	NDUFV2	-1.3322271	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24kDa
8094130	DUB4 USP17 DUE	-1.3327585	down	deubiquitinating enzyme DUB4   ubiquitin specific peptidase
8120679	DDX43	-1.3328329	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
8089299	CD47	-1.3336018	down	
8027260	ZNF486	-1.3347706	down	zinc finger protein 486
7960984	PZP	-1.3367705	down	pregnancy-zone protein
7899043	SEPN1	-1.3367906	down	selenoprotein N, 1
8172056	RPGR	-1.3380198	down	retinitis pigmentosa GTPase regulator
8103226	TMEM154	-1.3404975	down	transmembrane protein 154
7914809	KIAA0319L	-1.3417512	down	KIAA0319-like
8136315	LRGUK	-1.3431787	down	leucine-rich repeats and guanylate kinase domain contain
7944751	C11orf63	-1.3443589	down	chromosome 11 open reading frame 63
7975889	VASH1	-1.3465226	down	vasohibin 1
8088776	FOXP1	-1.3475537	down	forkhead box P1
7906400	IFI16	-1.34875	down	interferon, gamma-inducible protein 16
8112342	ADAMTS6	-1.3504227	down	ADAM metalloproteinase with thrombospondin type 1 motif
7961075	CD69	-1.3537315	down	
7903334	CDC14A	-1.3557537	down	CDC14 cell division cycle 14 homolog A ( <i>S. cerevisiae</i> )
7947199	LGR4	-1.3568975	down	leucine-rich repeat-containing G protein-coupled receptor
8067040	NFATC2	-1.3570838	down	nuclear factor of activated T-cells, cytoplasmic, calcineurin
7901915	ALG6	-1.3574169	down	asparagine-linked glycosylation 6 homolog ( <i>S. cerevisiae</i> , <i>S. pombe</i> )
7899627	TINAGL1	-1.3583174	down	tubulointerstitial nephritis antigen-like 1
8099685	LGI2	-1.3587667	down	leucine-rich repeat LGI family, member 2
8161865	PRUNE2 LOC1001	-1.3608384	down	prune homolog 2 ( <i>Drosophila</i> )   similar to KIAA0367
8062852	PKIG	-1.3623216	down	protein kinase (cAMP-dependent, catalytic) inhibitor gamma
8080926	ARL6IP5	-1.3632715	down	ADP-ribosylation-like factor 6 interacting protein 5
7996772	SLC7A6 TRPV6	-1.3633765	down	solute carrier family 7 (cationic amino acid transporter, y+)
7962146	FAM60A	-1.3639678	down	family with sequence similarity 60, member A
8020468	RBBP8	-1.3670034	down	retinoblastoma binding protein 8
7950883	OR7E13P	-1.3679233	down	olfactory receptor, family 7, subfamily E, member 13 pseudogene
7956759	SRGAP1	-1.3689598	down	SLIT-ROBO Rho GTPase activating protein 1

## Supplemental Table 1b

eMSC vs. eEN

8112649	KIAA0888	-1.3692697	down	
7917503	GBP3	-1.3719876	down	guanylate binding protein 3
8146517	CHCHD7	-1.3740983	down	coiled-coil-helix-coiled-coil-helix domain containing 7
8025672	SLC44A2	-1.3757691	down	solute carrier family 44, member 2
8056102	CD302	-1.3760148	down	
8052382	FANCL	-1.3764133	down	Fanconi anemia, complementation group L
7951807	CADM1 LOC100132764	-1.376483	down	cell adhesion molecule 1   hypothetical LOC100132764
7940028	SERPING1	-1.3766719	down	serpin peptidase inhibitor, clade G (C1 inhibitor), member 1
8143961	PRKAG2	-1.3779497	down	protein kinase, AMP-activated, gamma 2 non-catalytic subunit
8158671	ASS1	-1.3799638	down	argininosuccinate synthetase 1
8016444	HOXB3	-1.3801713	down	homeobox B3
8122464	UTRN	-1.3809904	down	utrophin
8141094	PDK4	-1.3828449	down	pyruvate dehydrogenase kinase, isozyme 4
8049512	LRRFIP1	-1.3832724	down	leucine rich repeat (in FLII) interacting protein 1
7936419	C10orf118	-1.3840332	down	chromosome 10 open reading frame 118
7929816	SCD	-1.3843169	down	stearoyl-CoA desaturase (delta-9-desaturase)
8102050	NHEDC2	-1.3844298	down	Na <sup>+</sup> /H <sup>+</sup> exchanger domain containing 2
8020058	NDUFV2	-1.3847647	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24kDa
8020878	MAPRE2	-1.3857901	down	microtubule-associated protein, RP/EB family, member 2
8146427	PCMTD1 LOC100132764	-1.3860604	down	protein-L-isoaspartate (D-aspartate) O-methyltransferase
8147661	SPAG1	-1.3865566	down	sperm associated antigen 1
7917912	DPYD	-1.3872375	down	dihydropyrimidine dehydrogenase
7956261	RBMS2	-1.3874646	down	RNA binding motif, single stranded interacting protein 2
7965322	KITLG	-1.3909049	down	KIT ligand
8170007	LOC644538	-1.3912616	down	
8105899	MARVELD2	-1.393136	down	MARVEL domain containing 2
7946439	TMEM9B	-1.3942538	down	TMEM9 domain family, member B
8177498	MARVELD2	-1.395668	down	MARVEL domain containing 2
8037505	TRAPPC6A	-1.3998451	down	trafficking protein particle complex 6A
8052721	PPP3R1 WDR92	-1.4029421	down	protein phosphatase 3 (formerly 2B), regulatory subunit B
8097056	SNORA24	-1.4041444	down	small nucleolar RNA, H/ACA box 24
8106210	RGNEF	-1.4047815	down	Rho-guanine nucleotide exchange factor
7925531	AKT3	-1.4096985	down	v-akt murine thymoma viral oncogene homolog 3 (protein kinase)

## Supplemental Table 1b

eMSC vs. eEN

8042468	ANXA4	-1.4100018	down	annexin A4
8106354	IQGAP2	-1.4117271	down	IQ motif containing GTPase activating protein 2
8009353	PITPNC1	-1.4140823	down	phosphatidylinositol transfer protein, cytoplasmic 1
8119088	CDKN1A	-1.4143466	down	cyclin-dependent kinase inhibitor 1A (p21, Cip1)
8101757	GPRIN3	-1.4161153	down	GPRIN family member 3
8016847	TRIM25	-1.4197872	down	tripartite motif-containing 25
7950473	ARRB1	-1.4223824	down	arrestin, beta 1
8015635	PTRF	-1.4230709	down	polymerase I and transcript release factor
7954711	C12orf35	-1.4238235	down	chromosome 12 open reading frame 35
8128788	FLJ42177 C6orf19	-1.42673	down	FLJ42177 protein   chromosome 6 open reading frame 19
7905147	C1orf54	-1.4297334	down	chromosome 1 open reading frame 54
7957338	SYT1	-1.4327971	down	synaptotagmin I
8178977	TAPBP	-1.4350919	down	TAP binding protein (tapasin)
8104066	SORBS2	-1.4377656	down	sorbin and SH3 domain containing 2
8180166	TAPBP	-1.4378535	down	TAP binding protein (tapasin)
7920600	SHC1	-1.4380475	down	SHC (Src homology 2 domain containing) transforming prc
8103881	RWDD4A	-1.4381874	down	RWD domain containing 4A
8031837	ZNF587	-1.4405615	down	zinc finger protein 587
7989037	CCPG1	-1.4434139	down	cell cycle progression 1
7954077	KIAA1467	-1.4442443	down	
8058161	ORC2L	-1.4450824	down	origin recognition complex, subunit 2-like (yeast)
8146092	INDO	-1.4462543	down	indoleamine-pyrrole 2,3 dioxygenase
8001099	HERC2P4	-1.4508264	down	hect domain and RLD 2 pseudogene 4
8097098	USP53	-1.4512345	down	ubiquitin specific peptidase 53
8001067	HERC2P4	-1.4537492	down	hect domain and RLD 2 pseudogene 4
8074286	MICAL3	-1.4538003	down	microtubule associated monooxygenase, calponin and LIM
8122327	CCDC28A	-1.4555529	down	coiled-coil domain containing 28A
8103563	DDX60	-1.4557024	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60
7996947	CYB5B	-1.4601554	down	cytochrome b5 type B (outer mitochondrial membrane)
8153684	DGAT1 LOC72776	-1.4657456	down	diacylglycerol O-acyltransferase homolog 1 (mouse)   simi
7909332	CD55	-1.46598	down	
8153939	DGAT1 LOC72776	-1.4678438	down	diacylglycerol O-acyltransferase homolog 1 (mouse)   simi
7898693	ALPL	-1.4702709	down	alkaline phosphatase, liver/bone/kidney



## Supplemental Table 1b

eMSC vs. eEN

8147439	PLEKHF2	-1.4727644	down	pleckstrin homology domain containing, family F (with FY
8041781	EPAS1	-1.4733546	down	endothelial PAS domain protein 1
8083839	GPR160	-1.4747162	down	G protein-coupled receptor 160
7921487	TAGLN2	-1.4770992	down	transgelin 2
8098041	TMEM144	-1.4780539	down	transmembrane protein 144
8056022	CCDC148	-1.4780915	down	coiled-coil domain containing 148
8120783	MYO6	-1.4810435	down	myosin VI
8147221	OSGIN2	-1.483193	down	oxidative stress induced growth inhibitor family member 2
8051547	PRKD3	-1.484368	down	protein kinase D3
7923824	SLC41A1	-1.4848516	down	solute carrier family 41, member 1
7986092	FURIN	-1.4849037	down	furin (paired basic amino acid cleaving enzyme)
8131881	C7orf46	-1.4904801	down	chromosome 7 open reading frame 46
7972297	ABCC4	-1.4920641	down	ATP-binding cassette, sub-family C (CFTR/MRP), member 4
8070819	PTTG1IP	-1.4931272	down	pituitary tumor-transforming 1 interacting protein
8180061	TAP1	-1.4933329	down	transporter 1, ATP-binding cassette, sub-family B (MDR/T)
8171034	SPRY3	-1.4935389	down	sprouty homolog 3 (Drosophila)
8178867	TAP1	-1.4942998	down	transporter 1, ATP-binding cassette, sub-family B (MDR/T)
8125512	TAP1	-1.4957472	down	transporter 1, ATP-binding cassette, sub-family B (MDR/T)
8161839	C9orf95	-1.4969448	down	chromosome 9 open reading frame 95
8176955	SPRY3	-1.4987831	down	sprouty homolog 3 (Drosophila)
8111101	ANKH	-1.4991859	down	ankylosis, progressive homolog (mouse)
7910792	RYR2	-1.4993421	down	ryanodine receptor 2 (cardiac)
8079305	CLEC3B	-1.5038805	down	C-type lectin domain family 3, member B
7966929	RAB35	-1.5042742	down	
8007620	GRN	-1.5108116	down	granulin
7913558	LUZP1	-1.5138936	down	leucine zipper protein 1
8011884	NLRP1	-1.5157884	down	NLR family, pyrin domain containing 1
8106068	MCCC2	-1.5158451	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
8069178	ADARB1	-1.5159893	down	adenosine deaminase, RNA-specific, B1 (RED1 homolog ra
8177601	MCCC2	-1.516477	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
8168691	DIAPH2	-1.5172751	down	diaphanous homolog 2 (Drosophila)
8037847	AP2S1	-1.5200423	down	adaptor-related protein complex 2, sigma 1 subunit
7907861	XPR1	-1.5247319	down	xenotropic and polytropic retrovirus receptor

## Supplemental Table 1b

eMSC vs. eEN

8169949	RP6-213H19.1	-1.526604	down	serine/threonine protein kinase MST4
8001197	NETO2	-1.527174	down	neuropilin (NRP) and tolloid (TLL)-like 2
8128099	GABRR2	-1.5286648	down	gamma-aminobutyric acid (GABA) receptor, rho 2
8096130	CDS1	-1.530308	down	CDP-diacylglycerol synthase (phosphatidate cytidyltransferase)
7952036	MPZL3	-1.5311959	down	myelin protein zero-like 3
7953291	CD9	-1.5329894	down	
8027701	GRAMD1A	-1.5349865	down	GRAM domain containing 1A
8169995	FAM122C	-1.5360715	down	family with sequence similarity 122C
8115783	STK10	-1.5364758	down	serine/threonine kinase 10
8100541	IGFBP7	-1.5434543	down	insulin-like growth factor binding protein 7
7968035	SPATA13 C1QTNF	-1.544107	down	spermatogenesis associated 13   C1q and tumor necrosis factor
8150830	LYPLA1	-1.5441142	down	lysophospholipase I
7965436	EEA1	-1.5445317	down	early endosome antigen 1
8083136	ATP1B3	-1.5476953	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 3 polypeptide
7961532	ARHGDI1	-1.5497482	down	Rho GDP dissociation inhibitor (GDI) beta
8067554	TCFL5	-1.5526552	down	transcription factor-like 5 (basic helix-loop-helix)
7920472	TPM3	-1.5535748	down	tropomyosin 3
7914516	LOC339483	-1.5578746	down	
8094134	DUB4	-1.5621991	down	
7935660	DNMBP	-1.5638052	down	dynamamin binding protein
7940643	ASRGL1	-1.5668961	down	asparaginase like 1
7926916	ZEB1	-1.5709883	down	zinc finger E-box binding homeobox 1
8135576	TES	-1.5716414	down	testis derived transcript (3 LIM domains)
8129562	CTGF	-1.5720383	down	connective tissue growth factor
7996908	SNTB2	-1.57297	down	syntrophin, beta 2 (dystrophin-associated protein A1, 59k)
7983734	TMOD2	-1.574139	down	tropomodulin 2 (neuronal)
8144758	ZDHHC2	-1.5741569	down	zinc finger, DHHC-type containing 2
8029489	BCAM	-1.5750499	down	basal cell adhesion molecule (Lutheran blood group)
8003171	COTL1	-1.5751697	down	coactosin-like 1 (Dictyostelium)
8089261	CBLB	-1.5753332	down	Cas-Br-M (murine) ecotropic retroviral transforming sequence
8173310	OPHN1	-1.5760151	down	oligophrenin 1
8149071	ANGPT2	-1.5785048	down	angiopoietin 2
8046003	GCA	-1.5792481	down	grancalcin, EF-hand calcium binding protein

## Supplemental Table 1b

eMSC vs. eEN

7917304	MCOLN3	-1.5799444	down	mucolipin 3
8052735	CNRIP1	-1.5829797	down	cannabinoid receptor interacting protein 1
8029465	BCL3	-1.5863253	down	B-cell CLL/lymphoma 3
8103601	DDX60L	-1.5874432	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60-like
7971780	NEK3	-1.5894697	down	NIMA (never in mitosis gene a)-related kinase 3
8146717	SGK3 C8orf44	-1.5896921	down	serum/glucocorticoid regulated kinase family, member 3
8028524	ACTN4	-1.5900244	down	actinin, alpha 4
7950838	PICALM	-1.5911455	down	phosphatidylinositol binding clathrin assembly protein
8078397	CMTM8	-1.5917453	down	CKLF-like MARVEL transmembrane domain containing 8
8086953	SHISA5	-1.5933037	down	shisa homolog 5 ( <i>Xenopus laevis</i> )
8179351	CFB	-1.5943514	down	complement factor B
7989365	RORA	-1.5981153	down	RAR-related orphan receptor A
7908125	RGL1	-1.5991907	down	ral guanine nucleotide dissociation stimulator-like 1
8117813	HLA-H HLA-A HLA	-1.6014874	down	major histocompatibility complex, class I, H (pseudogene)
7970602	PARP4	-1.6020509	down	poly (ADP-ribose) polymerase family, member 4
7986569	LOC283755 HERC:	-1.602208	down	hypothetical protein LOC283755   hect domain and RLD 2
8134552	ARPC1B	-1.6024878	down	actin related protein 2/3 complex, subunit 1B, 41kDa
8139198	RWDD4A	-1.6032275	down	RWD domain containing 4A
8030133	NUCB1	-1.6038699	down	nucleobindin 1
7955578	GRASP	-1.6054071	down	GRP1 (general receptor for phosphoinositides 1)-associate
7948229	SLC43A3	-1.6063619	down	solute carrier family 43, member 3
8041447	CRIM1	-1.609757	down	cysteine rich transmembrane BMP regulator 1 (chordin-lik
8151475	TPD52	-1.6108767	down	tumor protein D52
8135568	MDFIC	-1.6121752	down	MyoD family inhibitor domain containing
8179049	HLA-A HLA-B HLA	-1.6141547	down	major histocompatibility complex, class I, A   major histoc
7983512	SQRDL	-1.6145558	down	sulfide quinone reductase-like (yeast)
8117777	HLA-G HLA-A HLA	-1.6156677	down	major histocompatibility complex, class I, G   major histoc
8003357	FAM38A	-1.6165097	down	family with sequence similarity 38, member A
8010243	SYNGR2	-1.6183378	down	synaptogyrin 2
7986701	HERC2P2 LOC283	-1.6210544	down	hect domain and RLD 2 pseudogene 2   hypothetical prot
8117034	GMPR	-1.6247911	down	guanosine monophosphate reductase
7926223	CAMK1D	-1.6320059	down	calcium/calmodulin-dependent protein kinase ID
8137280	NOS3	-1.6362739	down	nitric oxide synthase 3 (endothelial cell)

Supplemental Table 1b  
eMSC vs. eEN

8179034	HLA-G HLA-A	-1.6392348	down	major histocompatibility complex, class I, G   major histoc
8178419	FLOT1	-1.6413683	down	flotillin 1
7969677	MBNL2	-1.6427938	down	muscleblind-like 2 (Drosophila)
7982154	HERC2P2 LOC283	-1.6430135	down	hect domain and RLD 2 pseudogene 2   hypothetical prot
8124828	FLOT1	-1.6438471	down	flotillin 1
8164665	RAPGEF1	-1.6460664	down	Rap guanine nucleotide exchange factor (GEF) 1
7910706	LGALS8	-1.6462542	down	lectin, galactoside-binding, soluble, 8 (galectin 8)
8146462	SOX17	-1.6472434	down	SRY (sex determining region Y)-box 17
8102232	LEF1	-1.6498555	down	lymphoid enhancer-binding factor 1
8177725	HLA-G HLA-A	-1.6505425	down	major histocompatibility complex, class I, G   major histoc
8179688	FLOT1	-1.6510061	down	flotillin 1
8009183	MAP3K3	-1.6517359	down	mitogen-activated protein kinase kinase kinase 3
8046546	HOXD8	-1.6535568	down	homeobox D8
8087485	UBA7	-1.6552391	down	ubiquitin-like modifier activating enzyme 7
8138922	KBTBD2	-1.6557323	down	kelch repeat and BTB (POZ) domain containing 2
8066939	B4GALT5	-1.6567044	down	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, poly
8169473	PLS3	-1.6573933	down	plastin 3 (T isoform)
8179041	HLA-A HLA-H HLA	-1.6592997	down	major histocompatibility complex, class I, A   major histoc
7969428	UCHL3	-1.661235	down	ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiolest
8084880	HES1	-1.6635802	down	hairly and enhancer of split 1, (Drosophila)
7902425	ST6GALNAC3	-1.6699337	down	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N
8163002	KLF4	-1.6746242	down	Kruppel-like factor 4 (gut)
7939197	HIPK3	-1.6753075	down	homeodomain interacting protein kinase 3
8078350	TGFBR2	-1.6775975	down	transforming growth factor, beta receptor II (70/80kDa)
7918857	TSPAN2	-1.6787432	down	tetraspanin 2
8105040	OSMR	-1.6791399	down	oncostatin M receptor
7995813	MT1DP	-1.6828809	down	metallothionein 1D (pseudogene)
8068353	SLC5A3 MRPS6	-1.6909722	down	solute carrier family 5 (inositol transporters), member 3
8096361	HERC5	-1.6917531	down	hect domain and RLD 5
7999909	GPRC5B	-1.6950332	down	G protein-coupled receptor, family C, group 5, member B
8109283	NDST1	-1.6966094	down	N-deacetylase/N-sulfotransferase (heparan glucosaminyl)
8015759	VAT1	-1.6968085	down	vesicle amine transport protein 1 homolog (T. californica)
7909866	MOSC2	-1.6972004	down	MOCO sulphurase C-terminal domain containing 2

## Supplemental Table 1b

eMSC vs. eEN

8157524	TLR4	-1.7012476	down	toll-like receptor 4
8174119	ZMAT1	-1.7024808	down	zinc finger, matrin type 1
8075106	TPST2	-1.7028434	down	tyrosylprotein sulfotransferase 2
7946579	LYVE1	-1.7032169	down	lymphatic vessel endothelial hyaluronan receptor 1
8138842	NOD1	-1.7033869	down	nucleotide-binding oligomerization domain containing 1
8167965	MSN	-1.7071806	down	moesin
8131339	FSCN1	-1.7082003	down	fascin homolog 1, actin-bundling protein (Strongylocentro
8140478	tcag7.1314	-1.7134051	down	hypothetical protein LOC54103
7957417	TMTC2	-1.7136428	down	transmembrane and tetratricopeptide repeat containing 2
8082100	PARP14	-1.7162758	down	poly (ADP-ribose) polymerase family, member 14
8136954	FAM139B LOC652	-1.7189361	down	family with sequence similarity 139, member B   similar to
7984217	PLEKHO2	-1.7191807	down	pleckstrin homology domain containing, family O member
8120428	FKBP1A FKBP1C	-1.7207466	down	FK506 binding protein 1A, 12kDa   FK506 binding protein
8042416	ARHGAP25	-1.7230266	down	Rho GTPase activating protein 25
7905116	PLEKHO1	-1.7232956	down	pleckstrin homology domain containing, family O member
8124562	ZNF323	-1.7249931	down	zinc finger protein 323
7939150	PRRG4	-1.7252957	down	proline rich Gla (G-carboxyglutamic acid) 4 (transmembran
8142424	GPR85	-1.7262381	down	G protein-coupled receptor 85
7958913	OAS2	-1.7294767	down	2'-5'-oligoadenylate synthetase 2, 69/71kDa
8160559	DDX58	-1.7297171	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
8043203	VAMP5	-1.7307771	down	vesicle-associated membrane protein 5 (myobrevin)
7933750	SLC16A9	-1.7385509	down	solute carrier family 16, member 9 (monocarboxylic acid t
7987454	BMF	-1.744218	down	Bcl2 modifying factor
8100870	ADAMTS3	-1.7507408	down	ADAM metalloproteinase with thrombospondin type 1 mo
7922610	ABL2	-1.7526553	down	v-abl Abelson murine leukemia viral oncogene homolog 2
8123936	NEDD9	-1.7621639	down	neural precursor cell expressed, developmentally down-re
8093304	CCRL2 LOC727811	-1.7654145	down	chemokine (C-C motif) receptor-like 2   similar to chemok
8149733	TNFRSF10B	-1.7654612	down	tumor necrosis factor receptor superfamily, member 10b
8090193	HEG1	-1.7664139	down	HEG homolog 1 (zebrafish)
8057898	HECW2	-1.7666248	down	HECT, C2 and WW domain containing E3 ubiquitin protein
7961230	CSDA	-1.7677997	down	cold shock domain protein A
8122279	KIAA1244 LOC202	-1.7679807	down	KIAA1244   hypothetical protein LOC202451
8058477	KLF7	-1.7687947	down	Kruppel-like factor 7 (ubiquitous)

## Supplemental Table 1b

eMSC vs. eEN

8090591	PLXND1	-1.7719166	down	plexin D1
8175393	ARHGEF6	-1.7778099	down	Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6
8100251	FRYL	-1.7820076	down	FRY-like
7970716	LNx2	-1.7902948	down	ligand of numb-protein X 2
8156199	DAPK1	-1.7968867	down	death-associated protein kinase 1
8136940	FAM139A	-1.8026949	down	family with sequence similarity 139, member A
7950248	FCHSD2	-1.8034484	down	FCH and double SH3 domains 2
8114733	CENTD3	-1.8036617	down	centaurin, delta 3
8117800	HLA-A HLA-H HLA	-1.8082374	down	major histocompatibility complex, class I, A   major histoc
7980773	CCDC88C	-1.8129711	down	coiled-coil domain containing 88C
8143065	C7orf49	-1.8132356	down	chromosome 7 open reading frame 49
8013788	FLOT2	-1.8133924	down	flotillin 2
8111153	MYO10	-1.8170543	down	myosin X
8018864	SOCS3	-1.818793	down	suppressor of cytokine signaling 3
7949454	MAP3K11	-1.819682	down	mitogen-activated protein kinase kinase kinase 11
7995825	MT1F	-1.8213581	down	metallothionein 1F
7964745	TMBIM4 LOC1001	-1.822484	down	transmembrane BAX inhibitor motif containing 4   hypoth
8078619	ITGA9	-1.8237287	down	integrin, alpha 9
7933877	JMJD1C	-1.8242198	down	jumonji domain containing 1C
7995258	ZNF267	-1.8292866	down	zinc finger protein 267
7976488	SERPINA5	-1.8322753	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase
8122336	C6orf115	-1.8331794	down	chromosome 6 open reading frame 115
8152506	SAMD12	-1.833388	down	sterile alpha motif domain containing 12
8068361	SLC5A3	-1.8340572	down	solute carrier family 5 (inositol transporters), member 3
8038163	RASIP1	-1.8363224	down	Ras interacting protein 1
8091327	PLSCR1	-1.842694	down	phospholipid scramblase 1
7996954	NFAT5	-1.8430439	down	nuclear factor of activated T-cells 5, tonicity-responsive
8064868	RP5-1022P6.2	-1.8455435	down	hypothetical protein KIAA1434
8018264	C17orf28	-1.8470145	down	chromosome 17 open reading frame 28
8137566	RNF32	-1.8477585	down	ring finger protein 32
8105741	MAST4 LOC10012	-1.8483602	down	microtubule associated serine/threonine kinase family me
8147516	MATN2	-1.8497249	down	matrilin 2
8164200	ANGPTL2	-1.8501632	down	angiopoietin-like 2

## Supplemental Table 1b

eMSC vs. eEN

8174474	ACSL4	-1.8514175	down	acyl-CoA synthetase long-chain family member 4
7996571	FAM65A	-1.8517913	down	family with sequence similarity 65, member A
8062557	PPP1R16B	-1.8528553	down	protein phosphatase 1, regulatory (inhibitor) subunit 16B
8149500	MTUS1	-1.8548663	down	mitochondrial tumor suppressor 1
7940775	RARRES3	-1.8564954	down	retinoic acid receptor responder (tazarotene induced) 3
8022674	CDH2	-1.8586566	down	cadherin 2, type 1, N-cadherin (neuronal)
7978712	CLEC14A	-1.860429	down	C-type lectin domain family 14, member A
7987192	SLC12A6	-1.8636361	down	solute carrier family 12 (potassium/chloride transporters)
8016468	HOXB7	-1.8641342	down	homeobox B7
8023415	TCF4	-1.8697408	down	transcription factor 4
8008185	ABI3	-1.870343	down	ABI gene family, member 3
7983111	SNAP23	-1.8704345	down	synaptosomal-associated protein, 23kDa
8138930	RP9P	-1.870463	down	retinitis pigmentosa 9 pseudogene
8016463	HOXB6	-1.871454	down	homeobox B6
8100382	CHIC2	-1.8715905	down	cysteine-rich hydrophobic domain 2
8091778	SCARNA7	-1.8820484	down	small Cajal body-specific RNA 7
8166469	SAT1	-1.8851006	down	spermidine/spermine N1-acetyltransferase 1
8077499	LOH3CR2A	-1.8855649	down	loss of heterozygosity, 3, chromosomal region 2, gene A
8060765	PRND	-1.8870286	down	prion protein 2 (dublet)
8125383	NOTCH4 GPSM3	-1.8879523	down	Notch homolog 4 (Drosophila)   G-protein signaling modu
8099797	RELL1	-1.8886129	down	RELT-like 1
7975361	KIAA0247	-1.8901867	down	
7940191	STX3	-1.8919548	down	syntaxin 3
8129649	C6orf192	-1.8934315	down	chromosome 6 open reading frame 192
7999387	EMP2	-1.8936427	down	epithelial membrane protein 2
8020495	CABLES1	-1.8958354	down	Cdk5 and Abl enzyme substrate 1
8060895	RNU105B	-1.8968883	down	RNA, U105B small nucleolar
8004184	XAF1	-1.897341	down	XIAP associated factor 1
8068761	ABCG1	-1.8976071	down	ATP-binding cassette, sub-family G (WHITE), member 1
8079407	CCRL2 LOC727811	-1.8987892	down	chemokine (C-C motif) receptor-like 2   similar to chemok
8052731	WDR92	-1.9020649	down	WD repeat domain 92
8067055	ATP9A	-1.9060242	down	ATPase, class II, type 9A
8177732	HLA-A HLA-H HLA	-1.9066216	down	major histocompatibility complex, class I, A   major histoc

Supplemental Table 1b  
eMSC vs. eEN

8164810	RALGDS	-1.9101839	down	ral guanine nucleotide dissociation stimulator
7918902	CD58	-1.9117048	down	
8001531	MT1G	-1.9120182	down	metallothionein 1G
8029437	PVR	-1.9151124	down	poliovirus receptor
8081758	GRAMD1C	-1.917466	down	GRAM domain containing 1C
8122637	SASH1	-1.919657	down	SAM and SH3 domain containing 1
8006779	ARHGAP23	-1.9214562	down	Rho GTPase activating protein 23
7975459	SIPA1L1	-1.9258806	down	signal-induced proliferation-associated 1 like 1
7936242	KIAA1754	-1.9270655	down	
8045857	LOC554201	-1.9286219	down	
8111339	MTMR12	-1.928816	down	myotubularin related protein 12
8124911	HLA-B XXbac-BPG	-1.9310397	down	major histocompatibility complex, class I, B   MHC class I
8098103	FNIP2	-1.9317406	down	folliculin interacting protein 2
8118594	HLA-DPB1	-1.932055	down	major histocompatibility complex, class II, DP beta 1
8137526	INSIG1	-1.9326044	down	insulin induced gene 1
8171762	RPS6KA3	-1.9345142	down	ribosomal protein S6 kinase, 90kDa, polypeptide 3
8171481	AP1S2	-1.9352107	down	adaptor-related protein complex 1, sigma 2 subunit
8068238	IFNAR2	-1.9352527	down	interferon (alpha, beta and omega) receptor 2
8175492	ATP11C	-1.9387373	down	ATPase, class VI, type 11C
7909890	HLX	-1.9402268	down	H2.0-like homeobox
7914603	RNF19B	-1.942252	down	ring finger protein 19B
7971950	DACH1	-1.942313	down	dachshund homolog 1 (Drosophila)
8178653	SLC44A4	-1.9423772	down	solute carrier family 44, member 4
7934842	MMRN2	-1.9434624	down	multimerin 2
7994280	IL4R	-1.9454908	down	interleukin 4 receptor
8125149	SLC44A4	-1.9504839	down	solute carrier family 44, member 4
7932552	LOC100128663 PF	-1.950612	down	similar to PRO3077   hypothetical protein PRO3077
8000811	MAPK3	-1.9539565	down	mitogen-activated protein kinase 3
7995793	MT1L	-1.9568444	down	metallothionein 1L (gene/pseudogene)
7951207	TMEM123	-1.9572219	down	transmembrane protein 123
8118734	ITPR3	-1.9577907	down	inositol 1,4,5-triphosphate receptor, type 3
8179861	SLC44A4	-1.9592842	down	solute carrier family 44, member 4
7907611	RASAL2	-1.9627209	down	RAS protein activator like 2



## Supplemental Table 1b

eMSC vs. eEN

8083429	MBNL1	-1.9638655	down	muscleblind-like (Drosophila)
8124901	HLA-C XXbac-BPG	-1.9648032	down	major histocompatibility complex, class I, C   MHC class I ;
8179731	HLA-B HLA-C XXb	-1.9660718	down	major histocompatibility complex, class I, B   major histoc
8179019	HLA-F	-1.9742519	down	major histocompatibility complex, class I, F
8150036	KIF13B	-1.9756317	down	kinesin family member 13B
8178498	HLA-B HLA-C XXb	-1.9761314	down	major histocompatibility complex, class I, B   major histoc
8177717	HLA-F	-1.981226	down	major histocompatibility complex, class I, F
8178489	HLA-C XXbac-BPG	-1.9823152	down	major histocompatibility complex, class I, C   MHC class I ;
7921713	F11R hCG_20857	-1.9838433	down	F11 receptor   hypothetical protein LOC100134860   KAT
8171392	ASB9	-1.9860244	down	ankyrin repeat and SOCS box-containing 9
8071981	CTA-221G9.4	-1.9863944	down	KIAA1671 protein
8073662	PARVB	-1.9905969	down	parvin, beta
7899750	C1orf90	-1.990933	down	chromosome 1 open reading frame 90
8171435	PIR	-1.9926639	down	pirin (iron-binding nuclear protein)
8079950	GNAI2	-1.9939425	down	guanine nucleotide binding protein (G protein), alpha inhi
8063382	SNAI1	-1.9961467	down	snail homolog 1 (Drosophila)
7904361	FAM46C	-1.9962299	down	family with sequence similarity 46, member C
7905881	ADAM15	-1.9969549	down	ADAM metallopeptidase domain 15
7947147	SVIP	-1.9997096	down	small VCP/p97-interacting protein
7912347	CASZ1	-2.0004125	down	castor zinc finger 1
8044919	RALB	-2.0014856	down	v-ral simian leukemia viral oncogene homolog B (ras relat
7995783	MT2A	-2.0020185	down	metallothionein 2A
8117760	HLA-F	-2.0052788	down	major histocompatibility complex, class I, F
7906435	DARC	-2.009302	down	Duffy blood group, chemokine receptor
8179519	HLA-DPB1	-2.010406	down	major histocompatibility complex, class II, DP beta 1
8117476	BTN3A3	-2.014029	down	butyrophilin, subfamily 3, member A3
8074131	SHANK3	-2.017002	down	SH3 and multiple ankyrin repeat domains 3
7926239	OPTN	-2.0198624	down	optineurin
7997453	PLCG2	-2.0199986	down	phospholipase C, gamma 2 (phosphatidylinositol-specific)
8111772	DAB2	-2.0207956	down	disabled homolog 2, mitogen-responsive phosphoprotein
8111569	RANBP3L	-2.0245876	down	RAN binding protein 3-like
7908351	PLA2G4A	-2.0257292	down	phospholipase A2, group IVA (cytosolic, calcium-depende
7950885	FZD4	-2.027854	down	frizzled homolog 4 (Drosophila)

## Supplemental Table 1b

eMSC vs. eEN

7931353	PTPRE	-2.0311434	down	protein tyrosine phosphatase, receptor type, E
8114300	KLHL3	-2.031422	down	kelch-like 3 (Drosophila)
8068202	C21orf63	-2.0315776	down	chromosome 21 open reading frame 63
8054766	bA395L14.13	-2.0337381	down	acrosin-like protease
8091306	PLSCR4	-2.0377278	down	phospholipid scramblase 4
8021984	YES1	-2.0401661	down	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1
7946245	DCHS1	-2.0445886	down	dachsous 1 (Drosophila)
7912145	TNFRSF9	-2.0452473	down	tumor necrosis factor receptor superfamily, member 9
7954527	ARNTL2	-2.0461125	down	aryl hydrocarbon receptor nuclear translocator-like 2
8041995	SPTBN1	-2.0482476	down	spectrin, beta, non-erythrocytic 1
7947425	CD59	-2.0508275	down	
8161774	TRPM6	-2.0542078	down	transient receptor potential cation channel, subfamily M,
8138941	NT5C3	-2.0546234	down	5'-nucleotidase, cytosolic III
8061247	RIN2	-2.0583816	down	Ras and Rab interactor 2
7967002	PXN	-2.0596645	down	paxillin
8107909	SLC22A4	-2.0601935	down	solute carrier family 22 (organic cation/ergothioneine trar
7960947	A2M	-2.0623772	down	alpha-2-macroglobulin
7964701	GNS	-2.0625126	down	glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease IIID
8152041	RNF19A	-2.0644841	down	ring finger protein 19A
8131067	GPR146	-2.064635	down	G protein-coupled receptor 146
8010271	PGS1	-2.0691762	down	phosphatidylglycerophosphate synthase 1
8155849	ANXA1	-2.0703318	down	annexin A1
8146550	SDCBP	-2.0765612	down	syndecan binding protein (syntenin)
8096899	C4orf32	-2.0781617	down	chromosome 4 open reading frame 32
8081590	PHLDB2	-2.0803075	down	pleckstrin homology-like domain, family B, member 2
8116910	HIVEP1	-2.0913043	down	human immunodeficiency virus type I enhancer binding pr
8121569	FLJ34503	-2.0928137	down	
8156043	PSAT1	-2.0953033	down	phosphoserine aminotransferase 1
7902104	PDE4B	-2.096457	down	phosphodiesterase 4B, cAMP-specific (phosphodiesterase
8092905	LSG1	-2.0965211	down	large subunit GTPase 1 homolog (S. cerevisiae)
8030991	LOC147804	-2.096651	down	tropomyosin 3 pseudogene
7978285	ADCY4	-2.0988047	down	adenylate cyclase 4
7974851	HIF1A	-2.0989442	down	hypoxia-inducible factor 1, alpha subunit (basic helix-loop

Supplemental Table 1b  
eMSC vs. eEN

8122426	PHACTR2	-2.1084702	down	phosphatase and actin regulator 2
7913582	ZNF436	-2.1091151	down	zinc finger protein 436
8171297	MID1	-2.109329	down	midline 1 (Opitz/BBB syndrome)
7950933	NOX4	-2.118168	down	NADPH oxidase 4
7964602	LRIG3	-2.1191318	down	leucine-rich repeats and immunoglobulin-like domains 3
8144089	LMBR1	-2.1212962	down	limb region 1 homolog (mouse)
8122634	SAMD5	-2.1223485	down	sterile alpha motif domain containing 5
8066848	PREX1	-2.1237369	down	phosphatidylinositol 3,4,5-trisphosphate-dependent RAC GEF 1
8156164	LOC389765	-2.1238282	down	similar to KIF27C
8095362	MT2A	-2.1241052	down	metallothionein 2A
7997427	CMIP	-2.1252668	down	c-Maf-inducing protein
7931097	HTRA1	-2.1273148	down	HtrA serine peptidase 1
8068583	KCNJ15	-2.1349952	down	potassium inwardly-rectifying channel, subfamily J, member 15
8005549	LOC400581	-2.1357963	down	GRB2-related adaptor protein-like
7922301	MYOC	-2.136149	down	myocilin, trabecular meshwork inducible glucocorticoid response protein
8153002	NDRG1	-2.137993	down	N-myc downstream regulated gene 1
7899160	CD52	-2.140759	down	
8161701	TMEM2	-2.1444192	down	transmembrane protein 2
8155630	LOC100132139 LC	-2.1476436	down	similar to methylenetetrahydrofolate dehydrogenase (NADPH-dependent)
7906469	DUSP23	-2.1480231	down	dual specificity phosphatase 23
8129888	NHSL1	-2.148069	down	NHS-like 1
7953626	CLSTN3	-2.1494777	down	calsyntenin 3
8100026	ATP8A1	-2.1498435	down	ATPase, aminophospholipid transporter (APLT), class I, type 8A1
8161377	LOC100132139 LC	-2.1498444	down	similar to methylenetetrahydrofolate dehydrogenase (NADPH-dependent)
8120279	LRRC1	-2.1503584	down	leucine rich repeat containing 1
7941104	ARL2 SNX15	-2.153164	down	ADP-ribosylation factor-like 2   sorting nexin 15
8132725	UPP1	-2.1597784	down	uridine phosphorylase 1
8080344	STAB1	-2.1648612	down	stabilin 1
8101659	SPARCL1	-2.1686084	down	SPARC-like 1 (mast9, hevin)
8045889	TANC1	-2.171945	down	tetratricopeptide repeat, ankyrin repeat and coiled-coil domain containing 1
8138689	SKAP2	-2.1731439	down	src kinase associated phosphoprotein 2
7909175	SRGAP2	-2.1740468	down	SLIT-ROBO Rho GTPase activating protein 2
8095376	TMPRSS11E2 MT2A	-2.1774263	down	transmembrane protease, serine 11E2   metallothionein 2A

## Supplemental Table 1b

eMSC vs. eEN

8118345	CFB	-2.1787791	down	complement factor B
7919800	CTSS	-2.1791697	down	cathepsin S
8075569	SLC5A4	-2.1799128	down	solute carrier family 5 (low affinity glucose cotransporter)
8077441	BHLHB2	-2.1871212	down	basic helix-loop-helix domain containing, class B, 2
8112202	PLK2	-2.1874273	down	polo-like kinase 2 (Drosophila)
8017736	CCDC46	-2.1880612	down	coiled-coil domain containing 46
7979269	GCH1	-2.1911716	down	GTP cyclohydrolase 1 (dopa-responsive dystonia)
8155563	LOC100132139 LC	-2.1915872	down	similar to methylenetetrahydrofolate dehydrogenase (NA
7964868	LOC100131613	-2.1949747	down	PRO1454
8147057	CHMP4C	-2.1990993	down	chromatin modifying protein 4C
7902874	LRRC8C	-2.199971	down	leucine rich repeat containing 8 family, member C
8154128	DSERG1	-2.2068121	down	Down syndrome encephalopathy related protein 1
8161484	LOC100132139 LC	-2.2080352	down	similar to methylenetetrahydrofolate dehydrogenase (NA
8147777	CTHRC1	-2.2089431	down	collagen triple helix repeat containing 1
8025601	ICAM1	-2.2121873	down	intercellular adhesion molecule 1 (CD54), human rhinovirus
8117890	HLA-E	-2.2155726	down	major histocompatibility complex, class I, E
7954090	EMP1	-2.2202861	down	epithelial membrane protein 1
8178115	CFB	-2.227796	down	complement factor B
8091991	MDS1	-2.2305427	down	myelodysplasia syndrome 1
8013860	MYO18A TIAF1	-2.234655	down	myosin XVIII A   TGFB1-induced anti-apoptotic factor 1
7916493	PPAP2B	-2.236012	down	phosphatidic acid phosphatase type 2B
8083677	SCHIP1	-2.2367234	down	schwannomin interacting protein 1
8103415	C4orf18	-2.245341	down	chromosome 4 open reading frame 18
7971813	THSD1	-2.2477083	down	thrombospondin, type I, domain containing 1
7970810	SLC7A1	-2.2499058	down	solute carrier family 7 (cationic amino acid transporter, y+
7989968	CALML4	-2.2529054	down	calmodulin-like 4
8100292	FRYL	-2.2535388	down	FRY-like
8142468	TPM3	-2.2538762	down	tropomyosin 3
8037614	GPR4	-2.2558656	down	G protein-coupled receptor 4
8160260	BNC2	-2.2561665	down	basonuclin 2
7953981	ETV6	-2.257421	down	ets variant gene 6 (TEL oncogene)
8114780	PCDH12	-2.2576447	down	protocadherin 12
8034021	CDC37	-2.258807	down	cell division cycle 37 homolog (S. cerevisiae)

## Supplemental Table 1b

eMSC vs. eEN

7968351	C13orf33	-2.2670581	down	chromosome 13 open reading frame 33
7982854	DLL4	-2.2696671	down	delta-like 4 (Drosophila)
8046726	SSFA2	-2.270983	down	sperm specific antigen 2
7955562	ACVRL1	-2.2726738	down	activin A receptor type II-like 1
7995838	MT1X	-2.2730582	down	metallothionein 1X
8062108	PROCR	-2.273338	down	protein C receptor, endothelial (EPCR)
8016476	HOXB9	-2.2747726	down	homeobox B9
8103822	VEGFC	-2.2782102	down	vascular endothelial growth factor C
8047069	INPP1	-2.2806034	down	inositol polyphosphate-1-phosphatase
8180078	HLA-DMB	-2.2812307	down	major histocompatibility complex, class II, DM beta
7911038	ZNF238	-2.2818167	down	zinc finger protein 238
7968976	LRCH1	-2.2843032	down	leucine-rich repeats and calponin homology (CH) domain
8038029	CARD8	-2.2860043	down	caspase recruitment domain family, member 8
8177788	HLA-E	-2.291439	down	major histocompatibility complex, class I, E
8179103	HLA-E	-2.2916844	down	major histocompatibility complex, class I, E
7946815	PIK3C2A	-2.2929125	down	phosphoinositide-3-kinase, class 2, alpha polypeptide
8103011	OTUD4	-2.2973313	down	OTU domain containing 4
8066214	TGM2	-2.2998986	down	transglutaminase 2 (C polypeptide, protein-glutamine-gan
8092392	KLHL6	-2.300754	down	kelch-like 6 (Drosophila)
8097513	MGST2	-2.311212	down	microsomal glutathione S-transferase 2
8109141	GRPEL2	-2.3156438	down	GrpE-like 2, mitochondrial (E. coli)
8047538	BMPR2	-2.3158977	down	bone morphogenetic protein receptor, type II (serine/thre
7920506	SHE	-2.321076	down	Src homology 2 domain containing E
8142345	DOCK4	-2.3236127	down	dedicator of cytokinesis 4
7946641	GALNTL4	-2.32458	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acety
8072360	TCN2	-2.3268805	down	transcobalamin II; macrocytic anemia
8050719	ITSN2	-2.3290324	down	intersectin 2
8155734	C9orf61	-2.3359244	down	chromosome 9 open reading frame 61
8120102	CD2AP	-2.340863	down	CD2-associated protein
8019643	DOC2B	-2.343802	down	double C2-like domains, beta
8005847	TNFAIP1	-2.34577	down	tumor necrosis factor, alpha-induced protein 1 (endotheli
8147156	WWP1	-2.3486776	down	WW domain containing E3 ubiquitin protein ligase 1
8085914	SLC4A7	-2.3512096	down	solute carrier family 4, sodium bicarbonate cotransporter,

## Supplemental Table 1b

eMSC vs. eEN

8128683	SNX3	-2.3586586	down	sorting nexin 3
7965510	TMCC3	-2.3590076	down	transmembrane and coiled-coil domain family 3
7971565	P2RY5	-2.3603446	down	purinergic receptor P2Y, G-protein coupled, 5
8132118	AQP1	-2.3621838	down	aquaporin 1 (Colton blood group)
8148049	NOV	-2.362347	down	nephroblastoma overexpressed gene
8135363	PIK3CG	-2.363151	down	phosphoinositide-3-kinase, catalytic, gamma polypeptide
7905929	EFNA1	-2.364324	down	ephrin-A1
7966026	NUAK1	-2.3656402	down	NUAK family, SNF1-like kinase, 1
8096224	AFF1	-2.3660588	down	AF4/FMR2 family, member 1
7970162	ATP11A	-2.369622	down	ATPase, class VI, type 11A
7928046	TSPAN15	-2.3727102	down	tetraspanin 15
7975799	FLVCR2	-2.374445	down	feline leukemia virus subgroup C cellular receptor family, I
7917338	BCL10	-2.3766942	down	B-cell CLL/lymphoma 10
7897522	RBP7	-2.3772848	down	retinol binding protein 7, cellular
7962250	CPNE8	-2.3782368	down	copine VIII
7932118	C10orf30	-2.383448	down	chromosome 10 open reading frame 30
8127756	LCA5	-2.383725	down	Leber congenital amaurosis 5
8116835	GCNT2	-2.3854656	down	glucosaminyl (N-acetyl) transferase 2, I-branching enzyme
7956819	RASSF3	-2.3916118	down	Ras association (RalGDS/AF-6) domain family member 3
8094501	STIM2	-2.3924108	down	stromal interaction molecule 2
7995787	MT1M	-2.3959389	down	metallothionein 1M
8125530	HLA-DMB	-2.3961673	down	major histocompatibility complex, class II, DM beta
8005809	LGALS9	-2.4024265	down	lectin, galactoside-binding, soluble, 9 (galectin 9)
8017843	SLC16A6	-2.4047377	down	solute carrier family 16, member 6 (monocarboxylic acid t
8130556	SOD2	-2.40986	down	superoxide dismutase 2, mitochondrial
8156783	COL15A1	-2.4147584	down	collagen, type XV, alpha 1
8006433	CCL2	-2.418339	down	chemokine (C-C motif) ligand 2
8178220	HLA-DPB1	-2.4264352	down	major histocompatibility complex, class II, DP beta 1
8059878	IQCA LOC1001292	-2.4352083	down	IQ motif containing with AAA domain   hypothetical prote
7963786	ITGA5	-2.4448385	down	integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
8068593	ETS2	-2.445321	down	v-ets erythroblastosis virus E26 oncogene homolog 2 (avia
8118571	PSMB9	-2.447998	down	proteasome (prosome, macropain) subunit, beta type, 9 (I
8178211	PSMB9	-2.449383	down	proteasome (prosome, macropain) subunit, beta type, 9 (I

## Supplemental Table 1b

eMSC vs. eEN

8179495	PSMB9	-2.4510891	down	proteasome (prosome, macropain) subunit, beta type, 9 (l
7989023	RAB27A	-2.4583023	down	
8162531	MT1G	-2.462651	down	metallothionein 1G
8068671	BACE2	-2.4657497	down	beta-site APP-cleaving enzyme 2
8005458	LGALS9 LOC65434	-2.467741	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   similar
7946275	GVIN1	-2.4746363	down	GTPase, very large interferon inducible 1
7977397	CRIP2	-2.4768696	down	cysteine-rich protein 2
8017651	SMURF2	-2.480326	down	SMAD specific E3 ubiquitin protein ligase 2
8013319	GRAP	-2.4809217	down	GRB2-related adaptor protein
7931081	PLEKHA1	-2.4823859	down	pleckstrin homology domain containing, family A (phosph
8008629	DGKE	-2.4840431	down	diacylglycerol kinase, epsilon 64kDa
8100298	OCIAD2	-2.486476	down	OCIA domain containing 2
8096489	PDLIM5	-2.487946	down	PDZ and LIM domain 5
8044391	MERTK	-2.490656	down	c-mer proto-oncogene tyrosine kinase
8065353	THBD	-2.4927254	down	thrombomodulin
8116932	PHACTR1	-2.4985461	down	phosphatase and actin regulator 1
7951271	MMP1	-2.5061712	down	matrix metalloproteinase 1 (interstitial collagenase)
8027604	KIAA0355	-2.5070975	down	
8078933	MYRIP	-2.509987	down	myosin VIIA and Rab interacting protein
8057377	CCDC141 LOC2851	-2.5166705	down	coiled-coil domain containing 141   hypothetical protein L
8088680	C3orf64	-2.5240605	down	chromosome 3 open reading frame 64
7932826	KIAA1462	-2.5243437	down	
8123598	SERPINB1	-2.5339117	down	serpin peptidase inhibitor, clade B (ovalbumin), member 1
8004842	ARHGEF15	-2.5347714	down	Rho guanine nucleotide exchange factor (GEF) 15
8049544	LRRFIP1	-2.5379808	down	leucine rich repeat (in FLII) interacting protein 1
8172698	SHROOM4	-2.541502	down	shroom family member 4
8169580	IL13RA1	-2.546253	down	interleukin 13 receptor, alpha 1
7952436	ESAM	-2.548009	down	endothelial cell adhesion molecule
8022572	OSBPL1A	-2.554022	down	oxysterol binding protein-like 1A
8085556	SH3BP5	-2.5543635	down	SH3-domain binding protein 5 (BTK-associated)
8059279	EPHA4	-2.559454	down	EPH receptor A4
8112980	EDIL3	-2.5600224	down	EGF-like repeats and discoidin I-like domains 3
8098500	CDKN2AIP	-2.5608072	down	CDKN2A interacting protein

## Supplemental Table 1b

eMSC vs. eEN

8161255	SHB CKAP2	-2.5651212	down	Src homology 2 domain containing adaptor protein B   cy
8149590	LOC100130604	-2.568488	down	
8081219	ST3GAL6	-2.5700672	down	ST3 beta-galactoside alpha-2,3-sialyltransferase 6
8101675	ABCG2	-2.5734742	down	ATP-binding cassette, sub-family G (WHITE), member 2
8017210	AP1S2 LOC653653	-2.5767376	down	adaptor-related protein complex 1, sigma 2 subunit   hyp
7899534	EPB41	-2.5814118	down	erythrocyte membrane protein band 4.1 (elliptocytosis 1,
8057797	SDPR	-2.583046	down	serum deprivation response (phosphatidylserine binding p
8099721	KIAA0746 SERINC	-2.58779	down	KIAA0746 protein   serine incorporator 2
7908204	HMCN1	-2.5936563	down	hemicentin 1
8004691	TMEM88	-2.5965676	down	transmembrane protein 88
8154512	ADAMTSL1	-2.601246	down	ADAMTS-like 1
8121277	AIM1	-2.6020453	down	absent in melanoma 1
8123609	SERPINB9	-2.614807	down	serpin peptidase inhibitor, clade B (ovalbumin), member 9
7932243	C10orf38	-2.6149018	down	chromosome 10 open reading frame 38
8010139	SEC14L1	-2.6251	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
8143781	GIMAP6	-2.6399448	down	GTPase, IMAP family member 6
8109001	SPINK5	-2.6419675	down	serine peptidase inhibitor, Kazal type 5
8163063	CTNNA1	-2.6469383	down	catenin (cadherin-associated protein), alpha-like 1
8101992	SLC39A8	-2.659488	down	solute carrier family 39 (zinc transporter), member 8
8102362	TIFA	-2.6603432	down	TRAF-interacting protein with forkhead-associated domain
8118111	HCP5	-2.6644063	down	HLA complex P5
7909862	C1orf115	-2.6879656	down	chromosome 1 open reading frame 115
7942830	LOC100130425 G	-2.688963	down	hypothetical protein LOC100130425   GCRG-P224
7929525	LOC100127889	-2.694704	down	
8098611	TLR3	-2.7011003	down	toll-like receptor 3
8056285	IFIH1	-2.7013476	down	interferon induced with helicase C domain 1
7966150	SSH1	-2.7015994	down	slingshot homolog 1 ( <i>Drosophila</i> )
8116818	BMP6	-2.7022324	down	bone morphogenetic protein 6
8126853	C6orf138	-2.712691	down	chromosome 6 open reading frame 138
7987385	MEIS2	-2.716001	down	Meis homeobox 2
8091546	LOC645843	-2.7163482	down	transmembrane protein 14-like
7996081	GPR56	-2.7318473	down	G protein-coupled receptor 56
8068713	MX1	-2.736461	down	myxovirus (influenza virus) resistance 1, interferon-inducil



## Supplemental Table 1b

eMSC vs. eEN

7914270	LAPTM5	-2.7438958	down	lysosomal associated multispinning membrane protein 5
8023401	CCDC68	-2.7482464	down	coiled-coil domain containing 68
7995797	MT1E	-2.7513907	down	metallothionein 1E
8089911	HCLS1	-2.7607174	down	hematopoietic cell-specific Lyn substrate 1
7978376	STXBP6	-2.764527	down	syntaxin binding protein 6 (amisyn)
8104035	SORBS2	-2.7659628	down	sorbin and SH3 domain containing 2
8152812	FAM84B	-2.770951	down	family with sequence similarity 84, member B
8149749	TNFRSF10D	-2.7731352	down	tumor necrosis factor receptor superfamily, member 10d,
7954589	REP15	-2.7751791	down	Rab15 effector protein
7984517	GLCE	-2.7773478	down	glucuronic acid epimerase
8057056	TTN	-2.7882695	down	titin
8004255	BCL6B	-2.7913487	down	B-cell CLL/lymphoma 6, member B (zinc finger protein)
8176174	MPP1	-2.7913756	down	membrane protein, palmitoylated 1, 55kDa
8013450	LGALS9 LOC28419	-2.7934666	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   galectin
7957665	ELK3	-2.7967777	down	
7965652	PCK2	-2.7987628	down	PCK2 protein kinase 2
8015412	JUP	-2.8166823	down	junction plakoglobin
7938370	SWAP70	-2.8174195	down	SWAP-70 protein
7909586	PPP2R5A	-2.819637	down	protein phosphatase 2, regulatory subunit B', alpha isoform
7943749	LAYN	-2.819756	down	layilin
8094874	LOC402175	-2.8387756	down	hypothetical gene supported by AF044957; NM_004547
8056963	LOC100129455	-2.8430746	down	
7923991	PLXNA2	-2.8511355	down	plexin A2
7922976	PTGS2	-2.8607323	down	prostaglandin-endoperoxide synthase 2 (prostaglandin G/
8046380	ITGA6	-2.861708	down	integrin, alpha 6
8008819	YPEL2	-2.8658538	down	yippee-like 2 (Drosophila)
7951351	PDGFD	-2.8681054	down	platelet derived growth factor D
8081890	PLA1A	-2.8808503	down	phospholipase A1 member A
8114287	SPOCK1	-2.8825104	down	sparc/osteonectin, cwcv and kazal-like domains proteogly
7972936	FAM70B	-2.8854764	down	family with sequence similarity 70, member B
8125537	HLA-DMA	-2.8929305	down	major histocompatibility complex, class II, DM alpha
7903358	VCAM1	-2.8930495	down	vascular cell adhesion molecule 1
8131631	HDAC9	-2.896059	down	histone deacetylase 9

## Supplemental Table 1b

eMSC vs. eEN

7977592	GAFA1	-2.9005466	down	
8046542	HOXD9	-2.9093482	down	homeobox D9
8126798	GPR116	-2.9141605	down	G protein-coupled receptor 116
8042038	RPL23AP13	-2.9203565	down	ribosomal protein L23a pseudogene 13
7943413	BIRC3	-2.9219713	down	baculoviral IAP repeat-containing 3
7902541	IFI44L	-2.9240522	down	interferon-induced protein 44-like
7926679	KIAA1217	-2.9247892	down	
8008588	HLF	-2.9249659	down	hepatic leukemia factor
8068024	JAM2	-2.9317975	down	junctional adhesion molecule 2
7928534	C10orf11	-2.9334114	down	chromosome 10 open reading frame 11
8103789	GPM6A	-2.9639132	down	glycoprotein M6A
8120719	CD109	-2.9776137	down	
8044212	SULT1C2	-2.9923956	down	sulfotransferase family, cytosolic, 1C, member 2
7948987	HRASLS3	-2.9975982	down	HRAS-like suppressor 3
8131600	TSPAN13	-3.0001168	down	tetraspanin 13
7954559	PPFIBP1	-3.0138135	down	PTPRF interacting protein, binding protein 1 (liprin beta 1)
8105077	CARD6	-3.01769	down	caspace recruitment domain family, member 6
7974902	RHOJ	-3.0221555	down	ras homolog gene family, member J
8117243	LRRC16A	-3.0250976	down	leucine rich repeat containing 16A
8154135	SLC1A1	-3.031714	down	solute carrier family 1 (neuronal/epithelial high affinity gli
8178884	HLA-DMA	-3.0432706	down	major histocompatibility complex, class II, DM alpha
8120833	SH3BGR2	-3.089729	down	SH3 domain binding glutamic acid-rich protein like 2
8180086	HLA-DMA	-3.095259	down	major histocompatibility complex, class II, DM alpha
8018922	PSCD1	-3.1054957	down	pleckstrin homology, Sec7 and coiled-coil domains 1(cytop
7931108	DMBT1	-3.1086972	down	deleted in malignant brain tumors 1
7962516	SLC38A1	-3.1089463	down	solute carrier family 38, member 1
7900365	MFSD2	-3.127522	down	major facilitator superfamily domain containing 2
8135601	MET	-3.1355996	down	met proto-oncogene (hepatocyte growth factor receptor)
7938951	TMEM16E	-3.1363716	down	transmembrane protein 16E
8027778	FXSD5	-3.1506348	down	FXSD domain containing ion transport regulator 5
7922200	SELP	-3.1519907	down	selectin P (granule membrane protein 140kDa, antigen CD
8140971	SAMD9L	-3.1563816	down	sterile alpha motif domain containing 9-like
8056113	LY75	-3.176074	down	lymphocyte antigen 75

## Supplemental Table 1b

eMSC vs. eEN

8116780	DSP	-3.1776173	down	desmoplakin
8036710	GMFG	-3.1863427	down	glia maturation factor, gamma
8055702	NMI	-3.2024295	down	N-myc (and STAT) interactor
7951485	SLC35F2	-3.2266781	down	solute carrier family 35, member F2
7902957	ABHD7	-3.2410777	down	abhydrolase domain containing 7
7961365	MANSC1	-3.246564	down	MANSC domain containing 1
7923662	PIK3C2B	-3.27398	down	phosphoinositide-3-kinase, class 2, beta polypeptide
8125436	HLA-DRB5 LOC100	-3.279343	down	
8137257	GIMAP5	-3.2835224	down	GTPase, IMAP family member 5
8017597	hCG_1793136	-3.2898793	down	similar to ribosomal protein L31
8155460	CNTNAP3 CNTNAI	-3.3109338	down	contactin associated protein-like 3   contactin associated
8090823	SLCO2A1	-3.3221736	down	solute carrier organic anion transporter family, member 2
8106660	RASGRF2	-3.3242693	down	Ras protein-specific guanine nucleotide-releasing factor 2
8123407	MLLT4	-3.3402631	down	myeloid/lymphoid or mixed-lineage leukemia (trithorax ho
7981460	PPP1R13B	-3.346441	down	protein phosphatase 1, regulatory (inhibitor) subunit 13B
7931951	SFMBT2	-3.350499	down	Scm-like with four mbt domains 2
7962884	RND1	-3.3535151	down	Rho family GTPase 1
7950731	PRCP	-3.357019	down	prolylcarboxypeptidase (angiotensinase C)
7995907	CETP	-3.3652	down	cholesteryl ester transfer protein, plasma
8077198	FLJ43315	-3.369711	down	similar to Asparagine synthetase [glutamine-hydrolyzing]
8114920	DPYSL3	-3.3755457	down	dihydropyrimidinase-like 3
7952453	ROBO4	-3.3990786	down	roundabout homolog 4, magic roundabout (Drosophila)
8072603	LOC100130269	-3.4046621	down	similar to Putative uncharacterized protein FLJ36925
7956826	TBC1D30	-3.412396	down	TBC1 domain family, member 30
8054479	MALL	-3.4199579	down	mal, T-cell differentiation protein-like
7961083	CLEC2B	-3.4326077	down	C-type lectin domain family 2, member B
7929533	CC2D2B LOC1001	-3.4334254	down	coiled-coil and C2 domain containing 2B   hypothetical pr
7930498	ACSL5	-3.4459257	down	acyl-CoA synthetase long-chain family member 5
8117106	RNF144B	-3.4526875	down	ring finger 144B
8113512	EPB41L4A	-3.4557774	down	erythrocyte membrane protein band 4.1 like 4A
8149574	CSGALNACT1	-3.470915	down	chondroitin sulfate N-acetylgalactosaminyltransferase 1
8105267	ITGA2	-3.4775977	down	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptc
8161288	CNTNAP3 CNTNAI	-3.4799685	down	contactin associated protein-like 3   contactin associated

## Supplemental Table 1b

eMSC vs. eEN

8078066	FGD5	-3.487363	down	FYVE, RhoGEF and PH domain containing 5
8091422	WWTR1	-3.493544	down	WW domain containing transcription regulator 1
8077490	LMCD1	-3.5015512	down	LIM and cysteine-rich domains 1
7931977	ITIH5	-3.513102	down	inter-alpha (globulin) inhibitor H5
8122865	VIP	-3.5211146	down	vasoactive intestinal peptide
7980828	CCDC88C	-3.5278249	down	coiled-coil domain containing 88C
7953924	CLEC9A	-3.5357192	down	C-type lectin domain family 9, member A
8084206	B3GNT5	-3.5358236	down	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransf
8091715	LXN	-3.5612378	down	latexin
8045736	FMNL2	-3.5820565	down	formin-like 2
8113358	ST8SIA4	-3.6175914	down	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferas
7900658	TIE1	-3.6203213	down	tyrosine kinase with immunoglobulin-like and EGF-like doi
8072735	APOL1	-3.634522	down	apolipoprotein L, 1
8101762	SNCA	-3.6376333	down	synuclein, alpha (non A4 component of amyloid precursor
8150962	TOX	-3.6435063	down	thymocyte selection-associated high mobility group box
8017547	ICAM2	-3.645055	down	intercellular adhesion molecule 2
7965335	DUSP6	-3.6658652	down	dual specificity phosphatase 6
8116921	EDN1	-3.7084222	down	endothelin 1
8049246	INPP5D	-3.7158365	down	inositol polyphosphate-5-phosphatase, 145kDa
8094789	LIMCH1	-3.7161841	down	LIM and calponin homology domains 1
7913450	HSPG2	-3.7180116	down	heparan sulfate proteoglycan 2
8047174	SLC39A10	-3.7321298	down	solute carrier family 39 (zinc transporter), member 10
8137250	GIMAP2	-3.7356057	down	GTPase, IMAP family member 2
7954436	LRMP	-3.7365575	down	lymphoid-restricted membrane protein
8081838	CDGAP	-3.751342	down	Cdc42 GTPase-activating protein
8115368	NMUR2	-3.7525818	down	neuromedin U receptor 2
8060854	PLCB1	-3.7615845	down	phospholipase C, beta 1 (phosphoinositide-specific)
8146930	TMEM70	-3.784707	down	transmembrane protein 70
8134257	GNG11	-3.794621	down	guanine nucleotide binding protein (G protein), gamma 11
7939559	TSPAN18	-3.7962637	down	tetraspanin 18
8152845	FAM49B	-3.8024054	down	family with sequence similarity 49, member B
8109120	AFAP1L1	-3.8328128	down	actin filament associated protein 1-like 1
7995697	LPCAT2	-3.8877745	down	lysophosphatidylcholine acyltransferase 2

## Supplemental Table 1b

eMSC vs. eEN

8084717	ST6GAL1	-3.8991926	down	ST6 beta-galactosamide alpha-2,6-sialyltransferase 1
8138202	ICA1	-3.9053783	down	islet cell autoantigen 1, 69kDa
8088602	MAG11	-3.9147289	down	membrane associated guanylate kinase, WW and PDZ domain containing
8035297	PLVAP	-3.9365702	down	plasmalemma vesicle associated protein
8059642	SLC16A14	-3.937859	down	solute carrier family 16, member 14 (monocarboxylic acid transporter)
7917649	TGFBR3	-3.953298	down	transforming growth factor, beta receptor III
7926451	MRC1 MRC1L1	-3.973078	down	mannose receptor, C type 1   mannose receptor, C type 1
7926410	MRC1 MRC1L1	-3.9821346	down	mannose receptor, C type 1   mannose receptor, C type 1
7903893	CD53	-3.9987574	down	mannose receptor, C type 1
7983890	Gcom1 GRINL1A	-3.9998586	down	GRINL1A combined protein   glutamate receptor, ionotropic, NR1
7929288	EXOC6	-4.0231204	down	exocyst complex component 6
7902553	IFI44	-4.0535436	down	interferon-induced protein 44
8112584	ZNF366	-4.05959	down	zinc finger protein 366
7951397	CASP1	-4.0861797	down	caspace 1, apoptosis-related cysteine peptidase (interleukin-1 beta converting enzyme)
7925929	AKR1C3	-4.0947514	down	aldo-keto reductase family 1, member C3 (3-alpha hydroxysteroid oxidoreductase)
8165752	IL3RA	-4.0977516	down	interleukin 3 receptor, alpha (low affinity)
8115261	CCDC69	-4.1000886	down	coiled-coil domain containing 69
8176323	IL3RA	-4.103104	down	interleukin 3 receptor, alpha (low affinity)
8129458	ARHGAP18	-4.118102	down	Rho GTPase activating protein 18
8161460	CNTNAP3B LOC388073	-4.1331043	down	contactin associated protein-like 3B   similar to KIAA1714
8014349	CCL14 CCL15	-4.140202	down	chemokine (C-C motif) ligand 14   chemokine (C-C motif) ligand 15
7902518	GIPC2	-4.1404457	down	GIPC PDZ domain containing family, member 2
8155540	CNTNAP3B LOC388073	-4.155564	down	contactin associated protein-like 3B   similar to KIAA1714
8154295	IL33	-4.2147446	down	interleukin 33
8121838	TPD52L1	-4.215379	down	tumor protein D52-like 1
8020806	RNF125	-4.243045	down	ring finger protein 125
8098214	TLL1	-4.270635	down	tolloid-like 1
8044225	SULT1C4	-4.311217	down	sulfotransferase family, cytosolic, 1C, member 4
8113761	ZNF608	-4.3192883	down	zinc finger protein 608
8113130	MCTP1	-4.334962	down	multiple C2 domains, transmembrane 1
8168622	KLHL4	-4.366471	down	kelch-like 4 (Drosophila)
8054135	MGAT4A	-4.372516	down	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltransferase IV
7936463	ABLIM1	-4.396777	down	actin binding LIM protein 1

## Supplemental Table 1b

eMSC vs. eEN

7903393	S1PR1	-4.3985214	down	sphingosine-1-phosphate receptor 1
7951408	COP1	-4.4117446	down	caspase-1 dominant-negative inhibitor pseudo-ICE
7987772	EHD4	-4.412446	down	EH-domain containing 4
8099524	LDB2	-4.422633	down	LIM domain binding 2
7973067	NP	-4.429946	down	nucleoside phosphorylase
8105579	IPO11	-4.4590654	down	importin 11
8045860	PKP4	-4.5206356	down	plakophilin 4
8057578	CALCRL	-4.529574	down	calcitonin receptor-like
8083494	MME	-4.554014	down	membrane metallo-endopeptidase
8166784	TSPAN7	-4.560778	down	tetraspanin 7
7956878	IRAK3	-4.561345	down	interleukin-1 receptor-associated kinase 3
8121861	NCOA7	-4.5617485	down	nuclear receptor coactivator 7
8111739	FYB	-4.566675	down	
8139656	GRB10	-4.6122403	down	growth factor receptor-bound protein 10
7952046	MPZL2	-4.6192384	down	myelin protein zero-like 2
7919139	LOC375010	-4.633295	down	
8088247	ARHGEF3	-4.6447754	down	Rho guanine nucleotide exchange factor (GEF) 3
8121749	GJA1	-4.6957946	down	gap junction protein, alpha 1, 43kDa
8124307	CMAH	-4.6963377	down	cytidine monophosphate-N-acetylneuraminic acid hydroxylase
8035304	BST2	-4.7800074	down	bone marrow stromal cell antigen 2
8047403	CASP10	-4.807096	down	caspase 10, apoptosis-related cysteine peptidase
8123739	NRN1	-4.869575	down	neuritin 1
8113073	ARRDC3	-4.922471	down	arrestin domain containing 3
8033362	INSR	-4.939718	down	insulin receptor
8085774	ZNF385D	-4.974954	down	zinc finger protein 385D
8146579	CHD7	-5.0046177	down	chromodomain helicase DNA binding protein 7
8152764	MTSS1	-5.0218368	down	metastasis suppressor 1
8146934	LY96	-5.053695	down	lymphocyte antigen 96
7976443	IFI27	-5.0689793	down	interferon, alpha-inducible protein 27
8111677	LIFR	-5.069694	down	leukemia inhibitory factor receptor alpha
8130422	CNKSR3	-5.1068296	down	CNKSR family member 3
7951363	CASP12	-5.1618404	down	caspase 12 (gene/pseudogene)
7902074	LEPR LEPROT	-5.1667976	down	leptin receptor   leptin receptor overlapping transcript

## Supplemental Table 1b

eMSC vs. eEN

7907370	DNM3	-5.1676836	down	dynamain 3
8019988	PTPRM	-5.169024	down	protein tyrosine phosphatase, receptor type, M
8137240	GIMAP7	-5.2458243	down	GTPase, IMAP family member 7
8138805	CPVL	-5.2950172	down	carboxypeptidase, vitellogenic-like
7929511	ENTPD1	-5.319108	down	ectonucleoside triphosphate diphosphohydrolase 1
8122756	PLEKHG1	-5.368209	down	pleckstrin homology domain containing, family G (with Rh
7961111	CLEC1A	-5.3768215	down	C-type lectin domain family 1, member A
8022118	EPB41L3	-5.3788414	down	erythrocyte membrane protein band 4.1-like 3
7917561	GBP4	-5.4191523	down	guanylate binding protein 4
7922846	FAM129A	-5.424107	down	family with sequence similarity 129, member A
8122365	GPR126	-5.4352508	down	G protein-coupled receptor 126
8149825	STC1	-5.4536867	down	stanniocalcin 1
8080714	FLNB	-5.518477	down	filamin B, beta (actin binding protein 278)
8137232	GIMAP8	-5.5434017	down	GTPase, IMAP family member 8
8164269	ENG	-5.578701	down	endoglin (Osler-Rendu-Weber syndrome 1)
7920291	S100A16	-5.5837064	down	S100 calcium binding protein A16
7929536	CC2D2B LOC1001	-5.6165953	down	coiled-coil and C2 domain containing 2B   hypothetical pr
8174141	BEX5	-5.652138	down	BEX family member 5
8152522	ENPP2	-5.6771207	down	ectonucleotide pyrophosphatase/phosphodiesterase 2 (a
7969330	PCDH17	-5.681745	down	protocadherin 17
7948167	AGTRL1	-5.6838984	down	angiotensin II receptor-like 1
8125556	HLA-DPA1	-5.773095	down	major histocompatibility complex, class II, DP alpha 1
7960764	RBP5	-5.781648	down	retinol binding protein 5, cellular
8178891	HLA-DPA1	-5.7834697	down	major histocompatibility complex, class II, DP alpha 1
8042637	DYSF	-5.848723	down	dysferlin, limb girdle muscular dystrophy 2B (autosomal r
7970763	FLT1	-5.9150805	down	fms-related tyrosine kinase 1 (vascular endothelial growthf
8180100	HLA-DPA1	-5.954198	down	major histocompatibility complex, class II, DP alpha 1
7972487	DOCK9	-6.1125836	down	dedicator of cytokinesis 9
8097657	SMAD1	-6.169971	down	SMAD family member 1
7909681	PROX1	-6.2999053	down	prospero homeobox 1
7953873	OVOS2	-6.4178295	down	ovostatin 2
8115734	LCP2	-6.4834805	down	lymphocyte cytosolic protein 2 (SH2 domain containing le
8002778	MLKL	-6.5038414	down	mixed lineage kinase domain-like

## Supplemental Table 1b

eMSC vs. eEN

8139057	ELMO1	-6.526572	down	engulfment and cell motility 1
8132013	CHN2	-6.5540757	down	chimerin (chimaerin) 2
8070458	PLAC4	-6.5582395	down	placenta-specific 4
8154491	ADAMTSL1	-6.559267	down	ADAMTS-like 1
8142981	PODXL	-6.5923147	down	podocalyxin-like
7965226	RASSF9	-6.61906	down	Ras association (RalGDS/AF-6) domain family (N-terminal)
8091972	EVI1 MDS1	-6.720323	down	ecotropic viral integration site 1   myelodysplasia syndron
8180003	HLA-DRB3 HLA-DF	-6.7527504	down	
7948058	FOLH1 PSMAL	-6.757445	down	folate hydrolase (prostate-specific membrane antigen) 1
7917850	ARHGAP29	-6.7676315	down	Rho GTPase activating protein 29
8096301	SPP1	-6.818613	down	secreted phosphoprotein 1 (osteopontin, bone sialoprotei
8178802	HLA-DRB3 HLA-DF	-6.836559	down	
7942998	PSMAL FOLH1	-6.8369656	down	growth-inhibiting protein 26   folate hydrolase (prostate-s
8176234	CLIC2	-6.9065046	down	chloride intracellular channel 2
7968789	C13orf15	-7.0004697	down	chromosome 13 open reading frame 15
8146794	DEPDC2	-7.0170884	down	DEP domain containing 2
8105061	FYB	-7.359969	down	
8178811	HLA-DRB3 HLA-DF	-7.370087	down	
8037205	CEACAM1	-7.6192417	down	carcinoembryonic antigen-related cell adhesion molecule
8173755	ITM2A	-7.675478	down	integral membrane protein 2A
7929282	HHEX	-7.780953	down	hematopoietically expressed homeobox
7943998	NNMT	-7.821451	down	nicotinamide N-methyltransferase
7961026	OVOS LOC728715	-7.858189	down	ovostatin   similar to hCG38149
8166925	MAOA	-8.000709	down	monoamine oxidase A
7977615	RNASE1	-8.126245	down	ribonuclease, RNase A family, 1 (pancreatic)
8160138	NFIB	-8.14511	down	nuclear factor I/B
7988876	MYO5C	-8.302121	down	myosin VC
8147766	FZD6	-8.352156	down	frizzled homolog 6 (Drosophila)
8095110	KIT	-8.393392	down	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene hc
8133961	RUNDC3B	-8.58684	down	RUN domain containing 3B
8096704	NPNT	-8.624814	down	nephronectin
8081657	CD200	-8.7016735	down	
8099476	PROM1	-8.849545	down	prominin 1



## Supplemental Table 1b

eMSC vs. eEN

8065280	C20orf74	-8.862373	down	chromosome 20 open reading frame 74
8046428	RAPGEF4	-8.90411	down	Rap guanine nucleotide exchange factor (GEF) 4
8056222	DPP4	-8.98089	down	dipeptidyl-peptidase 4 (CD26, adenosine deaminase comp
8112045	ESM1	-9.090598	down	endothelial cell-specific molecule 1
8138504	RAPGEF5	-9.102748	down	Rap guanine nucleotide exchange factor (GEF) 5
8154692	TEK	-9.315761	down	
7927964	SRGN	-9.321351	down	serglycin
8099760	CENTD1	-9.374286	down	centaurin, delta 1
8069668	CYYR1	-9.379273	down	cysteine/tyrosine-rich 1
8172254	CXorf36	-9.408927	down	chromosome X open reading frame 36
7960438	TMEM16B	-9.541168	down	transmembrane protein 16B
8007348	RAMP2	-9.648039	down	receptor (G protein-coupled) activity modifying protein 2
8022612	ZNF521	-9.930587	down	zinc finger protein 521
8091411	TM4SF1	-10.00164	down	transmembrane 4 L six family member 1
8065359	CD93	-10.282643	down	
7996264	CDH5	-11.08791	down	cadherin 5, type 2, VE-cadherin (vascular epithelium)
7923978	CD34	-11.105854	down	
8041422	RASGRP3	-11.346768	down	RAS guanyl releasing protein 3 (calcium and DAG-regulate
8115147	CD74	-11.350591	down	
7945132	FLI1 EWSR1	-11.555531	down	Friend leukemia virus integration 1   Ewing sarcoma brea
8009502	KCNJ2	-11.676022	down	potassium inwardly-rectifying channel, subfamily J, memb
8052355	EFEMP1	-12.008141	down	EGF-containing fibulin-like extracellular matrix protein 1
7920123	S100A10	-12.371281	down	S100 calcium binding protein A10
8060897	PLCB4	-12.715873	down	phospholipase C, beta 4
8092169	TNFSF10	-13.150596	down	tumor necrosis factor (ligand) superfamily, member 10
7974835	PRKCH	-13.25225	down	protein kinase C, eta
8046099	NOSTRIN	-13.511957	down	nitric oxide synthase trafficker
7903227	PALMD	-14.075316	down	palmdelphin
8100393	KDR	-14.381505	down	kinase insert domain receptor (a type III receptor tyrosine
8140782	ABCB1	-14.904908	down	ATP-binding cassette, sub-family B (MDR/TAP), member 1
8118548	HLA-DRA	-15.845757	down	major histocompatibility complex, class II, DR alpha
8137244	GIMAP4	-15.954878	down	GTPase, IMAP family member 4
8070297	ERG	-16.347593	down	v-ets erythroblastosis virus E26 oncogene homolog (avian

Supplemental Table 1b  
eMSC vs. eEN

8179481	HLA-DRA	-16.45526	down	major histocompatibility complex, class II, DR alpha
8122860	MYCT1	-16.567099	down	myc target 1
7964872	PTPRB	-16.827652	down	protein tyrosine phosphatase, receptor type, B
7908597	NR5A2	-17.331745	down	nuclear receptor subfamily 5, group A, member 2
8178193	HLA-DRA	-17.59579	down	major histocompatibility complex, class II, DR alpha
8091402	TM4SF18	-18.330008	down	transmembrane 4 L six family member 18
7960464	VWF	-18.524239	down	von Willebrand factor
8017599	PECAM1	-19.02515	down	platelet/endothelial cell adhesion molecule (CD31 antigen)
7922229	SELE	-21.43954	down	selectin E (endothelial adhesion molecule 1)
8101957	EMCN	-22.550598	down	endomucin
7917182	ELTD1	-26.687098	down	EGF, latrophilin and seven transmembrane domain contain
8096415	MMRN1	-28.111507	down	multimerin 1

Supplemental Table 1c  
eMSC vs. eSF

Transcripts Cluster Id	Genesymbol	eMSC vs. eSF (Fold Change)	Regulation	Gene description
7921916	RGS5	39.859512	up	regulator of G-protein signaling 5
8149071	ANGPT2	25.61775	up	angiopoietin 2
8007701	HIGD1B	18.387976	up	HIG1 domain family, member 1B
8056363	SLC38A11	17.57202	up	solute carrier family 38, member 11
8104663	CDH6	16.526825	up	cadherin 6, type 2, K-cadherin (fetal kidney)
8144917	LPL	15.931173	up	lipoprotein lipase
8170648	BGN	12.310639	up	biglycan
8126798	GPR116	11.981095	up	G protein-coupled receptor 116
8123920	ELOVL2	11.936222	up	elongation of very long chain fatty acids (FEN1/Elo2, SLC
7952205	MCAM	10.21646	up	melanoma cell adhesion molecule
8023497	ATP8B1	9.844899	up	ATPase, class I, type 8B, member 1
8146957	PI15	9.834398	up	peptidase inhibitor 15
8081067	HTR1F	9.239014	up	5-hydroxytryptamine (serotonin) receptor 1F
8097973	GUCY1B3	9.137931	up	guanylate cyclase 1, soluble, beta 3
7937952	OR51E1	8.644006	up	olfactory receptor, family 51, subfamily E, member 1
7961710	ABCC9	8.0964	up	ATP-binding cassette, sub-family C (CFTR/MRP), memb
7934906	ACTA2	8.087425	up	actin, alpha 2, smooth muscle, aorta
8115543	EBF1	7.6178493	up	early B-cell factor 1
8064978	JAG1	7.543838	up	jagged 1 (Alagille syndrome)
8057486	PDE1A	7.3707876	up	phosphodiesterase 1A, calmodulin-dependent
8137670	PDGFA	7.118826	up	platelet-derived growth factor alpha polypeptide
8105229	PELO ITGA1	6.979694	up	pelota homolog (Drosophila)   integrin, alpha 1
8106573	THBS4	6.8787093	up	thrombospondin 4
8094301	SLIT2	6.762414	up	slit homolog 2 (Drosophila)
7979133	NID2	6.7582603	up	nidogen 2 (osteonidogen)
8105013	EGFLAM	6.7046657	up	EGF-like, fibronectin type III and laminin G domains
8115099	PDGFRB	6.4069486	up	platelet-derived growth factor receptor, beta polypept
7960947	A2M	6.2119184	up	alpha-2-macroglobulin
8157153	PALM2-AKAP2	6.0193343	up	
7972750	COL4A1	5.9997296	up	collagen, type IV, alpha 1
8014768	PLXDC1	5.9896455	up	plexin domain containing 1
8129071	FRK	5.8544874	up	fyn-related kinase

Supplemental Table 1c  
eMSC vs. eSF

8097957	GUCY1A3	5.7485414	up	guanylate cyclase 1, soluble, alpha 3
7961540	RERG	5.675406	up	RAS-like, estrogen-regulated, growth inhibitor
7961532	ARHGDIB	5.6403213	up	Rho GDP dissociation inhibitor (GDI) beta
7950555	LRRC32	5.5332103	up	leucine rich repeat containing 32
7999674	MYH11	5.5049086	up	myosin, heavy chain 11, smooth muscle
7970763	FLT1	5.3040934	up	fms-related tyrosine kinase 1 (vascular endothelial growth factor receptor type 1)
8006214	CENTA2	5.247387	up	centaurin, alpha 2
8078286	RARB LOC100130	5.234135	up	retinoic acid receptor, beta   hypothetical protein LOC100130
8148501	PTP4A3 LOC1001	5.192289	up	protein tyrosine phosphatase type IVA, member 3   sir
8083779	SERPINI1	5.1845984	up	serpin peptidase inhibitor, clade I (neuroserpin), member 1
8113039	MEF2C	5.1806307	up	myocyte enhancer factor 2C
8146863	SULF1	5.1504045	up	sulfatase 1
7909789	TGFB2	5.135372	up	transforming growth factor, beta 2
8041781	EPAS1	5.130632	up	endothelial PAS domain protein 1
7966749	TESC	5.127523	up	tescalcin
7915229	HEYL	5.048464	up	hairy/enhancer-of-split related with YRPW motif-like
8140840	STEAP4	5.024385	up	STEAP family member 4
8152617	HAS2	4.9446473	up	hyaluronan synthase 2
8115691	SLIT3	4.9219275	up	slit homolog 3 (Drosophila)
7933733	FAM13C1	4.9146733	up	family with sequence similarity 13, member C1
8097753	DCLK2	4.827244	up	doublecortin-like kinase 2
8062312	MYL9	4.7126946	up	myosin, light chain 9, regulatory
7944082	TAGLN	4.6885242	up	transgelin
8016094	GJC1	4.6674647	up	gap junction protein, gamma 1, 45kDa
8135594	CAV1	4.6391816	up	caveolin 1, caveolae protein, 22kDa
7913357	ECE1	4.6108074	up	endothelin converting enzyme 1
8161964	FRMD3	4.537095	up	FERM domain containing 3
7921882	OLFML2B	4.500154	up	olfactomedin-like 2B
8121850	HEY2	4.438239	up	hairy/enhancer-of-split related with YRPW motif 2
8007420	AOC3	4.3470025	up	amine oxidase, copper containing 3 (vascular adhesion protein 1)
7936439	AFAP1L2	4.3325443	up	actin filament associated protein 1-like 2
8121712	SLC35F1	4.1912107	up	solute carrier family 35, member F1
8113491	STARD4	4.1690435	up	StAR-related lipid transfer (START) domain containing 4

Supplemental Table 1c  
eMSC vs. eSF

7935180	PDLIM1	4.1656647	up	PDZ and LIM domain 1 (elfin)
8057506	FRZB	4.1024933	up	frizzled-related protein
8085665	RFTN1	4.0639915	up	raftlin, lipid raft linker 1
8124531	HIST1H3I HIST1H:	4.04637	up	histone cluster 1, H3i   histone cluster 1, H2bn   histon
8023598	RNF152	4.0246396	up	ring finger protein 152
7980958	LGMN	3.9898431	up	legumain
7934936	SLC16A12	3.9844487	up	solute carrier family 16, member 12 (monocarboxylic a
8141206	BAIAP2L1 LOC10C	3.9498339	up	BAI1-associated protein 2-like 1   hypothetical protein
8072626	TIMP3	3.9393682	up	TIMP metallopeptidase inhibitor 3 (Sorsby fundus dysti
7932082	CCDC3	3.9313686	up	coiled-coil domain containing 3
8123104	FNDC1	3.925917	up	fibronectin type III domain containing 1
7970954	DCLK1	3.918485	up	doublecortin-like kinase 1
7923608	REN	3.9135392	up	renin
8050766	ADCY3	3.9036036	up	adenylate cyclase 3
8096489	PDLIM5	3.8661084	up	PDZ and LIM domain 5
7954293	PDE3A	3.813806	up	phosphodiesterase 3A, cGMP-inhibited
8047926	MAP2	3.7885416	up	microtubule-associated protein 2
8043363	C2orf59 LOC5414	3.7699213	up	chromosome 2 open reading frame 59   hypothetical L
8038319	HRC	3.7279139	up	histidine rich calcium binding protein
8163896	STOM	3.693373	up	stomatin
8127646	FILIP1	3.6606815	up	filamin A interacting protein 1
7991234	MFGE8	3.6232793	up	milk fat globule-EGF factor 8 protein
8042788	ACTG2	3.5937383	up	actin, gamma 2, smooth muscle, enteric
8054611	C2orf59 LOC5414	3.5761762	up	chromosome 2 open reading frame 59   hypothetical L
7945991	OR51E2	3.5712845	up	olfactory receptor, family 51, subfamily E, member 2
7970033	COL4A2	3.5285914	up	collagen, type IV, alpha 2
8017039	41156	3.508146	up	septin 4
7922717	RGS16	3.4778879	up	regulator of G-protein signaling 16
8166079	EGFL6	3.4533367	up	EGF-like-domain, multiple 6
8036710	GMFG	3.4432118	up	glia maturation factor, gamma
8056343	COBLL1	3.432779	up	COBL-like 1
7927606	PRKG1	3.3944433	up	protein kinase, cGMP-dependent, type I
7952601	ETS1	3.344579	up	v-ets erythroblastosis virus E26 oncogene homolog 1 (;

Supplemental Table 1c  
eMSC vs. eSF

7921487	TAGLN2	3.3276627	up	transgelin 2
7965322	KITLG	3.3036427	up	KIT ligand
7918323	SORT1	3.278488	up	sortilin 1
7961702	KCNJ8	3.2658613	up	potassium inwardly-rectifying channel, subfamily J, me
7952268	THY1	3.261638	up	Thy-1 cell surface antigen
8154381	C9orf150	3.223361	up	chromosome 9 open reading frame 150
7972428	OXGR1	3.2205396	up	oxoglutarate (alpha-ketoglutarate) receptor 1
8017599	PECAM1	3.2180772	up	platelet/endothelial cell adhesion molecule (CD31 anti;
8144322	MYOM2	3.1821203	up	myomesin (M-protein) 2, 165kDa
8078350	TGFBR2	3.1778355	up	transforming growth factor, beta receptor II (70/80kDa
7916843	GNG12	3.1686513	up	guanine nucleotide binding protein (G protein), gamma
8138067	PSCD3	3.1615136	up	pleckstrin homology, Sec7 and coiled-coil domains 3
8045470	THSD7B	3.153689	up	thrombospondin, type I, domain containing 7B
7976012	NRXN3	3.145702	up	neurexin 3
7932796	SVIL	3.139026	up	supervillin
8097513	MGST2	3.129498	up	microsomal glutathione S-transferase 2
7906919	RGS4	3.0935621	up	regulator of G-protein signaling 4
8138489	CDCA7L	3.088396	up	cell division cycle associated 7-like
7961546	EPS8	3.0671816	up	epidermal growth factor receptor pathway substrate 8
8086120	DCLK3	3.044594	up	doublecortin-like kinase 3
8167185	TIMP1	3.0356877	up	TIMP metallopeptidase inhibitor 1
8096733	SGMS2	3.0168424	up	sphingomyelin synthase 2
7953291	CD9	3.0012572	up	
8123936	NEDD9	2.9814706	up	neural precursor cell expressed, developmentally down
8111153	MYO10	2.9802783	up	myosin X
7900340	BMP8A	2.9603064	up	bone morphogenetic protein 8a
7917347	DDAH1	2.9112747	up	dimethylarginine dimethylaminohydrolase 1
7964834	CPM	2.9011188	up	carboxypeptidase M
8058869	TNS1	2.8995695	up	tensin 1
7949588	CD248	2.8960829	up	
8091411	TM4SF1	2.8571217	up	transmembrane 4 L six family member 1
8097991	TDO2	2.7983415	up	tryptophan 2,3-dioxygenase
8102982	GAB1	2.791901	up	GRB2-associated binding protein 1

Supplemental Table 1c  
eMSC vs. eSF

8171684	SH3KBP1	2.780718	up	SH3-domain kinase binding protein 1
8128991	LAMA4	2.7746294	up	laminin, alpha 4
8141140	DLX5	2.7561707	up	distal-less homeobox 5
7990632	SGK269	2.7385702	up	NKF3 kinase family member
8140319	HIP1	2.733466	up	huntingtin interacting protein 1
7997642	CRISPLD2	2.730009	up	cysteine-rich secretory protein LCCL domain containing
8028524	ACTN4	2.7291493	up	actinin, alpha 4
8097080	SYNPO2	2.7224848	up	synaptopodin 2
8004545	ATP1B2	2.7154288	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 2 polypeptide
8114797	SPRY4	2.7149603	up	sprouty homolog 4 (Drosophila)
8021685	CCDC102B	2.7058296	up	coiled-coil domain containing 102B
8061572	COX4I2	2.6886873	up	cytochrome c oxidase subunit IV isoform 2 (lung)
7929052	IFIT3	2.687294	up	interferon-induced protein with tetratricopeptide repe
8019802	RNU2 RNU2B WI	2.6866293	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
7956401	SHMT2	2.6832762	up	serine hydroxymethyltransferase 2 (mitochondrial)
8041995	SPTBN1	2.6818454	up	spectrin, beta, non-erythrocytic 1
8045336	GPR39	2.669433	up	G protein-coupled receptor 39
7938231	PPFIBP2	2.668216	up	PTPRF interacting protein, binding protein 2 (liprin bet:
7940626	SCGB2A1	2.6677723	up	secretoglobin, family 2A, member 1
8112865	SERINC5	2.6530921	up	serine incorporator 5
8096160	ARHGAP24	2.649357	up	Rho GTPase activating protein 24
8099982	APBB2	2.6451175	up	amyloid beta (A4) precursor protein-binding, family B,
8100154	CORIN	2.6356082	up	corin, serine peptidase
7901272	CYP4X1	2.6341844	up	cytochrome P450, family 4, subfamily X, polypeptide 1
8019707	RNU2 RNU2B WI	2.6338716	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019705	RNU2 RNU2B WI	2.6337917	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019641	RNU2 RNU2B WI	2.633768	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019703	RNU2 RNU2B WI	2.6336546	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019635	RNU2 RNU2B WI	2.633573	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019639	RNU2 RNU2B WI	2.633383	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019637	RNU2 RNU2B WI	2.6332989	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019631	RNU2 RNU2B WI	2.633139	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8019633	RNU2 RNU2B WI	2.6330087	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD

Supplemental Table 1c  
eMSC vs. eSF

8171248	KAL1	2.6320515	up	Kallmann syndrome 1 sequence
8126163	KCNK17	2.630002	up	potassium channel, subfamily K, member 17
8019709	RNU2 RNU2B WI	2.628238	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD
8084880	HES1	2.6176593	up	hairy and enhancer of split 1, (Drosophila)
8178598	CLIC1	2.611669	up	chloride intracellular channel 1
7899939	GJA4	2.6099498	up	gap junction protein, alpha 4, 37kDa
8087935	NT5DC2	2.6079493	up	5'-nucleotidase domain containing 2
8055952	NR4A2	2.6033356	up	nuclear receptor subfamily 4, group A, member 2
8084794	IL1RAP	2.6012306	up	interleukin 1 receptor accessory protein
8067040	NFATC2	2.591726	up	nuclear factor of activated T-cells, cytoplasmic, calcine
8092520	LOC285382	2.5909288	up	hypothetical gene supported by AK091454
8162908	GRIN3A	2.5890057	up	glutamate receptor, ionotropic, N-methyl-D-aspartate
7972826	C13orf29	2.5847359	up	chromosome 13 open reading frame 29
8156134	NTRK2	2.579958	up	neurotrophic tyrosine kinase, receptor, type 2
8028652	ZFP36	2.557044	up	zinc finger protein 36, C3H type, homolog (mouse)
7942417	ARHGEF17	2.5433826	up	Rho guanine nucleotide exchange factor (GEF) 17
7982597	THBS1	2.5430193	up	thrombospondin 1
7953385	GAPDH	2.5407963	up	glyceraldehyde-3-phosphate dehydrogenase
8090591	PLXND1	2.5396209	up	plexin D1
8009353	PITPNC1	2.5386186	up	phosphatidylinositol transfer protein, cytoplasmic 1
7950810	SYTL2	2.5379632	up	synaptotagmin-like 2
8049448	CENTG2	2.5284975	up	centaurin, gamma 2
8126839	TNFRSF21	2.5280752	up	tumor necrosis factor receptor superfamily, member 2
8117377	HIST1H1E	2.5266852	up	histone cluster 1, H1e
8040365	TRIB2	2.523417	up	tribbles homolog 2 (Drosophila)
8070194	RUNX1	2.522657	up	runt-related transcription factor 1 (acute myeloid leuki
8115147	CD74	2.522044	up	
8034940	NOTCH3	2.5013971	up	Notch homolog 3 (Drosophila)
8179827	CLIC1	2.4946408	up	chloride intracellular channel 1
8006820	LASP1	2.488312	up	LIM and SH3 protein 1
8075728	MYH9	2.4853454	up	myosin, heavy chain 9, non-muscle
8142345	DOCK4	2.4812512	up	dedicator of cytokinesis 4
8070297	ERG	2.4805486	up	v-ets erythroblastosis virus E26 oncogene homolog (av



Supplemental Table 1c  
eMSC vs. eSF

7963880	ITGA7	2.4797745	up	integrin, alpha 7
8088745	FRMD4B	2.4771063	up	FERM domain containing 4B
8125059	CLIC1	2.4741333	up	chloride intracellular channel 1
7963092	FMNL3	2.4731321	up	formin-like 3
8103630	SH3RF1	2.4730449	up	SH3 domain containing ring finger 1
8047127	MYO1B	2.4712603	up	myosin IB
8138527	MGC87042	2.470592	up	similar to Six transmembrane epithelial antigen of pros
8076481	CYB5R3	2.4606047	up	cytochrome b5 reductase 3
7995783	MT2A	2.4494119	up	metallothionein 2A
8007828	MAPT	2.4413826	up	microtubule-associated protein tau
7960850	SLC2A14 SLC2A3	2.4380043	up	solute carrier family 2 (facilitated glucose transporter),
8008819	YPEL2	2.437325	up	yippee-like 2 (Drosophila)
8104746	NPR3	2.4332776	up	natriuretic peptide receptor C/guanylate cyclase C (atri
8094574	TBC1D1	2.422718	up	TBC1 (tre-2/USP6, BUB2, cdc16) domain family, memb
7906085	LMNA	2.4160528	up	lamin A/C
8014115	MYO1D	2.4112408	up	myosin ID
8115490	ADAM19	2.4053726	up	ADAM metallopeptidase domain 19 (meltrin beta)
7932530	PIP4K2A	2.4051733	up	phosphatidylinositol-5-phosphate 4-kinase, type II, alpl
8176026	FLNA	2.4033818	up	filamin A, alpha (actin binding protein 280)
7907611	RASAL2	2.3965945	up	RAS protein activator like 2
8066117	SAMHD1	2.3963919	up	SAM domain and HD domain 1
8091402	TM4SF18	2.3946693	up	transmembrane 4 L six family member 18
8020183	IMPA2	2.390936	up	inositol(myo)-1(or 4)-monophosphatase 2
8148317	MYC LOC1001305	2.3845184	up	v-myc myelocytomatosis viral oncogene homolog (avian
8174692	41158	2.3795757	up	septin 6
8003298	SLC7A5	2.377354	up	solute carrier family 7 (cationic amino acid transporter,
8069689	ADAMTS5	2.3749688	up	ADAM metallopeptidase with thrombospondin type 1 r
8028656	PLEKHG2	2.374167	up	pleckstrin homology domain containing, family G (with
8024111	CNN2	2.365351	up	calponin 2
7972557	EBI2	2.3638885	up	Epstein-Barr virus induced gene 2 (lymphocyte-specific
8129677	SGK1	2.3622093	up	serum/glucocorticoid regulated kinase 1
7928630	EIF5AL1	2.346901	up	eukaryotic translation initiation factor 5A-like 1   eukai
8048749	KCNE4	2.342264	up	potassium voltage-gated channel, Isk-related family, m

Supplemental Table 1c  
eMSC vs. eSF

8069269	COL6A1	2.3400545	up	collagen, type VI, alpha 1
7990545	CSPG4	2.3365989	up	chondroitin sulfate proteoglycan 4
7943263	AMOTL1	2.332306	up	angiomin like 1
8178435	IER3	2.326652	up	immediate early response 3
7931353	PTPRE	2.3262403	up	protein tyrosine phosphatase, receptor type, E
8053484	ST3GAL5	2.3164136	up	ST3 beta-galactoside alpha-2,3-sialyltransferase 5
8091972	EVI1   MDS1	2.3154829	up	ecotropic viral integration site 1   myelodysplasia synd
8165217	NOTCH1	2.3129818	up	Notch homolog 1, translocation-associated (Drosophila
8010161	41161	2.3108087	up	septin 9
8150509	PLAT	2.3093455	up	plasminogen activator, tissue
8162404	ECM2	2.3073905	up	extracellular matrix protein 2, female organ and adipoc
7943349	FLJ32810	2.304317	up	
8177858	TUBB	2.2997298	up	tubulin, beta
8179174	TUBB	2.2980776	up	tubulin, beta
8117995	TUBB	2.2978194	up	tubulin, beta
7978285	ADCY4	2.295968	up	adenylate cyclase 4
7954065	GPRC5A	2.293808	up	G protein-coupled receptor, family C, group 5, member
7952436	ESAM	2.2915213	up	endothelial cell adhesion molecule
7917182	ELTD1	2.2891924	up	EGF, latrophilin and seven transmembrane domain cor
7934753	EIF5AL1	2.2795508	up	eukaryotic translation initiation factor 5A-like 1   eukai
7939314	EHF	2.2783132	up	ets homologous factor
7934997	PPP1R3C	2.274978	up	protein phosphatase 1, regulatory (inhibitor) subunit 3
8117800	HLA-A   HLA-H   HLA	2.2676249	up	major histocompatibility complex, class I, A   major his
7956856	MSRB3	2.2667	up	methionine sulfoxide reductase B3
8026490	UCA1	2.260542	up	urothelial cancer associated 1
8177732	HLA-A   HLA-H   HLA	2.257576	up	major histocompatibility complex, class I, A   major his
7970111	ARHGEF7	2.2573795	up	Rho guanine nucleotide exchange factor (GEF) 7
7924166	BATF3	2.2560616	up	basic leucine zipper transcription factor, ATF-like 3
8110932	SEMA5A	2.2560422	up	sema domain, seven thrombospondin repeats (type 1 ;
7928600	EIF5AL1	2.2559946	up	eukaryotic translation initiation factor 5A-like 1   eukai
8054519	LIMS3   LOC729261	2.2535844	up	LIM and senescent cell antigen-like domains 3   similar
7971150	LHFP	2.2468493	up	lipoma HMGIC fusion partner
8044333	LIMS3   LOC729261	2.2468278	up	LIM and senescent cell antigen-like domains 3   similar

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8135576	TES	2.2468145	up	testis derived transcript (3 LIM domains)
7909236	MAPKAPK2	2.2436452	up	mitogen-activated protein kinase-activated protein kin
7908597	NR5A2	2.2426012	up	nuclear receptor subfamily 5, group A, member 2
8026300	CD97	2.2399805	up	
8119357	DAAM2	2.239028	up	dishevelled associated activator of morphogenesis 2
7906307	KIRREL	2.2357683	up	kin of IRRE like (Drosophila)
7943369	TMEM133	2.2339969	up	transmembrane protein 133
7908041	LAMC1	2.2339685	up	laminin, gamma 1 (formerly LAMB2)
7960865	SLC2A3	2.2310011	up	solute carrier family 2 (facilitated glucose transporter),
8169350	LOC100134364	2.2294018	up	
7920123	S100A10	2.2269995	up	S100 calcium binding protein A10
7971104	TRPC4	2.2266748	up	transient receptor potential cation channel, subfamily
8132151	ADCYAP1R1	2.221821	up	adenylate cyclase activating polypeptide 1 (pituitary) r
7902861	LRRC8B	2.2176473	up	leucine rich repeat containing 8 family, member B
7905079	HIST2H2AA3   HIST	2.2122517	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
7919619	HIST2H2AA3   HIST	2.2117143	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   hi
8036473	PPP1R14A	2.211119	up	protein phosphatase 1, regulatory (inhibitor) subunit 1
8019765	ARHGDI A	2.2109618	up	Rho GDP dissociation inhibitor (GDI) alpha
8030049	PSCD2	2.2075365	up	pleckstrin homology, Sec7 and coiled-coil domains 2 (c
8062251	EPB41L1	2.2069712	up	erythrocyte membrane protein band 4.1-like 1
8096301	SPP1	2.2052188	up	secreted phosphoprotein 1 (osteopontin, bone sialoproc
7989670	RBPM S2	2.2019098	up	RNA binding protein with multiple splicing 2
7989661	OAZ2	2.1984863	up	ornithine decarboxylase antizyme 2
7986293	MCTP2	2.1945915	up	multiple C2 domains, transmembrane 2
8042038	RPL23AP13	2.1903007	up	ribosomal protein L23a pseudogene 13
7938485	MICAL2	2.1898232	up	microtubule associated monooxygenase, calponin and L
8046428	RAPGEF4	2.1813805	up	Rap guanine nucleotide exchange factor (GEF) 4
8145865	GPR124	2.1804183	up	G protein-coupled receptor 124
8139500	TNS3	2.1799383	up	tensin 3
8119088	CDKN1A	2.176897	up	cyclin-dependent kinase inhibitor 1A (p21, Cip1)
8034227	RGL3	2.172296	up	ral guanine nucleotide dissociation stimulator-like 3
7924996	C1orf198	2.1719737	up	chromosome 1 open reading frame 198
7921088	NES	2.157832	up	nestin

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7926037	PFKFB3	2.1572936	up	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase
7985809	ABHD2	2.1560204	up	abhydrolase domain containing 2
7964660	AVPR1A	2.1556988	up	arginine vasopressin receptor 1A
7951437	GUCY1A2	2.152266	up	guanylate cyclase 1, soluble, alpha 2
7968236	RASL11A	2.1501572	up	RAS-like, family 11, member A
8065403	CST3	2.1491625	up	cystatin C
8136347	CALD1	2.149136	up	caldesmon 1
8179103	HLA-E	2.1468158	up	major histocompatibility complex, class I, E
7932132	FRMD4A	2.146755	up	FERM domain containing 4A
8177788	HLA-E	2.1408906	up	major histocompatibility complex, class I, E
8105596	RGS7BP	2.1380465	up	regulator of G-protein signaling 7 binding protein
7953428	CD4	2.1366184	up	
7905088	HIST2H2AC BOLA	2.136437	up	histone cluster 2, H2ac   bolA homolog 1 (E. coli)
8052654	PELI1	2.1318245	up	pellino homolog 1 (Drosophila)
7947681	ARHGAP1	2.1279442	up	Rho GTPase activating protein 1
7942135	TMEM16A	2.120084	up	transmembrane protein 16A
8124385	HIST1H4B HIST4F	2.1152034	up	histone cluster 1, H4b   histone cluster 4, H4   histone
8060854	PLCB1	2.1126163	up	phospholipase C, beta 1 (phosphoinositide-specific)
8146115	C8orf4	2.1090796	up	chromosome 8 open reading frame 4
8163618	TNFSF15	2.1066651	up	tumor necrosis factor (ligand) superfamily, member 15
8175393	ARHGEF6	2.1059055	up	Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6
8115234	ANXA6	2.105521	up	annexin A6
8142194	LAMB1	2.1016212	up	laminin, beta 1
7921014	MEF2D	2.1009617	up	myocyte enhancer factor 2D
8117890	HLA-E	2.0996943	up	major histocompatibility complex, class I, E
8095362	MT2A	2.0995743	up	metallothionein 2A
7925954	NET1	2.0991626	up	neuroepithelial cell transforming gene 1
7970924	STARD13	2.098889	up	StAR-related lipid transfer (START) domain containing :
7935188	SORBS1	2.0977073	up	sorbin and SH3 domain containing 1
7902127	SGIP1	2.095828	up	SH3-domain GRB2-like (endophilin) interacting protein
8040113	DDEF2	2.0942476	up	development and differentiation enhancing factor 2
8112890	MED27 LOC4410:	2.092118	up	mediator complex subunit 27   CRSP8 pseudogene
7922610	ABL2	2.0919073	up	v-abl Abelson murine leukemia viral oncogene homolo

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8157524	TLR4	2.090969	up	toll-like receptor 4
7977409	CRIP1 LOC100127	2.0853202	up	cysteine-rich protein 1 (intestinal)   hypothetical prote
7951217	MMP7	2.083918	up	matrix metalloproteinase 7 (matrilysin, uterine)
8177717	HLA-F	2.0701175	up	major histocompatibility complex, class I, F
8055220	A26C1A A26C1B	2.0697348	up	ANKRD26-like family C, member 1A   ANKRD26-like far
8019183	ACTG1	2.0696216	up	actin, gamma 1
8044021	IL1RL1	2.0677283	up	interleukin 1 receptor-like 1
8018754	CYGB	2.0651805	up	cytoglobin
8078262	UBE2E1	2.0642874	up	ubiquitin-conjugating enzyme E2E 1 (UBC4/5 homolog,
8179704	IER3	2.063137	up	immediate early response 3
8145470	DPYSL2	2.063026	up	dihydropyrimidinase-like 2
8046099	NOSTRIN	2.0624971	up	nitric oxide synthase trafficker
8178498	HLA-B HLA-C XXt	2.05966	up	major histocompatibility complex, class I, B   major his
8124848	IER3	2.0586047	up	immediate early response 3
8175177	MBNL3	2.0541399	up	muscleblind-like 3 (Drosophila)
8138504	RAPGEF5	2.05276	up	Rap guanine nucleotide exchange factor (GEF) 5
7946589	MRVI1	2.05262	up	murine retrovirus integration site 1 homolog
7944722	UBASH3B	2.049892	up	ubiquitin associated and SH3 domain containing, B
7949496	CFL1	2.0444646	up	cofilin 1 (non-muscle)
8055624	ZEB2	2.04255	up	zinc finger E-box binding homeobox 2
8139212	GLI3	2.0412016	up	
8081590	PHLDB2	2.0410812	up	pleckstrin homology-like domain, family B, member 2
8068651	PCP4	2.0384986	up	Purkinje cell protein 4
8062971	DBNDD2 SYS1-DE	2.035556	up	dysbindin (dystrobrevin binding protein 1) domain con
8106393	F2R	2.0345387	up	coagulation factor II (thrombin) receptor
8092691	BCL6	2.0332901	up	B-cell CLL/lymphoma 6 (zinc finger protein 51)
8145151	SORBS3	2.0322292	up	sorbin and SH3 domain containing 3
8095751	DKFZP564O0823	2.0293887	up	
8080511	CACNA1D	2.0287905	up	calcium channel, voltage-dependent, L type, alpha 1D :
8047161	OBFC2A	2.0285668	up	oligonucleotide/oligosaccharide-binding fold containin
7942791	LOC100008589 M	2.027841	up	28S ribosomal RNA   WD repeat domain 88
8121601	FAM26E	2.0223544	up	family with sequence similarity 26, member E
7975121	FNTB	2.021515	up	farnesyltransferase, CAAX box, beta

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8076046	TMEM184B	2.0185661	up	transmembrane protein 184B
8041206	LBH	2.0139146	up	limb bud and heart development homolog (mouse)
8019263	ARHGDI A	2.0134742	up	Rho GDP dissociation inhibitor (GDI) alpha
8113800	FBN2	2.0115361	up	fibrillin 2 (congenital contractural arachnodactyly)
7949765	PPP1CA	2.0109499	up	protein phosphatase 1, catalytic subunit, alpha isoform
7909027	NFASC	2.0101683	up	neurofascin homolog (chicken)
7962842	ADCY6	2.009187	up	adenylate cyclase 6
7944049	SIDT2	2.0080767	up	SID1 transmembrane family, member 2
8161056	TLN1	2.0007033	up	talin 1
8059576	PID1	2.0006635	up	phosphotyrosine interaction domain containing 1
8044133	NCK2	1.9963342	up	NCK adaptor protein 2
8112045	ESM1	1.9955448	up	endothelial cell-specific molecule 1
7977397	CRIP2	1.9940779	up	cysteine-rich protein 2
7977621	NDRG2	1.9937127	up	NDRG family member 2
8179019	HLA-F	1.9925678	up	major histocompatibility complex, class I, F
8122464	UTRN	1.9913532	up	utrophin
8122637	SASH1	1.9898838	up	SAM and SH3 domain containing 1
8162394	ASPN	1.9897873	up	asporin
7920271	S100A4	1.988163	up	S100 calcium binding protein A4
7910792	RYR2	1.9778935	up	ryanodine receptor 2 (cardiac)
8064415	C20orf46	1.9718333	up	chromosome 20 open reading frame 46
7927732	ARID5B	1.9696845	up	AT rich interactive domain 5B (MRF1-like)
8090098	MYLK	1.9689851	up	myosin light chain kinase
7990054	UACA	1.966884	up	uveal autoantigen with coiled-coil domains and ankyrin
8018864	SOCS3	1.9649345	up	suppressor of cytokine signaling 3
8151816	GEM	1.9619417	up	GTP binding protein overexpressed in skeletal muscle
8117594	HIST1H2BM	1.9611413	up	histone cluster 1, H2bm
8071768	SMARCB1	1.9608094	up	SWI/SNF related, matrix associated, actin dependent repressor 1
8124911	HLA-B   XXbac-BPG	1.9573442	up	major histocompatibility complex, class I, B   MHC class I chain B
8127778	FAM46A	1.9541731	up	family with sequence similarity 46, member A
8168146	KIF4A	1.950998	up	kinesin family member 4A
8076241	MKL1	1.9498291	up	megakaryoblastic leukemia (translocation) 1
8138613	OSBPL3	1.9462878	up	oxysterol binding protein-like 3

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8095376	TMPRSS11E2 MT:	1.942508	up	transmembrane protease, serine 11E2   metallothionein
8177725	HLA-G HLA-A	1.9405876	up	major histocompatibility complex, class I, G   major histocompatibility complex, class I, G
8162531	MT1G	1.9393431	up	metallothionein 1G
8045889	TANC1	1.9386342	up	tetratricopeptide repeat, ankyrin repeat and coiled-coil domain containing protein
8179034	HLA-G HLA-A	1.9344604	up	major histocompatibility complex, class I, G   major histocompatibility complex, class I, G
8157216	UGCG	1.9331672	up	UDP-glucose ceramide glucosyltransferase
7919642	HIST2H2AB	1.9320326	up	histone cluster 2, H2ab
8065359	CD93	1.9319493	up	
8134263	COL1A2	1.9293098	up	collagen, type I, alpha 2
7930194	CNNM2	1.9268819	up	cyclin M2
8049187	EFHD1	1.925236	up	EF-hand domain family, member D1
7923824	SLC41A1	1.9246026	up	solute carrier family 41, member 1
8059905	COL6A3	1.9236023	up	collagen, type VI, alpha 3
8109926	GABRP	1.9204426	up	gamma-aminobutyric acid (GABA) A receptor, pi
8117372	HIST1H2AC	1.9201809	up	histone cluster 1, H2ac
8164252	SH2D3C	1.917425	up	SH2 domain containing 3C
7914648	PHC2	1.9173082	up	polyhomeotic homolog 2 (Drosophila)
7974835	PRKCH	1.9119427	up	protein kinase C, eta
8144378	AGPAT5	1.9102479	up	1-acylglycerol-3-phosphate O-acyltransferase 5 (lysophosphatidylcholine acyltransferase 5)
7955663	TENC1	1.9092036	up	tensin like C1 domain containing phosphatase (tensin 2)
8179731	HLA-B HLA-C XXI	1.9080225	up	major histocompatibility complex, class I, B   major histocompatibility complex, class I, B
8078330	RBMS3	1.9047432	up	RNA binding motif, single stranded interacting protein
7918593	RHOC	1.9026535	up	ras homolog gene family, member C
8042942	HK2	1.9023948	up	hexokinase 2
7940160	DTX4	1.900059	up	deltex 4 homolog (Drosophila)
8169541	DOCK11	1.8952537	up	dedicator of cytokinesis 11
8057620	COL5A2	1.8945831	up	collagen, type V, alpha 2
7919340	GJA5	1.894518	up	gap junction protein, alpha 5, 40kDa
8041422	RASGRP3	1.8939102	up	RAS guanyl releasing protein 3 (calcium and DAG-regulated guanine nucleotide exchange factor 3)
7975095	PLEKHG3	1.8915894	up	pleckstrin homology domain containing, family G (with SH2 domain)
8021169	LIPG	1.8914498	up	lipase, endothelial
8005235	M-RIP	1.8883764	up	myosin phosphatase-Rho interacting protein
8058857	IGFBP5	1.8876319	up	insulin-like growth factor binding protein 5

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8027650	UBA2	1.8875527	up	ubiquitin-like modifier activating enzyme 2
8116921	EDN1	1.8870931	up	endothelin 1
8122807	AKAP12	1.8868748	up	A kinase (PRKA) anchor protein (gravin) 12
7985016	SNX33	1.8858501	up	sorting nexin 33
8178489	HLA-C XXbac-BPG	1.8815885	up	major histocompatibility complex, class I, C   MHC clas
7936028	ACTR1A	1.879744	up	ARP1 actin-related protein 1 homolog A, centractin alp
7951178	TRPC6	1.8766477	up	transient receptor potential cation channel, subfamily
8050007	PXDN	1.8756461	up	peroxidasin homolog (Drosophila)
8025828	LDLR	1.8743277	up	low density lipoprotein receptor (familial hypercholest
7953564	C12orf57	1.8742478	up	chromosome 12 open reading frame 57
7954312	SLCO1C1	1.8735882	up	solute carrier organic anion transporter family, membe
7945132	FLI1 EWSR1	1.8712735	up	Friend leukemia virus integration 1   Ewing sarcoma br
8041048	FOSL2	1.8680296	up	FOS-like antigen 2
8158739	LAMC3	1.8664268	up	laminin, gamma 3
8029489	BCAM	1.8591255	up	basal cell adhesion molecule (Lutheran blood group)
8037005	TGFB1	1.8577459	up	transforming growth factor, beta 1
7909332	CD55	1.8569049	up	
8029950	EHD2	1.8559618	up	EH-domain containing 2
8100541	IGFBP7	1.8537841	up	insulin-like growth factor binding protein 7
8101957	EMCN	1.8524816	up	endomucin
8167815	MAGED2	1.8511103	up	melanoma antigen family D, 2
8079037	TRAK1	1.8482167	up	trafficking protein, kinesin binding 1
8117760	HLA-F	1.8456802	up	major histocompatibility complex, class I, F
8157804	OLFML2A	1.8425599	up	olfactomedin-like 2A
8124798	KIAA1949	1.8404585	up	
7939376	LDLRAD3	1.8404104	up	low density lipoprotein receptor class A domain contai
8077376	ITPR1	1.8396939	up	inositol 1,4,5-triphosphate receptor, type 1
8042830	MTHFD2	1.8337989	up	methylenetetrahydrofolate dehydrogenase (NADP+ de
8104079	FAT	1.8336695	up	
7969665	HS6ST3 LOC1001.	1.8324454	up	heparan sulfate 6-O-sulfotransferase 3   similar to hep
7923386	LMOD1	1.8314424	up	leiomodoin 1 (smooth muscle)
8124280	C6orf32	1.8303442	up	chromosome 6 open reading frame 32
7921821	ADAMTS4	1.8303146	up	ADAM metallopeptidase with thrombospondin type 1 i



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7908072	LAMC2	1.829595	up	laminin, gamma 2
8115651	GABRB2	1.8295242	up	gamma-aminobutyric acid (GABA) A receptor, beta 2
7948229	SLC43A3	1.8286165	up	solute carrier family 43, member 3
8097586	GAB1	1.8283556	up	GRB2-associated binding protein 1
8122222	PDE7B	1.8272887	up	phosphodiesterase 7B
7903592	KIAA1324	1.8272578	up	
8043203	VAMP5	1.8262485	up	vesicle-associated membrane protein 5 (myobrevin)
8042283	HSPC159	1.8256902	up	galectin-related protein
8083221	PBX2	1.8250637	up	pre-B-cell leukemia homeobox 2
8127201	COL21A1	1.8229003	up	collagen, type XXI, alpha 1
8150698	SNAI2	1.8227245	up	snail homolog 2 (Drosophila)
7952243	C1QTNF5 MFRP	1.82085	up	C1q and tumor necrosis factor related protein 5   men
7928558	ZMIZ1	1.8199722	up	zinc finger, MIZ-type containing 1
7964388	NDUFA4L2	1.8172045	up	NADH dehydrogenase (ubiquinone) 1 alpha subcomple
8156278	S1PR3 C9orf47	1.8162569	up	sphingosine-1-phosphate receptor 3   chromosome 9 c
8063000	WFDC2	1.8124909	up	WAP four-disulfide core domain 2
7981142	CLMN	1.8119558	up	calmin (calponin-like, transmembrane)
8149774	LOXL2 ENTPD4	1.8117294	up	lysyl oxidase-like 2   ectonucleoside triphosphate diph
8124380	HIST1H1A	1.8078032	up	histone cluster 1, H1a
8124901	HLA-C XXbac-BPG	1.8046596	up	major histocompatibility complex, class I, C   MHC clas
8015635	PTRF	1.7965335	up	polymerase I and transcript release factor
8007323	CNTNAP1	1.7946258	up	contactin associated protein 1
7962516	SLC38A1	1.7880169	up	solute carrier family 38, member 1
7964872	PTPRB	1.787664	up	protein tyrosine phosphatase, receptor type, B
7946142	PRKCDBP	1.7866553	up	protein kinase C, delta binding protein
8156848	NR4A3	1.786201	up	nuclear receptor subfamily 4, group A, member 3
7952641	RICS	1.7855401	up	Rho GTPase-activating protein
7965040	PHLDA1	1.7848444	up	pleckstrin homology-like domain, family A, member 1
7960464	VWF	1.7838453	up	von Willebrand factor
8100393	KDR	1.7828094	up	kinase insert domain receptor (a type III receptor tyros
7947230	BDNF	1.7823644	up	brain-derived neurotrophic factor
8091867	BCHE	1.7806617	up	butyrylcholinesterase
8029006	AXL	1.7769861	up	

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8143188	CREB3L2	1.7740662	up	cAMP responsive element binding protein 3-like 2
7953981	ETV6	1.772696	up	ets variant gene 6 (TEL oncogene)
7995206	TGFB11	1.7722074	up	transforming growth factor beta 1 induced transcript 1
8034021	CDC37	1.7702639	up	cell division cycle 37 homolog ( <i>S. cerevisiae</i> )
8069301	COL6A2	1.7698538	up	collagen, type VI, alpha 2
8037374	PLAUR	1.7653518	up	plasminogen activator, urokinase receptor
8019912	EMILIN2	1.7650303	up	elastin microfibril interfacier 2
7996837	CDH1	1.7643226	up	cadherin 1, type 1, E-cadherin (epithelial)
8047272	LOC26010	1.7611083	up	viral DNA polymerase-transactivated protein 6
8131631	HDAC9	1.7584686	up	histone deacetylase 9
8005847	TNFAIP1	1.7576624	up	tumor necrosis factor, alpha-induced protein 1 (endotr
8083240	AGTR1	1.7571983	up	angiotensin II receptor, type 1
8178193	HLA-DRA	1.7568488	up	major histocompatibility complex, class II, DR alpha
8037847	AP2S1	1.7531459	up	adaptor-related protein complex 2, sigma 1 subunit
8025672	SLC44A2	1.7526518	up	solute carrier family 44, member 2
7944493	CBL	1.7524275	up	Cas-Br-M (murine) ecotropic retroviral transforming se
8035465	ISYNA1	1.7519841	up	myo-inositol 1-phosphate synthase A1
7977452	FLJ39632	1.7517658	up	hypothetical LOC642477
8099685	LGI2	1.7492349	up	leucine-rich repeat LGI family, member 2
8035980	RHPN2	1.7489182	up	rhophilin, Rho GTPase binding protein 2
8017867	FAM20A	1.748864	up	family with sequence similarity 20, member A
7903214	LPPR4	1.7480391	up	plasticity related gene 1
8167965	MSN	1.747439	up	moesin
8130867	THBS2	1.747045	up	thrombospondin 2
8002403	ABBA-1	1.7438357	up	actin-bundling protein with BAIAP2 homology
7954997	TMEM16F	1.7437259	up	transmembrane protein 16F
8065353	THBD	1.7421072	up	thrombomodulin
7969414	KLF5	1.7412387	up	Kruppel-like factor 5 (intestinal)
7968417	FRY	1.7354829	up	furry homolog ( <i>Drosophila</i> )
8058390	RAPH1	1.7331915	up	Ras association (RalGDS/AF-6) and pleckstrin homology
8032730	EEF2	1.7309141	up	eukaryotic translation elongation factor 2
7996677	NUTF2	1.7296487	up	nuclear transport factor 2
8125360	PBX2	1.7275283	up	pre-B-cell leukemia homeobox 2

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7925320	NID1	1.7256848	up	nidogen 1
8113220	ELL2	1.7239249	up	elongation factor, RNA polymerase II, 2
7965335	DUSP6	1.7213925	up	dual specificity phosphatase 6
7931479	INPP5A	1.7209221	up	inositol polyphosphate-5-phosphatase, 40kDa
8000375	ARHGAP17	1.7204086	up	Rho GTPase activating protein 17
8016646	COL1A1	1.7196897	up	collagen, type I, alpha 1
8074168	FLJ39632	1.7195274	up	hypothetical LOC642477
7906564	PEA15	1.7174582	up	phosphoprotein enriched in astrocytes 15
8089112	FILIP1L	1.7155586	up	filamin A interacting protein 1-like
8025918	CNN1	1.7130682	up	calponin 1, basic, smooth muscle
7973067	NP	1.7121533	up	nucleoside phosphorylase
7899043	SEPN1	1.710329	up	selenoprotein N, 1
7899627	TINAGL1	1.7101942	up	tubulointerstitial nephritis antigen-like 1
8149413	DLC1	1.7099311	up	deleted in liver cancer 1
8054135	MGAT4A	1.7049423	up	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylgl
8117422	HIST1H4F HIST4H	1.7034954	up	histone cluster 1, H4f   histone cluster 4, H4   histone
8148040	MAL2	1.7019982	up	mal, T-cell differentiation protein 2
8179041	HLA-A HLA-H HLA	1.7017447	up	major histocompatibility complex, class I, A   major his
8152867	DDEF1	1.7016345	up	development and differentiation enhancing factor 1
8133459	CLIP2	1.7009007	up	CAP-GLY domain containing linker protein 2
7954029	CDKN1B	1.6986095	up	cyclin-dependent kinase inhibitor 1B (p27, Kip1)
8007620	GRN	1.6983244	up	granulin
8100994	CXCL2	1.6959139	up	chemokine (C-X-C motif) ligand 2
7979824	ACTN1	1.6952794	up	actinin, alpha 1
8091283	PLOD2	1.6950853	up	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 2
7971159	TNAP	1.6922358	up	TRAFs and NIK-associated protein
8048995	ITM2C	1.6859224	up	integral membrane protein 2C
8030383	RCN3	1.6855793	up	reticulocalbin 3, EF-hand calcium binding domain
8153002	NDRG1	1.6839536	up	N-myc downstream regulated gene 1
7902874	LRRRC8C	1.6824121	up	leucine rich repeat containing 8 family, member C
8122860	MYCT1	1.6817235	up	myc target 1
7968800	DGKH	1.6813006	up	diacylglycerol kinase, eta
7933488	C10orf72	1.6798122	up	chromosome 10 open reading frame 72

Supplemental Table 1c  
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8095854	41163	1.6787965	up	septin 11
8161648	KLF9	1.6786814	up	Kruppel-like factor 9
8124397	HIST1H1C	1.6775099	up	histone cluster 1, H1c
7991186	NTRK3	1.6736617	up	neurotrophic tyrosine kinase, receptor, type 3
8099259	AFAP1	1.6654863	up	actin filament associated protein 1
7966202	KCTD10	1.664476	up	potassium channel tetramerisation domain containing
8083677	SCHIP1	1.6636251	up	schwannomin interacting protein 1
8026407	SYDE1	1.6632262	up	synapse defective 1, Rho GTPase, homolog 1 (C. elegar
8127051	TRAM2	1.6618129	up	translocation associated membrane protein 2
7903358	VCAM1	1.6613919	up	vascular cell adhesion molecule 1
8123609	SERPINB9	1.6605725	up	serpin peptidase inhibitor, clade B (ovalbumin), memb
7936856	GALNAC4S-6ST	1.6600593	up	B cell RAG associated protein
8002692	ZFHX3	1.6578994	up	zinc finger homeobox 3
7908694	NAV1	1.657404	up	neuron navigator 1
8087337	LAMB2	1.6570746	up	laminin, beta 2 (laminin S)
8092707	LEPREL1	1.6566936	up	leprecan-like 1
8161044	TPM2	1.653037	up	tropomyosin 2 (beta)
7952046	MPZL2	1.6481969	up	myelin protein zero-like 2
7966135	CORO1C	1.647519	up	coronin, actin binding protein, 1C
8143397	DENND2A	1.6465315	up	DENN/MADD domain containing 2A
7926875	BAMBI	1.6457813	up	BMP and activin membrane-bound inhibitor homolog (
7965510	TMCC3	1.644911	up	transmembrane and coiled-coil domain family 3
8118548	HLA-DRA	1.6439649	up	major histocompatibility complex, class II, DR alpha
8049317	DGKD	1.6393698	up	diacylglycerol kinase, delta 130kDa
8179481	HLA-DRA	1.6388469	up	major histocompatibility complex, class II, DR alpha
8058765	FN1	1.6387402	up	fibronectin 1
8142585	CADPS2	1.6381509	up	Ca <sup>2+</sup> -dependent activator protein for secretion 2
8038347	TEAD2	1.6381283	up	TEA domain family member 2
8021181	SCARNA17	1.6376927	up	small Cajal body-specific RNA 17
8171172	MXRA5	1.6351061	up	matrix-remodelling associated 5
8090433	MGLL	1.63438	up	monoglyceride lipase
8037614	GPR4	1.6336464	up	G protein-coupled receptor 4
8130505	EZR	1.631267	up	ezrin

## Supplemental Table 1c

eMSC vs. eSF

8135705	KCND2	1.6309555	up	potassium voltage-gated channel, Shal-related subfam
8043909	NPAS2	1.6280336	up	neuronal PAS domain protein 2
8134030	STEAP1	1.6275959	up	six transmembrane epithelial antigen of the prostate 1
7997582	WFDC1	1.626996	up	WAP four-disulfide core domain 1
8092578	ETV5	1.6259456	up	ets variant gene 5 (ets-related molecule)
7996264	CDH5	1.6245813	up	cadherin 5, type 2, VE-cadherin (vascular epithelium)
7957665	ELK3	1.6207443	up	
7993310	MKL2	1.6205052	up	MKL/myocardin-like 2
8079140	SNRK	1.6202749	up	SNF related kinase
8153449	EEF1D	1.6183072	up	eukaryotic translation elongation factor 1 delta (guanir
7946401	ST5	1.6175202	up	suppression of tumorigenicity 5
7906061	SYT11	1.6170549	up	synaptotagmin XI
7980720	TTC7B	1.6170255	up	tetratricopeptide repeat domain 7B
8058221	TRAK2	1.6160722	up	trafficking protein, kinesin binding 2
8101788	UNC5C	1.6143875	up	unc-5 homolog C (C. elegans)
8043197	VAMP8	1.6143305	up	vesicle-associated membrane protein 8 (endobrevin)
7904254	ATP1A1	1.6133773	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 1 polypeptide
8088776	FOXP1	1.6111256	up	forkhead box P1
8105040	OSMR	1.6109047	up	oncostatin M receptor
8124430	HIST1H1D	1.6090447	up	histone cluster 1, H1d
8021047	SETBP1	1.6055216	up	SET binding protein 1
7963567	KRT8	1.6035014	up	keratin 8
8114050	41160	1.6029515	up	septin 8
8169473	PLS3	1.6009253	up	plastin 3 (T isoform)
7991406	PRC1	1.600503	up	protein regulator of cytokinesis 1
8145977	PLEKHA2	1.5986848	up	pleckstrin homology domain containing, family A (phos
7924058	IRF6	1.5975307	up	interferon regulatory factor 6
7945573	POLR2L	1.5905774	up	polymerase (RNA) II (DNA directed) polypeptide L, 7.6k
8062623	PLCG1	1.5892599	up	phospholipase C, gamma 1
8117813	HLA-H HLA-A HLA-	1.5890172	up	major histocompatibility complex, class I, H (pseudoge
8062852	PKIG	1.5877773	up	protein kinase (cAMP-dependent, catalytic) inhibitor g
8176323	IL3RA	1.5863535	up	interleukin 3 receptor, alpha (low affinity)
7958253	OCC-1	1.5843393	up	overexpressed in colon carcinoma-1

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7968015	TNFRSF19	1.580715	up	tumor necrosis factor receptor superfamily, member 1
8152119	NCALD	1.580184	up	neurocalcin delta
7915147	FHL3	1.5801448	up	four and a half LIM domains 3
7983228	MAP1A	1.5790582	up	microtubule-associated protein 1A
8020495	CABLES1	1.5762289	up	Cdk5 and Abl enzyme substrate 1
8165752	IL3RA	1.5752832	up	interleukin 3 receptor, alpha (low affinity)
8039144	TMC4	1.5734074	up	transmembrane channel-like 4
7935660	DNMBP	1.5724646	up	dynamamin binding protein
8086953	SHISA5	1.5723387	up	shisa homolog 5 ( <i>Xenopus laevis</i> )
8117402	HIST1H4E HIST4H	1.571726	up	histone cluster 1, H4e   histone cluster 4, H4   histone
8080810	PTPRG	1.5711734	up	protein tyrosine phosphatase, receptor type, G
7975361	KIAA0247	1.5709026	up	
7916584	TACSTD2	1.5697399	up	tumor-associated calcium signal transducer 2
7921344	ELL2	1.5671507	up	elongation factor, RNA polymerase II, 2
8009502	KCNJ2	1.5668508	up	potassium inwardly-rectifying channel, subfamily J, me
8178867	TAP1	1.5665005	up	transporter 1, ATP-binding cassette, sub-family B (MDF
8180061	TAP1	1.5659615	up	transporter 1, ATP-binding cassette, sub-family B (MDF
8125512	TAP1	1.5652269	up	transporter 1, ATP-binding cassette, sub-family B (MDF
8109773	WWC1	1.5647879	up	WW and C2 domain containing 1
7969736	FARP1	1.5620645	up	FERM, RhoGEF (ARHGEF) and pleckstrin domain protei
7951977	FXVD6	1.5615313	up	FXVD domain containing ion transport regulator 6
8170119	FHL1	1.561168	up	four and a half LIM domains 1
8092726	CLDN1	1.5610077	up	claudin 1
8132557	AEBP1	1.5603983	up	AE binding protein 1
7986049	CRTC3	1.5585915	up	CREB regulated transcription coactivator 3
8075310	LIF	1.55827	up	leukemia inhibitory factor (cholinergic differentiation f
7968976	LRCH1	1.5572685	up	leucine-rich repeats and calponin homology (CH) doma
8167006	RP2	1.5542892	up	retinitis pigmentosa 2 (X-linked recessive)
8017210	AP1S2 LOC65365	1.5542327	up	adaptor-related protein complex 1, sigma 2 subunit   f
7897803	PLOD1 LOC10013	1.5497515	up	procollagen-lysine 1, 2-oxoglutarate 5-dioxygenase 1
7920128	S100A11	1.5489882	up	S100 calcium binding protein A11
8117777	HLA-G HLA-A HLA	1.5481989	up	major histocompatibility complex, class I, G   major his
8096704	NPNT	1.547709	up	nephronectin

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8129120	C6orf189	1.5473055	up	chromosome 6 open reading frame 189
7996947	CYB5B	1.5461415	up	cytochrome b5 type B (outer mitochondrial membrane
8095680	IL8	1.5442426	up	interleukin 8
8034151	DOCK6	1.5440972	up	dedicator of cytokinesis 6
7905929	EFNA1	1.5439649	up	ephrin-A1
8105908	OCLN	1.5408137	up	occludin
8128737	MICAL1	1.540494	up	microtubule associated monooxygenase, calponin and L
8085774	ZNF385D	1.5404108	up	zinc finger protein 385D
7927694	PHYHIPL	1.5399613	up	phytanoyl-CoA 2-hydroxylase interacting protein-like
7904131	DCLRE1B	1.5393283	up	DNA cross-link repair 1B (PSO2 homolog, <i>S. cerevisiae</i> )
8073775	FBLN1	1.5382314	up	fibulin 1
8129562	CTGF	1.536263	up	connective tissue growth factor
7970810	SLC7A1	1.5354359	up	solute carrier family 7 (cationic amino acid transporter
7928444	VCL	1.5354155	up	vinculin
8179049	HLA-A HLA-B HLA-	1.5350372	up	major histocompatibility complex, class I, A   major his
7947199	LGR4	1.5345975	up	leucine-rich repeat-containing G protein-coupled recep
8133860	GNAI1	1.533243	up	guanine nucleotide binding protein (G protein), alpha i
7909610	ATF3	1.5324345	up	activating transcription factor 3
8089261	CBLB	1.5320276	up	Cas-Br-M (murine) ecotropic retroviral transforming se
8127346	RAB23	1.5303867	up	
7908204	HMCN1	1.529041	up	hemicentin 1
7995258	ZNF267	1.5287695	up	zinc finger protein 267
8029693	FOSB	1.5279554	up	FBJ murine osteosarcoma viral oncogene homolog B
7922229	SELE	1.5259551	up	selectin E (endothelial adhesion molecule 1)
8156199	DAPK1	1.5256271	up	death-associated protein kinase 1
8120428	FKBP1A FKBP1C	1.5247582	up	FK506 binding protein 1A, 12kDa   FK506 binding prote
8132055	C7orf41	1.5245616	up	chromosome 7 open reading frame 41
8098204	CPE	1.5243999	up	carboxypeptidase E
7969288	OLFM4	1.5241657	up	olfactomedin 4
7920600	SHC1	1.5214868	up	SHC (Src homology 2 domain containing) transforming
7927964	SRGN	1.5200047	up	serglycin
7979671	MAX	1.5194159	up	MYC associated factor X
7909568	DTL	1.5185525	up	denticleless homolog ( <i>Drosophila</i> )

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8065280	C20orf74	1.5182968	up	chromosome 20 open reading frame 74
7948662	SCGB1D4	1.5182588	up	secretoglobin, family 1D, member 4
7908793	ELF3	1.5180103	up	E74-like factor 3 (ets domain transcription factor, epithelial)
8046086	LASS6	1.517858	up	LAG1 homolog, ceramide synthase 6
8116272	ADAMTS2	1.5175644	up	ADAM metalloproteinase with thrombospondin type 1 motifs
7936242	KIAA1754	1.5165125	up	
8129458	ARHGAP18	1.5140382	up	Rho GTPase activating protein 18
7921713	F11R hCG_20857	1.511581	up	F11 receptor   hypothetical protein LOC100134860   K
7943998	NNMT	1.510824	up	nicotinamide N-methyltransferase
7928046	TSPAN15	1.5106013	up	tetraspanin 15
7929388	PLCE1	1.5101597	up	phospholipase C, epsilon 1
7956551	GEFT SLC26A10	1.5098661	up	RhoA/RAC/CDC42 exchange factor   solute carrier family 26
8049512	LRRFIP1	1.5089555	up	leucine rich repeat (in FLII) interacting protein 1
8014706	PCGF2	1.507607	up	polycomb group ring finger 2
8107307	CAMK4	1.506706	up	calcium/calmodulin-dependent protein kinase IV
7902913	CDC7	1.5065349	up	cell division cycle 7 homolog ( <i>S. cerevisiae</i> )
8115327	SPARC	1.5047215	up	secreted protein, acidic, cysteine-rich (osteonectin)
7953040	CACNA1C	1.502537	up	calcium channel, voltage-dependent, L type, alpha 1C subunit
7974689	DACT1	1.5021725	up	dapper, antagonist of beta-catenin, homolog 1 ( <i>Xenopus</i> )
8178590	DDAH2	1.5017656	up	dimethylarginine dimethylaminohydrolase 2
7938370	SWAP70	1.5009346	up	SWAP-70 protein
8083136	ATP1B3	1.4990706	up	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 3 polypeptide
8001099	HERC2P4	1.4990445	up	hect domain and RLD 2 pseudogene 4
7955637	KRT18	1.4969816	up	keratin 18
8006736	DUSP14	1.4967438	up	dual specificity phosphatase 14
8179819	DDAH2	1.4960283	up	dimethylarginine dimethylaminohydrolase 2
7964579	CTDSP2	1.4943835	up	CTD (carboxy-terminal domain, RNA polymerase II, pol II)
7984079	TPM1	1.4937546	up	tropomyosin 1 (alpha)
8108301	KIF20A	1.4927716	up	kinesin family member 20A
7912750	FBXO42	1.4924821	up	F-box protein 42
7958749	SH2B3	1.4921955	up	SH2B adaptor protein 3
7968678	FREM2	1.4899677	up	FRAS1 related extracellular matrix protein 2
8170891	GDI1	1.489886	up	GDP dissociation inhibitor 1



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8163775	MEGF9	1.4898415	up	multiple EGF-like-domains 9
8145055	BMP1	1.488354	up	bone morphogenetic protein 1
7975889	VASH1	1.4870576	up	vasohibin 1
8015590	STAT5B	1.4869668	up	signal transducer and activator of transcription 5B
7936516	HSPA12A	1.486853	up	heat shock 70kDa protein 12A
7918973	SPAG17	1.4866306	up	sperm associated antigen 17
8050537	MATN3	1.4864944	up	matrilin 3
8153021	ST3GAL1	1.4863886	up	ST3 beta-galactoside alpha-2,3-sialyltransferase 1
7963157	RACGAP1	1.4862401	up	Rac GTPase activating protein 1
7973709	NFATC4	1.4861575	up	nuclear factor of activated T-cells, cytoplasmic, calcine
7979204	FERMT2	1.4860985	up	fermitin family homolog 2 (Drosophila)
8096415	MMRN1	1.4858472	up	multimerin 1
8155707	TJP2	1.4856488	up	tight junction protein 2 (zona occludens 2)
8056545	STK39	1.4854864	up	serine threonine kinase 39 (STE20/SPS1 homolog, yeas
7999468	LITAF	1.4834194	up	lipopolysaccharide-induced TNF factor
7907079	RCSL1	1.4800982	up	RCSL domain containing 1
7962146	FAM60A	1.4789877	up	family with sequence similarity 60, member A
8105585	RNF180	1.4777486	up	ring finger protein 180
8077490	LMCD1	1.4776205	up	LIM and cysteine-rich domains 1
8014233	SLFN11	1.4768554	up	schlafen family member 11
8164665	RAPGEF1	1.4762412	up	Rap guanine nucleotide exchange factor (GEF) 1
8122426	PHACTR2	1.4753999	up	phosphatase and actin regulator 2
8010139	SEC14L1	1.4739227	up	SEC14-like 1 (S. cerevisiae)
7954527	ARNTL2	1.4727263	up	aryl hydrocarbon receptor nuclear translocator-like 2
7972021	TBC1D4	1.4713734	up	TBC1 domain family, member 4
8109283	NDST1	1.4712464	up	N-deacetylase/N-sulfotransferase (heparan glucosaminir
7966026	NUAK1	1.4689808	up	NUAK family, SNF1-like kinase, 1
7900365	MFSD2	1.4670385	up	major facilitator superfamily domain containing 2
7993458	C16orf45	1.4670334	up	chromosome 16 open reading frame 45
8117630	ZNF165	1.4654378	up	zinc finger protein 165
7987385	MEIS2	1.4651332	up	Meis homeobox 2
8042211	B3GNT2	1.464684	up	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltra
8046695	ITGA4	1.4638195	up	integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VL

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7942596	SERPINH1	1.4615766	up	serpin peptidase inhibitor, clade H (heat shock protein
8037505	TRAPPC6A	1.4602675	up	trafficking protein particle complex 6A
8087485	UBA7	1.4592215	up	ubiquitin-like modifier activating enzyme 7
7953409	PTMS	1.4588145	up	parathyrosin
8060897	PLCB4	1.458389	up	phospholipase C, beta 4
7973336	MMP14	1.4576819	up	matrix metalloproteinase 14 (membrane-inserted)
8072876	LGALS1	1.4571669	up	lectin, galactoside-binding, soluble, 1 (galectin 1)
7956819	RASSF3	1.4562749	up	Ras association (RalGDS/AF-6) domain family member
7966929	RAB35	1.4555604	up	
7944302	PHLDB1	1.4527357	up	pleckstrin homology-like domain, family B, member 1
8180166	TAPBP	1.4515986	up	TAP binding protein (tapasin)
8112615	ENC1	1.4514025	up	ectodermal-neural cortex (with BTB-like domain)
8066493	SLPI	1.4498422	up	secretory leukocyte peptidase inhibitor
7940643	ASRGL1	1.4495007	up	asparaginase like 1
7946579	LYVE1	1.4491389	up	lymphatic vessel endothelial hyaluronan receptor 1
8147206	RIPK2	1.4478089	up	receptor-interacting serine-threonine kinase 2
7994280	IL4R	1.4473832	up	interleukin 4 receptor
8019737	KPNA2 LOC72886	1.4452349	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
8044919	RALB	1.4443871	up	v-ral simian leukemia viral oncogene homolog B (ras re
8141459	GAL3ST4	1.4442302	up	galactose-3-O-sulfotransferase 4
8114733	CENTD3	1.4429212	up	centaurin, delta 3
8048205	IGFBP2	1.4428991	up	insulin-like growth factor binding protein 2, 36kDa
8143279	ZC3HAV1	1.4410082	up	zinc finger CCCH-type, antiviral 1
7991335	ANPEP	1.4398123	up	alanine aminopeptidase (aminopeptidase N
8135601	MET	1.4392731	up	met proto-oncogene (hepatocyte growth factor recept
7926223	CAMK1D	1.4389403	up	calcium/calmodulin-dependent protein kinase ID
8040927	NRBP1	1.4388721	up	nuclear receptor binding protein 1
7966150	SSH1	1.4386716	up	slingshot homolog 1 (Drosophila)
8138842	NOD1	1.4379296	up	nucleotide-binding oligomerization domain containing
8009417	KPNA2 LOC72886	1.4374695	up	karyopherin alpha 2 (RAG cohort 1, importin alpha 1)
8126402	TRERF1	1.4372561	up	transcriptional regulating factor 1
8018922	PSCD1	1.4361416	up	pleckstrin homology, Sec7 and coiled-coil domains 1(c)
7950473	ARRB1	1.4360169	up	arrestin, beta 1

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8137244	GIMAP4	1.4342654	up	GTPase, IMAP family member 4
7962183	AK3L1 AK3L2	1.4339057	up	adenylate kinase 3-like 1   adenylate kinase 3-like 2
7913237	CAMK2N1	1.4327126	up	calcium/calmodulin-dependent protein kinase II inhibitor
8075462	SELM	1.4323086	up	selenoprotein M
8001067	HERC2P4	1.4286021	up	hect domain and RLD 2 pseudogene 4
8114536	TMEM173	1.427032	up	transmembrane protein 173
7929511	ENTPD1	1.4252521	up	ectonucleoside triphosphate diphosphohydrolase 1
8016463	HOXB6	1.4250227	up	homeobox B6
8019988	PTPRM	1.4248924	up	protein tyrosine phosphatase, receptor type, M
8094441	SLC34A2	1.4239854	up	solute carrier family 34 (sodium phosphate), member 2
7990643	LINGO1	1.4224085	up	leucine rich repeat and Ig domain containing 1
7986092	FURIN	1.422328	up	furin (paired basic amino acid cleaving enzyme)
7916747	JAK1	1.4222753	up	Janus kinase 1 (a protein tyrosine kinase)
8155192	C9orf19	1.4219099	up	chromosome 9 open reading frame 19
8004691	TMEM88	1.4218124	up	transmembrane protein 88
8002152	SLC12A4	1.4210613	up	solute carrier family 12 (potassium/chloride transporter)
8167125	USP11	1.4204739	up	ubiquitin specific peptidase 11
8083901	FNDC3B	1.4197326	up	fibronectin type III domain containing 3B
7956261	RBMS2	1.4195477	up	RNA binding motif, single stranded interacting protein
7947425	CD59	1.4193343	up	
7909285	PFKFB2	1.4184893	up	6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase
7950671	GAB2	1.4174122	up	GRB2-associated binding protein 2
8178977	TAPBP	1.4172984	up	TAP binding protein (tapasin)
8164269	ENG	1.4171392	up	endoglin (Osler-Rendu-Weber syndrome 1)
8064766	RNF24	1.417042	up	ring finger protein 24
8033233	TUBB4	1.4168392	up	tubulin, beta 4
8134869	PCOLCE	1.4168279	up	procollagen C-endopeptidase enhancer
7899153	SH3BGRL3	1.4162018	up	SH3 domain binding glutamic acid-rich protein like 3
7938834	NAV2	1.4161546	up	neuron navigator 2
8142981	PODXL	1.4160477	up	podocalyxin-like
8140955	CDK6	1.4138837	up	cyclin-dependent kinase 6
7977592	GAFA1	1.4106767	up	
7965573	NTN4	1.410658	up	netrin 4

Supplemental Table 1c  
eMSC vs. eSF

8077499	LOH3CR2A	1.4097248	up	loss of heterozygosity, 3, chromosomal region 2, gene .
8034130	KANK2	1.408094	up	KN motif and ankyrin repeat domains 2
8001531	MT1G	1.4077866	up	metallothionein 1G
8101839	EIF4E	1.407324	up	eukaryotic translation initiation factor 4E
8067233	PMEPA1	1.4067531	up	prostate transmembrane protein, androgen induced 1
8096899	C4orf32	1.405974	up	chromosome 4 open reading frame 32
8025601	ICAM1	1.4058912	up	intercellular adhesion molecule 1 (CD54), human rhino
7937961	MMP26	1.405243	up	matrix metalloproteinase 26
8138381	AGR2	1.4051378	up	anterior gradient homolog 2 (Xenopus laevis)
8021129	C18orf23   RNF165	1.4035227	up	chromosome 18 open reading frame 23   ring finger pr
8098103	FNIP2	1.4035027	up	folliculin interacting protein 2
7959102	HSPB8	1.4025738	up	heat shock 22kDa protein 8
8083941	ECT2	1.4022502	up	epithelial cell transforming sequence 2 oncogene
7905116	PLEKHO1	1.4018345	up	pleckstrin homology domain containing, family O mem
8070819	PTTG1IP	1.4008188	up	pituitary tumor-transforming 1 interacting protein
8153684	DGAT1   LOC72776	1.3980547	up	diacylglycerol O-acyltransferase homolog 1 (mouse)   s
8106098	MAP1B	1.3964614	up	microtubule-associated protein 1B
8105267	ITGA2	1.3962464	up	integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 rece
7997427	CMIP	1.396152	up	c-Maf-inducing protein
7962884	RND1	1.3943894	up	Rho family GTPase 1
8022145	L3MBTL4	1.3933381	up	l(3)mbt-like 4 (Drosophila)
8039692	LOC730051	1.3920515	up	similar to hCG2044798
7995793	MT1L	1.3904605	up	metallothionein 1L (gene/pseudogene)
7961386	GPRC5D	1.3894863	up	G protein-coupled receptor, family C, group 5, membe
8153939	DGAT1   LOC72776	1.388562	up	diacylglycerol O-acyltransferase homolog 1 (mouse)   s
8088680	C3orf64	1.3882059	up	chromosome 3 open reading frame 64
8063187	EYA2	1.3879763	up	eyes absent homolog 2 (Drosophila)
8066939	B4GALT5	1.3877908	up	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, p
7957072	RAB3IP	1.3873192	up	RAB3A interacting protein (rabin3)
7939365	FJX1	1.3871212	up	four jointed box 1 (Drosophila)
8118111	HCP5	1.3852494	up	HLA complex P5
8099797	RELL1	1.382141	up	RELT-like 1
7961230	CSDA	1.3820273	up	cold shock domain protein A

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7965652	PCTK2	1.3819454	up	PCTAIRE protein kinase 2
8066716	ELMO2	1.3816552	up	engulfment and cell motility 2
8079950	GNAI2	1.3808022	up	guanine nucleotide binding protein (G protein), alpha i
8007154	FKBP10	1.380549	up	FK506 binding protein 10, 65 kDa
8069178	ADARB1	1.3803008	up	adenosine deaminase, RNA-specific, B1 (RED1 homolog)
8102950	INPP4B	1.3797288	up	inositol polyphosphate-4-phosphatase, type II, 105kDa
8054517	FLJ38359 LOC440	1.3782442	up	hypothetical protein FLJ38359   hypothetical protein L
8052798	AAK1	1.3778337	up	AP2 associated kinase 1
8079305	CLEC3B	1.3776344	up	C-type lectin domain family 3, member B
7950743	RAB30	1.3773522	up	
8006433	CCL2	1.376677	up	chemokine (C-C motif) ligand 2
8141094	PDK4	1.3749638	up	pyruvate dehydrogenase kinase, isozyme 4
8116051	DBN1	1.3736382	up	drebrin 1
7965357	GALNT4	1.37352	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-ac
7934690	C10orf56	1.3720673	up	chromosome 10 open reading frame 56
7983478	C15orf48	1.3715769	up	chromosome 15 open reading frame 48
8028311	SPINT2 LOC10013	1.3710306	up	serine peptidase inhibitor, Kunitz type, 2   hypothetical
8109528	CYFIP2	1.3692739	up	cytoplasmic FMR1 interacting protein 2
7984364	SMAD3	1.368978	up	SMAD family member 3
8046922	COL3A1	1.3677368	up	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type
8057898	HECW2	1.367144	up	HECT, C2 and WW domain containing E3 ubiquitin prot
7913450	HSPG2	1.366813	up	heparan sulfate proteoglycan 2
8066905	ZNFX1	1.3666472	up	zinc finger, NFX1-type containing 1
7901175	TSPAN1	1.3662252	up	tetraspanin 1
8027778	FXVD5	1.3661801	up	FXVD domain containing ion transport regulator 5
8083075	ACPL2	1.3659626	up	acid phosphatase-like 2
7923662	PIK3C2B	1.3655438	up	phosphoinositide-3-kinase, class 2, beta polypeptide
7913558	LUZP1	1.3651103	up	leucine zipper protein 1
7980828	CCDC88C	1.3635421	up	coiled-coil domain containing 88C
8018966	TIMP2	1.3633741	up	TIMP metalloproteinase inhibitor 2
8170390	IDS LOC727913	1.362903	up	iduronate 2-sulfatase (Hunter syndrome)   similar to ic
8104506	TRIO LOC100131	1.3627262	up	triple functional domain (PTPRF interacting)   hypothe
8020551	LAMA3	1.3621317	up	laminin, alpha 3

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7919305	PRKAB2	1.3611366	up	protein kinase, AMP-activated, beta 2 non-catalytic subunit
7938154	ILK ILK-2	1.3610952	up	integrin-linked kinase   integrin-linked kinase-2
7951662	CRYAB	1.3601574	up	crystallin, alpha B
8154692	TEK	1.3598192	up	
8123651	TUBB2B	1.3591425	up	tubulin, beta 2B
8097867	KIAA0922	1.3590358	up	
7917728	FAM69A RPL5	1.3586566	up	family with sequence similarity 69, member A   ribosomal protein L5
7943562	ELMOD1	1.3579404	up	ELMO/CED-12 domain containing 1
8008969	TBX2	1.3572537	up	T-box 2
8095110	KIT	1.3547624	up	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
8001133	SHCBP1	1.3534385	up	SHC SH2-domain binding protein 1
8117120	ID4	1.3533679	up	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
8121949	LAMA2	1.3528479	up	laminin, alpha 2 (merosin, congenital muscular dystrophy associated)
8058477	KLF7	1.3523154	up	Kruppel-like factor 7 (ubiquitous)
7979524	TMEM30B	1.351987	up	transmembrane protein 30B
8094911	ATP10D	1.3517752	up	ATPase, class V, type 10D
8006779	ARHGAP23	1.3501939	up	Rho GTPase activating protein 23
8122756	PLEKHG1	1.3500507	up	pleckstrin homology domain containing, family G (with SH3 domain)
8035304	BST2	1.3498807	up	bone marrow stromal cell antigen 2
7977615	RNASE1	1.3496871	up	ribonuclease, RNase A family, 1 (pancreatic)
8017597	hCG_1793136	1.3494617	up	similar to ribosomal protein L31
8082673	ACPP	1.3492163	up	acid phosphatase, prostate
7986214	SLCO3A1	1.3484929	up	solute carrier organic anion transporter family, member 3A1
8000811	MAPK3	1.3482376	up	mitogen-activated protein kinase 3
8043993	UNQ9419	1.3470227	up	AHPA9419
7950838	PICALM	1.3455602	up	phosphatidylinositol binding clathrin assembly protein
8151512	PAG1	1.3446492	up	phosphoprotein associated with glycosphingolipid microdomains
8163908	GGTA1	1.3431667	up	glycoprotein, alpha-galactosyltransferase 1
8078252	UBE2E2	1.3431358	up	ubiquitin-conjugating enzyme E2E 2 (UBC4/5 homolog)
8012126	CLDN7	1.3424686	up	claudin 7
7962000	PTH1L	1.3409461	up	parathyroid hormone-like hormone
7995755	OGFOD1	1.3407015	up	2-oxoglutarate and iron-dependent oxygenase domain containing
8111677	LIFR	1.340693	up	leukemia inhibitory factor receptor alpha

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8077441	BHLHB2	1.3400959	up	basic helix-loop-helix domain containing, class B, 2
7943398	YAP1	1.3393099	up	Yes-associated protein 1, 65kDa
8135585	LOC100128868	1.3385271	up	testin-related protein TRG
7969330	PCDH17	1.3382148	up	protocadherin 17
8129880	PERP	1.3379124	up	
7942998	PSMAL FOLH1	1.3377165	up	growth-inhibiting protein 26   folate hydrolase (prosta
8041447	CRIM1	1.3360317	up	cysteine rich transmembrane BMP regulator 1 (chordir
8023646	BCL2	1.3347306	up	B-cell CLL/lymphoma 2
8097841	TRIM2	1.3347028	up	tripartite motif-containing 2
7929026	LOC100132116	1.3339747	up	
8015412	JUP	1.3324403	up	junction plakoglobin
7951485	SLC35F2	1.332325	up	solute carrier family 35, member F2
8046906	GULP1	1.3314403	up	GULP, engulfment adaptor PTB domain containing 1
8088979	VGLL3	1.3313935	up	vestigial like 3 (Drosophila)
7938528	PARVA	1.3313154	up	parvin, alpha
8178419	FLOT1	1.331192	up	flotillin 1
8031825	ZNF587	1.3307242	up	zinc finger protein 587
7940630	SCGB1D2	1.3295804	up	secretoglobin, family 1D, member 2
7909862	C1orf115	1.3293787	up	chromosome 1 open reading frame 115
8009685	SLC9A3R1	1.3281394	up	solute carrier family 9 (sodium/hydrogen exchanger), r
8089851	HGD LOC1001325	1.3273773	up	homogentisate 1,2-dioxygenase (homogentisate oxida:
8095907	FRAS1	1.3273131	up	Fraser syndrome 1
8177983	TNF	1.3258452	up	
8020878	MAPRE2	1.3258104	up	microtubule-associated protein, RP/EB family, membe
8118142	TNF	1.3257304	up	
8179263	TNF	1.3257256	up	
7981068	SERPINA1	1.3247197	up	serpin peptidase inhibitor, clade A (alpha-1 antiprotein
8089544	CCDC80	1.3240476	up	coiled-coil domain containing 80
8047248	PLCL1	1.3231372	up	phospholipase C-like 1
7995787	MT1M	1.3218232	up	metallothionein 1M
8093278	HGD LOC1001325	1.3217764	up	homogentisate 1,2-dioxygenase (homogentisate oxida:
7899615	SERINC2 KIAA074	1.3215497	up	serine incorporator 2   KIAA0746 protein
8124828	FLOT1	1.3208047	up	flotillin 1

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8163149	PTPN3	1.3207445	up	protein tyrosine phosphatase, non-receptor type 3
8081645	C3orf52	1.3202229	up	chromosome 3 open reading frame 52
8179688	FLOT1	1.3190174	up	flotillin 1
8027701	GRAMD1A	1.3181629	up	GRAM domain containing 1A
7919095	NOTCH2	1.3177153	up	Notch homolog 2 (Drosophila)
8117243	LRRRC16A	1.3169057	up	leucine rich repeat containing 16A
8133360	CLDN4	1.3160921	up	claudin 4
8090193	HEG1	1.3160244	up	HEG homolog 1 (zebrafish)
7976443	IFI27	1.3158894	up	interferon, alpha-inducible protein 27
7962250	CPNE8	1.3158729	up	copine VIII
7952490	FEZ1	1.3154123	up	fasciculation and elongation protein zeta 1 (zygin I)
8133233	AUTS2	1.3143761	up	autism susceptibility candidate 2
8121588	DSE	1.3136058	up	dermatan sulfate epimerase
8049544	LRRFIP1	1.3111004	up	leucine rich repeat (in FLII) interacting protein 1
7995813	MT1DP	1.3089769	up	metallothionein 1D (pseudogene)
8061035	MACROD2	1.3086374	up	MACRO domain containing 2
7982757	CASC5	1.308026	up	cancer susceptibility candidate 5
7995797	MT1E	1.3074305	up	metallothionein 1E
8014974	TOP2A	1.3074241	up	topoisomerase (DNA) II alpha 170kDa
8115783	STK10	1.3069142	up	serine/threonine kinase 10
7949503	EFEMP2	1.3065972	up	EGF-containing fibulin-like extracellular matrix protein
7955613	KRT7	1.3059716	up	keratin 7
8089478	GCET2	1.3053706	up	germinal center expressed transcript 2
7948058	FOLH1 PSMAL	1.3038528	up	folate hydrolase (prostate-specific membrane antigen)
8132118	AQP1	1.3036377	up	aquaporin 1 (Colton blood group)
7986527	C15orf51	1.303629	up	chromosome 15 open reading frame 51
8021727	CNDP2	1.3035139	up	CNDP dipeptidase 2 (metallopeptidase M20 family)
8057887	STK17B	1.3027499	up	serine/threonine kinase 17b
7986509	LOC441734	1.3023814	up	similar to hypothetical protein DKFZp434I1020
7983527	SEMA6D	1.3018274	up	sema domain, transmembrane domain (TM), and cyto
8003171	COTL1	1.300161	up	coactosin-like 1 (Dictyostelium)
7988876	MYO5C	1.3001438	up	myosin VC
7917850	ARHGAP29	1.2986673	up	Rho GTPase activating protein 29



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7986359	IGF1R	1.2986006	up	insulin-like growth factor 1 receptor
8141016	TFPI2	1.2984293	up	tissue factor pathway inhibitor 2
8023855	CYB5A	1.2982326	up	cytochrome b5 type A (microsomal)
8131803	IL6	1.2981673	up	interleukin 6 (interferon, beta 2)
7980891	TC2N	1.2980264	up	tandem C2 domains, nuclear
8149749	TNFRSF10D	1.2977791	up	tumor necrosis factor receptor superfamily, member 1
8005661	SPECC1	1.296576	up	sperm antigen with calponin homology and coiled-coil
7940323	MS4A8B	1.296104	up	membrane-spanning 4-domains, subfamily A, member
7999079	ADCY9	1.2953582	up	adenylate cyclase 9
8029465	BCL3	1.2948827	up	B-cell CLL/lymphoma 3
8138202	ICA1	1.293993	up	islet cell autoantigen 1, 69kDa
7991453	LOC400451	1.2933757	up	hypothetical gene supported by AK075564; BC060873
8114814	NR3C1	1.2933373	up	nuclear receptor subfamily 3, group C, member 1 (gluc
8147461	SDC2	1.293287	up	syndecan 2
8131179	TTYH3	1.29302	up	tweety homolog 3 (Drosophila)
7990657	TBC1D2B	1.2928042	up	TBC1 domain family, member 2B
8171313	ARHGAP6	1.2917818	up	Rho GTPase activating protein 6
8010243	SYNGR2	1.2908128	up	synaptogyrin 2
8140140	CLDN3	1.2907217	up	claudin 3
7904158	OLFML3	1.2886028	up	olfactomedin-like 3
7907222	PRRX1	1.2872795	up	paired related homeobox 1
8126428	TRERF1	1.2866001	up	transcriptional regulating factor 1
7915444	LEPRE1	1.28643	up	leucine proline-enriched proteoglycan (leprecan) 1
7956573	SLC26A10 GEFT	1.2839193	up	solute carrier family 26, member 10   RhoA/RAC/CDC4
7948167	AGTRL1	1.2827289	up	angiotensin II receptor-like 1
7902592	ARID3B	1.2824693	up	AT rich interactive domain 3B (BRIGHT-like)
8152764	MTSS1	1.2822474	up	metastasis suppressor 1
7975268	ARG2	1.2814562	up	arginase, type II
7902687	CYR61	1.2805647	up	cysteine-rich, angiogenic inducer, 61
8128099	GABRR2	1.2794847	up	gamma-aminobutyric acid (GABA) receptor, rho 2
8064808	SLC23A2	1.2793146	up	solute carrier family 23 (nucleobase transporters), mer
8098870	SPON2	1.2785906	up	spondin 2, extracellular matrix protein
8010271	PGS1	1.2781708	up	phosphatidylglycerophosphate synthase 1

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8033674	MUC16	1.2781557	up	mucin 16, cell surface associated
8020110	RAB31	1.2769474	up	
7951807	CADM1 LOC1001	1.2747892	up	cell adhesion molecule 1   hypothetical LOC100132764
7923991	PLXNA2	1.2743891	up	plexin A2
8099172	CRMP1	1.2739264	up	collapsin response mediator protein 1
8146462	SOX17	1.2727743	up	SRY (sex determining region Y)-box 17
7996081	GPR56	1.2726943	up	G protein-coupled receptor 56
7954631	MLSTD1	1.2726868	up	male sterility domain containing 1
8116780	DSP	1.271582	up	desmoplakin
8155802	GDA	1.2690779	up	guanine deaminase
7929282	HHEX	1.268342	up	hematopoietically expressed homeobox
7904000	DDX20	1.2678148	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 20
8147351	RBM35A	1.2660196	up	RNA binding motif protein 35A
7937330	IFITM2	1.2650641	up	interferon induced transmembrane protein 2 (1-8D)
8075673	RBM9	1.2643542	up	RNA binding motif protein 9
8067055	ATP9A	1.26434	up	ATPase, class II, type 9A
8018082	SLC39A11	1.264265	up	solute carrier family 39 (metal ion transporter), membe
8156897	C9orf30 TMEFF1	1.2641381	up	chromosome 9 open reading frame 30   transmembrai
7950248	FCHSD2	1.264007	up	FCH and double SH3 domains 2
8169240	PRPS1	1.2636995	up	phosphoribosyl pyrophosphate synthetase 1
7987772	EHD4	1.2636806	up	EH-domain containing 4
8076355	PMM1	1.2612801	up	phosphomannomutase 1
7932243	C10orf38	1.2611487	up	chromosome 10 open reading frame 38
7980742	LOC283588	1.2591076	up	
7945245	HNT	1.2587376	up	neurotrimin
7961798	SOX5	1.2585427	up	SRY (sex determining region Y)-box 5
8096875	ENPEP	1.2580826	up	glutamyl aminopeptidase (aminopeptidase A)
8036284	COX7A1	1.2540787	up	cytochrome c oxidase subunit VIIa polypeptide 1 (muscl
8111387	ADAMTS12	1.2535032	up	ADAM metalloproteinase with thrombospondin type 1 i
7923875	C1orf186	1.2527746	up	chromosome 1 open reading frame 186
8139656	GRB10	1.2523178	up	growth factor receptor-bound protein 10
8170364	AFF2	1.2522153	up	AF4/FMR2 family, member 2
7914603	RNF19B	1.2520148	up	ring finger protein 19B

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7918857	TSPAN2	1.2510731	up	tetraspanin 2
7924029	LAMB3	1.2498682	up	laminin, beta 3
8149733	TNFRSF10B	1.2488073	up	tumor necrosis factor receptor superfamily, member 1
8027604	KIAA0355	1.247849	up	
7938225	OLFML1	1.2469879	up	olfactomedin-like 1
8041853	TACSTD1	1.2465585	up	tumor-associated calcium signal transducer 1
7988414	GATM	1.2464316	up	glycine amidinotransferase (L-arginine:glycine amidino
8090091	PTPLB	1.2461532	up	protein tyrosine phosphatase-like (proline instead of c
7991581	CHSY1	1.2459005	up	chondroitin sulfate synthase 1
7980044	PNMA1	1.2458925	up	paraneoplastic antigen MA1
7939559	TSPAN18	1.2458894	up	tetraspanin 18
7932023	USP6NL	1.2454053	up	USP6 N-terminal like
7982829	SPINT1	1.2448052	up	serine peptidase inhibitor, Kunitz type 1
7940028	SERPING1	1.2446387	up	serpin peptidase inhibitor, clade G (C1 inhibitor), mem
8099760	CENTD1	1.2423166	up	centaurin, delta 1
8175052	AIFM1	1.2413694	up	apoptosis-inducing factor, mitochondrion-associated, 1
8158317	SPTAN1	1.2397655	up	spectrin, alpha, non-erythrocytic 1 (alpha-fodrin)
8146579	CHD7	1.2390047	up	chromodomain helicase DNA binding protein 7
7964665	DPY19L2	1.2388545	up	dpy-19-like 2 (C. elegans)
8058627	ERBB4	1.2387903	up	v-erb-a erythroblastic leukemia viral oncogene homolo
8030007	EMP3	1.2385622	up	epithelial membrane protein 3
8030133	NUCB1	1.2380683	up	nucleobindin 1
7945262	JAM3	1.2378615	up	junctional adhesion molecule 3
8072678	HMOX1	1.2355632	up	heme oxygenase (decycling) 1
8054308	TBC1D8	1.2346803	up	TBC1 domain family, member 8 (with GRAM domain)
8005132	MEIS3P1	1.2334608	up	Meis homeobox 3 pseudogene 1
8075106	TPST2	1.233325	up	tyrosylprotein sulfotransferase 2
7968703	NHLRC3	1.2328064	up	NHL repeat containing 3
8054511	LOC205251	1.2324553	up	
7909841	MARK1	1.2310106	up	MAP/microtubule affinity-regulating kinase 1
8072015	ADRBK2	1.2302928	up	adrenergic, beta, receptor kinase 2
8131583	BZW2	1.2281134	up	basic leucine zipper and W2 domains 2
7984217	PLEKHO2	1.2277347	up	pleckstrin homology domain containing, family O mem

## Supplemental Table 1c

eMSC vs. eSF

8179719	POU5F1 POU5F1I	1.227513	up	POU class 5 homeobox 1   POU class 5 homeobox 1 ps
8124889	POU5F1 POU5F1I	1.2268524	up	POU class 5 homeobox 1   POU class 5 homeobox 1 ps
8013753	RAB34	1.226759	up	
7974425	SAMD4A	1.2264146	up	sterile alpha motif domain containing 4A
7996571	FAM65A	1.2248394	up	family with sequence similarity 65, member A
7986569	LOC283755 HERC	1.2245008	up	hypothetical protein LOC283755   hect domain and RL
8170007	LOC644538	1.2244638	up	
7960984	PZP	1.2234662	up	pregnancy-zone protein
8066431	ADA	1.2232833	up	adenosine deaminase
7903742	GSTM4 GSTM2	1.2224858	up	glutathione S-transferase M4   glutathione S-transferase
8121277	AIM1	1.2209611	up	absent in melanoma 1
7965226	RASSF9	1.220733	up	Ras association (RalGDS/AF-6) domain family (N-terminal)
7954589	REP15	1.2168349	up	Rab15 effector protein
7918504	OVGP1	1.2160882	up	oviductal glycoprotein 1, 120kDa (mucin 9, oviductin)
8104378	POLS	1.2147251	up	polymerase (DNA directed) sigma
8104035	SORBS2	1.2142538	up	sorbin and SH3 domain containing 2
8117106	RNF144B	1.2140487	up	ring finger 144B
7957140	LGR5	1.2140473	up	leucine-rich repeat-containing G protein-coupled receptor
8002778	MLKL	1.2133596	up	mixed lineage kinase domain-like
8083146	PLS1	1.2131869	up	plastin 1 (I isoform)
8178802	HLA-DRB3 HLA-DI	1.2129067	up	
7920642	MUC1	1.2125695	up	mucin 1, cell surface associated
8095868	UNQ3028	1.2122586	up	TSSP3028
8123739	NRN1	1.20975	up	neuritin 1
8123678	C6orf145	1.20888	up	chromosome 6 open reading frame 145
8161701	TMEM2	1.2079238	up	transmembrane protein 2
8178470	POU5F1 POU5F1I	1.2076921	up	POU class 5 homeobox 1   POU class 5 homeobox 1 ps
8124196	DCDC2	1.207445	up	doublecortin domain containing 2
7960362	UNQ3104	1.2070514	up	ACA3104
7972157	EDNRB	1.206944	up	endothelin receptor type B
8144481	DEFB4	1.2068644	up	defensin, beta 4
8059350	AP1S3	1.2066566	up	adaptor-related protein complex 1, sigma 3 subunit
7905329	MLLT11	1.2065758	up	myeloid/lymphoid or mixed-lineage leukemia (trithorax)

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8149169	DEFB4	1.2058175	up	defensin, beta 4
8142468	TPM3	1.2055255	up	tropomyosin 3
7963786	ITGA5	1.2052929	up	integrin, alpha 5 (fibronectin receptor, alpha polypepti
7936041	ARL3	1.2052435	up	ADP-ribosylation factor-like 3
7923929	PIGR	1.204897	up	polymeric immunoglobulin receptor
8109001	SPINK5	1.204883	up	serine peptidase inhibitor, Kazal type 5
8140686	SEMA3D	1.2046164	up	sema domain, immunoglobulin domain (Ig), short basic
7899534	EPB41	1.2045662	up	erythrocyte membrane protein band 4.1 (elliptocytosis
7947147	SVIP	1.2043555	up	small VCP/p97-interacting protein
8045289	RHOQ	1.2039759	up	ras homolog gene family, member Q
7963054	TUBA1A	1.2030563	up	tubulin, alpha 1a
8143065	C7orf49	1.2030191	up	chromosome 7 open reading frame 49
7938880	HTATIP2	1.20265	up	HIV-1 Tat interactive protein 2, 30kDa
8178653	SLC44A4	1.2021742	up	solute carrier family 44, member 4
8097692	EDNRA	1.2015362	up	endothelin receptor type A
8121861	NCOA7	1.2013844	up	nuclear receptor coactivator 7
8013788	FLOT2	1.2013235	up	flotillin 2
8092552	IGF2BP2	1.2003328	up	insulin-like growth factor 2 mRNA binding protein 2
8068105	BACH1	1.2000861	up	BTB and CNC homology 1, basic leucine zipper transcrip
8125149	SLC44A4	1.1997834	up	solute carrier family 44, member 4
8116835	GCNT2	1.1996583	up	glucosaminyl (N-acetyl) transferase 2, l-branching enzy
8091009	PIK3CB	1.199458	up	phosphoinositide-3-kinase, catalytic, beta polypeptide
8016444	HOXB3	1.1994123	up	homeobox B3
8081657	CD200	1.1989518	up	
8017927	ABCA9	1.1981688	up	ATP-binding cassette, sub-family A (ABC1), member 9
8179861	SLC44A4	1.1980344	up	solute carrier family 44, member 4
8164810	RALGDS	1.1973735	up	ral guanine nucleotide dissociation stimulator
7995907	CETP	1.1971176	up	cholesteryl ester transfer protein, plasma
7918936	VTCN1	1.1968547	up	V-set domain containing T cell activation inhibitor 1
8133961	RUNDC3B	1.1968076	up	RUN domain containing 3B
8089911	HCLS1	1.1963452	up	hematopoietic cell-specific Lyn substrate 1
8035297	PLVAP	1.1958458	up	plasmalemma vesicle associated protein
7960529	SCNN1A	1.1956266	up	sodium channel, nonvoltage-gated 1 alpha

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8015759	VAT1	1.1949596	up	vesicle amine transport protein 1 homolog (T. californi
8104693	PDZD2	1.1947105	up	PDZ domain containing 2
8132013	CHN2	1.1946248	up	chimerin (chimaerin) 2
8134552	ARPC1B	1.1940275	up	actin related protein 2/3 complex, subunit 1B, 41kDa
8121838	TPD52L1	1.1938597	up	tumor protein D52-like 1
8091991	MDS1	1.1937698	up	myelodysplasia syndrome 1
7924773	CDC42BPA	1.1936606	up	CDC42 binding protein kinase alpha (DMPK-like)
8178811	HLA-DRB3 HLA-DI	1.1934355	up	
8111339	MTMR12	1.1911637	up	myotubularin related protein 12
8011713	CXCL16	1.1911395	up	chemokine (C-X-C motif) ligand 16
7984843	ARID3B	1.1899667	up	AT rich interactive domain 3B (BRIGHT-like)
8081838	CDGAP	1.1899352	up	Cdc42 GTPase-activating protein
8166784	TSPAN7	1.1898184	up	tetraspanin 7
7909561	C1orf97	1.1888981	up	chromosome 1 open reading frame 97
8099721	KIAA0746 SERINC	1.1888618	up	KIAA0746 protein   serine incorporator 2
7922846	FAM129A	1.1882439	up	family with sequence similarity 129, member A
8044346	FLJ38359 LOC100	1.1882011	up	hypothetical protein FLJ38359   hypothetical protein L
8085999	CMTM6	1.1881399	up	CKLF-like MARVEL transmembrane domain containing
8046726	SSFA2	1.1876069	up	sperm specific antigen 2
8059470	IRS1	1.18731	up	insulin receptor substrate 1
8016468	HOXB7	1.186739	up	homeobox B7
8151369	RPESP	1.1865509	up	RPE-spondin
8105741	MAST4 LOC1001	1.1861218	up	microtubule associated serine/threonine kinase family
8117189	KAAG1	1.1859802	up	kidney associated antigen 1
7999909	GPRC5B	1.1853824	up	G protein-coupled receptor, family C, group 5, member
8145293	ADAM28	1.1852126	up	ADAM metallopeptidase domain 28
8168179	DLG3	1.1843363	up	discs, large homolog 3 (neuroendocrine-dlg, Drosophila
8054479	MALL	1.1840043	up	mal, T-cell differentiation protein-like
8079407	CCRL2 LOC72781	1.1836016	up	chemokine (C-C motif) receptor-like 2   similar to chen
7920506	SHE	1.1827911	up	Src homology 2 domain containing E
8097356	PLK4	1.1827706	up	polo-like kinase 4 (Drosophila)
7910950	KMO	1.1824621	up	kynurenine 3-monooxygenase (kynurenine 3-hydroxylase
7933872	EGR2	1.182386	up	early growth response 2 (Krox-20 homolog, Drosophila

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8046542	HOXD9	1.1821467	up	homeobox D9
8028908	ITPKC	1.1820192	up	inositol 1,4,5-trisphosphate 3-kinase C
8048026	CPS1	1.1816792	up	carbamoyl-phosphate synthetase 1, mitochondrial
8042637	DYSF	1.1816773	up	dysferlin, limb girdle muscular dystrophy 2B (autosomal recessive)
8022803	FAM59A	1.181607	up	family with sequence similarity 59, member A
8152812	FAM84B	1.1811179	up	family with sequence similarity 84, member B
8061013	C20orf82	1.1809037	up	chromosome 20 open reading frame 82
8041763	PRKCE	1.1796921	up	protein kinase C, epsilon
7980744	RPS6KA5	1.1794983	up	ribosomal protein S6 kinase, 90kDa, polypeptide 5
8093304	CCRL2 LOC72781	1.1788726	up	chemokine (C-C motif) receptor-like 2   similar to chemokine (C-C motif) receptor-like 2
8160637	B4GALT1	1.1787517	up	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1
8120402	BAG2	1.1776785	up	BCL2-associated athanogene 2
7975238	PLEKHH1	1.1762182	up	pleckstrin homology domain containing, family H (with SH2 domain)
7932420	PTPLA	1.1760333	up	protein tyrosine phosphatase-like (proline instead of conserved tyrosine)
8146092	INDO	1.1748272	up	indoleamine-pyrrole 2,3 dioxygenase
7941104	ARL2 SNX15	1.1747483	up	ADP-ribosylation factor-like 2   sorting nexin 15
7986411	MEF2A	1.1742295	up	myocyte enhancer factor 2A
8017547	ICAM2	1.174177	up	intercellular adhesion molecule 2
7909890	HLX	1.1740062	up	H2.0-like homeobox
7906469	DUSP23	1.1732901	up	dual specificity phosphatase 23
7948612	FADS1 FADS3	1.1732877	up	fatty acid desaturase 1   fatty acid desaturase 3
8052735	CNRIP1	1.1731625	up	cannabinoid receptor interacting protein 1
8180100	HLA-DPA1	1.1724504	up	major histocompatibility complex, class II, DP alpha 1
8104570	FAM105A	1.1722592	up	family with sequence similarity 105, member A
7999387	EMP2	1.1719625	up	epithelial membrane protein 2
7978712	CLEC14A	1.1718148	up	C-type lectin domain family 14, member A
7953626	CLSTN3	1.1717032	up	calsyntenin 3
8072603	LOC100130269	1.170385	up	similar to Putative uncharacterized protein FLJ36925
8167305	EBP	1.170137	up	emopamil binding protein (sterol isomerase)
8099967	RBM47	1.1690141	up	RNA binding motif protein 47
8180003	HLA-DRB3 HLA-D	1.1689016	up	
8091385	CP	1.1688881	up	ceruloplasmin (ferroxidase)
8048717	SGPP2	1.1675854	up	sphingosine-1-phosphate phosphatase 2

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7987405	RASGRP1	1.166719	up	RAS guanyl releasing protein 1 (calcium and DAG-regul
7905881	ADAM15	1.1659172	up	ADAM metallopeptidase domain 15
8174103	GK GK3P	1.1657379	up	glycerol kinase   glycerol kinase 3 pseudogene
8047659	ABI2	1.1653718	up	abl interactor 2
8044462	TTL	1.1653525	up	tubulin tyrosine ligase
8077899	PPARG	1.1647658	up	peroxisome proliferator-activated receptor gamma
7987192	SLC12A6	1.1646569	up	solute carrier family 12 (potassium/chloride transporte
7987454	BMF	1.1641239	up	Bcl2 modifying factor
7963328	FIGNL2	1.1635551	up	fidgetin-like 2
7936115	SH3PXD2A	1.1632738	up	SH3 and PX domains 2A
8112342	ADAMTS6	1.1627301	up	ADAM metallopeptidase with thrombospondin type 1
8129783	MAP7	1.1626263	up	microtubule-associated protein 7
8110084	MSX2	1.1623641	up	msh homeobox 2
8138466	7A5	1.1623604	up	putative binding protein 7a5
8106403	F2RL1	1.1622573	up	coagulation factor II (thrombin) receptor-like 1
7997504	CDH13	1.1619948	up	cadherin 13, H-cadherin (heart)
8116932	PHACTR1	1.1617253	up	phosphatase and actin regulator 1
7906878	DDR2	1.1615812	up	discoidin domain receptor tyrosine kinase 2
8091778	SCARNA7	1.1614054	up	small Cajal body-specific RNA 7
8137566	RNF32	1.1611444	up	ring finger protein 32
7910600	KIAA1804	1.1598214	up	mixed lineage kinase 4
8029437	PVR	1.1596507	up	poliovirus receptor
8106350	NBLA11895	1.159601	up	putative protein product of Nbla11895
8083757	NMD3	1.1589609	up	
8068671	BACE2	1.1582135	up	beta-site APP-cleaving enzyme 2
8049246	INPP5D	1.1580784	up	inositol polyphosphate-5-phosphatase, 145kDa
8125556	HLA-DPA1	1.1578671	up	major histocompatibility complex, class II, DP alpha 1
7943795	C11orf52	1.1575174	up	chromosome 11 open reading frame 52
8161255	SHB CKAP2	1.1574582	up	Src homology 2 domain containing adaptor protein B
8013319	GRAP	1.1560472	up	GRB2-related adaptor protein
8105828	CCNB1	1.1558402	up	cyclin B1
8178891	HLA-DPA1	1.1553437	up	major histocompatibility complex, class II, DP alpha 1
7915926	STIL	1.1548623	up	SCL/TAL1 interrupting locus



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8091546	LOC645843	1.1545744	up	transmembrane protein 14-like
8005549	LOC400581	1.1538328	up	GRB2-related adaptor protein-like
7967002	PXN	1.15378	up	paxillin
8095744	AREG LOC727738	1.1535017	up	amphiregulin (schwannoma-derived growth factor)   s
8009183	MAP3K3	1.153202	up	mitogen-activated protein kinase kinase kinase 3
8054580	BUB1	1.1516277	up	
7986701	HERC2P2 LOC283	1.1509608	up	hect domain and RLD 2 pseudogene 2   hypothetical p
8177498	MARVELD2	1.1509318	up	MARVEL domain containing 2
8017057	C17orf47	1.150482	up	chromosome 17 open reading frame 47
8072735	APOL1	1.1502846	up	apolipoprotein L, 1
8077323	CNTN4	1.150082	up	contactin 4
8041383	LTBP1	1.1499585	up	latent transforming growth factor beta binding protein
8112274	ELOVL7	1.14993	up	ELOVL family member 7, elongation of long chain fatty
8095736	AREG LOC727738	1.1498141	up	amphiregulin (schwannoma-derived growth factor)   s
7918517	WDR77	1.1495385	up	WD repeat domain 77
7912347	CASZ1	1.14927	up	castor zinc finger 1
8018264	C17orf28	1.1473148	up	chromosome 17 open reading frame 28
8131339	FSCN1	1.147115	up	fascin homolog 1, actin-bundling protein (Strongylocer
8105899	MARVELD2	1.1470536	up	MARVEL domain containing 2
8019954	FLJ35776	1.1464698	up	hypothetical protein LOC649446
8129888	NHSL1	1.1457964	up	NHS-like 1
7923731	RIPK5	1.1454068	up	receptor interacting protein kinase 5
7898693	ALPL	1.1449944	up	alkaline phosphatase, liver/bone/kidney
8003357	FAM38A	1.1446029	up	family with sequence similarity 38, member A
8134407	DLX6	1.1445628	up	distal-less homeobox 6
7908732	IPO9	1.1445218	up	importin 9
8104066	SORBS2	1.1444403	up	sorbin and SH3 domain containing 2
8054513	FLJ38359 LOC100	1.144383	up	hypothetical protein FLJ38359   hypothetical protein L
8042503	MXD1	1.1437278	up	MAX dimerization protein 1
7926679	KIAA1217	1.1430833	up	
7960764	RBP5	1.1428621	up	retinol binding protein 5, cellular
8092177	AADA1	1.141892	up	arylacetamide deacetylase-like 1
8058203	ALS2CR12	1.1414467	up	amyotrophic lateral sclerosis 2 (juvenile) chromosome

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7958202	CHST11	1.1404545	up	carbohydrate (chondroitin 4) sulfotransferase 11
8054740	PAX8	1.1400493	up	paired box 8
7902518	GIPC2	1.1399102	up	GIPC PDZ domain containing family, member 2
8122365	GPR126	1.1396093	up	G protein-coupled receptor 126
7939150	PRRG4	1.1380507	up	proline rich Gla (G-carboxyglutamic acid) 4 (transmembr
8122396	AIG1	1.1374671	up	androgen-induced 1
7980773	CCDC88C	1.1365784	up	coiled-coil domain containing 88C
7997158	MARVELD3	1.136375	up	MARVEL domain containing 3
8109120	AFAP1L1	1.1362549	up	actin filament associated protein 1-like 1
7928944	PAPSS2	1.1358167	up	3'-phosphoadenosine 5'-phosphosulfate synthase 2
8058498	FZD5	1.135672	up	frizzled homolog 5 (Drosophila)
7926821	MASTL	1.135473	up	microtubule associated serine/threonine kinase-like
8036252	CLIP3	1.135165	up	CAP-GLY domain containing linker protein 3
7972936	FAM70B	1.135075	up	family with sequence similarity 70, member B
8169949	RP6-213H19.1	1.1350114	up	serine/threonine protein kinase MST4
8113512	EPB41L4A	1.1348258	up	erythrocyte membrane protein band 4.1 like 4A
8114780	PCDH12	1.1347398	up	protocadherin 12
7925531	AKT3	1.1346254	up	v-akt murine thymoma viral oncogene homolog 3 (prot
7934842	MMRN2	1.134159	up	multimerin 2
7949454	MAP3K11	1.1334398	up	mitogen-activated protein kinase kinase kinase 11
7976160	TDP1	1.1330609	up	tyrosyl-DNA phosphodiesterase 1
8096753	HADH	1.1323155	up	hydroxyacyl-Coenzyme A dehydrogenase
7945204	ST14	1.1322223	up	suppression of tumorigenicity 14 (colon carcinoma)
7923967	YOD1	1.1320788	up	
7933760	CCDC6	1.1319592	up	coiled-coil domain containing 6
8172254	CXorf36	1.1318485	up	chromosome X open reading frame 36
7900658	TIE1	1.1315976	up	tyrosine kinase with immunoglobulin-like and EGF-like
7980098	ALDH6A1	1.1313338	up	aldehyde dehydrogenase 6 family, member A1
7958913	OAS2	1.1303166	up	2'-5'-oligoadenylate synthetase 2, 69/71kDa
7916506	C1orf168	1.1296415	up	chromosome 1 open reading frame 168
8042416	ARHGAP25	1.1294878	up	Rho GTPase activating protein 25
8014349	CCL14 CCL15	1.129468	up	chemokine (C-C motif) ligand 14   chemokine (C-C mot
8167287	PORCN	1.1290336	up	porcupine homolog (Drosophila)

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7929288	EXOC6	1.1282845	up	exocyst complex component 6
7940191	STX3	1.1281617	up	syntaxin 3
7943387	C11orf70	1.127963	up	chromosome 11 open reading frame 70
7974697	DAAM1	1.1272515	up	dishevelled associated activator of morphogenesis 1
8124897	PSORS1C3 LOC10	1.1267757	up	psoriasis susceptibility 1 candidate 3   similar to psoria
8074131	SHANK3	1.1267296	up	SH3 and multiple ankyrin repeat domains 3
8016476	HOXB9	1.1266167	up	homeobox B9
7903393	S1PR1	1.1264255	up	sphingosine-1-phosphate receptor 1
8179727	PSORS1C3 LOC10	1.1264198	up	psoriasis susceptibility 1 candidate 3   similar to psoria
7954090	EMP1	1.1261445	up	epithelial membrane protein 1
8131719	DNAH11	1.1252317	up	dynein, axonemal, heavy chain 11
8116818	BMP6	1.1251018	up	bone morphogenetic protein 6
7962579	AMIGO2	1.1250128	up	adhesion molecule with Ig-like domain 2
7980309	C14orf1	1.1244124	up	chromosome 14 open reading frame 1
7907861	XPR1	1.1241056	up	xenotropic and polytropic retrovirus receptor
8058824	MREG	1.1235979	up	melanoregulin
8127502	C6orf155	1.123455	up	chromosome 6 open reading frame 155
8143961	PRKAG2	1.1232136	up	protein kinase, AMP-activated, gamma 2 non-catalytic
8152491	EXT1	1.1231406	up	exostoses (multiple) 1
7905147	C1orf54	1.1223767	up	chromosome 1 open reading frame 54
7943218	PANX1	1.1221926	up	pannexin 1
8044008	IL1RL2	1.1215981	up	interleukin 1 receptor-like 2
7986329	NR2F2	1.1209939	up	nuclear receptor subfamily 2, group F, member 2
8104492	ROPN1L	1.1204737	up	ropporin 1-like
8070458	PLAC4	1.1204197	up	placenta-specific 4
7920472	TPM3	1.1191552	up	tropomyosin 3
8056184	ITGB6	1.1188596	up	integrin, beta 6
8171481	AP1S2	1.1185299	up	adaptor-related protein complex 1, sigma 2 subunit
8147766	FZD6	1.1184124	up	frizzled homolog 6 (Drosophila)
8092392	KLHL6	1.1183003	up	kelch-like 6 (Drosophila)
8139680	COBL	1.1181235	up	cordon-bleu homolog (mouse)
7918902	CD58	1.118003	up	
7905754	ATP8B2	1.1178497	up	ATPase, class I, type 8B, member 2

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8129618	VNN1	1.1170121	up	vanin 1
7941401	OVOL1	1.1169513	up	ovo-like 1(Drosophila)
8148280	SQLE	1.1167686	up	squalene epoxidase
7915170	MYCBP GJA9	1.1166675	up	c-myc binding protein   gap junction protein, alpha 9, !
7920285	S100A2	1.1165508	up	S100 calcium binding protein A2
8138689	SKAP2	1.1165489	up	src kinase associated phosphoprotein 2
8037835	SLC1A5	1.1163998	up	solute carrier family 1 (neutral amino acid transporter)
8080487	PRKCD	1.1156114	up	protein kinase C, delta
8178211	PSMB9	1.115323	up	proteasome (prosome, macropain) subunit, beta type,
8016414	SKAP1	1.1152959	up	src kinase associated phosphoprotein 1
8081219	ST3GAL6	1.1148474	up	ST3 beta-galactoside alpha-2,3-sialyltransferase 6
8091327	PLSCR1	1.114802	up	phospholipid scramblase 1
8091922	WDR49	1.1145632	up	WD repeat domain 49
7967456	RILPL2	1.1142517	up	Rab interacting lysosomal protein-like 2
7982154	HERC2P2 LOC283	1.1141598	up	hect domain and RLD 2 pseudogene 2   hypothetical p
8118571	PSMB9	1.1139889	up	proteasome (prosome, macropain) subunit, beta type,
8179495	PSMB9	1.1136713	up	proteasome (prosome, macropain) subunit, beta type,
8157446	ORM1	1.1131215	up	orosomuroid 1
7919596	LOC440570	1.1124412	up	
8154135	SLC1A1	1.1124245	up	solute carrier family 1 (neuronal/epithelial high affinity
7967107	C12orf27	1.1120048	up	chromosome 12 open reading frame 27
8175023	ZDHHC9	1.1115179	up	zinc finger, DHHC-type containing 9
7919580	LOC440570	1.1113772	up	
8155930	GCNT1	1.1108071	up	glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1,6-
8094759	NSUN7	1.1100519	up	NOL1/NOP2/Sun domain family, member 7
8080344	STAB1	1.1100124	up	stabilin 1
8066542	SPINLW1 WFDC6	1.109886	up	serine peptidase inhibitor-like, with Kunitz and WAP dc
8140468	tcag7.1314	1.109517	up	hypothetical protein LOC54103
8037205	CEACAM1	1.1093076	up	carcinoembryonic antigen-related cell adhesion molecu
8137280	NOS3	1.1091505	up	nitric oxide synthase 3 (endothelial cell)
8070467	TMPRSS2	1.1088141	up	transmembrane protease, serine 2
7961111	CLEC1A	1.1086856	up	C-type lectin domain family 1, member A
8048864	CCL20	1.1084903	up	chemokine (C-C motif) ligand 20

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8095139	SRD5A3	1.1081543	up	steroid 5 alpha-reductase 3
8100984	CXCL3	1.1079304	up	chemokine (C-X-C motif) ligand 3
8008185	ABI3	1.1079234	up	ABI gene family, member 3
7970162	ATP11A	1.107415	up	ATPase, class VI, type 11A
8021286	C18orf54	1.1055868	up	chromosome 18 open reading frame 54
8074856	PRAME	1.1050833	up	preferentially expressed antigen in melanoma
8166925	MAOA	1.1040872	up	monoamine oxidase A
7954559	PPFIBP1	1.1034901	up	PTPRF interacting protein, binding protein 1 (liprin beta)
8099467	FGFBP1	1.1034033	up	fibroblast growth factor binding protein 1
7940565	FADS2	1.1031823	up	fatty acid desaturase 2
8096511	BMPR1B	1.1029058	up	bone morphogenetic protein receptor, type IB
8144712	C8orf79	1.1028839	up	chromosome 8 open reading frame 79
8059413	DOCK10	1.102845	up	dedicator of cytokinesis 10
7926451	MRC1 MRC1L1	1.1014766	up	mannose receptor, C type 1   mannose receptor, C type 1
7982854	DLL4	1.1010691	up	delta-like 4 (Drosophila)
8102532	PDE5A	1.100715	up	phosphodiesterase 5A, cGMP-specific
8119525	HCRP1	1.1001242	up	
7926410	MRC1 MRC1L1	1.0998957	up	mannose receptor, C type 1   mannose receptor, C type 1
8038163	RASIP1	1.0993038	up	Ras interacting protein 1
8090630	TMCC1	1.0986605	up	transmembrane and coiled-coil domain family 1
8126853	C6orf138	1.0977213	up	chromosome 6 open reading frame 138
8125530	HLA-DMB	1.09701	up	major histocompatibility complex, class II, DM beta
7979196	GNPNAT1	1.0969772	up	glucosamine-phosphate N-acetyltransferase 1
8101675	ABCG2	1.096871	up	ATP-binding cassette, sub-family G (WHITE), member 2
8115261	CCDC69	1.0968535	up	coiled-coil domain containing 69
8064868	RP5-1022P6.2	1.0967942	up	hypothetical protein KIAA1434
7926531	ARL5B	1.0967675	up	ADP-ribosylation factor-like 5B
8052731	WDR92	1.0963048	up	WD repeat domain 92
8113504	C5orf13	1.0957621	up	chromosome 5 open reading frame 13
8171392	ASB9	1.0955253	up	ankyrin repeat and SOCS box-containing 9
8001547	PLLP	1.0950793	up	plasma membrane proteolipid (plasmolipin)
7972003	KLF12	1.0950067	up	Kruppel-like factor 12
8109141	GRPEL2	1.0948026	up	GrpE-like 2, mitochondrial (E. coli)

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8066786	ZMYND8	1.0947832	up	zinc finger, MYND-type containing 8
7968035	SPATA13 C1QTNF	1.0944448	up	spermatogenesis associated 13   C1q and tumor necro
7931977	ITIH5	1.0943258	up	inter-alpha (globulin) inhibitor H5
8180078	HLA-DMB	1.09421	up	major histocompatibility complex, class II, DM beta
7983111	SNAP23	1.0936344	up	synaptosomal-associated protein, 23kDa
7988990	WDR72	1.0934001	up	WD repeat domain 72
7924055	C1orf74	1.0930351	up	chromosome 1 open reading frame 74
8161774	TRPM6	1.092657	up	transient receptor potential cation channel, subfamily
8027748	FXVD3	1.0923926	up	FXVD domain containing ion transport regulator 3
8148448	KHDRBS3	1.0920453	up	KH domain containing, RNA binding, signal transductio
7956120	ERBB3	1.0918103	up	v-erb-b2 erythroblastic leukemia viral oncogene homol
7995838	MT1X	1.0912448	up	metallothionein 1X
7906079	RAB25	1.0911238	up	
8146934	LY96	1.0899612	up	lymphocyte antigen 96
8090823	SLCO2A1	1.0892178	up	solute carrier organic anion transporter family, membe
7905428	TUFT1	1.0892032	up	tuftelin 1
7974902	RHOJ	1.0891955	up	ras homolog gene family, member J
7932407	ST8SIA6	1.0891354	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransfe
7975081	C14orf50	1.087644	up	chromosome 14 open reading frame 50
8096130	CDS1	1.0871904	up	CDP-diacylglycerol synthase (phosphatidate cytidyltr
7954077	KIAA1467	1.0865419	up	
8089867	RABL3	1.0864842	up	RAB, member of RAS oncogene family-like 3
8021695	DOK6	1.0862889	up	docking protein 6
7914270	LAPTM5	1.0860487	up	lysosomal associated multispinning membrane proteir
7909866	MOSC2	1.0852319	up	MOCO sulphurase C-terminal domain containing 2
8027402	CCNE1	1.0849658	up	cyclin E1
7974851	HIF1A	1.0846345	up	hypoxia-inducible factor 1, alpha subunit (basic helix-lc
8171762	RPS6KA3	1.0835176	up	ribosomal protein S6 kinase, 90kDa, polypeptide 3
8002283	TMED6	1.0832635	up	transmembrane emp24 protein transport domain cont
8057797	SDPR	1.083243	up	serum deprivation response (phosphatidylserine bindir
8125537	HLA-DMA	1.0829431	up	major histocompatibility complex, class II, DM alpha
7945371	IFITM3	1.0823841	up	interferon induced transmembrane protein 3 (1-8U)
7954729	FGD4	1.0819927	up	FYVE, RhoGEF and PH domain containing 4

Supplemental Table 1c  
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8045882	DAPL1	1.0817547	up	death associated protein-like 1
7968351	C13orf33	1.0817323	up	chromosome 13 open reading frame 33
8136954	FAM139B LOC655	1.0815265	up	family with sequence similarity 139, member B   similar
8136987	ARHGEF5 LOC728	1.0807493	up	Rho guanine nucleotide exchange factor (GEF) 5   similar
8111569	RANBP3L	1.0807124	up	RAN binding protein 3-like
7965343	WDR51B GALNT4	1.0800045	up	WD repeat domain 51B   UDP-N-acetyl-alpha-D-galactose
8044080	SLC9A2	1.0793715	up	solute carrier family 9 (sodium/hydrogen exchanger), member 2
7925929	AKR1C3	1.0793004	up	aldo-keto reductase family 1, member C3 (3-alpha hydroxysteroid
8083743	ARL14	1.0792321	up	ADP-ribosylation factor-like 14
8163437	SLC46A2	1.0790344	up	solute carrier family 46, member 2
7959123	PRKAB1	1.0786912	up	protein kinase, AMP-activated, beta 1 non-catalytic subunit
8171418	PIGA	1.0782782	up	phosphatidylinositol glycan anchor biosynthesis, class I
7914516	LOC339483	1.0781516	up	
7982564	SPRED1	1.0771731	up	sprouty-related, EVH1 domain containing 1
8058927	TMBIM1	1.0771682	up	transmembrane BAX inhibitor motif containing 1
8143781	GIMAP6	1.0769095	up	GTPase, IMAP family member 6
7955562	ACVRL1	1.0768422	up	activin A receptor type II-like 1
7983145	STARD9	1.0767632	up	StAR-related lipid transfer (START) domain containing 9
8055606	GTDC1	1.0767535	up	glycosyltransferase-like domain containing 1
8096556	METAP1	1.0764236	up	methionyl aminopeptidase 1
7945321	GLB1L2	1.0763533	up	galactosidase, beta 1-like 2
7906400	IFI16	1.0763085	up	interferon, gamma-inducible protein 16
8178884	HLA-DMA	1.0758635	up	major histocompatibility complex, class II, DM alpha chain
8150112	GSR	1.075852	up	glutathione reductase
8146550	SDCBP	1.0756884	up	syndecan binding protein (syntenin)
7997712	IRF8	1.0749842	up	interferon regulatory factor 8
8085062	IL5RA	1.0748702	up	interleukin 5 receptor, alpha
8016457	HOXB5	1.0747447	up	homeobox B5
8036341	ZNF461	1.074267	up	zinc finger protein 461
7908940	ATP2B4	1.074182	up	ATPase, Ca <sup>++</sup> transporting, plasma membrane 4
8121886	HINT3	1.073958	up	histidine triad nucleotide binding protein 3
7916541	DAB1	1.0735502	up	disabled homolog 1 (Drosophila)
7901140	MAST2	1.0733864	up	microtubule associated serine/threonine kinase 2

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8012450	SLC25A35	1.0728896	up	solute carrier family 25, member 35
8139131	AMPH	1.0727043	up	amphiphysin
8150036	KIF13B	1.0726831	up	kinesin family member 13B
7994058	SCNN1G	1.0725187	up	sodium channel, nonvoltage-gated 1, gamma
7908351	PLA2G4A	1.0722535	up	phospholipase A2, group IVA (cytosolic, calcium-depen
8035095	CYP4F11	1.0710182	up	cytochrome P450, family 4, subfamily F, polypeptide 1:
7954436	LRMP	1.0708871	up	lymphoid-restricted membrane protein
8138805	CPVL	1.0707866	up	carboxypeptidase, vitellogenic-like
7917649	TGFBR3	1.0703467	up	transforming growth factor, beta receptor III
8014248	SLFN13	1.0694476	up	schlafen family member 13
7911038	ZNF238	1.0692952	up	zinc finger protein 238
8061247	RIN2	1.0691288	up	Ras and Rab interactor 2
8080714	FLNB	1.069105	up	filamin B, beta (actin binding protein 278)
7950307	UCP2	1.0689011	up	uncoupling protein 2 (mitochondrial, proton carrier)
8095986	ANXA3	1.068724	up	annexin A3
7983393	SORD	1.0682384	up	sorbitol dehydrogenase
7961075	CD69	1.068036	up	
8083839	GPR160	1.067892	up	G protein-coupled receptor 160
7968866	C13orf30	1.0674949	up	chromosome 13 open reading frame 30
8030991	LOC147804	1.067483	up	tropomyosin 3 pseudogene
8125383	NOTCH4 GPSM3	1.0674607	up	Notch homolog 4 (Drosophila)   G-protein signaling mc
7996908	SNTB2	1.0673016	up	syntrophin, beta 2 (dystrophin-associated protein A1, 5
8169995	FAM122C	1.0672686	up	family with sequence similarity 122C
7951363	CASP12	1.0670903	up	caspase 12 (gene/pseudogene)
8157058	FSD1L	1.0661342	up	fibronectin type III and SPRY domain containing 1-like
8074286	MICAL3	1.0661019	up	microtubule associated monooxygenase, calponin and L
8157632	C9orf18	1.0658611	up	chromosome 9 open reading frame 18
8143040	SLC35B4	1.0658156	up	solute carrier family 35, member B4
8104901	IL7R	1.0657643	up	interleukin 7 receptor
7931108	DMBT1	1.0655843	up	deleted in malignant brain tumors 1
8108912	SH3RF2	1.0654855	up	SH3 domain containing ring finger 2
8112584	ZNF366	1.0650843	up	zinc finger protein 366
8017061	TEX14	1.0649264	up	testis expressed 14



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8033362	INSR	1.0643296	up	insulin receptor
7929976	RP11-529I10.4	1.0641761	up	deleted in a mouse model of primary ciliary dyskinesia
7898988	CLIC4	1.0634605	up	chloride intracellular channel 4
8135341	FLJ23834	1.0634129	up	
8136940	FAM139A	1.0632559	up	family with sequence similarity 139, member A
8117382	HIST1H2BD	1.0630344	up	histone cluster 1, H2bd
8096314	PKD2	1.0626206	up	polycystic kidney disease 2 (autosomal dominant)
8090180	MUC13	1.0624853	up	mucin 13, cell surface associated
8149574	CSGALNACT1	1.0623908	up	chondroitin sulfate N-acetylgalactosaminyltransferase
8097801	LOC729830	1.0618896	up	similar to CG3558-PA, isoform A
8111739	FYB	1.0617658	up	
8116910	HIVEP1	1.0617151	up	human immunodeficiency virus type I enhancer bindin
8180086	HLA-DMA	1.0611941	up	major histocompatibility complex, class II, DM alpha
8161865	PRUNE2 LOC1001	1.061161	up	prune homolog 2 (Drosophila)   similar to KIAA0367
7969576	MIRHG1	1.0604094	up	microRNA host gene (non-protein coding) 1
7914809	KIAA0319L	1.0603871	up	KIAA0319-like
8171516	RBBP7	1.0598134	up	retinoblastoma binding protein 7
8088642	LRIG1	1.0595534	up	leucine-rich repeats and immunoglobulin-like domains
8075569	SLC5A4	1.0593929	up	solute carrier family 5 (low affinity glucose cotransport
8044818	hCG_17324	1.0585238	up	primary ciliary dyskinesia protein 1
8122279	KIAA1244 LOC20;	1.0583886	up	KIAA1244   hypothetical protein LOC202451
7968637	CCNA1	1.0582193	up	cyclin A1
8135363	PIK3CG	1.0581601	up	phosphoinositide-3-kinase, catalytic, gamma polypepti
8105061	FYB	1.0571969	up	
8068761	ABCG1	1.0569756	up	ATP-binding cassette, sub-family G (WHITE), member 1
7932765	MPP7	1.0568218	up	membrane protein, palmitoylated 7 (MAGUK p55 subf;
7976496	SERPINA3	1.0566702	up	serpin peptidase inhibitor, clade A (alpha-1 antiprotein
8065607	PLAGL2	1.0564454	up	pleiomorphic adenoma gene-like 2
8116848	PAK1IP1	1.056392	up	PAK1 interacting protein 1
8102050	NHEDC2	1.056376	up	Na <sup>+</sup> /H <sup>+</sup> exchanger domain containing 2
7917576	GBP5	1.0559992	up	guanylate binding protein 5
8079598	ZNF589	1.0555555	up	zinc finger protein 589
7945680	H19	1.0554106	up	

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8016847	TRIM25	1.0549306	up	tripartite motif-containing 25
8169492	AGTR2	1.0547763	up	angiotensin II receptor, type 2
8159919	C9orf68	1.0547378	up	chromosome 9 open reading frame 68
8073645	SAMM50 LOC100	1.0546294	up	sorting and assembly machinery component 50 homol
8062557	PPP1R16B	1.0543509	up	protein phosphatase 1, regulatory (inhibitor) subunit 1
8039687	ZNF552	1.0542784	up	zinc finger protein 552
8063351	SLC9A8	1.0541332	up	solute carrier family 9 (sodium/hydrogen exchanger), r
7926622	SPAG6	1.0540854	up	sperm associated antigen 6
8007348	RAMP2	1.054059	up	receptor (G protein-coupled) activity modifying proteir
8174474	ACSL4	1.0537525	up	acyl-CoA synthetase long-chain family member 4
8063601	C20orf85	1.0532777	up	chromosome 20 open reading frame 85
8156043	PSAT1	1.0526162	up	phosphoserine aminotransferase 1
8088866	CNTN3	1.0525789	up	contactin 3 (plasmacytoma associated)
8132439	C7orf10	1.0523067	up	chromosome 7 open reading frame 10
7930593	C10orf81	1.0522794	up	chromosome 10 open reading frame 81
7904361	FAM46C	1.0520403	up	family with sequence similarity 46, member C
7922301	MYOC	1.0519378	up	myocilin, trabecular meshwork inducible glucocorticoic
8147891	PKHD1L1	1.0516877	up	polycystic kidney and hepatic disease 1 (autosomal rec
8101086	NAAA	1.0514749	up	N-acylethanolamine acid amidase
8013906	TWF1	1.0513093	up	twinfilin, actin-binding protein, homolog 1 (Drosophila
7918294	C1orf194	1.0491059	up	chromosome 1 open reading frame 194
8125436	HLA-DRB5 LOC10	1.0490297	up	
7970441	GJB2	1.0489712	up	gap junction protein, beta 2, 26kDa
8078066	FGD5	1.0488461	up	FYVE, RhoGEF and PH domain containing 5
8123101	LOC100130967 C	1.0484905	up	similar to hCG2044932   chromosome 6 open reading
8004842	ARHGEF15	1.0482922	up	Rho guanine nucleotide exchange factor (GEF) 15
7903893	CD53	1.0479523	up	
8130191	RMND1	1.0472748	up	required for meiotic nuclear division 1 homolog (S. cer
8174076	GLA	1.0466917	up	galactosidase, alpha
7993638	TMC5	1.0462806	up	transmembrane channel-like 5
7957023	LYZ	1.0459745	up	lysozyme (renal amyloidosis)
7933010	PARD3	1.0456766	up	par-3 partitioning defective 3 homolog (C. elegans)
8034084	AP1M2	1.0453106	up	adaptor-related protein complex 1, mu 2 subunit

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7943740	FLJ46266	1.0448624	up	
8136248	MEST	1.0443001	up	mesoderm specific transcript homolog (mouse)
7976488	SERPINA5	1.0430707	up	serpin peptidase inhibitor, clade A (alpha-1 antiprotein
8045835	GALNT5	1.0421306	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-ac
7952927	B4GALNT3	1.0418205	up	beta-1,4-N-acetyl-galactosaminyl transferase 3
8144089	LMBR1	1.0415071	up	limb region 1 homolog (mouse)
7909877	MOSC1	1.0411614	up	MOCO sulphurase C-terminal domain containing 1
8099121	STX18	1.0408248	up	syntaxin 18
8120061	ENPP4	1.0402721	up	ectonucleotide pyrophosphatase/phosphodiesterase 4
8019643	DOC2B	1.0394717	up	double C2-like domains, beta
8120719	CD109	1.0393662	up	
8157691	LOC729012	1.0385793	up	similar to Spindle and kinetochore-associated protein 2
7909455	TRAF3IP3   LOC100	1.0385463	up	TRAF3 interacting protein 3   hypothetical protein LOC
8068583	KCNJ15	1.0384296	up	potassium inwardly-rectifying channel, subfamily J, me
8155849	ANXA1	1.0384043	up	annexin A1
8015900	TMEM101	1.0379584	up	transmembrane protein 101
8147697	GRHL2	1.0377815	up	grainyhead-like 2 (Drosophila)
7942489	DNAJB13	1.0372562	up	DnaJ (Hsp40) related, subfamily B, member 13
8094533	FLJ16686	1.0369713	up	
8175593	IDS	1.0368915	up	iduronate 2-sulfatase (Hunter syndrome)
8056890	CHN1	1.0365844	up	chimerin (chimaerin) 1
8100210	TXK	1.0357878	up	
8113358	ST8SIA4	1.0353279	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransfe
8081826	UPK1B	1.0352457	up	uroplakin 1B
7979269	GCH1	1.0348212	up	GTP cyclohydrolase 1 (dopa-responsive dystonia)
8138392	AGR3	1.0347868	up	anterior gradient homolog 3 (Xenopus laevis)
7952453	ROBO4	1.0347271	up	roundabout homolog 4, magic roundabout (Drosophila
8150225	RAB11FIP1	1.0345538	up	RAB11 family interacting protein 1 (class I)
8011884	NLRP1	1.0342722	up	NLR family, pyrin domain containing 1
8166671	CXorf22	1.0342697	up	chromosome X open reading frame 22
8101126	CXCL10	1.0338756	up	chemokine (C-X-C motif) ligand 10
8143610	FLJ43692   LOC728	1.0337015	up	ARHGEF5-like   similar to rho guanine nucleotide exch
8149590	LOC100130604	1.0335405	up	

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8106354	IQGAP2	1.0331552	up	IQ motif containing GTPase activating protein 2
8140782	ABCB1	1.0328927	up	ATP-binding cassette, sub-family B (MDR/TAP), member 1
8146000	ADAM9	1.0325121	up	ADAM metallopeptidase domain 9 (meltrin gamma)
8068383	CLIC6	1.0321215	up	chloride intracellular channel 6
8025255	STXBP2	1.032057	up	syntaxin binding protein 2
8100231	TEC	1.0318996	up	tec protein tyrosine kinase
8019831	CLUL1	1.0318247	up	clusterin-like 1 (retinal)
8121489	AMD1	1.0313169	up	adenosylmethionine decarboxylase 1
7909175	SRGAP2	1.0311234	up	SLIT-ROBO Rho GTPase activating protein 2
7971126	STOML3	1.030765	up	stomatin (EPB72)-like 3
8160559	DDX58	1.0307252	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 58
8096602	DAPP1	1.0300392	up	dual adaptor of phosphotyrosine and 3-phosphoinositide
8116418	GFPT2	1.0292034	up	glutamine-fructose-6-phosphate transaminase 2
7991034	HOMER2	1.0289744	up	homer homolog 2 (Drosophila)
7956301	LRP1	1.0286908	up	low density lipoprotein-related protein 1 (alpha-2-macroglobulin receptor type 1)
8068697	MX2	1.0285662	up	myxovirus (influenza virus) resistance 2 (mouse)
7932552	LOC100128663 P	1.0282307	up	similar to PRO3077   hypothetical protein PRO3077
8071981	CTA-221G9.4	1.0277193	up	KIAA1671 protein
8015133	KRT23	1.0260097	up	keratin 23 (histone deacetylase inducible)
7917019	C1orf173	1.0253135	up	chromosome 1 open reading frame 173
8120783	MYO6	1.0251409	up	myosin VI
8115814	SH3PXD2B	1.0239106	up	SH3 and PX domains 2B
8004255	BCL6B	1.0236638	up	B-cell CLL/lymphoma 6, member B (zinc finger protein)
8048725	MOGAT1	1.0234631	up	monoacylglycerol O-acyltransferase 1
8126905	CRISP3	1.0223426	up	cysteine-rich secretory protein 3
7974080	MIA2	1.0223411	up	melanoma inhibitory activity 2
7906435	DARC	1.020878	up	Duffy blood group, chemokine receptor
8077270	CHL1	1.0208536	up	cell adhesion molecule with homology to L1CAM (close homolog of L1CAM)
7996954	NFAT5	1.0208342	up	nuclear factor of activated T-cells 5, tonicity-responsive
7916629	C1orf87	1.0208054	up	chromosome 1 open reading frame 87
8100362	LNX1	1.020599	up	ligand of numb-protein X 1
7902957	ABHD7	1.020373	up	abhydrolase domain containing 7
8057377	CCDC141 LOC285	1.0198556	up	coiled-coil domain containing 141   hypothetical protein

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8100026	ATP8A1	1.019552	up	ATPase, aminophospholipid transporter (APLT), class I,
7990757	CTSH	1.0193846	up	cathepsin H
8129497	EPB41L2	1.0191549	up	erythrocyte membrane protein band 4.1-like 2
8138922	KBTBD2	1.0190897	up	kelch repeat and BTB (POZ) domain containing 2
7903803	AHCYL1	1.0187836	up	S-adenosylhomocysteine hydrolase-like 1
7966690	TBX3	1.0185612	up	T-box 3 (ulnar mammary syndrome)
8099834	TLR1	1.0183364	up	toll-like receptor 1
8088315	ASB14 DNAH12	1.0182977	up	ankyrin repeat and SOCS box-containing 14   dynein, a
8066530	SPINT3	1.0181276	up	serine peptidase inhibitor, Kunitz type, 3
8150830	LYPLA1	1.0176615	up	lysophospholipase I
8094988	FLJ21511	1.015811	up	
8094378	PI4K2B	1.0156761	up	phosphatidylinositol 4-kinase type 2 beta
8166098	RAB9A	1.0155095	up	
7930148	SFXN2	1.0153419	up	sideroflexin 2
8078971	ENTPD3	1.0148103	up	ectonucleoside triphosphate diphosphohydrolase 3
8004889	WDR16	1.0146642	up	WD repeat domain 16
7939197	HIPK3	1.0141509	up	homeodomain interacting protein kinase 3
8073662	PARVB	1.014054	up	parvin, beta
8080863	FLJ44379	1.0131038	up	similar to S-100 protein, alpha chain
8142554	AASS	1.013102	up	aminoadipate-semialdehyde synthase
8127087	GSTA3	1.0125462	up	glutathione S-transferase A3
7934898	ANKRD22	1.0120213	up	ankyrin repeat domain 22
7953924	CLEC9A	1.011557	up	C-type lectin domain family 9, member A
8016841	TMEM100	1.0115199	up	transmembrane protein 100
8045539	KYNU	1.0113052	up	kynureninase (L-kynurenine hydrolase)
7996772	SLC7A6 TRPV6	1.0111395	up	solute carrier family 7 (cationic amino acid transporter)
8081890	PLA1A	1.0108199	up	phospholipase A1 member A
7935270	BLNK	1.0104113	up	B-cell linker
8112803	LHFPL2	1.0102111	up	lipoma HMGIC fusion partner-like 2
8066513	SDC4	1.0097705	up	syndecan 4
7972055	KCTD12	1.0097034	up	potassium channel tetramerisation domain containing
8142424	GPR85	1.0097008	up	G protein-coupled receptor 85
8103695	MFAP3L	1.0096976	up	microfibrillar-associated protein 3-like

Supplemental Table 1c  
eMSC vs. eSF

8114287	SPOCK1	1.0090533	up	sparc/osteonectin, cwcv and kazal-like domains proteo
8056222	DPP4	1.0087478	up	dipeptidyl-peptidase 4 (CD26, adenosine deaminase cc
8111019	DNAH5	1.0083475	up	dynein, axonemal, heavy chain 5
7968872	DNAJC15	1.0079752	up	DnaJ (Hsp40) homolog, subfamily C, member 15
8156321	SYK	1.0072895	up	spleen tyrosine kinase
8138009	RSPH10B LOC728	1.0072479	up	radial spoke head 10 homolog B (Chlamydomonas)   ra
7970448	GJB6	1.0069237	up	gap junction protein, beta 6, 30kDa
8162502	FBP1	1.0069227	up	fructose-1,6-bisphosphatase 1
8096061	C4orf22	1.0067843	up	chromosome 4 open reading frame 22
8137240	GIMAP7	1.0065758	up	GTPase, IMAP family member 7
8120431	PTP4A1	1.0064869	up	protein tyrosine phosphatase type IVA, member 1
8008040	LRRC46	1.0064229	up	leucine rich repeat containing 46
7950933	NOX4	1.0061471	up	NADPH oxidase 4
8101701	PPM1K	1.005875	up	protein phosphatase 1K (PP2C domain containing)
8100768	UGT2B11 UGT2B:	1.0057423	up	UDP glucuronosyltransferase 2 family, polypeptide B11
8081343	RG9MTD1	1.0053399	up	RNA (guanine-9-) methyltransferase domain containi
8041745	C2orf34	1.0049134	up	chromosome 2 open reading frame 34
7951686	IL18	1.0045019	up	interleukin 18 (interferon-gamma-inducing factor)
7946641	GALNTL4	1.0044155	up	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-ac
7902738	CLCA4	1.0043348	up	chloride channel, calcium activated, family member 4
8014591	HNF1B	1.0039085	up	HNF1 homeobox B
7905677	CREB3L4	1.0030394	up	cAMP responsive element binding protein 3-like 4
7904907	BCL9	1.0028496	up	B-cell CLL/lymphoma 9
8021301	RAB27B	1.002617	up	
8043937	C2orf29	1.0022006	up	chromosome 2 open reading frame 29
8129558	OR2A4 OR2A7	1.0020308	up	olfactory receptor, family 2, subfamily A, member 4   c
7971191	SUGT1L1 LOC100	1.0019966	up	SGT1, suppressor of G2 allele of SKP1 like 1 (S. cerevisi:
8081277	NIT2	1.0018733	up	nitrilase family, member 2
8122865	VIP	1.0010781	up	vasoactive intestinal peptide
8078933	MYRIP	1.0010256	up	myosin VIIA and Rab interacting protein
8085914	SLC4A7	1.0010011	up	solute carrier family 4, sodium bicarbonate cotranspor
8123044	TULP4	1.0009856	up	tubby like protein 4
7907370	DNM3	1.0001323	up	dynamamin 3

Supplemental Table 1c  
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8040249	ATP6V1C2	1.0001032	up	ATPase, H+ transporting, lysosomal 42kDa, V1 subunit
8058591	ACADL	-1.00013	down	acyl-Coenzyme A dehydrogenase, long chain
8022666	CHST9	-1.0002419	down	carbohydrate (N-acetylgalactosamine 4-0) sulfotransfe
8138857	C7orf24	-1.0002584	down	chromosome 7 open reading frame 24
8139057	ELMO1	-1.0006217	down	engulfment and cell motility 1
7901969	ROR1	-1.0012133	down	receptor tyrosine kinase-like orphan receptor 1
8166690	CXorf59	-1.0012468	down	chromosome X open reading frame 59
8067554	TCFL5	-1.0013477	down	transcription factor-like 5 (basic helix-loop-helix)
7929689	MARVELD1	-1.0013504	down	MARVEL domain containing 1
8038981	ZNF611	-1.0013705	down	zinc finger protein 611
8054712	IL1A	-1.0013747	down	interleukin 1, alpha
7993898	VWA3A	-1.0015701	down	von Willebrand factor A domain containing 3A
7986383	IGF1R	-1.0024474	down	insulin-like growth factor 1 receptor
7955578	GRASP	-1.0026078	down	GRP1 (general receptor for phosphoinositides 1)-assoc
8050719	ITSN2	-1.0028031	down	intersectin 2
7897953	SNORA59A SNOR	-1.0031283	down	small nucleolar RNA, H/ACA box 59A   small nucleolar
8143633	OR2A7 OR2A4 LC	-1.0031483	down	olfactory receptor, family 2, subfamily A, member 7   c
7929533	CC2D2B LOC1001	-1.0031614	down	coiled-coil and C2 domain containing 2B   hypothetical
8005626	SNORA59A SNOR	-1.0031906	down	small nucleolar RNA, H/ACA box 59A   small nucleolar
8131452	RSPH10B LOC728	-1.0039934	down	radial spoke head 10 homolog B (Chlamydomonas)   ra
8081953	GTF2E1	-1.0043613	down	general transcription factor IIE, polypeptide 1, alpha 5f
7950906	CTSC	-1.0045052	down	cathepsin C
7956826	TBC1D30	-1.0045785	down	TBC1 domain family, member 30
8135568	MDFIC	-1.0046062	down	MyoD family inhibitor domain containing
8095021	SPATA18	-1.0047929	down	spermatogenesis associated 18 homolog (rat)
8088602	MAGI1	-1.004998	down	membrane associated guanylate kinase, WW and PDZ i
8043835	C2orf15 MRPL30	-1.0054238	down	chromosome 2 open reading frame 15   mitochondrial
8052721	PPP3R1 WDR92	-1.0054512	down	protein phosphatase 3 (formerly 2B), regulatory subun
7909681	PROX1	-1.0055523	down	prospero homeobox 1
8054766	bA395L14.13	-1.0057479	down	acrosin-like protease
7953765	FAM80B	-1.0061193	down	family with sequence similarity 80, member B
7959681	DNAH10	-1.0064877	down	dynein, axonemal, heavy chain 10
8138363	SOSTDC1	-1.0068835	down	sclerostin domain containing 1

Supplemental Table 1c  
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8112053	CDC20B	-1.0070349	down	cell division cycle 20 homolog B ( <i>S. cerevisiae</i> )
8163202	SVEP1	-1.0073675	down	sushi, von Willebrand factor type A, EGF and pentraxin
8165024	C9orf116	-1.0074778	down	chromosome 9 open reading frame 116
7922200	SELP	-1.0076823	down	selectin P (granule membrane protein 140kDa, antigen
7907466	DARS2	-1.007809	down	aspartyl-tRNA synthetase 2, mitochondrial
8094361	GBA3	-1.007867	down	glucosidase, beta, acid 3 (cytosolic)
7929525	LOC100127889	-1.0081999	down	
7979378	C14orf105	-1.0088184	down	chromosome 14 open reading frame 105
8155754	MAMDC2	-1.0088408	down	MAM domain containing 2
8111506	CAPSL	-1.0089089	down	calcyphosine-like
7910706	LGALS8	-1.0089676	down	lectin, galactoside-binding, soluble, 8 (galectin 8)
7899750	C1orf90	-1.0089889	down	chromosome 1 open reading frame 90
8009476	MAP2K6	-1.0090249	down	mitogen-activated protein kinase kinase 6
8092295	CCDC39	-1.0091653	down	coiled-coil domain containing 39
8096682	FLJ20184	-1.0092711	down	
8081081	EPHA3	-1.0095506	down	EPH receptor A3
8055361	YSK4	-1.0095587	down	yeast Sps1/Ste20-related kinase 4 ( <i>S. cerevisiae</i> )
8091600	PLCH1	-1.0096067	down	phospholipase C, eta 1
8089835	FSTL1	-1.0099692	down	follistatin-like 1
8022711	DSC2	-1.0102464	down	desmocollin 2
8149097	DEFB1	-1.0105113	down	defensin, beta 1
8162940	ABCA1	-1.0108343	down	ATP-binding cassette, sub-family A (ABC1), member 1
8154491	ADAMTSL1	-1.0116081	down	ADAMTS-like 1
8138941	NT5C3	-1.0123085	down	5'-nucleotidase, cytosolic III
8139859	GUSB	-1.0123354	down	glucuronidase, beta
7955078	PFKM	-1.01248	down	phosphofructokinase, muscle
8146986	HNF4G	-1.0132055	down	hepatocyte nuclear factor 4, gamma
8106660	RASGRF2	-1.0144144	down	Ras protein-specific guanine nucleotide-releasing facto
8067955	CXADR	-1.0148294	down	coxsackie virus and adenovirus receptor
8146967	CRISPLD1	-1.0149018	down	cysteine-rich secretory protein LCCL domain containing
7905339	MGC29891	-1.0157521	down	
8106986	RHOBTB3	-1.015867	down	Rho-related BTB domain containing 3
8083223	C3orf58	-1.0161877	down	chromosome 3 open reading frame 58



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8140478	tcag7.1314	-1.0165133	down	hypothetical protein LOC54103
8154892	DNAI1	-1.0166287	down	dynein, axonemal, intermediate chain 1
8060895	RNU105B	-1.0169473	down	RNA, U105B small nucleolar
8084627	C3orf65	-1.0173047	down	chromosome 3 open reading frame 65
8174654	KLHL13	-1.0173383	down	kelch-like 13 (Drosophila)
8007493	ARL4D	-1.0184071	down	ADP-ribosylation factor-like 4D
8091678	VEPH1	-1.0188342	down	ventricular zone expressed PH domain homolog 1 (zeb
8082012	SLC15A2	-1.0189905	down	solute carrier family 15 (H <sup>+</sup> /peptide transporter), mem
8122071	ENPP3	-1.0191855	down	ectonucleotide pyrophosphatase/phosphodiesterase 3
8058614	LANCL1	-1.0192007	down	LanC lantibiotic synthetase component C-like 1 (bacter
8038029	CARD8	-1.0192918	down	caspase recruitment domain family, member 8
8109576	THG1L	-1.0199977	down	tRNA-histidine guanylyltransferase 1-like ( <i>S. cerevisiae</i> )
8018774	ST6GALNAC1	-1.0201217	down	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3-
7930857	EMX2	-1.0201693	down	empty spiracles homeobox 2
7925480	FH	-1.0207431	down	fumarate hydratase
7944869	SPA17	-1.0210458	down	sperm autoantigenic protein 17
8042574	OR7E37P LOC441	-1.0210967	down	olfactory receptor, family 7, subfamily E, member 37 p
7925492	OPN3	-1.0211071	down	opsin 3
7902495	NEXN	-1.0214268	down	nexilin (F actin binding protein)
8095819	STBD1 LOC10012	-1.0226718	down	starch binding domain 1   similar to genethonin 1
8138824	SCRN1	-1.0228571	down	secernin 1
8151101	MYBL1	-1.0229319	down	v-myb myeloblastosis viral oncogene homolog (avian)-l
7903227	PALMD	-1.0229554	down	palmdelphin
8107868	CDC42SE2	-1.0240885	down	CDC42 small effector 2
8066536	WFDC6 SPINLW1	-1.0245063	down	WAP four-disulfide core domain 6   serine peptidase ir
7947156	MUC15	-1.0246998	down	mucin 15, cell surface associated
7969428	UCHL3	-1.0249577	down	ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiol
8174351	NUP62CL	-1.0250373	down	nucleoporin 62kDa C-terminal like
8122561	C6orf103	-1.0250753	down	chromosome 6 open reading frame 103
8129985	PLAGL1	-1.0254757	down	pleiomorphic adenoma gene-like 1
8096617	BANK1	-1.025522	down	B-cell scaffold protein with ankyrin repeats 1
7980616	PTPN21	-1.025535	down	protein tyrosine phosphatase, non-receptor type 21
8143221	ATP6V0A4	-1.0258186	down	ATPase, H <sup>+</sup> transporting, lysosomal V0 subunit a4

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8143772	RARRES2	-1.0260344	down	retinoic acid receptor responder (tazarotene induced)
8038998	ZNF468	-1.0260525	down	zinc finger protein 468
8160718	PTENP1	-1.0262097	down	phosphatase and tensin homolog (mutated in multiple
8058091	SATB2	-1.0263716	down	SATB homeobox 2
8120176	C6orf141	-1.0267967	down	chromosome 6 open reading frame 141
8083000	FAIM	-1.0268027	down	Fas apoptotic inhibitory molecule
8132725	UPP1	-1.0281829	down	uridine phosphorylase 1
7973108	LOC643332	-1.0282829	down	similar to Nonsecretory ribonuclease precursor (Ribon
8102792	PCDH18	-1.0287906	down	protocadherin 18
8014891	IKZF3	-1.0296723	down	IKAROS family zinc finger 3 (Aiolos)
8104930	SLC1A3	-1.0307158	down	solute carrier family 1 (glial high affinity glutamate tra
8082066	C3orf28	-1.0312574	down	chromosome 3 open reading frame 28
7946275	GVIN1	-1.0313169	down	GTPase, very large interferon inducible 1
8088299	DNHD2	-1.0316312	down	dynein heavy chain domain 2
7949948	C11orf24	-1.032405	down	chromosome 11 open reading frame 24
8068202	C21orf63	-1.0325674	down	chromosome 21 open reading frame 63
8147057	CHMP4C	-1.0326015	down	chromatin modifying protein 4C
8131067	GPR146	-1.0341233	down	G protein-coupled receptor 146
7975772	C14orf140	-1.0349064	down	chromosome 14 open reading frame 140
8146839	C8orf34	-1.0358783	down	chromosome 8 open reading frame 34
7983512	SQRDL	-1.0359359	down	sulfide quinone reductase-like (yeast)
7957514	PLEKHG7	-1.0360098	down	pleckstrin homology domain containing, family G (with
8081710	SIDT1	-1.0361625	down	SID1 transmembrane family, member 1
8023314	CCDC11	-1.0362233	down	coiled-coil domain containing 11
7979510	SIX4	-1.0368059	down	SIX homeobox 4
8089519	BTLA	-1.036916	down	B and T lymphocyte associated
8095834	SHROOM3	-1.0372869	down	shroom family member 3
8162039	C9orf64	-1.037398	down	chromosome 9 open reading frame 64
7997556	LRRC50	-1.0377117	down	leucine rich repeat containing 50
8138735	HOXA5	-1.0382973	down	homeobox A5
8138553	FAM126A	-1.0384456	down	family with sequence similarity 126, member A
7995825	MT1F	-1.0387037	down	metallothionein 1F
7917338	BCL10	-1.0388604	down	B-cell CLL/lymphoma 10

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7969640	CLDN10	-1.0389005	down	claudin 10
8167973	HEPH	-1.0392019	down	hephaestin
7942941	CCDC81	-1.0400605	down	coiled-coil domain containing 81
8124166	MBOAT1	-1.0401615	down	membrane bound O-acyltransferase domain containing
7951593	FLJ45803	-1.0402682	down	
8113796	FLJ44606	-1.0410382	down	hypothetical gene supported by AK126569
7971922	PCDH9	-1.0414957	down	protocadherin 9
7997453	PLCG2	-1.0428466	down	phospholipase C, gamma 2 (phosphatidylinositol-speci
8086451	HIGD1A	-1.0430238	down	HIG1 domain family, member 1A
8070603	RSPH1	-1.0431879	down	radial spoke head 1 homolog (Chlamydomonas)
8129837	IL20RA	-1.0432395	down	interleukin 20 receptor, alpha
7955063	TMEM106C	-1.0435246	down	transmembrane protein 106C
8017133	FAM33A	-1.043526	down	family with sequence similarity 33, member A
8106950	FAM81B	-1.0435752	down	family with sequence similarity 81, member B
8156319	GADD45G	-1.0437489	down	growth arrest and DNA-damage-inducible, gamma
8166289	CDKL5	-1.0439533	down	cyclin-dependent kinase-like 5
7964701	GNS	-1.0442463	down	glucosamine (N-acetyl)-6-sulfatase (Sanfilippo disease
8138157	COL28A1	-1.0445663	down	collagen, type XXVIII, alpha 1
7954196	MGST1	-1.0449699	down	microsomal glutathione S-transferase 1
8120279	LRRC1	-1.0449835	down	leucine rich repeat containing 1
8111941	HMGCS1	-1.0449913	down	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 (sc
8118734	ITPR3	-1.0452603	down	inositol 1,4,5-triphosphate receptor, type 3
8146921	RDH10	-1.0458012	down	retinol dehydrogenase 10 (all-trans)
8113130	MCTP1	-1.045978	down	multiple C2 domains, transmembrane 1
8171837	KLHL15	-1.0461723	down	kelch-like 15 (Drosophila)
7968787	OR7E37P OR7E47	-1.0461797	down	olfactory receptor, family 7, subfamily E, member 37 p
8146533	FAM110B	-1.0462166	down	family with sequence similarity 110, member B
8123080	SYTL3	-1.0466263	down	synaptotagmin-like 3
7970455	CRYL1	-1.0467303	down	crystallin, lambda 1
8060765	PRND	-1.0469874	down	prion protein 2 (dublet)
8060997	SPTLC3	-1.0476453	down	serine palmitoyltransferase, long chain base subunit 3
7985398	FAM154B	-1.0477467	down	family with sequence similarity 154, member B
8022646	KCTD1	-1.0479712	down	potassium channel tetramerisation domain containing

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8138145	LOC441453	-1.048197	down	similar to olfactory receptor, family 7, subfamily A, me
7938683	LOC441453	-1.0482996	down	similar to olfactory receptor, family 7, subfamily A, me
8046546	HOXD8	-1.0483087	down	homeobox D8
8091422	WWTR1	-1.0486798	down	WW domain containing transcription regulator 1
8169389	PAK3	-1.0493629	down	p21 (CDKN1A)-activated kinase 3
7984588	THSD4	-1.0494518	down	thrombospondin, type I, domain containing 4
8020806	RNF125	-1.049808	down	ring finger protein 125
8178220	HLA-DPB1	-1.0500492	down	major histocompatibility complex, class II, DP beta 1
8021442	ZNF532	-1.0501653	down	zinc finger protein 532
7990818	BCL2A1	-1.0503048	down	BCL2-related protein A1
8084717	ST6GAL1	-1.0513071	down	ST6 beta-galactosamide alpha-2,6-sialyltransferase 1
8045887	OR7E37P	-1.0513256	down	olfactory receptor, family 7, subfamily E, member 37 p
8101828	TSPAN5	-1.0513916	down	tetraspanin 5
7928471	ADK	-1.0515884	down	adenosine kinase
7961365	MANSC1	-1.0519768	down	MANSC domain containing 1
8081758	GRAMD1C	-1.0520198	down	GRAM domain containing 1C
8054092	TMEM131	-1.0521728	down	transmembrane protein 131
7954503	MED21	-1.0522525	down	mediator complex subunit 21
8057959	PGAP1	-1.0524437	down	post-GPI attachment to proteins 1
7964522	CDK4	-1.0526295	down	cyclin-dependent kinase 4
7971241	OR7E37P OR7E47	-1.0526524	down	olfactory receptor, family 7, subfamily E, member 37 p
8023267	MYO5B	-1.0527127	down	myosin VB
8091887	ZBBX	-1.0528412	down	zinc finger, B-box domain containing
7926638	ARMC3	-1.0531963	down	armadillo repeat containing 3
7922523	LOC730167	-1.0533574	down	similar to protein tyrosine phosphatase 4a1
7969613	GPC6	-1.0535315	down	glypican 6
8124307	CMAH	-1.0536504	down	cytidine monophosphate-N-acetylneuraminic acid hydri
8096675	TET2	-1.0539395	down	tet oncogene family member 2
8167930	FAAH2	-1.0543548	down	fatty acid amide hydrolase 2
7971950	DACH1	-1.0544446	down	dachshund homolog 1 (Drosophila)
8179595	GABBR1	-1.0545652	down	gamma-aminobutyric acid (GABA) B receptor, 1
8126729	CLIC5 LOC100131	-1.0551881	down	chloride intracellular channel 5   similar to chloride int
8124654	GABBR1	-1.0554354	down	gamma-aminobutyric acid (GABA) B receptor, 1

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7952036	MPZL3	-1.0557216	down	myelin protein zero-like 3
8022176	LAMA1	-1.0559951	down	laminin, alpha 1
7900159	DNALI1	-1.0562676	down	dynein, axonemal, light intermediate chain 1
8114920	DPYSL3	-1.0570856	down	dihydropyrimidinase-like 3
7948113	OR7E5P	-1.0574105	down	olfactory receptor, family 7, subfamily E, member 5 ps
7938951	TMEM16E	-1.0578711	down	transmembrane protein 16E
8085732	EFHB	-1.0583694	down	EF-hand domain family, member B
8107673	GRAMD3	-1.058901	down	GRAM domain containing 3
7976578	AK7	-1.0601479	down	adenylate kinase 7
7951910	BACE1	-1.0602103	down	beta-site APP-cleaving enzyme 1
8174189	TMSL8 MGC3990	-1.0602231	down	thymosin-like 8   thymosin beta15b
8121015	C6orf165 SLC35A	-1.0606174	down	chromosome 6 open reading frame 165   solute carrier
8082244	OR7E37P	-1.0612491	down	olfactory receptor, family 7, subfamily E, member 37 p
8117225	GMNN	-1.0613973	down	geminin, DNA replication inhibitor
8044605	LOC654433	-1.0617566	down	
8100318	SGCB	-1.0618308	down	sarcoglycan, beta (43kDa dystrophin-associated glycop
7944803	LOH11CR2A	-1.0618771	down	loss of heterozygosity, 11, chromosomal region 2, gene
8095705	MTHFD2L	-1.0622504	down	methylenetetrahydrofolate dehydrogenase (NADP+ de
7981439	BAG5	-1.0622604	down	BCL2-associated athanogene 5
8178298	GABBR1	-1.062349	down	gamma-aminobutyric acid (GABA) B receptor, 1
7932453	NEBL	-1.0626143	down	nebulette
8091715	LXN	-1.0627117	down	latexin
7951271	MMP1	-1.0631621	down	matrix metalloproteinase 1 (interstitial collagenase)
7945873	ZNF195	-1.0633382	down	zinc finger protein 195
8088848	PDZRN3	-1.063548	down	PDZ domain containing RING finger 3
8120043	RUNX2	-1.0640297	down	runt-related transcription factor 2
8114300	KLHL3	-1.0657774	down	kelch-like 3 (Drosophila)
8035779	LOC100128975	-1.0664816	down	similar to Zinc finger protein 626
8086555	LZTFL1	-1.0666406	down	leucine zipper transcription factor-like 1
8055096	AMMECR1L	-1.0676202	down	AMME chromosomal region gene 1-like
8102877	CLGN	-1.0676645	down	calmegin
8045860	PKP4	-1.0677989	down	plakophilin 4
8007745	HEXIM1	-1.0679959	down	hexamethylene bis-acetamide inducible 1

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8172220	NDP	-1.0681095	down	Norrie disease (pseudoglioma)
8103877	CLDN22	-1.0681851	down	claudin 22
8049044	ARMC9	-1.0685401	down	armadillo repeat containing 9
7971813	THSD1	-1.068889	down	thrombospondin, type I, domain containing 1
8095697	CXCL1	-1.0690683	down	chemokine (C-X-C motif) ligand 1 (melanoma growth st
8070584	TMPRSS3	-1.0692177	down	transmembrane protease, serine 3
8154512	ADAMTSL1	-1.06956	down	ADAMTS-like 1
7984704	NEO1	-1.070422	down	neogenin homolog 1 (chicken)
7973875	NPAS3	-1.0707467	down	neuronal PAS domain protein 3
8013399	ULK2	-1.0708517	down	unc-51-like kinase 2 (C. elegans)
8119184	RNF8	-1.0711302	down	ring finger protein 8
8109194	SLC26A2	-1.0714202	down	solute carrier family 26 (sulfate transporter), member :
7913787	C1orf201	-1.0714312	down	chromosome 1 open reading frame 201
7904211	VANGL1	-1.0715114	down	vang-like 1 (van gogh, Drosophila)
7933437	PTPN20B PTPN2C	-1.072088	down	protein tyrosine phosphatase, non-receptor type 20B
8084206	B3GNT5	-1.0724735	down	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltra
8097435	C4orf33	-1.0725298	down	chromosome 4 open reading frame 33
7960919	MFAP5	-1.0738322	down	microfibrillar associated protein 5
8088322	DNAH12L	-1.0741805	down	dynein, axonemal, heavy chain 12-like
7964759	GRIP1	-1.0744891	down	glutamate receptor interacting protein 1
8101757	GPRIN3	-1.0745243	down	GPRIN family member 3
7964927	TSPAN8	-1.0751117	down	tetraspanin 8
8044212	SULT1C2	-1.0752403	down	sulfotransferase family, cytosolic, 1C, member 2
7899160	CD52	-1.0761867	down	
8126750	ENPP5	-1.0762494	down	ectonucleotide pyrophosphatase/phosphodiesterase 5
8023401	CCDC68	-1.0764444	down	coiled-coil domain containing 68
8096091	THAP9	-1.0767968	down	THAP domain containing 9
8130408	PIP3-E	-1.0769542	down	
8166104	OFD1	-1.0769709	down	oral-facial-digital syndrome 1
8131881	C7orf46	-1.0769824	down	chromosome 7 open reading frame 46
8027268	ZNF66	-1.0776172	down	zinc finger protein 66
8063382	SNAI1	-1.0776381	down	snail homolog 1 (Drosophila)
8097920	LRAT	-1.0786926	down	lecithin retinol acyltransferase (phosphatidylcholine--r

Supplemental Table 1c  
eMSC vs. eSF

8042993	CTNNA2	-1.0791566	down	catenin (cadherin-associated protein), alpha 2
7989501	CA12	-1.0803982	down	carbonic anhydrase XII
7988859	GNB5	-1.0812962	down	guanine nucleotide binding protein (G protein), beta 5
8171823	APOO	-1.0818316	down	apolipoprotein O
8137526	INSIG1	-1.0825324	down	insulin induced gene 1
8118594	HLA-DPB1	-1.0826815	down	major histocompatibility complex, class II, DP beta 1
8138602	DFNA5	-1.0831991	down	deafness, autosomal dominant 5
7938816	ZDHHC13	-1.0835192	down	zinc finger, DHHC-type containing 13
8127549	SLC17A5	-1.0835851	down	solute carrier family 17 (anion/sugar transporter), men
7995681	MMP2	-1.0840188	down	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatin
8059279	EPHA4	-1.0844804	down	EPH receptor A4
8023843	FBXO15	-1.0847007	down	F-box protein 15
7922408	SNORD78	-1.0849386	down	small nucleolar RNA, C/D box 78
7925452	GREM2	-1.085221	down	gremlin 2, cysteine knot superfamily, homolog (Xenopi
8096425	MGC48628	-1.0854485	down	similar to KIAA1680 protein
8179351	CFB	-1.0859064	down	complement factor B
7900635	hCG_23177	-1.086086	down	hCG23177
7947322	DCDC1 DCDC5	-1.0862188	down	doublecortin domain containing 1   doublecortin dom:
7902290	CTH	-1.0870447	down	cystathionase (cystathionine gamma-lyase)
7904693	FLJ21272	-1.0870904	down	
8039013	ZNF321	-1.0877273	down	zinc finger protein 321
8162059	SLC28A3	-1.0878744	down	solute carrier family 28 (sodium-coupled nucleoside tr:
8147516	MATN2	-1.0886853	down	matrilin 2
7898957	RCAN3	-1.0887917	down	RCAN family member 3
8108683	PCDHB2	-1.0892677	down	protocadherin beta 2
8098500	CDKN2AIP	-1.0897305	down	CDKN2A interacting protein
7933821	RHOBTB1	-1.0903645	down	Rho-related BTB domain containing 1
7975799	FLVCR2	-1.0904077	down	feline leukemia virus subgroup C cellular receptor fami
7982256	GOLGA9P	-1.0905501	down	golgi autoantigen, golgin subfamily a, 9 pseudogene
7965918	NT5DC3	-1.0914805	down	5'-nucleotidase domain containing 3
7931951	SFMBT2	-1.0928022	down	Scm-like with four mbt domains 2
7997374	DYNLRB2	-1.0930169	down	dynein, light chain, roadblock-type 2
7983734	TMOD2	-1.0934755	down	tropomodulin 2 (neuronal)

Supplemental Table 1c  
eMSC vs. eSF

8039607	PEG3 ZIM2	-1.0941185	down	paternally expressed 3   zinc finger, imprinted 2
7937696	LOC338651	-1.0945722	down	
8155747	C9orf135	-1.0960016	down	chromosome 9 open reading frame 135
7971757	NEK5	-1.0962723	down	NIMA (never in mitosis gene a)-related kinase 5
7969533	SLAIN1	-1.0969527	down	SLAIN motif family, member 1
8033257	C3	-1.097333	down	complement component 3
8071758	MMP11	-1.0975187	down	matrix metalloproteinase 11 (stromelysin 3)
7971246	KIAA0564	-1.0977052	down	
7979158	TXNDC16	-1.0979933	down	thioredoxin domain containing 16
7932118	C10orf30	-1.0984799	down	chromosome 10 open reading frame 30
7927146	CSGALNACT2	-1.099558	down	chondroitin sulfate N-acetylgalactosaminyltransferase
8094874	LOC402175	-1.0998911	down	hypothetical gene supported by AF044957; NM_00454
7956878	IRAK3	-1.1007115	down	interleukin-1 receptor-associated kinase 3
8112302	DKFZP686E2158	-1.1008435	down	hypothetical protein LOC643155
8117034	GMPR	-1.1009513	down	guanosine monophosphate reductase
8179519	HLA-DPB1	-1.1013795	down	major histocompatibility complex, class II, DP beta 1
8020090	TWSG1	-1.1018523	down	twisted gastrulation homolog 1 (Drosophila)
8020702	TAF4B	-1.102326	down	TAF4b RNA polymerase II, TATA box binding protein (T
8137232	GIMAP8	-1.1024783	down	GTPase, IMAP family member 8
8157890	PBX3	-1.1046064	down	pre-B-cell leukemia homeobox 3
7970716	LNX2	-1.1051689	down	ligand of numb-protein X 2
8058670	IKZF2	-1.1053393	down	IKAROS family zinc finger 2 (Helios)
7898623	UBXD3	-1.105465	down	UBX domain containing 3
8056963	LOC100129455	-1.1056858	down	
8109629	FABP6	-1.1057327	down	fatty acid binding protein 6, ileal (gastrotropin)
8055702	NMI	-1.1059291	down	N-myc (and STAT) interactor
8094936	LOC280665	-1.105994	down	putative anti-CNG alpha 1 cation channel translation pi
8089026	STX19	-1.1061023	down	syntaxin 19
8171624	GPR64	-1.1063848	down	G protein-coupled receptor 64
8052940	PAIP2B	-1.1079509	down	poly(A) binding protein interacting protein 2B
8178115	CFB	-1.1087309	down	complement factor B
8097903	TLR2	-1.1089385	down	toll-like receptor 2
8144880	SH2D4A	-1.1096482	down	SH2 domain containing 4A



Supplemental Table 1c  
eMSC vs. eSF

8151824	RAD54B LOC1001	-1.1098839	down	RAD54 homolog B ( <i>S. cerevisiae</i> )   similar to fibrinogen
8118345	CFB	-1.1100311	down	complement factor B
8120679	DDX43	-1.1102316	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
8121319	SOBP	-1.1102464	down	sine oculis binding protein homolog ( <i>Drosophila</i> )
8074237	CECR1	-1.1104544	down	cat eye syndrome chromosome region, candidate 1
8120335	FAM83B	-1.110514	down	family with sequence similarity 83, member B
8040655	SELI	-1.1106778	down	selenoprotein I
8135218	LRRC17	-1.1112472	down	leucine rich repeat containing 17
8097017	UGT8	-1.1113608	down	UDP glycosyltransferase 8 (UDP-galactose ceramide ga
8042270	UGP2	-1.1121591	down	UDP-glucose pyrophosphorylase 2
8005289	LRRC48	-1.112809	down	leucine rich repeat containing 48
8068713	MX1	-1.113094	down	myxovirus (influenza virus) resistance 1, interferon-ind
8038993	ZNF28	-1.1131183	down	zinc finger protein 28
8150978	CA8	-1.1135957	down	carbonic anhydrase VIII
7918694	BCL2L15	-1.1138973	down	BCL2-like 15
7901479	ZYG11B	-1.1139474	down	zyg-11 homolog B ( <i>C. elegans</i> )
8122336	C6orf115	-1.1141967	down	chromosome 6 open reading frame 115
7933772	ANK3	-1.1146816	down	ankyrin 3, node of Ranvier (ankyrin G)
7938989	GAS2	-1.1155139	down	growth arrest-specific 2
8097449	PCDH10	-1.115547	down	protocadherin 10
8047596	ALS2CR16	-1.1159189	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome
8057056	TTN	-1.116555	down	titin
8121525	KIAA1919	-1.1166409	down	
8064539	CPXM1	-1.1166543	down	carboxypeptidase X (M14 family), member 1
8096224	AFF1	-1.116682	down	AF4/FMR2 family, member 1
7981460	PPP1R13B	-1.1168792	down	protein phosphatase 1, regulatory (inhibitor) subunit 1
7971015	SMAD9	-1.1174029	down	SMAD family member 9
8046530	HOXD11	-1.1175549	down	homeobox D11
8167835	TRO	-1.1175933	down	trophinin
7932390	TRDMT1	-1.1184037	down	tRNA aspartic acid methyltransferase 1
8166442	FAM3C	-1.1195375	down	family with sequence similarity 3, member C
8108435	UBE2D2	-1.1198034	down	ubiquitin-conjugating enzyme E2D 2 (UBC4/5 homolog
7950042	SHANK2	-1.1199176	down	SH3 and multiple ankyrin repeat domains 2

Supplemental Table 1c  
eMSC vs. eSF

7966321	GPN3	-1.1203636	down	GPN-loop GTPase 3
7972487	DOCK9	-1.1206328	down	dedicator of cytokinesis 9
8090277	OSBPL11	-1.121583	down	oxysterol binding protein-like 11
7971296	EPSTI1	-1.121633	down	epithelial stromal interaction 1 (breast)
8067157	CBLN4	-1.1220361	down	cerebellin 4 precursor
8060850	BMP2	-1.1224185	down	bone morphogenetic protein 2
8042439	ANTXR1	-1.1225536	down	anthrax toxin receptor 1
7990879	EFTUD1	-1.1226315	down	elongation factor Tu GTP binding domain containing 1
8047062	MGC13057	-1.1228439	down	
7919800	CTSS	-1.1236966	down	cathepsin S
8144669	FDFT1	-1.124283	down	farnesyl-diphosphate farnesyltransferase 1
8004133	RPAIN	-1.1248206	down	RPA interacting protein
8102482	SEC24D	-1.1251062	down	SEC24 related gene family, member D (S. cerevisiae)
7926239	OPTN	-1.1253217	down	optineurin
7973826	NUBPL	-1.1253856	down	nucleotide binding protein-like
8077513	THUMPD3	-1.1254967	down	THUMP domain containing 3
8068100	C21orf109	-1.1255258	down	chromosome 21 open reading frame 109
8101992	SLC39A8	-1.127367	down	solute carrier family 39 (zinc transporter), member 8
8083749	PPM1L	-1.1275471	down	protein phosphatase 1 (formerly 2C)-like
7903753	GSTM2	-1.1276201	down	glutathione S-transferase M2 (muscle)
8130768	RNASET2 LOC100	-1.1289937	down	ribonuclease T2   hypothetical protein LOC100131869
8039025	ZNF702	-1.1290565	down	zinc finger protein 702
8143601	CTAGE6 CTAGE4	-1.1291813	down	CTAGE family, member 6   CTAGE family, member 4   :
8066074	DSN1	-1.1301204	down	
8172158	CASK	-1.1303567	down	calcium/calmodulin-dependent serine protein kinase (l
8083523	GMPS	-1.1306792	down	guanine monphosphate synthetase
8136936	CTAGE6 CTAGE4	-1.1314765	down	CTAGE family, member 6   CTAGE family, member 4   :
8143766	ARP11	-1.1316186	down	actin-related Arp11
8086517	CDCP1	-1.1328576	down	CUB domain containing protein 1
8081903	C3orf15	-1.1338015	down	chromosome 3 open reading frame 15
7903144	SLC44A3	-1.1340921	down	solute carrier family 44, member 3
8129363	HDDC2	-1.1341311	down	HD domain containing 2
7904314	TTF2	-1.1345798	down	transcription termination factor, RNA polymerase II

Supplemental Table 1c  
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8030950	ZNF701	-1.1353216	down	zinc finger protein 701
8122265	TNFAIP3	-1.1354636	down	tumor necrosis factor, alpha-induced protein 3
8163063	CTNNAL1	-1.1355649	down	catenin (cadherin-associated protein), alpha-like 1
8021376	NEDD4L	-1.1357765	down	neural precursor cell expressed, developmentally down
8027260	ZNF486	-1.1359681	down	zinc finger protein 486
8103226	TMEM154	-1.1361796	down	transmembrane protein 154
8124498	ZNF204	-1.1367533	down	zinc finger protein 204 (pseudogene)
8103260	DCHS2	-1.1371074	down	dachsous 2 (Drosophila)
8121569	FLJ34503	-1.137347	down	
7928534	C10orf11	-1.1386204	down	chromosome 10 open reading frame 11
8108753	PCDHB15	-1.1387036	down	protocadherin beta 15
8070557	ZNF295	-1.1390811	down	zinc finger protein 295
8138930	RP9P	-1.1392795	down	retinitis pigmentosa 9 pseudogene
7909586	PPP2R5A	-1.1399322	down	protein phosphatase 2, regulatory subunit B', alpha iso
8092905	LSG1	-1.1402198	down	large subunit GTPase 1 homolog (S. cerevisiae)
7961514	MGP	-1.1402798	down	matrix Gla protein
7901765	HOOK1	-1.1403403	down	hook homolog 1 (Drosophila)
7947282	DCDC5	-1.140869	down	doublecortin domain containing 5
8096669	TET2	-1.1416711	down	tet oncogene family member 2
8089596	WDR52	-1.1417631	down	WD repeat domain 52
8103011	OTUD4	-1.141816	down	OTU domain containing 4
7931754	IDI1	-1.1418918	down	isopentenyl-diphosphate delta isomerase 1
8004957	DNAH9	-1.1424085	down	dynein, axonemal, heavy chain 9
7930498	ACSL5	-1.1427876	down	acyl-CoA synthetase long-chain family member 5
8085164	SRGAP3	-1.1429402	down	SLIT-ROBO Rho GTPase activating protein 3
8039010	ZNF765   LOC3885	-1.143221	down	zinc finger protein 765   similar to hCG1778601
8067295	SLMO2	-1.14472	down	slowmo homolog 2 (Drosophila)
7983828	TEX9	-1.1448464	down	testis expressed 9
8171034	SPRY3	-1.1455674	down	sprouty homolog 3 (Drosophila)
8075182	XBP1	-1.1455684	down	X-box binding protein 1
8176955	SPRY3	-1.1460086	down	sprouty homolog 3 (Drosophila)
7959330	WDR66	-1.1462952	down	WD repeat domain 66
7932826	KIAA1462	-1.146384	down	

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8146794	DEPDC2	-1.1467935	down	DEP domain containing 2
8100251	FRYL	-1.1473879	down	FRY-like
8168873	LOC653354	-1.1482589	down	
8097098	USP53	-1.1485502	down	ubiquitin specific peptidase 53
8099897	UGDH	-1.1496384	down	UDP-glucose dehydrogenase
7903972	ATP5F1	-1.1502457	down	ATP synthase, H+ transporting, mitochondrial F0 comp
8149248	LRLE1 LOC100127	-1.1511363	down	liver-related low express protein 1   similar to liver-rel:
8151296	LACTB2	-1.151432	down	lactamase, beta 2
8017843	SLC16A6	-1.1515119	down	solute carrier family 16, member 6 (monocarboxylic ac
8142540	FAM3C	-1.151614	down	family with sequence similarity 3, member C
7909142	LOC100130123 N	-1.1517179	down	PRO2870   nuclear casein kinase and cyclin-dependent
8005809	LGALS9	-1.1530489	down	lectin, galactoside-binding, soluble, 9 (galectin 9)
8006531	SLFN5	-1.1530583	down	schlafen family member 5
7956989	MDM2	-1.1550908	down	Mdm2 p53 binding protein homolog (mouse)
8083090	ZBTB38	-1.1560075	down	zinc finger and BTB domain containing 38
8145454	BNIP3L LOC44025	-1.1561273	down	BCL2/adenovirus E1B 19kDa interacting protein 3-like
7989055	DYX1C1	-1.1565491	down	dyslexia susceptibility 1 candidate 1
7989365	RORA	-1.1569977	down	RAR-related orphan receptor A
8128788	FLJ42177 C6orf15	-1.1570317	down	FLJ42177 protein   chromosome 6 open reading frame
8100292	FRYL	-1.1570519	down	FRY-like
7961829	BCAT1	-1.15725	down	branched chain aminotransferase 1, cytosolic
8134351	PPP1R9A	-1.1580552	down	protein phosphatase 1, regulatory (inhibitor) subunit 9
7912145	TNFRSF9	-1.1587076	down	tumor necrosis factor receptor superfamily, member 9
8101376	SEC31A	-1.1589911	down	SEC31 homolog A ( <i>S. cerevisiae</i> )
8117081	AOX1	-1.1600474	down	amine oxidase (flavin containing) domain 1
8056113	LY75	-1.1608129	down	lymphocyte antigen 75
8107920	SLC22A5	-1.1609883	down	solute carrier family 22 (organic cation/carnitine transp
7965436	EEA1	-1.1614513	down	early endosome antigen 1
8124134	TPMT	-1.1617308	down	thiopurine S-methyltransferase
8166049	PRPS2	-1.162351	down	phosphoribosyl pyrophosphate synthetase 2
8049969	SH3YL1	-1.1625749	down	SH3 domain containing, Ysc84-like 1 ( <i>S. cerevisiae</i> )
7932326	CUBN	-1.1637818	down	cubilin (intrinsic factor-cobalamin receptor)
7927681	BICC1	-1.1638479	down	bicaudal C homolog 1 ( <i>Drosophila</i> )

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eMSC vs. eSF

8109490	SGCD	-1.1644528	down	sarcoglycan, delta (35kDa dystrophin-associated glycoprotein)
8096361	HERC5	-1.165186	down	hect domain and RLD 5
7931081	PLEKHA1	-1.1655461	down	pleckstrin homology domain containing, family A (phosphotyrosine)
8147777	CTHRC1	-1.1660995	down	collagen triple helix repeat containing 1
8108720	PCDHB9	-1.1668214	down	protocadherin beta 9
8103106	LRBA	-1.1670675	down	LPS-responsive vesicle trafficking, beach and anchor co-receptor
8106068	MCCC2	-1.1671271	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
8138277	FLJ14712	-1.1672814	down	
8027354	LOC388524	-1.1673906	down	ribosomal protein SA pseudogene
7925257	LYST	-1.167464	down	lysosomal trafficking regulator
8044127	C2orf49	-1.1682826	down	chromosome 2 open reading frame 49
8133770	CCDC146	-1.1685597	down	coiled-coil domain containing 146
8177601	MCCC2	-1.1687944	down	methylcrotonoyl-Coenzyme A carboxylase 2 (beta)
7989968	CALML4	-1.1691601	down	calmodulin-like 4
8130211	SYNE1 C6orf98	-1.1692365	down	spectrin repeat containing, nuclear envelope 1   chromatin
8062211	BXDC1	-1.1693137	down	chromatin domain containing 1
7906900	DDR2	-1.1695105	down	discoidin domain receptor tyrosine kinase 2
8177674	GTF2H2 DKFZP68	-1.1696057	down	general transcription factor IIH, polypeptide 2, 44kDa   DNA
8043055	DNAH6	-1.1696573	down	dynein, axonemal, heavy chain 6
8047069	INPP1	-1.1700089	down	inositol polyphosphate-1-phosphatase
8108716	PCDHB16	-1.1702044	down	protocadherin beta 16
8063410	PARD6B	-1.1710625	down	par-6 partitioning defective 6 homolog beta (C. elegans)
8117476	BTN3A3	-1.1715094	down	butyrophilin, subfamily 3, member A3
8156770	GALNT12	-1.1718053	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyltransferase 12
8167887	MAGEH1	-1.1722531	down	melanoma antigen family H, 1
8103951	ACSL1	-1.1727353	down	acyl-CoA synthetase long-chain family member 1
8083429	MBNL1	-1.1733122	down	muscleblind-like (Drosophila)
8044391	MERTK	-1.175054	down	c-met proto-oncogene tyrosine kinase
7988789	DMXL2	-1.1758538	down	Dmx-like 2
8056327	GRB14	-1.1760314	down	growth factor receptor-bound protein 14
8166469	SAT1	-1.1771837	down	spermidine/spermine N1-acetyltransferase 1
8115196	ZNF300	-1.1777184	down	zinc finger protein 300
8088919	ROBO1	-1.1789379	down	roundabout, axon guidance receptor, homolog 1 (Drosophila)

Supplemental Table 1c  
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7909494	SYT14	-1.179798	down	synaptotagmin XIV
7943413	BIRC3	-1.1798909	down	baculoviral IAP repeat-containing 3
8093053	TFRC	-1.1799355	down	transferrin receptor (p90, CD71)
7953518	LOC171220	-1.180178	down	destrin-2 pseudogene
8002969	MAF	-1.1809053	down	v-maf musculoaponeurotic fibrosarcoma oncogene homologue 1
8070398	LCA5L	-1.1809385	down	Leber congenital amaurosis 5-like
8089627	CCDC52	-1.181592	down	coiled-coil domain containing 52
8097670	MMAA	-1.1820676	down	methylmalonic aciduria (cobalamin deficiency) cblA type 1
8097657	SMAD1	-1.1830637	down	SMAD family member 1
8121622	RSHL3	-1.1830791	down	radial spokehead-like 3
7953520	LRRC23	-1.183868	down	leucine rich repeat containing 23
8094169	CPEB2	-1.1840197	down	cytoplasmic polyadenylation element binding protein 2
8145586	ELP3	-1.1844295	down	elongation protein 3 homolog ( <i>S. cerevisiae</i> )
8051785	KCNG3	-1.1854877	down	potassium voltage-gated channel, subfamily G, member 3
8101723	NAP1L5	-1.185703	down	nucleosome assembly protein 1-like 5
8126135	GLO1	-1.186082	down	glyoxalase I
8106280	HMGCR	-1.1881014	down	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
7977674	SUPT16H	-1.1887548	down	suppressor of Ty 16 homolog ( <i>S. cerevisiae</i> )
8039017	ZNF816A ZNF321	-1.1887835	down	zinc finger protein 816A   zinc finger protein 321
8074969	DDT	-1.188808	down	D-dopachrome tautomerase
8093258	IQCG	-1.1891735	down	IQ motif containing G
8147848	OXR1	-1.1897044	down	oxidation resistance 1
7927915	STOX1	-1.1897415	down	storkhead box 1
8154132	C9orf70	-1.1902887	down	chromosome 9 open reading frame 70
7928671	C10orf57	-1.1903567	down	chromosome 10 open reading frame 57
8120102	CD2AP	-1.1915804	down	CD2-associated protein
8147661	SPAG1	-1.1925102	down	sperm associated antigen 1
8136979	CTAGE6 CTAGE4 CTAGE5	-1.192833	down	CTAGE family, member 6   CTAGE family, member 4   CTAGE family, member 5
7983890	Gcom1 GRINL1A	-1.1938818	down	GRINL1A combined protein   glutamate receptor, ionotropic, NMDA 1A
7974461	LGALS3	-1.1943259	down	lectin, galactoside-binding, soluble, 3
8108251	NPY6R	-1.1952398	down	neuropeptide Y receptor Y6 (pseudogene)
7960438	TMEM16B	-1.1953136	down	transmembrane protein 16B
7954382	PYROXD1	-1.1960994	down	pyridine nucleotide-disulphide oxidoreductase domain

Supplemental Table 1c  
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8129560	CTAGE6 CTAGE4	-1.1972128	down	CTAGE family, member 6   CTAGE family, member 4
8164200	ANGPTL2	-1.1980608	down	angiopoietin-like 2
8136315	LRGUK	-1.198749	down	leucine-rich repeats and guanylate kinase domain cont
8103092	LOC100129572	-1.198799	down	
7916343	YIPF1	-1.1992708	down	Yip1 domain family, member 1
8006415	TMEM98	-1.1994426	down	transmembrane protein 98
7902074	LEPR LEPROT	-1.200055	down	leptin receptor   leptin receptor overlapping transcript
8147221	OSGIN2	-1.2015034	down	oxidative stress induced growth inhibitor family memb
8155563	LOC100132139 L	-1.20181	down	similar to methylenetetrahydrofolate dehydrogenase (
7963212	SLC11A2	-1.2018478	down	solute carrier family 11 (proton-coupled divalent meta
7943749	LAYN	-1.2026485	down	layilin
8162570	HSD17B3	-1.2026565	down	hydroxysteroid (17-beta) dehydrogenase 3
8085788	NKIRAS1	-1.2029128	down	NFKB inhibitor interacting Ras-like 1
8042519	PCYOX1	-1.2033635	down	prenylcysteine oxidase 1
8151254	NCOA2	-1.2034775	down	nuclear receptor coactivator 2
8094501	STIM2	-1.203541	down	stromal interaction molecule 2
7928171	SGPL1	-1.203605	down	sphingosine-1-phosphate lyase 1
7989146	MNS1	-1.2037123	down	meiosis-specific nuclear structural 1
7982271	FAM7A1 GOLGA9	-1.2037301	down	family with sequence similarity 7, member A1   golgi a
8089606	WDR52	-1.2039782	down	WD repeat domain 52
8157038	SLC44A1	-1.2045474	down	solute carrier family 44, member 1
8105918	GTF2H2 DKFZP68	-1.204745	down	general transcription factor IIH, polypeptide 2, 44kDa
8168622	KLHL4	-1.2051712	down	kelch-like 4 (Drosophila)
8008629	DGKE	-1.2051909	down	diacylglycerol kinase, epsilon 64kDa
7903162	TMEM56	-1.2054383	down	transmembrane protein 56
7975971	C14orf174	-1.2055916	down	chromosome 14 open reading frame 174
7919226	POLR3C	-1.2056483	down	polymerase (RNA) III (DNA directed) polypeptide C (62l
8041940	STON1-GTF2A1L	-1.2079194	down	
7936968	ADAM12	-1.2086948	down	ADAM metallopeptidase domain 12 (meltrin alpha)
8034393	ZNF443	-1.2088597	down	zinc finger protein 443
8103789	GPM6A	-1.2092881	down	glycoprotein M6A
8175574	SLITRK4	-1.2093344	down	SLIT and NTRK-like family, member 4
8017162	RNFT1	-1.2099178	down	ring finger protein, transmembrane 1

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8112538	GTF2H2 DKFZP68	-1.2100959	down	general transcription factor IIH, polypeptide 2, 44kDa
7969179	RNASEH2B	-1.2103218	down	ribonuclease H2, subunit B
7966448	TMEM116	-1.2109079	down	transmembrane protein 116
8120943	CYB5R4	-1.211757	down	cytochrome b5 reductase 4
8046604	AGPS	-1.2126377	down	alkylglycerone phosphate synthase
8121578	NT5DC1	-1.212787	down	5'-nucleotidase domain containing 1
8078650	CTDSPL	-1.2134402	down	CTD (carboxy-terminal domain, RNA polymerase II, pol
7974090	CTAGE5	-1.2137178	down	CTAGE family, member 5
7956759	SRGAP1	-1.2139912	down	SLIT-ROBO Rho GTPase activating protein 1
8144701	LOC100131581	-1.2141418	down	
8034315	ZNF823	-1.2143236	down	zinc finger protein 823
8053668	EIF2AK3	-1.2146535	down	eukaryotic translation initiation factor 2-alpha kinase 3
8088560	ADAMTS9	-1.2147611	down	ADAM metalloproteinase with thrombospondin type 1
8100145	COMMD8	-1.2157665	down	COMM domain containing 8
7951207	TMEM123	-1.2158185	down	transmembrane protein 123
7918768	DENND2C	-1.2158483	down	DENN/MADD domain containing 2C
8161484	LOC100132139 L	-1.2162803	down	similar to methylenetetrahydrofolate dehydrogenase (
7957433	LRRIQ1	-1.2164189	down	leucine-rich repeats and IQ motif containing 1
8106556	CMYA5	-1.2165273	down	cardiomyopathy associated 5
8047538	BMPR2	-1.2170966	down	bone morphogenetic protein receptor, type II (serine/t
8149555	PSD3	-1.2173955	down	pleckstrin and Sec7 domain containing 3
8027254	ZNF90	-1.2174457	down	zinc finger protein 90
8121257	PRDM1	-1.2176619	down	PR domain containing 1, with ZNF domain
8167957	ZC3H12B	-1.217777	down	zinc finger CCCH-type containing 12B
8044849	PTPN4	-1.2179313	down	protein tyrosine phosphatase, non-receptor type 4 (me
8177507	GTF2H2 DKFZP68	-1.218017	down	general transcription factor IIH, polypeptide 2, 44kDa
7977270	LOC388022	-1.218182	down	hypothetical gene supported by AK131040
7984813	ISLR	-1.218455	down	immunoglobulin superfamily containing leucine-rich re
8152041	RNF19A	-1.2192402	down	ring finger protein 19A
8105970	GTF2H2 DKFZP68	-1.2195337	down	general transcription factor IIH, polypeptide 2, 44kDa
8046759	DNAJC10	-1.2200469	down	DnaJ (Hsp40) homolog, subfamily C, member 10
8057578	CALCRL	-1.2211032	down	calcitonin receptor-like
8069620	MRPL39	-1.2212667	down	mitochondrial ribosomal protein L39



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7948656	FTH1	-1.2220286	down	ferritin, heavy polypeptide 1
8021984	YES1	-1.2221034	down	v-yes-1 Yamaguchi sarcoma viral oncogene homolog 1
8166219	SYAP1	-1.2226019	down	synapse associated protein 1, SAP47 homolog (Drosopl
8047784	ZDBF2	-1.2227443	down	zinc finger, DBF-type containing 2
8122933	TIAM2	-1.2230158	down	T-cell lymphoma invasion and metastasis 2
8011832	NUP88	-1.223414	down	nucleoporin 88kDa
8099841	TLR6	-1.2236753	down	toll-like receptor 6
8042291	AFTPH	-1.2237802	down	aftiphilin
8105579	IPO11	-1.2243629	down	importin 11
7976795	MEG3 LOC10013:	-1.2249112	down	maternally expressed 3   hypothetical protein LOC100:
7937335	IFITM1	-1.2250707	down	interferon induced transmembrane protein 1 (9-27)
7930818	DKFZp781N1041	-1.2257289	down	similar to RIKEN cDNA 6430537H07 gene
8113914	FNIP1 RAPGEF6	-1.2265663	down	folliculin interacting protein 1   Rap guanine nucleotid
8144699	LRLE1 LOC10012:	-1.2283491	down	liver-related low express protein 1   similar to liver-rel:
8068238	IFNAR2	-1.2287718	down	interferon (alpha, beta and omega) receptor 2
8112746	WDR41	-1.2294068	down	WD repeat domain 41
8030914	ZNF610	-1.2300516	down	zinc finger protein 610
7918379	GSTM3	-1.2302854	down	glutathione S-transferase M3 (brain)
8035789	ZNF826 ZNF737	-1.2308472	down	zinc finger protein 826   zinc finger protein 737
8157246	KIAA1958	-1.2317827	down	
7965048	NAP1L1	-1.2323769	down	nucleosome assembly protein 1-like 1
7927288	FAM35A	-1.2324344	down	family with sequence similarity 35, member A
7923141	DENND1B C1orf2	-1.2327375	down	DENN/MADD domain containing 1B   chromosome 1 c
8172395	SSX10 LOC10013:	-1.2329271	down	synovial sarcoma, X breakpoint 10   similar to Synovial
7919326	ACP6	-1.2332486	down	acid phosphatase 6, lysophosphatidic
8154823	ANKRD18B	-1.2341065	down	ankyrin repeat domain 18B
7939329	PDHX	-1.2349412	down	pyruvate dehydrogenase complex, component X
8038989	ZNF600	-1.2351059	down	zinc finger protein 600
8022338	DISP2 LOC728211	-1.2352248	down	dispatched homolog 2 (Drosophila)   hypothetical LOC
8020037	KIAA0802	-1.2363436	down	
7973727	KIAA1305	-1.2366986	down	
8135661	CFTR	-1.2369772	down	cystic fibrosis transmembrane conductance regulator (
8171205	NLGN4X	-1.2371433	down	neuroligin 4, X-linked

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8086125	LBA1	-1.2376332	down	lupus brain antigen 1
8146930	TMEM70	-1.2383558	down	transmembrane protein 70
8157144	C9orf6	-1.2392023	down	chromosome 9 open reading frame 6
8123893	MAK	-1.2394466	down	male germ cell-associated kinase
8154254	KIAA1432	-1.2396088	down	
7953135	TULP3	-1.2412237	down	tubby like protein 3
7977497	CCNB1IP1	-1.241483	down	cyclin B1 interacting protein 1
7913694	FUCA1	-1.2418587	down	fucosidase, alpha-L- 1, tissue
8092073	EIF5A2	-1.2418833	down	eukaryotic translation initiation factor 5A2
8152597	MRPL13	-1.2419983	down	mitochondrial ribosomal protein L13
8106210	RGNEF	-1.242035	down	Rho-guanine nucleotide exchange factor
8081362	CEP97	-1.2427226	down	centrosomal protein 97kDa
8156126	RMI1	-1.2433585	down	
8144516	THEX1	-1.243548	down	three prime histone mRNA exonuclease 1
8091078	RBP1	-1.2439063	down	retinol binding protein 1, cellular
8159900	GLIS3	-1.2441949	down	GLIS family zinc finger 3
8102720	ANKRD50	-1.2446249	down	ankyrin repeat domain 50
7916669	DOCK7	-1.2453054	down	dedicator of cytokinesis 7
8089993	WDR5B	-1.2453492	down	WD repeat domain 5B
7929536	CC2D2B LOC1001	-1.2457669	down	coiled-coil and C2 domain containing 2B   hypothetical
7930380	ADD3	-1.2475333	down	adducin 3 (gamma)
8035773	ZNF506	-1.247583	down	zinc finger protein 506
7978718	SEC23A	-1.2476838	down	Sec23 homolog A (S. cerevisiae)
7963946	MMP19	-1.247692	down	matrix metalloproteinase 19
7907893	MR1	-1.2484437	down	major histocompatibility complex, class I-related
7984517	GLCE	-1.2486341	down	glucuronic acid epimerase
8020898	ZNF271	-1.2487344	down	zinc finger protein 271
8066848	PREX1	-1.249828	down	phosphatidylinositol 3,4,5-trisphosphate-dependent R
7972369	UGCGL2	-1.2501228	down	UDP-glucose ceramide glucosyltransferase-like 2
8043071	LOC200383	-1.2501824	down	similar to Dynein heavy chain at 16F
8134257	GNG11	-1.2504807	down	guanine nucleotide binding protein (G protein), gamma
8094609	FAM114A1	-1.2509977	down	family with sequence similarity 114, member A1
7984112	RAB8B	-1.2511615	down	

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8149629	GFRA2	-1.2517327	down	GDNF family receptor alpha 2
7909603	NENF	-1.2528017	down	neuron derived neurotrophic factor
7986428	LOC400464	-1.2529676	down	similar to FLJ43276 protein
7925500	CHML	-1.2529873	down	choroideremia-like (Rab escort protein 2)
7965964	SLC41A2	-1.2534412	down	solute carrier family 41, member 2
8061186	SEC23B	-1.2540252	down	Sec23 homolog B ( <i>S. cerevisiae</i> )
8127094	GSTA4	-1.2541276	down	glutathione S-transferase A4
8131975	TAX1BP1	-1.2541593	down	Tax1 (human T-cell leukemia virus type I) binding prote
7925672	ZNF670	-1.2547495	down	zinc finger protein 670
8142646	IQUB	-1.2562941	down	IQ motif and ubiquitin domain containing
8130556	SOD2	-1.2566069	down	superoxide dismutase 2, mitochondrial
8154128	DSERG1	-1.2568046	down	Down syndrome encephalopathy related protein 1
7988286	SPG11	-1.2568566	down	spastic paraplegia 11 (autosomal recessive)
8082965	MRAS	-1.2569156	down	muscle RAS oncogene homolog
7964347	TMEM194	-1.2571652	down	transmembrane protein 194
8082100	PARP14	-1.2572542	down	poly (ADP-ribose) polymerase family, member 14
8085556	SH3BP5	-1.2574	down	SH3-domain binding protein 5 (BTK-associated)
8175492	ATP11C	-1.258396	down	ATPase, class VI, type 11C
8123884	C6orf52	-1.2584041	down	chromosome 6 open reading frame 52
8146517	CHCHD7	-1.2584214	down	coiled-coil-helix-coiled-coil-helix domain containing 7
7954717	BICD1	-1.2585449	down	bicaudal D homolog 1 ( <i>Drosophila</i> )
7995697	LPCAT2	-1.2586378	down	lysophosphatidylcholine acyltransferase 2
7903959	C1orf88	-1.2597014	down	chromosome 1 open reading frame 88
7927082	HSD17B7P2	-1.2601564	down	hydroxysteroid (17-beta) dehydrogenase 7 pseudogen
8107909	SLC22A4	-1.2602586	down	solute carrier family 22 (organic cation/ergothioneine t
8001387	SALL1	-1.261262	down	sal-like 1 ( <i>Drosophila</i> )
8040672	C2orf39	-1.2615274	down	chromosome 2 open reading frame 39
8164013	STRBP	-1.2617362	down	spermatid perinuclear RNA binding protein
8133818	PHTF2	-1.262143	down	putative homeodomain transcription factor 2
8165911	TBL1X	-1.2623049	down	transducin (beta)-like 1X-linked
8115734	LCP2	-1.2625594	down	lymphocyte cytosolic protein 2 (SH2 domain containing
7983157	TMEM62	-1.2633597	down	transmembrane protein 62
7969544	NDFIP2	-1.2634451	down	Nedd4 family interacting protein 2

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8084955	PIGX	-1.2639433	down	phosphatidylinositol glycan anchor biosynthesis, class 3
7950578	PAK1	-1.2647227	down	p21/Cdc42/Rac1-activated kinase 1 (STE20 homolog, yeast)
7968883	C13orf31	-1.2650372	down	chromosome 13 open reading frame 31
7951535	KDELC2	-1.2655535	down	KDEL (Lys-Asp-Glu-Leu) containing 2
8098328	GALNT7	-1.2658848	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyltransferase 7
8097388	LARP2	-1.2662021	down	La ribonucleoprotein domain family, member 2
8130499	DYNLT1	-1.2672364	down	dynein, light chain, Tctex-type 1
7906904	HSD17B7 HSD17E	-1.267272	down	hydroxysteroid (17-beta) dehydrogenase 7   hydroxysteroid (17-beta) dehydrogenase 7
8007176	TTC25	-1.267489	down	tetratricopeptide repeat domain 25
8092654	RPL39L	-1.26778	down	ribosomal protein L39-like
8134098	PFTK1	-1.2678872	down	PFTAIRE protein kinase 1
8121510	BXDC1	-1.2681947	down	brich domain containing 1
8138765	HOXA11	-1.2684919	down	homeobox A11
7919139	LOC375010	-1.2701777	down	
7943051	NAALAD2	-1.270335	down	N-acetylated alpha-linked acidic dipeptidase 2
8060940	C20orf103	-1.2706513	down	chromosome 20 open reading frame 103
8081386	NFKBIZ	-1.2716334	down	nuclear factor of kappa light polypeptide gene enhancer in B-cells 2
7921862	C1orf192	-1.2723687	down	chromosome 1 open reading frame 192
8112940	SSBP2	-1.272391	down	single-stranded DNA binding protein 2
7951077	SESN3	-1.2737715	down	sestrin 3
8110520	LOC729595	-1.2740879	down	similar to high-mobility group box 3
8058373	WDR12	-1.2748199	down	WD repeat domain 12
7983763	MAPK6	-1.2752204	down	mitogen-activated protein kinase 6
7925342	ERO1LB	-1.2755638	down	ERO1-like beta ( <i>S. cerevisiae</i> )
7903092	FNBP1L	-1.2756078	down	formin binding protein 1-like
8143629	OR2A9P OR2A20I	-1.2762464	down	olfactory receptor, family 2, subfamily A, member 9 protein
7987642	NDUFAF1	-1.2764435	down	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex 1
8132860	EGFR	-1.276661	down	epidermal growth factor receptor (erythroblastic leukemia) 1
8172035	DYNLT3	-1.277025	down	dynein, light chain, Tctex-type 3
8091120	GK5	-1.2776617	down	glycerol kinase 5 (putative)
8123038	GTF2H5	-1.2782819	down	general transcription factor IIH, polypeptide 5
7915425	ZMYND12	-1.2805538	down	zinc finger, MYND-type containing 12
8047356	NIF3L1	-1.2805833	down	NIF3 NGG1 interacting factor 3-like 1 ( <i>S. pombe</i> )

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8069532	STCH	-1.2807562	down	stress 70 protein chaperone, microsomal-associated, 66 kDa
7922162	SLC19A2	-1.2813581	down	solute carrier family 19 (thiamine transporter), member 2
8057933	GTF3C3	-1.2825073	down	general transcription factor III C, polypeptide 3, 102 kDa
7980547	SEL1L	-1.2828732	down	sel-1 suppressor of lin-12-like (C. elegans)
8157105	ZNF462	-1.2830799	down	zinc finger protein 462
8136516	tcag7.1228	-1.2845634	down	hypothetical protein FLJ25778
8147112	CA13	-1.2848454	down	carbonic anhydrase XIII
8174527	CAPN6	-1.2858499	down	calpain 6
7918223	C1orf59	-1.2863635	down	chromosome 1 open reading frame 59
8138454	TWISTNB	-1.2864468	down	TWIST neighbor
8155630	LOC100132139 L1	-1.2872742	down	similar to methylenetetrahydrofolate dehydrogenase (cytosolic)
8113761	ZNF608	-1.2874328	down	zinc finger protein 608
8020779	DSG2	-1.2874459	down	desmoglein 2
7925229	B3GALNT2	-1.2876322	down	beta-1,3-N-acetylgalactosaminyltransferase 2
8122348	VTA1	-1.2876407	down	Vps20-associated 1 homolog (S. cerevisiae)
8113623	TICAM2 TMED7	-1.2879249	down	toll-like receptor adaptor molecule 2   transmembrane protein 2
8097056	SNORA24	-1.2879875	down	small nucleolar RNA, H/ACA box 24
8112202	PLK2	-1.2888191	down	polo-like kinase 2 (Drosophila)
8017885	ABCA8	-1.2890025	down	ATP-binding cassette, sub-family A (ABC1), member 8
8059708	SNORA75	-1.2891942	down	small nucleolar RNA, H/ACA box 75
8171297	MID1	-1.2894353	down	midline 1 (Opitz/BBB syndrome)
8161377	LOC100132139 L1	-1.2907029	down	similar to methylenetetrahydrofolate dehydrogenase (cytosolic)
8121927	RNF146	-1.2922844	down	ring finger protein 146
8089759	TMEM39A	-1.2926317	down	transmembrane protein 39A
8175269	FAM122B	-1.2937185	down	family with sequence similarity 122B
7917370	COL24A1	-1.294012	down	collagen, type XXIV, alpha 1
8158183	DNM1	-1.2941366	down	dynamamin 1
7936734	FGFR2	-1.2942716	down	fibroblast growth factor receptor 2 (bacteria-expressed)
7979085	PYGL	-1.2946708	down	phosphorylase, glycogen; liver (Hers disease, glycogen phosphorylase)
7931097	HTRA1	-1.2949917	down	HtrA serine peptidase 1
8129254	MAN1A1	-1.2951354	down	mannosidase, alpha, class 1A, member 1
8020349	ANKRD20B CCDC127	-1.2954736	down	ankyrin repeat domain 20B   coiled-coil domain containing protein 127
7935692	ERLIN1	-1.2955614	down	ER lipid raft associated 1

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8017651	SMURF2	-1.2957504	down	SMAD specific E3 ubiquitin protein ligase 2
8045499	HNMT	-1.2958928	down	histamine N-methyltransferase
8098441	ODZ3	-1.2969611	down	odz, odd Oz/ten-m homolog 3 (Drosophila)
8005458	LGALS9   LOC6543	-1.2972528	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   sim
7971124	UFM1	-1.2973617	down	ubiquitin-fold modifier 1
8021453	SEC11C	-1.2984402	down	SEC11 homolog C ( <i>S. cerevisiae</i> )
7957688	C12orf63	-1.2987485	down	chromosome 12 open reading frame 63
8094132	DUB4   USP17   DUB4	-1.3000809	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
7948987	HRASLS3	-1.3001615	down	HRAS-like suppressor 3
8094126	DUB4   USP17   DUB4	-1.3012599	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
8094128	DUB4   USP17   DUB4	-1.3013208	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
8094120	DUB4   USP17   DUB4	-1.3014133	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
8123274	MAP3K4	-1.3016938	down	mitogen-activated protein kinase kinase kinase 4
8154416	C9orf93	-1.3019615	down	chromosome 9 open reading frame 93
8094118	DUB4   USP17   DUB4	-1.3020442	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
8173310	OPHN1	-1.3021964	down	oligophrenin 1
8129901	REPS1	-1.3023068	down	RALBP1 associated Eps domain containing 1
8108729	PCDHB11	-1.3023118	down	protocadherin beta 11
8094124	DUB4   USP17   DUB4	-1.3024144	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
7936871	OAT	-1.3027787	down	ornithine aminotransferase (gyrate atrophy)
7908125	RGL1	-1.3029068	down	ral guanine nucleotide dissociation stimulator-like 1
8043043	DNHL1   LOC20038	-1.3029588	down	dynein heavy chain-like 1   similar to Dynein heavy cha
8072360	TCN2	-1.3036853	down	transcobalamin II; macrocytic anemia
8105663	NLN	-1.3038825	down	neurolysin (metallopeptidase M3 family)
8098195	SC4MOL	-1.3044091	down	sterol-C4-methyl oxidase-like
8094116	CPZ   USP17   DUB3	-1.3045115	down	carboxypeptidase Z   ubiquitin specific peptidase 17
7990636	C15orf5	-1.3053643	down	chromosome 15 open reading frame 5
8058552	IDH1	-1.3053771	down	isocitrate dehydrogenase 1 (NADP+), soluble
8045587	ACVR2A	-1.3054138	down	activin A receptor, type IIA
7923453	JARID1B	-1.3056513	down	jumonji, AT rich interactive domain 1B
8105862	CDK7	-1.3059704	down	cyclin-dependent kinase 7
8062108	PROCR	-1.3063489	down	protein C receptor, endothelial (EPCR)
8076612	EFCAB6	-1.3064139	down	EF-hand calcium binding domain 6

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8068593	ETS2	-1.3076311	down	v-ets erythroblastosis virus E26 oncogene homolog 2 (c
8044882	EPB41L5	-1.3089298	down	erythrocyte membrane protein band 4.1 like 5
7900395	RLF	-1.309986	down	rearranged L-myc fusion
8094520	PCDH7	-1.3100641	down	protocadherin 7
7927267	FAM35A	-1.3101392	down	family with sequence similarity 35, member A
7957032	YEATS4	-1.3102545	down	YEATS domain containing 4
8177462	CDK7	-1.3103625	down	cyclin-dependent kinase 7
8119000	MAPK14	-1.3106555	down	mitogen-activated protein kinase 14
8046333	CYBRD1	-1.3111254	down	cytochrome b reductase 1
8122634	SAMD5	-1.3116121	down	sterile alpha motif domain containing 5
8112857	MTX3	-1.3122382	down	metaxin 3
8172056	RPGR	-1.3128753	down	retinitis pigmentosa GTPase regulator
7946815	PIK3C2A	-1.313083	down	phosphoinositide-3-kinase, class 2, alpha polypeptide
8094130	DUB4 USP17 DUI	-1.3143951	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
7943162	C11orf54	-1.3145074	down	chromosome 11 open reading frame 54
8034390	ZNF799	-1.3157752	down	zinc finger protein 799
8088339	ARF4	-1.3159915	down	ADP-ribosylation factor 4
8027247	ZNF93	-1.3172871	down	zinc finger protein 93
7954208	PIK3C2G	-1.3177114	down	phosphoinositide-3-kinase, class 2, gamma polypeptide
8172698	SHROOM4	-1.3184522	down	shroom family member 4
7974109	LRFN5	-1.3186067	down	leucine rich repeat and fibronectin type III domain con
8091723	RARRES1	-1.3186499	down	retinoic acid receptor responder (tazarotene induced)
7936529	KIAA1598	-1.3189743	down	
8067113	ZNF217	-1.3190396	down	zinc finger protein 217
8056943	KIAA1715	-1.3200231	down	
8147101	E2F5	-1.3201275	down	E2F transcription factor 5, p130-binding
8094122	DUB4 USP17 DUI	-1.3205652	down	deubiquitinating enzyme DUB4   ubiquitin specific pep
8143433	MRPS33	-1.3214161	down	mitochondrial ribosomal protein S33
8085033	LMLN	-1.3226242	down	leishmanolysin-like (metallopeptidase M8 family)
8167027	RGN	-1.3248407	down	regucalcin (senescence marker protein-30)
8129379	ECHDC1	-1.3251472	down	enoyl Coenzyme A hydratase domain containing 1
8148049	NOV	-1.3260754	down	nephroblastoma overexpressed gene
8013450	LGALS9 LOC2841!	-1.3263997	down	lectin, galactoside-binding, soluble, 9 (galectin 9)   gale

Supplemental Table 1c  
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8140915	PEX1	-1.3264952	down	peroxisome biogenesis factor 1
8102713	NUDT6	-1.3268058	down	nudix (nucleoside diphosphate linked moiety X)-type n
7932227	NMT2	-1.3279445	down	N-myristoyltransferase 2
7934870	ATAD1	-1.3284965	down	ATPase family, AAA domain containing 1
8114829	YIPF5	-1.3288815	down	Yip1 domain family, member 5
8054166	TSGA10	-1.3289726	down	testis specific, 10
8078397	CMTM8	-1.3292555	down	CKLF-like MARVEL transmembrane domain containing
8063437	TSHZ2	-1.3299273	down	teashirt zinc finger homeobox 2
8083166	TRPC1	-1.3304539	down	transient receptor potential cation channel, subfamily
8138370	ANKMY2	-1.3311934	down	ankyrin repeat and MYND domain containing 2
8128123	RRAGD	-1.3313817	down	Ras-related GTP binding D
8135378	PRKAR2B	-1.3317779	down	protein kinase, cAMP-dependent, regulatory, type II, b
8095545	RUFY3	-1.3324056	down	RUN and FYVE domain containing 3
8020058	NDUFV2	-1.3333345	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24k
8150002	FBXO16 ZNF395	-1.333882	down	F-box protein 16   zinc finger protein 395
7970602	PARP4	-1.3339772	down	poly (ADP-ribose) polymerase family, member 4
8076113	RP1-199H16.1	-1.3339995	down	hypothetical LOC388900
8011945	KIAA0753	-1.3345295	down	
7918622	SLC16A1	-1.3347555	down	solute carrier family 16, member 1 (monocarboxylic ac
8126860	MUT	-1.3347759	down	methylmalonyl Coenzyme A mutase
8130765	FAM103A1	-1.3362775	down	family with sequence similarity 103, member A1
8081375	FAM55C	-1.3363163	down	family with sequence similarity 55, member C
7954388	GOLT1B	-1.3371918	down	golgi transport 1 homolog B ( <i>S. cerevisiae</i> )
7938890	PRMT3	-1.3374112	down	protein arginine methyltransferase 3
8040552	NCOA1	-1.3374472	down	nuclear receptor coactivator 1
8047443	ALS2CR2	-1.3378191	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome
7953873	OVOS2	-1.33842	down	ovostatin 2
8124562	ZNF323	-1.3392334	down	zinc finger protein 323
7929032	FAS	-1.3392614	down	Fas (TNF receptor superfamily, member 6)
7965064	OSBPL8	-1.3392966	down	oxysterol binding protein-like 8
7912292	LZIC	-1.3397146	down	leucine zipper and CTNNBIP1 domain containing
8160531	C9orf72	-1.3398097	down	chromosome 9 open reading frame 72
7950683	NARS2	-1.3401638	down	asparaginyl-tRNA synthetase 2, mitochondrial (putativ



Supplemental Table 1c  
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7901336	ALS2CR2	-1.3404106	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome
8127158	GCLC	-1.3414097	down	glutamate-cysteine ligase, catalytic subunit
7971780	NEK3	-1.3417407	down	NIMA (never in mitosis gene a)-related kinase 3
8039068	NDUFV2	-1.3417933	down	NADH dehydrogenase (ubiquinone) flavoprotein 2, 24k
8174141	BEX5	-1.3419926	down	BEX family member 5
8077198	FLJ43315	-1.3424119	down	similar to Asparagine synthetase [glutamine-hydrolyz
8057732	LOC100131211	-1.3429961	down	similar to hCG1646803
8128795	C6orf199	-1.343041	down	chromosome 6 open reading frame 199
7902345	TYW3	-1.3430928	down	tRNA-yW synthesizing protein 3 homolog ( <i>S. cerevisiae</i> )
8091260	SLC9A9	-1.3432231	down	solute carrier family 9 (sodium/hydrogen exchanger), r
8051605	HNRPLL	-1.3434782	down	heterogeneous nuclear ribonucleoprotein L-like
8107133	PAM	-1.3436453	down	peptidylglycine alpha-amidating monooxygenase
8010078	SNORD1C	-1.3439798	down	small nucleolar RNA, C/D box 1C
8005638	ALDH3A2	-1.3445165	down	aldehyde dehydrogenase 3 family, member A2
7999598	NTAN1	-1.3454789	down	N-terminal asparagine amidase
8134051	FLJ21062	-1.3459183	down	
8098620	FAM149A	-1.3474443	down	family with sequence similarity 149, member A
8043059	LOC200383	-1.3504584	down	similar to Dynein heavy chain at 16F
8108737	PCDHB13	-1.3505305	down	protocadherin beta 13
8096938	LARP7	-1.3505642	down	La ribonucleoprotein domain family, member 7
8136495	TTC26	-1.3508139	down	tetratricopeptide repeat domain 26
7903777	GSTM5	-1.35163	down	glutathione S-transferase M5
8144528	TNKS	-1.3525722	down	tankyrase, TRF1-interacting ankyrin-related ADP-ribose
8131844	GPNMB	-1.3528441	down	glycoprotein (transmembrane) nmb
8156263	SPIN1	-1.3529464	down	spindlin 1
7958211	C12orf45	-1.353191	down	chromosome 12 open reading frame 45
8113073	ARRDC3	-1.3537858	down	arrestin domain containing 3
8046048	FAM130A2	-1.355186	down	family with sequence similarity 130, member A2
8001876	NAE1	-1.35732	down	NEDD8 activating enzyme E1 subunit 1
8108127	CAMLG	-1.357364	down	calcium modulating ligand
8105353	SKIV2L2	-1.3574022	down	superkiller viralicidic activity 2-like 2 ( <i>S. cerevisiae</i> )
8143988	MLL3	-1.3581736	down	myeloid/lymphoid or mixed-lineage leukemia 3
8108749	PCDHB18	-1.3588045	down	protocadherin beta 18 pseudogene

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7909768	SPATA17	-1.3588736	down	spermatogenesis associated 17
7933186	ZNF32	-1.3591969	down	zinc finger protein 32
8089659	KIAA1407	-1.3596886	down	
7928855	BMPR1A	-1.3603051	down	bone morphogenetic protein receptor, type IA
7911155	SCCPDH	-1.3612567	down	saccharopine dehydrogenase (putative)
8124040	ATXN1	-1.3613259	down	ataxin 1
7907160	ATP1B1	-1.3614707	down	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 1 polypeptide
8088803	EIF4E3	-1.3618331	down	eukaryotic translation initiation factor 4E family memb
8146544	LOC137886	-1.3621914	down	
8132897	LANCL2	-1.3623937	down	LanC lantibiotic synthetase component C-like 2 (bacter
8162313	IARS	-1.365236	down	isoleucyl-tRNA synthetase
8145835	ERLIN2	-1.3653766	down	ER lipid raft associated 2
7983173	CCNDBP1	-1.3658463	down	cyclin D-type binding-protein 1
7968658	EXOSC8	-1.3670226	down	exosome component 8
8112649	KIAA0888	-1.3671021	down	
7904830	ZNF364	-1.3672132	down	zinc finger protein 364
8020384	KIAA1772	-1.3686503	down	
8102848	SETD7	-1.368802	down	SET domain containing (lysine methyltransferase) 7
7959827	TMEM132C	-1.3699112	down	transmembrane protein 132C
8129666	SLC2A12	-1.371248	down	solute carrier family 2 (facilitated glucose transporter),
8103341	MAP9	-1.3728195	down	microtubule-associated protein 9
8129573	MOXD1	-1.3733308	down	monooxygenase, DBH-like 1
8142407	TMEM168	-1.3735623	down	transmembrane protein 168
8052269	CCDC88A	-1.3765123	down	coiled-coil domain containing 88A
8090678	MRPL3	-1.3772585	down	mitochondrial ribosomal protein L3
7904965	PDE4DIP	-1.3772644	down	phosphodiesterase 4D interacting protein (myomegalin)
7903334	CDC14A	-1.3775766	down	CDC14 cell division cycle 14 homolog A ( <i>S. cerevisiae</i> )
8161270	ANKRD18A	-1.3777982	down	ankyrin repeat domain 18A
7916616	CYP2J2	-1.3780211	down	cytochrome P450, family 2, subfamily J, polypeptide 2
8039006	ZNF320	-1.3780452	down	zinc finger protein 320
8133155	TPST1	-1.3786151	down	tyrosylprotein sulfotransferase 1
7960744	C1R	-1.3795472	down	complement component 1, r subcomponent
7917561	GBP4	-1.3808305	down	guanylate binding protein 4

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8162117	GOLM1	-1.3813633	down	golgi membrane protein 1
8114653	TAF7	-1.3819963	down	
7956697	MON2	-1.3820643	down	
8128683	SNX3	-1.3829038	down	sorting nexin 3
8051762	SLC8A1	-1.3831466	down	solute carrier family 8 (sodium/calcium exchanger), me
8101916	RG9MTD2	-1.383431	down	RNA (guanine-9-) methyltransferase domain containing
8155169	RECK	-1.383491	down	reversion-inducing-cysteine-rich protein with kazal mo
8108166	TXNDC15	-1.3844501	down	thioredoxin domain containing 15
8056710	LOC129881	-1.3847066	down	
8151436	PXMP3	-1.3851334	down	peroxisomal membrane protein 3, 35kDa (Zellweger sy
7920291	S100A16	-1.3859677	down	S100 calcium binding protein A16
7985488	FAM103A1	-1.3863064	down	family with sequence similarity 103, member A1
7939137	EIF3M	-1.3880812	down	eukaryotic translation initiation factor 3, subunit M
8042066	CCDC104	-1.3881782	down	coiled-coil domain containing 104
8169073	MGC39900 H2BF	-1.3882167	down	thymosin beta15b   H2B histone family, member X, psi
8002470	HYDIN HYDIN2	-1.3885663	down	hydrocephalus inducing homolog (mouse)   hydroceph
8045816	GPD2	-1.3892317	down	glycerol-3-phosphate dehydrogenase 2 (mitochondrial
8156167	MAK10	-1.3895557	down	
8111136	FAM134B	-1.3904452	down	family with sequence similarity 134, member B
8116859	TMEM14C	-1.3910292	down	transmembrane protein 14C
8137257	GIMAP5	-1.3916525	down	GTPase, IMAP family member 5
8171435	PIR	-1.3927535	down	pirin (iron-binding nuclear protein)
7902965	BTBD8	-1.3931382	down	BTB (POZ) domain containing 8
8105077	CARD6	-1.3939395	down	caspase recruitment domain family, member 6
7934133	PPA1	-1.3945643	down	pyrophosphatase (inorganic) 1
8066214	TGM2	-1.3951226	down	transglutaminase 2 (C polypeptide, protein-glutamine-
7946635	ZBED5	-1.3961598	down	zinc finger, BED-type containing 5
8152845	FAM49B	-1.3963541	down	family with sequence similarity 49, member B
7961026	OVOS LOC728715	-1.3963943	down	ovostatin   similar to hCG38149
7938608	SPON1	-1.3968035	down	spondin 1, extracellular matrix protein
8098611	TLR3	-1.39705	down	toll-like receptor 3
7904930	GPR89B GPR89A	-1.3972759	down	G protein-coupled receptor 89B   G protein-coupled re
8093839	D4S234E	-1.3976603	down	DNA segment on chromosome 4 (unique) 234 expresse

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7918467	C1orf103	-1.3979871	down	chromosome 1 open reading frame 103
7983811	PIGB	-1.3982381	down	phosphatidylinositol glycan anchor biosynthesis, class I
8113483	XIRP1 FLJ43080	-1.3984685	down	xin actin-binding repeat containing 1   hypothetical pr
7952305	LOC283155	-1.3986114	down	
7916493	PPAP2B	-1.3988175	down	phosphatidic acid phosphatase type 2B
8130129	NUP43	-1.3988403	down	nucleoporin 43kDa
8169352	NXT2	-1.3989185	down	nuclear transport factor 2-like export factor 2
8089830	LRRC58	-1.3992414	down	leucine rich repeat containing 58
8099612	GPR125	-1.3996882	down	G protein-coupled receptor 125
7914996	C1orf149	-1.4007617	down	chromosome 1 open reading frame 149
8151931	TSPYL5	-1.4019753	down	TSPY-like 5
8097373	C4orf29	-1.403252	down	chromosome 4 open reading frame 29
8168984	BHLHB9	-1.4036213	down	basic helix-loop-helix domain containing, class B, 9
8149521	FGL1	-1.4039291	down	fibrinogen-like 1
8061138	CSRP2BP	-1.4041275	down	CSRP2 binding protein
8081431	ALCAM	-1.404739	down	activated leukocyte cell adhesion molecule
7927876	TET1	-1.4062673	down	tet oncogene 1
8143144	PTN	-1.4069335	down	pleiotrophin (heparin binding growth factor 8, neurite
8056022	CCDC148	-1.4070066	down	coiled-coil domain containing 148
7985662	PDE8A	-1.4071181	down	phosphodiesterase 8A
7947138	FANCF	-1.4077414	down	Fanconi anemia, complementation group F
7957673	C12orf55 FLJ3447	-1.4083985	down	chromosome 12 open reading frame 55   hypothetical
8046461	ZAK	-1.4084196	down	sterile alpha motif and leucine zipper containing kinase
7964810	MDM1	-1.4098608	down	Mdm1 nuclear protein homolog (mouse)
8030931	ZNF528	-1.4100763	down	zinc finger protein 528
8108697	PCDH5	-1.4102572	down	protocadherin beta 5
8147573	OSR2	-1.4111779	down	odd-skipped related 2 (Drosophila)
8168691	DIAPH2	-1.4111965	down	diaphanous homolog 2 (Drosophila)
8085852	NGLY1	-1.4112291	down	N-glycanase 1
8082607	ATP2C1	-1.4116626	down	ATPase, Ca <sup>++</sup> transporting, type 2C, member 1
8082750	UBA5	-1.4117255	down	ubiquitin-like modifier activating enzyme 5
7926385	STAM	-1.4117526	down	signal transducing adaptor molecule (SH3 domain and
8060949	ANKRD5	-1.4121696	down	ankyrin repeat domain 5

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7979400	C14orf37	-1.4123814	down	chromosome 14 open reading frame 37
8163444	ZFP37	-1.412385	down	zinc finger protein 37 homolog (mouse)
8056837	GPR155	-1.4142543	down	G protein-coupled receptor 155
7950885	FZD4	-1.4143964	down	frizzled homolog 4 (Drosophila)
7978666	MBIP	-1.4147903	down	MAP3K12 binding inhibitory protein 1
8013860	MYO18A TIAF1	-1.4150169	down	myosin XVIII A   TGFB1-induced anti-apoptotic factor 1
8083092	ZBTB38	-1.4152813	down	zinc finger and BTB domain containing 38
7933877	JMJD1C	-1.4153825	down	jumonji domain containing 1C
7952069	C11orf60	-1.415493	down	chromosome 11 open reading frame 60
8047403	CASP10	-1.415712	down	caspace 10, apoptosis-related cysteine peptidase
8055688	RND3	-1.4157882	down	Rho family GTPase 3
7947947	AGBL2	-1.416481	down	ATP/GTP binding protein-like 2
8112980	EDIL3	-1.4165454	down	EGF-like repeats and discoidin I-like domains 3
7968789	C13orf15	-1.4167507	down	chromosome 13 open reading frame 15
8048733	ACSL3	-1.4171171	down	acyl-CoA synthetase long-chain family member 3
8068620	SH3BGR	-1.4171462	down	SH3 domain binding glutamic acid-rich protein
8128650	SEC63	-1.4172465	down	
8051547	PRKD3	-1.417404	down	protein kinase D3
7979725	PIGH	-1.4188368	down	phosphatidylinositol glycan anchor biosynthesis, class I
8000003	THUMPD1	-1.4188387	down	THUMP domain containing 1
8022393	PTPN2	-1.4190145	down	protein tyrosine phosphatase, non-receptor type 2
7926356	PTER	-1.4193097	down	phosphotriesterase related
8082003	EAF2	-1.4198594	down	ELL associated factor 2
8017150	TUBD1	-1.4212801	down	tubulin, delta 1
7933750	SLC16A9	-1.4214863	down	solute carrier family 16, member 9 (monocarboxylic ac
7919251	GPR89B GPR89A	-1.4225287	down	G protein-coupled receptor 89B   G protein-coupled re
8152656	ZHX1 C8orf76	-1.4236457	down	zinc fingers and homeoboxes 1   chromosome 8 open r
7909689	SMYD2	-1.4237717	down	SET and MYND domain containing 2
7951397	CASP1	-1.4242914	down	caspace 1, apoptosis-related cysteine peptidase (interl
8040292	GREB1	-1.42515	down	
8094190	CC2D2A	-1.4261571	down	coiled-coil and C2 domain containing 2A
8138749	HOXA9	-1.4262367	down	homeobox A9
8069574	C21orf91	-1.4270542	down	chromosome 21 open reading frame 91

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7951429	KBTBD3	-1.4275355	down	kelch repeat and BTB (POZ) domain containing 3
7985044	UBE2Q2	-1.4275624	down	ubiquitin-conjugating enzyme E2Q family member 2
8150797	ATP6V1H	-1.4278587	down	ATPase, H <sup>+</sup> transporting, lysosomal 50/57kDa, V1 subu
8050160	MBOAT2	-1.4285187	down	membrane bound O-acyltransferase domain containin
8045857	LOC554201	-1.428961	down	
8152506	SAMD12	-1.4290661	down	sterile alpha motif domain containing 12
8094408	ANAPC4	-1.4293673	down	anaphase promoting complex subunit 4
7973036	PARP2	-1.4301333	down	poly (ADP-ribose) polymerase family, member 2
7917199	TTLL7	-1.4302025	down	tubulin tyrosine ligase-like family, member 7
7972682	KDELC1	-1.4307075	down	KDEL (Lys-Asp-Glu-Leu) containing 1
8052250	MTIF2	-1.431337	down	mitochondrial translational initiation factor 2
7938348	WEE1	-1.4319487	down	
8001800	CDH11	-1.4322343	down	cadherin 11, type 2, OB-cadherin (osteoblast)
8115368	NMUR2	-1.4333861	down	neuromedin U receptor 2
7969916	BIVM	-1.4339246	down	basic, immunoglobulin-like variable motif containing
8102214	PAPSS1	-1.4343549	down	3'-phosphoadenosine 5'-phosphosulfate synthase 1
8131815	KLHL7	-1.4343979	down	kelch-like 7 (Drosophila)
7961524	ERP27	-1.4348423	down	endoplasmic reticulum protein 27 kDa
7923978	CD34	-1.4349426	down	
8142663	NDUFA5	-1.4361502	down	NADH dehydrogenase (ubiquinone) 1 alpha subcomple
8064967	MKKS	-1.436847	down	McKusick-Kaufman syndrome
7922243	C1orf156	-1.4369229	down	chromosome 1 open reading frame 156
8113726	PPIC	-1.4377872	down	peptidylprolyl isomerase C (cyclophilin C)
7969935	ERCC5	-1.4395427	down	excision repair cross-complementing rodent repair def
7918008	DBT	-1.4399892	down	dihydrolipoamide branched chain transacylase E2
7928354	FAM149B1	-1.4438841	down	family with sequence similarity 149, member B1
7936891	METTLL10	-1.4448805	down	methyltransferase like 10
7905220	ECM1	-1.4465677	down	extracellular matrix protein 1
7917037	CRYZ	-1.4468992	down	crystallin, zeta (quinone reductase)
8089988	CCDC58	-1.4486501	down	coiled-coil domain containing 58
7918725	TRIM33	-1.4489337	down	tripartite motif-containing 33
7959638	TCTN2	-1.449375	down	tectonic family member 2
8133057	ZNF138	-1.4496394	down	zinc finger protein 138

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8133938	CROT	-1.4501095	down	carnitine O-octanoyltransferase
8043278	MRPL35	-1.4509768	down	mitochondrial ribosomal protein L35
8099912	C4orf34	-1.4512277	down	chromosome 4 open reading frame 34
8173217	ARHGEF9	-1.4513232	down	Cdc42 guanine nucleotide exchange factor (GEF) 9
7970624	CENPJ	-1.4517515	down	centromere protein J
7912157	ERRFI1	-1.452063	down	ERBB receptor feedback inhibitor 1
8103822	VEGFC	-1.4526007	down	vascular endothelial growth factor C
8020930	ELP2	-1.452831	down	elongation protein 2 homolog ( <i>S. cerevisiae</i> )
8111286	RNASEN	-1.4540946	down	ribonuclease type III, nuclear
8108099	SEC24A	-1.4544715	down	SEC24 related gene family, member A ( <i>S. cerevisiae</i> )
8133062	ZNF273	-1.4547535	down	zinc finger protein 273
7961844	CASC1	-1.4548087	down	cancer susceptibility candidate 1
8089743	B4GALT4	-1.4559598	down	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, p
8160284	FAM29A	-1.456216	down	family with sequence similarity 29, member A
8138834	FKBP14	-1.4565899	down	FK506 binding protein 14, 22 kDa
7950990	SLC36A4	-1.4575227	down	solute carrier family 36 (proton/amino acid symporter)
7979732	VTI1B	-1.4579264	down	vesicle transport through interaction with t-SNAREs ho
7899455	PHACTR4	-1.4579816	down	phosphatase and actin regulator 4
7965979	ALDH1L2	-1.4581316	down	aldehyde dehydrogenase 1 family, member L2
8001507	BBS2	-1.4588021	down	Bardet-Biedl syndrome 2
8138258	FLJ14712	-1.4596391	down	
8135211	MGC35361	-1.4602315	down	
7983469	SPATA5L1	-1.461961	down	spermatogenesis associated 5-like 1
8147439	PLEKHF2	-1.4621185	down	pleckstrin homology domain containing, family F (with
8121392	C6orf182   C6orf18	-1.4625494	down	chromosome 6 open reading frame 182   chromosome
7984686	BBS4	-1.4640034	down	Bardet-Biedl syndrome 4
8122045	AKAP7	-1.4640801	down	A kinase (PRKA) anchor protein 7
8052762	GFPT1	-1.464691	down	glutamine-fructose-6-phosphate transaminase 1
8091648	SSR3	-1.4649304	down	signal sequence receptor, gamma (translocon-associat
8128818	WASF1	-1.4652175	down	WAS protein family, member 1
8126710	SUPT3H	-1.4660954	down	suppressor of Ty 3 homolog ( <i>S. cerevisiae</i> )
8075709	APOL4	-1.4666752	down	apolipoprotein L, 4
7975676	C14orf45	-1.46679	down	chromosome 14 open reading frame 45

Supplemental Table 1c  
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7954460	LYRM5	-1.4674106	down	LYR motif containing 5
8161537	CBWD3 CBWD1 C	-1.4682728	down	COBW domain containing 3   COBW domain containi
8113413	NUDT12	-1.4691314	down	nudix (nucleoside diphosphate linked moiety X)-type n
8020468	RBBP8	-1.4691681	down	retinoblastoma binding protein 8
8031837	ZNF587	-1.4694781	down	zinc finger protein 587
8102655	BBS7	-1.4700382	down	Bardet-Biedl syndrome 7
8046680	PLEKHA3	-1.4718678	down	pleckstrin homology domain containing, family A (phos
8152962	LRR6	-1.4719805	down	leucine rich repeat containing 6
7932703	ACBD5	-1.4725046	down	acyl-Coenzyme A binding domain containing 5
7965789	ARL1	-1.4726894	down	ADP-ribosylation factor-like 1
8107859	LYRM7	-1.4728385	down	Lym7 homolog (mouse)
8108703	PCDHB6	-1.4732925	down	protocadherin beta 6
7946245	DCHS1	-1.4735414	down	dachsous 1 (Drosophila)
7991640	TARSL2	-1.4741423	down	threonyl-tRNA synthetase-like 2
8005603	SLC47A1	-1.4745452	down	solute carrier family 47, member 1
8108708	PCDHB7	-1.4747671	down	protocadherin beta 7
8141035	SGCE	-1.4750711	down	sarcoglycan, epsilon
8150143	PURG	-1.4756404	down	purine-rich element binding protein G
8121144	MANEA	-1.47586	down	mannosidase, endo-alpha
8131475	C1GALT1	-1.4762735	down	core 1 synthase, glycoprotein-N-acetylgalactosamine 3
8008547	TOM1L1	-1.4768412	down	target of myb1 (chicken)-like 1
8046685	UBE2E3 UBE2E4P	-1.477059	down	ubiquitin-conjugating enzyme E2E 3 (UBC4/5 homolog,
8171006	BRCC3	-1.4775213	down	BRCA1/BRCA2-containing complex, subunit 3
8155636	CBWD3 CBWD1 C	-1.4775282	down	COBW domain containing 3   COBW domain containi
7928491	MYST4	-1.4776882	down	MYST histone acetyltransferase (monocytic leukemia)
8068522	TTC3	-1.4777967	down	tetratricopeptide repeat domain 3
8002481	HYDIN HYDIN2	-1.4782513	down	hydrocephalus inducing homolog (mouse)   hydroceph
8096771	DC2	-1.4783653	down	
8123598	SERPINB1	-1.4788173	down	serpin peptidase inhibitor, clade B (ovalbumin), memb
7934411	USP54	-1.4790831	down	ubiquitin specific peptidase 54
8067985	NCAM2	-1.4799229	down	neural cell adhesion molecule 2
8098214	TLL1	-1.480895	down	tolloid-like 1
8051707	MAP4K3	-1.4818605	down	mitogen-activated protein kinase kinase kinase kinase



Supplemental Table 1c  
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7960411	C12orf4	-1.482407	down	chromosome 12 open reading frame 4
8044613	CBWD1 CBWD3 C	-1.4827119	down	COBW domain containing 1   COBW domain containin
8160260	BNC2	-1.4829035	down	basonuclin 2
8023415	TCF4	-1.4839735	down	transcription factor 4
8080847	C3orf14	-1.4846299	down	chromosome 3 open reading frame 14
8003060	HSPC105	-1.4860972	down	NAD(P) dependent steroid dehydrogenase-like
8157092	TMEM38B	-1.4861635	down	transmembrane protein 38B
8059801	USP40	-1.4863919	down	ubiquitin specific peptidase 40
7925130	TARBP1	-1.48683	down	TAR (HIV-1) RNA binding protein 1
8023165	HDHD2	-1.4871764	down	haloacid dehalogenase-like hydrolase domain containi
7934178	PCBD1	-1.4878438	down	pterin-4 alpha-carbinolamine dehydratase/dimerizatio
8114326	C5orf5	-1.4881687	down	chromosome 5 open reading frame 5
8097704	TMEM34	-1.4889041	down	transmembrane protein 34
8160332	MLLT3	-1.4890066	down	myeloid/lymphoid or mixed-lineage leukemia (trithora
7988970	KIAA1370	-1.4890292	down	
7951672	PIH1D2	-1.4899294	down	PIH1 domain containing 2
8130032	FBXO30	-1.4908626	down	F-box protein 30
8012475	MYH10	-1.4909551	down	myosin, heavy chain 10, non-muscle
8113733	CCDC100	-1.4910212	down	coiled-coil domain containing 100
8127767	ELOVL4	-1.4913149	down	elongation of very long chain fatty acids (FEN1/Elo2, SL
8078380	LOC344787	-1.4926227	down	similar to zinc finger protein 813
7964868	LOC100131613	-1.4927669	down	PRO1454
7927062	ZNF33A	-1.4970798	down	zinc finger protein 33A
8156581	C9orf102	-1.4971478	down	chromosome 9 open reading frame 102
8008646	SCPEP1	-1.4975375	down	serine carboxypeptidase 1
7902104	PDE4B	-1.4989545	down	phosphodiesterase 4B, cAMP-specific (phosphodiester
8061305	C20orf19	-1.4995377	down	chromosome 20 open reading frame 19
7916789	WDR78	-1.4998413	down	WD repeat domain 78
8151471	MRPS28 TPD52	-1.500143	down	mitochondrial ribosomal protein S28   tumor protein C
8162147	ZCCHC6	-1.5006226	down	zinc finger, CCHC domain containing 6
8042356	MEIS1	-1.50126	down	Meis homeobox 1
8027241	ZNF253	-1.5013075	down	zinc finger protein 253
8080562	IL17RB	-1.5013299	down	interleukin 17 receptor B

Supplemental Table 1c  
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7957793	ACTR6	-1.501689	down	ARP6 actin-related protein 6 homolog (yeast)
8126259	C6orf130	-1.5030485	down	chromosome 6 open reading frame 130
7932000	KIN	-1.5034581	down	
7924351	EPRS	-1.5039093	down	glutamyl-prolyl-tRNA synthetase
8127787	IBTK	-1.5045267	down	inhibitor of Bruton agammaglobulinemia tyrosine kinase
8113773	ALDH7A1	-1.5050336	down	aldehyde dehydrogenase 7 family, member A1
7904853	GPR89C GPR89A	-1.5051448	down	G protein-coupled receptor 89C   G protein-coupled receptor 89A
7958346	C12orf23	-1.5056986	down	chromosome 12 open reading frame 23
8078014	SLC6A6	-1.505861	down	solute carrier family 6 (neurotransmitter transporter, taurine)
7996198	CCDC113	-1.5064627	down	coiled-coil domain containing 113
8091354	HLTF	-1.5074201	down	helicase-like transcription factor
8108238	SMAD5	-1.5107737	down	SMAD family member 5
8098084	ETFDH	-1.5110683	down	electron-transferring-flavoprotein dehydrogenase
8056257	FAP	-1.5121875	down	fibroblast activation protein, alpha
8112841	HOMER1	-1.5126535	down	homer homolog 1 (Drosophila)
8112081	DHX29	-1.5128584	down	DEAH (Asp-Glu-Ala-His) box polypeptide 29
7974542	C14orf101	-1.5129092	down	chromosome 14 open reading frame 101
7967386	MPHOSPH9	-1.5129176	down	M-phase phosphoprotein 9
8122202	MYB	-1.5133398	down	v-myb myeloblastosis viral oncogene homolog (avian)
8098556	CCDC111	-1.5137573	down	coiled-coil domain containing 111
8106602	ZFYVE16	-1.5137743	down	zinc finger, FYVE domain containing 16
7950544	PRKRIR	-1.5142708	down	protein-kinase, interferon-inducible double stranded RNA dependent
8147172	CPNE3	-1.5153732	down	copine III
7974316	FRMD6	-1.5153861	down	FERM domain containing 6
7970546	EFHA1	-1.5163343	down	EF-hand domain family, member A1
8168976	GPRASP2	-1.5165008	down	G protein-coupled receptor associated sorting protein
8089299	CD47	-1.5174485	down	CD47
8120833	SH3BGRL2	-1.5175054	down	SH3 domain binding glutamic acid-rich protein like 2
8014172	CCT6B	-1.5185297	down	chaperonin containing TCP1, subunit 6B (zeta 2)
8094456	LOC389203	-1.5186715	down	hypothetical gene supported by BC032431
7974799	MNAT1	-1.5190222	down	menage a trois homolog 1, cyclin H assembly factor (Xenopus)
7907104	IQWD1	-1.5190907	down	IQ motif and WD repeats 1
8140668	SEMA3A	-1.5192072	down	sema domain, immunoglobulin domain (Ig), short basic

Supplemental Table 1c  
eMSC vs. eSF

8102415	CAMK2D	-1.5199513	down	calcium/calmodulin-dependent protein kinase (CaM ki
8127743	HMGN3	-1.5205274	down	high mobility group nucleosomal binding domain 3
8144786	SLC7A2	-1.5206119	down	solute carrier family 7 (cationic amino acid transporter
7983191	ADAL	-1.5209591	down	adenosine deaminase-like
8178275	ZNF311	-1.5211201	down	zinc finger protein 311
7976571	C14orf129	-1.5221581	down	chromosome 14 open reading frame 129
7917896	ALG14	-1.5224823	down	asparagine-linked glycosylation 14 homolog ( <i>S. cerevisi</i>
7971565	P2RY5	-1.5229462	down	purinergic receptor P2Y, G-protein coupled, 5
7917503	GBP3	-1.5231036	down	guanylate binding protein 3
7967863	ZNF605	-1.5233438	down	zinc finger protein 605
7917976	SASS6	-1.5239147	down	spindle assembly 6 homolog ( <i>C. elegans</i> )
8096411	TIGD2	-1.5244933	down	tigger transposable element derived 2
8124622	ZNF311	-1.5252042	down	zinc finger protein 311
8113981	P4HA2	-1.5257654	down	procollagen-proline, 2-oxoglutarate 4-dioxygenase (pro
8173551	PHKA1	-1.5258486	down	phosphorylase kinase, alpha 1 (muscle)
8044278	CCDC138	-1.5263616	down	coiled-coil domain containing 138
8155734	C9orf61	-1.5281614	down	chromosome 9 open reading frame 61
8021966	ENOSF1	-1.5285763	down	enolase superfamily member 1
8129649	C6orf192	-1.5307114	down	chromosome 6 open reading frame 192
8148124	MTBP	-1.530879	down	Mdm2, transformed 3T3 cell double minute 2, p53 bin
7922598	ANGPTL1	-1.5312603	down	angiopoietin-like 1
8052934	MCEE	-1.532787	down	methylmalonyl CoA epimerase
7962185	AMN1	-1.5336196	down	antagonist of mitotic exit network 1 homolog ( <i>S. cerevi</i>
8156783	COL15A1	-1.5341902	down	collagen, type XV, alpha 1
7901804	INADL	-1.5378401	down	InaD-like ( <i>Drosophila</i> )
8108688	PCDHB3	-1.5381403	down	protocadherin beta 3
8114193	SAR1B	-1.5388455	down	SAR1 gene homolog B ( <i>S. cerevisiae</i> )
8171708	CXorf23	-1.5390779	down	chromosome X open reading frame 23
8000013	EXOD1 DCUN1D3	-1.5393112	down	exonuclease domain containing 1   DCN1, defective in
8112622	GFM2	-1.539664	down	G elongation factor, mitochondrial 2
8152703	FBXO32	-1.5401247	down	F-box protein 32
7950731	PRCP	-1.5406445	down	prolylcarboxypeptidase (angiotensinase C)
8168855	ARMCX4	-1.5414732	down	armadillo repeat containing, X-linked 4

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8161945	RASEF	-1.541532	down	RAS and EF-hand domain containing
7948896	SNORD22 SNHG1	-1.5422262	down	small nucleolar RNA, C/D box 22   small nucleolar RNA
8174779	LAMP2	-1.5426806	down	lysosomal-associated membrane protein 2
8109938	RANBP17	-1.5427408	down	RAN binding protein 17
7965156	LIN7A	-1.5429394	down	lin-7 homolog A (C. elegans)
8166455	PRDX4	-1.5436784	down	peroxiredoxin 4
7903281	SLC35A3	-1.5442758	down	solute carrier family 35 (UDP-N-acetylglucosamine (UD
7914218	TAF12	-1.5446957	down	
8119898	VEGFA	-1.5447849	down	vascular endothelial growth factor A
8056408	GALNT3	-1.5449182	down	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-ac
8122242	PEX7	-1.5450113	down	peroxisomal biogenesis factor 7
7965403	LUM	-1.5455178	down	lumican
8042468	ANXA4	-1.5476896	down	annexin A4
7989069	PYGO1	-1.5482919	down	pygopus homolog 1 (Drosophila)
8137483	FLJ16734	-1.5486803	down	hypothetical LOC641928
7968556	KL	-1.5496354	down	klotho
8116494	ZFP62	-1.550322	down	zinc finger protein 62 homolog (mouse)
8097066	KIAA1627	-1.5528752	down	
7931281	FANK1	-1.5534186	down	fibronectin type III and ankyrin repeat domains 1
7939411	C11orf74	-1.5545939	down	chromosome 11 open reading frame 74
8127756	LCA5	-1.5547072	down	Leber congenital amaurosis 5
8155422	CBWD5 CBWD2 C	-1.5565745	down	COBW domain containing 5   COBW domain containin
8102232	LEF1	-1.5568664	down	lymphoid enhancer-binding factor 1
7965410	DCN	-1.5569361	down	decorin
8058462	MDH1B	-1.5575017	down	malate dehydrogenase 1B, NAD (soluble)
8097256	FGF2	-1.5577146	down	fibroblast growth factor 2 (basic)
8042310	SLC1A4	-1.5577699	down	solute carrier family 1 (glutamate/neutral amino acid t
8041519	FAM82A	-1.5578806	down	family with sequence similarity 82, member A
8021275	POLI	-1.5587158	down	polymerase (DNA directed) iota
7964602	LRIG3	-1.5602441	down	leucine-rich repeats and immunoglobulin-like domains
7901426	ZFYVE9	-1.5603764	down	zinc finger, FYVE domain containing 9
8151066	ARMC1	-1.5604278	down	armadillo repeat containing 1
8101260	ANTXR2	-1.5616726	down	anthrax toxin receptor 2

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7986757	NDN	-1.562996	down	necdin homolog (mouse)
7918759	BCAS2 DENND2C	-1.5631377	down	breast carcinoma amplified sequence 2   DENN/MADD
8042259	MDH1	-1.5642657	down	malate dehydrogenase 1, NAD (soluble)
7932885	ARHGAP12	-1.5644273	down	Rho GTPase activating protein 12
8001197	NETO2	-1.5655229	down	neuropilin (NRP) and tolloid (TLL)-like 2
7936419	C10orf118	-1.5655321	down	chromosome 10 open reading frame 118
8033667	ZNF558	-1.5677869	down	zinc finger protein 558
7991216	DET1	-1.5679959	down	de-etiolated homolog 1 (Arabidopsis)
8122038	TMEM200A	-1.5681921	down	transmembrane protein 200A
7980908	FBLN5	-1.5689859	down	fibulin 5
8156919	MURC	-1.5691158	down	muscle-restricted coiled-coil protein
8028194	ZNF382	-1.5691983	down	zinc finger protein 382
8140971	SAMD9L	-1.5704027	down	sterile alpha motif domain containing 9-like
7950641	KCTD14	-1.5714226	down	potassium channel tetramerisation domain containing
7986350	ARRDC4	-1.5729293	down	arrestin domain containing 4
7983843	TCF12	-1.5738292	down	transcription factor 12 (HTF4, helix-loop-helix transcrip
8116402	MAPK9	-1.5742433	down	mitogen-activated protein kinase 9
8176174	MPP1	-1.5745857	down	membrane protein, palmitoylated 1, 55kDa
7980246	MLH3	-1.5746665	down	mutL homolog 3 (E. coli)
8116867	TMEM14B	-1.5754601	down	transmembrane protein 14B
8094342	C4orf28	-1.5760298	down	chromosome 4 open reading frame 28
7949931	SUV420H1	-1.5760835	down	suppressor of variegation 4-20 homolog 1 (Drosophila)
8052626	VPS54	-1.5767558	down	vacuolar protein sorting 54 homolog (S. cerevisiae)
7939341	CD44	-1.5782498	down	
7974771	C14orf135 LOC10	-1.5799077	down	chromosome 14 open reading frame 135   hypothetical
7943231	ANKRD49	-1.5799383	down	ankyrin repeat domain 49
7932744	ARMC4	-1.5806359	down	armadillo repeat containing 4
7972336	DZIP1	-1.5814859	down	DAZ interacting protein 1
8120222	EFHC1	-1.5822091	down	EF-hand domain (C-terminal) containing 1
8129706	HBS1L	-1.5830183	down	HBS1-like (S. cerevisiae)
8161839	C9orf95	-1.5842971	down	chromosome 9 open reading frame 95
8058147	PPIL3	-1.5845476	down	peptidylprolyl isomerase (cyclophilin)-like 3
7965486	CCDC41	-1.5850966	down	coiled-coil domain containing 41

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8023727	DSEL	-1.5856217	down	dermatan sulfate epimerase-like
8151942	HRSP12	-1.5857962	down	heat-responsive protein 12
8085815	TOP2B	-1.5882039	down	topoisomerase (DNA) II beta 180kDa
8168580	APOOL	-1.5887117	down	apolipoprotein O-like
8157021	NIPSNAP3A	-1.5889505	down	nipsnap homolog 3A (C. elegans)
8101624	KLHL8	-1.5893319	down	kelch-like 8 (Drosophila)
7974781	PPM1A	-1.5916457	down	protein phosphatase 1A (formerly 2C), magnesium-dep
8175076	ZNF280C	-1.591985	down	zinc finger protein 280C
8121461	CDC40	-1.592228	down	cell division cycle 40 homolog (S. cerevisiae)
7965855	NUP37	-1.5924133	down	nucleoporin 37kDa
8046020	SCN2A	-1.5932195	down	sodium channel, voltage-gated, type II, alpha subunit
8002446	HYDIN HYDIN2	-1.5932844	down	hydrocephalus inducing homolog (mouse)   hydroceph
8083978	NAALADL2	-1.5937189	down	N-acetylated alpha-linked acidic dipeptidase-like 2
8060988	BTBD3	-1.5950534	down	BTB (POZ) domain containing 3
8097717	ARHGAP10	-1.595486	down	Rho GTPase activating protein 10
8096109	MRPS18C	-1.5973694	down	mitochondrial ribosomal protein S18C
7950796	CREBZF	-1.597848	down	CREB/ATF bZIP transcription factor
7902541	IFI44L	-1.597888	down	interferon-induced protein 44-like
7979906	C14orf112	-1.5988823	down	chromosome 14 open reading frame 112
8090577	MBD4	-1.5996836	down	methyl-CpG binding domain protein 4
8138912	LSM5	-1.6006461	down	
8102249	AGXT2L1	-1.6008227	down	alanine-glyoxylate aminotransferase 2-like 1
8092009	LRRC34	-1.6009487	down	leucine rich repeat containing 34
8142415	FLJ31818	-1.6009897	down	
7919815	CTSK	-1.6019467	down	cathepsin K
8048835	C2orf33	-1.6019949	down	chromosome 2 open reading frame 33
7985089	RCN2	-1.6020317	down	reticulocalbin 2, EF-hand calcium binding domain
7926609	BMI1	-1.6020659	down	
8069744	RWDD2B	-1.6021618	down	RWD domain containing 2B
7990810	MTHFS ST20	-1.6025805	down	5,10-methenyltetrahydrofolate synthetase (5-formylte
8073015	KDELR3	-1.6029493	down	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein
8168589	ZNF711	-1.6032984	down	zinc finger protein 711
8155673	PIP5K1B	-1.6039761	down	phosphatidylinositol-4-phosphate 5-kinase, type I, bet

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8065566	DEFB124	-1.6050211	down	defensin, beta 124
8112439	CCDC125	-1.605115	down	coiled-coil domain containing 125
8173917	NAP1L3	-1.6055083	down	nucleosome assembly protein 1-like 3
8156601	C9orf102	-1.6055546	down	chromosome 9 open reading frame 102
8099524	LDB2	-1.6060039	down	LIM domain binding 2
8156160	LOC100129901	-1.6060578	down	similar to KIF27B
8103289	PLRG1	-1.6064636	down	pleiotropic regulator 1 (PRL1 homolog, Arabidopsis)
8065248	LOC100130264	-1.6071815	down	similar to hCG2038397
8122843	ESR1	-1.607868	down	estrogen receptor 1
8120165	CENPQ	-1.6079777	down	centromere protein Q
8173059	WNK3	-1.6087321	down	WNK lysine deficient protein kinase 3
8130422	CNKSR3	-1.6088166	down	CNKSR family member 3
8141024	BET1	-1.609102	down	blocked early in transport 1 homolog ( <i>S. cerevisiae</i> )
7915870	ATPAF1	-1.6096023	down	ATP synthase mitochondrial F1 complex assembly factor
8140170	GTF2IRD2 GTF2IR	-1.6105119	down	GTF2I repeat domain containing 2   GTF2I repeat domain
8162586	SLC35D2	-1.6108234	down	solute carrier family 35, member D2
8108724	PCDHB10	-1.6109524	down	protocadherin beta 10
8090133	CCDC14	-1.6117724	down	coiled-coil domain containing 14
7929816	SCD	-1.6126927	down	stearoyl-CoA desaturase (delta-9-desaturase)
8094476	TBC1D19	-1.6134588	down	TBC1 domain family, member 19
8175755	CETN2	-1.6135046	down	centrin, EF-hand protein, 2
7917482	CCBL2	-1.6141099	down	cysteine conjugate-beta lyase 2
7943498	DYNC2H1	-1.6141503	down	dynein, cytoplasmic 2, heavy chain 1
7989315	GTF2A2	-1.6147581	down	general transcription factor IIA, 2, 12kDa
7948900	SNORD30	-1.6153042	down	small nucleolar RNA, C/D box 30
8021496	KIAA1468	-1.6154156	down	
8163839	C5	-1.6167551	down	complement component 5
7954613	CCDC91	-1.617641	down	coiled-coil domain containing 91
7908988	SNRPE	-1.6177547	down	small nuclear ribonucleoprotein polypeptide E
8100298	OCIAD2	-1.617899	down	OCIA domain containing 2
7926916	ZEB1	-1.6182947	down	zinc finger E-box binding homeobox 1
8102342	ELOVL6	-1.6191603	down	ELOVL family member 6, elongation of long chain fatty
8098344	NBLA00301	-1.6197239	down	Nbla00301

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8080781	PXK	-1.6210932	down	PX domain containing serine/threonine kinase
8112388	TRIM23	-1.6223167	down	tripartite motif-containing 23
7975136	FUT8	-1.6223449	down	fucosyltransferase 8 (alpha (1,6) fucosyltransferase)
8020267	CEP192	-1.6223944	down	centrosomal protein 192kDa
7943803	DIXDC1	-1.6230975	down	DIX domain containing 1
8130664	C6orf118	-1.6236572	down	chromosome 6 open reading frame 118
7936408	DCLRE1A	-1.6244687	down	DNA cross-link repair 1A (PSO2 homolog, <i>S. cerevisiae</i> )
8127872	SNAP91	-1.6249092	down	synaptosomal-associated protein, 91kDa homolog (mo
8155864	RORB	-1.6250852	down	RAR-related orphan receptor B
7932285	C10orf97	-1.6252877	down	chromosome 10 open reading frame 97
8114006	FLJ44796	-1.6268475	down	
8063444	TSHZ2	-1.6272953	down	teashirt zinc finger homeobox 2
8133258	WBSCR17	-1.6280159	down	Williams-Beuren syndrome chromosome region 17
8021470	PMAIP1	-1.6286886	down	phorbol-12-myristate-13-acetate-induced protein 1
8056217	MXRA7	-1.6296337	down	matrix-remodelling associated 7
8067305	SYCP2	-1.629786	down	synaptonemal complex protein 2
8009255	CCDC45	-1.6313971	down	coiled-coil domain containing 45
8050608	C2orf43	-1.6316285	down	chromosome 2 open reading frame 43
8042402	C2orf13 PROKR1	-1.6316448	down	chromosome 2 open reading frame 13   prokineticin re
8103834	AGA	-1.6317315	down	aspartylglucosaminidase
7971335	CCDC122	-1.6325232	down	coiled-coil domain containing 122
8094134	DUB4	-1.6334666	down	
7936346	ZDHHC6	-1.6334732	down	zinc finger, DHHC-type containing 6
7918457	KCNA3	-1.6344477	down	potassium voltage-gated channel, shaker-related subfa
7930614	NHLRC2	-1.635246	down	NHL repeat containing 2
8172043	SRPX	-1.6353998	down	sushi-repeat-containing protein, X-linked
7944656	SC5DL	-1.6358224	down	sterol-C5-desaturase (ERG3 delta-5-desaturase homolo
7939158	QSER1	-1.6367818	down	glutamine and serine rich 1
8088247	ARHGEF3	-1.6367948	down	Rho guanine nucleotide exchange factor (GEF) 3
8152453	TRPS1	-1.637631	down	trichorhinophalangeal syndrome I
8008113	CALCOCO2	-1.6377095	down	calcium binding and coiled-coil domain 2
8001149	VPS35	-1.6382006	down	vacuolar protein sorting 35 homolog ( <i>S. cerevisiae</i> )
8133549	GTF2IRD2 GTF2IR	-1.6398258	down	GTF2I repeat domain containing 2   GTF2I repeat domi



Supplemental Table 1c  
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8147837	ZFPM2	-1.6400259	down	zinc finger protein, multitype 2
7918255	CLCC1	-1.6405592	down	chloride channel CLIC-like 1
8017736	CCDC46	-1.6421964	down	coiled-coil domain containing 46
7958620	IFT81	-1.642314	down	intraflagellar transport 81 homolog (Chlamydomonas)
8101489	CCDC98	-1.6426896	down	coiled-coil domain containing 98
7960383	PARP11	-1.6427904	down	poly (ADP-ribose) polymerase family, member 11
7897378	PER3	-1.6455582	down	period homolog 3 (Drosophila)
8121429	FIG4	-1.6477137	down	
8041867	MSH2	-1.648591	down	mutS homolog 2, colon cancer, nonpolyposis type 1 (E.
8100382	CHIC2	-1.6488861	down	cysteine-rich hydrophobic domain 2
8161575	CBWD5   CBWD3	-1.6491047	down	COBW domain containing 5   COBW domain containi
8091446	PFN2	-1.651135	down	profilin 2
8031640	ZNF583	-1.6514444	down	zinc finger protein 583
7923131	DENND1B   C1orf2	-1.6518928	down	DENN/MADD domain containing 1B   chromosome 1 c
7956522	KIF5A	-1.6519381	down	kinesin family member 5A
7961767	KIAA0528	-1.6526507	down	
8130102	KATNA1	-1.6532524	down	katanin p60 (ATPase-containing) subunit A 1
8095894	MRPL1	-1.6539545	down	mitochondrial ribosomal protein L1
7902810	LMO4	-1.6541767	down	LIM domain only 4
8100870	ADAMTS3	-1.6568966	down	ADAM metalloproteinase with thrombospondin type 1
8034342	ZNF625   ZNF20	-1.6591458	down	zinc finger protein 625   zinc finger protein 20
7965956	NFYB	-1.659148	down	nuclear transcription factor Y, beta
8056285	IFIH1	-1.6592818	down	interferon induced with helicase C domain 1
7901895	ATG4C	-1.6597952	down	ATG4 autophagy related 4 homolog C (S. cerevisiae)
7913582	ZNF436	-1.6604872	down	zinc finger protein 436
8140500	TMEM60	-1.6605773	down	transmembrane protein 60
8087985	GLT8D1	-1.660992	down	glycosyltransferase 8 domain containing 1
8165486	TMEM203   LOC65	-1.6617258	down	transmembrane protein 203   hypothetical LOC653383
8127841	PGM3	-1.6626761	down	phosphoglucomutase 3
7968711	COG6	-1.663351	down	component of oligomeric golgi complex 6
8111129	ZNF622	-1.6647754	down	zinc finger protein 622
8108217	TGFBI	-1.6667819	down	transforming growth factor, beta-induced, 68kDa
8091737	IFT80	-1.6669492	down	intraflagellar transport 80 homolog (Chlamydomonas)

Supplemental Table 1c  
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8106702	ZCCHC9	-1.667266	down	zinc finger, CCHC domain containing 9
8068024	JAM2	-1.6697478	down	junctional adhesion molecule 2
7943442	DYNC2H1	-1.6700706	down	dynein, cytoplasmic 2, heavy chain 1
8038967	ZNF83	-1.670542	down	zinc finger protein 83
8040163	IAH1	-1.6714059	down	isoamyl acetate-hydrolyzing esterase 1 homolog ( <i>S. cerevisiae</i> )
7936673	RGS10	-1.6716824	down	regulator of G-protein signaling 10
7957386	ACSS3	-1.6719587	down	acyl-CoA synthetase short-chain family member 3
8144742	EFHA2	-1.6721917	down	EF-hand domain family, member A2
8139198	RWDD4A	-1.6727659	down	RWD domain containing 4A
8124502	ZNF184	-1.673595	down	zinc finger protein 184
8162533	PTCH1	-1.6738174	down	patched homolog 1 ( <i>Drosophila</i> )
8147313	TMEM67	-1.674523	down	transmembrane protein 67
7934334	TTC18	-1.674913	down	tetratricopeptide repeat domain 18
8112967	TMEM167	-1.6750928	down	transmembrane protein 167
7942957	PRSS23	-1.6760192	down	protease, serine, 23
8050507	WDR35	-1.6761388	down	WD repeat domain 35
8085954	AZI2	-1.6768174	down	5-azacytidine induced 2
8112121	SLC38A9	-1.6774508	down	solute carrier family 38, member 9
8008564	OK/KNS-CL.3	-1.6795447	down	
8062748	IFT52	-1.6797383	down	intraflagellar transport 52 homolog ( <i>Chlamydomonas</i> )
8105778	PIK3R1	-1.6806723	down	phosphoinositide-3-kinase, regulatory subunit 1 (alpha)
8051928	PREPL	-1.6816901	down	prolyl endopeptidase-like
7943620	ATM NPAT	-1.6824838	down	ataxia telangiectasia mutated   nuclear protein, ataxia-
8177628	CCDC125	-1.6846635	down	coiled-coil domain containing 125
8131479	FLJ20323	-1.685112	down	
8097529	ELMOD2	-1.6855313	down	ELMO/CED-12 domain containing 2
7947363	WT1	-1.6857014	down	Wilms tumor 1
8055445	DARS	-1.6863666	down	aspartyl-tRNA synthetase
7910680	GPR137B	-1.687347	down	G protein-coupled receptor 137B
8131600	TSPAN13	-1.688893	down	tetraspanin 13
7989023	RAB27A	-1.6893039	down	
8030908	ZNF480	-1.6894664	down	zinc finger protein 480
8046895	KIAA1946	-1.6901152	down	

Supplemental Table 1c  
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8175432	SNORD61	-1.6912977	down	small nucleolar RNA, C/D box 61
7962112	CAPRIN2	-1.6915087	down	caprin family member 2
8107119	TMEM157	-1.6917092	down	transmembrane protein 157
8042223	EHBP1	-1.691839	down	EH domain binding protein 1
7942830	LOC100130425 G	-1.691872	down	hypothetical protein LOC100130425   GCRG-P224
8122409	PEX3	-1.6932428	down	peroxisomal biogenesis factor 3
7951408	COP1	-1.693726	down	caspase-1 dominant-negative inhibitor pseudo-ICE
7930927	INPP5F	-1.6980906	down	inositol polyphosphate-5-phosphatase F
7962327	SLC2A13	-1.699455	down	solute carrier family 2 (facilitated glucose transporter),
7968516	PDS5B	-1.7006209	down	PDS5, regulator of cohesion maintenance, homolog B (
7922137	NME7	-1.7008481	down	non-metastatic cells 7, protein expressed in (nucleosid
7923119	ZBTB41	-1.7010677	down	zinc finger and BTB domain containing 41
8094778	UCHL1	-1.7023894	down	ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiol
8130720	SFT2D1	-1.704757	down	SFT2 domain containing 1
7918034	DPH5	-1.7049887	down	
8045736	FMNL2	-1.705456	down	formin-like 2
7901460	GPX7	-1.7067983	down	glutathione peroxidase 7
7973918	C14orf24	-1.7077295	down	chromosome 14 open reading frame 24
8157976	GARNL3	-1.7079167	down	GTPase activating Rap/RanGAP domain-like 3
8006345	RHOT1	-1.7081544	down	ras homolog gene family, member T1
7927786	REEP3	-1.7092034	down	receptor accessory protein 3
8107942	RAD50	-1.7096817	down	
8168749	SRPX2	-1.7102072	down	sushi-repeat-containing protein, X-linked 2
8159850	FLJ35024	-1.7130233	down	hypothetical LOC401491
7976084	SPATA7	-1.7135618	down	spermatogenesis associated 7
8146024	ADAM32	-1.7152684	down	ADAM metallopeptidase domain 32
8023191	SMAD2	-1.7168537	down	SMAD family member 2
8106516	JMY	-1.7191856	down	junction-mediating and regulatory protein
7918026	EXTL2	-1.7192307	down	exostoses (multiple)-like 2
8105111	FBXO4	-1.7200513	down	F-box protein 4
7910591	C1orf57	-1.7204006	down	chromosome 1 open reading frame 57
8128726	PPIL6	-1.7206413	down	peptidylprolyl isomerase (cyclophilin)-like 6
8048081	SPAG16	-1.7222686	down	sperm associated antigen 16

Supplemental Table 1c  
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8082643	NEK11	-1.7240778	down	NIMA (never in mitosis gene a)- related kinase 11
7958158	HCFC2	-1.7246363	down	host cell factor C2
8122317	HEBP2	-1.724993	down	heme binding protein 2
8123695	PECI	-1.7261373	down	peroxisomal D3,D2-enoyl-CoA isomerase
8120378	KIAA1586	-1.7266681	down	
8155460	CNTNAP3 CNTNA	-1.7273395	down	contactin associated protein-like 3   contactin associat
8129974	FUCA2	-1.727842	down	fucosidase, alpha-L- 2, plasma
7902553	IFI44	-1.7282678	down	interferon-induced protein 44
8166243	REPS2	-1.7283487	down	RALBP1 associated Eps domain containing 2
8135235	PMPCB	-1.7284749	down	peptidase (mitochondrial processing) beta
8042737	ALMS1	-1.7288712	down	Alstrom syndrome 1
7956488	KIF5A	-1.7311764	down	kinesin family member 5A
8121734	ASF1A	-1.7313331	down	ASF1 anti-silencing function 1 homolog A (S. cerevisiae
8095760	THAP6	-1.7315409	down	THAP domain containing 6
8129273	C6orf170	-1.7321315	down	chromosome 6 open reading frame 170
7968577	NBEA	-1.7341967	down	neurobeachin
8174119	ZMAT1	-1.7343245	down	zinc finger, matrin type 1
8094719	N4BP2	-1.735877	down	NEDD4 binding protein 2
7973840	ARHGAP5	-1.736843	down	Rho GTPase activating protein 5
7987145	FMN1	-1.7372627	down	formin 1
8174201	BEX1	-1.7373329	down	brain expressed, X-linked 1
8073799	ATXN10	-1.7376318	down	ataxin 10
8174610	LRCH2	-1.7379047	down	leucine-rich repeats and calponin homology (CH) doma
8090988	CEP70	-1.7382975	down	centrosomal protein 70kDa
7919780	GOLPH3L	-1.7390362	down	golgi phosphoprotein 3-like
8152222	AZIN1	-1.7406621	down	antizyme inhibitor 1
7902977	KIAA1107	-1.7410856	down	
8098006	GLRB	-1.7419704	down	glycine receptor, beta
8027312	ZNF429	-1.7421933	down	zinc finger protein 429
8081055	CHMP2B	-1.7422941	down	chromatin modifying protein 2B
8038655	KLK4	-1.7427055	down	kallikrein-related peptidase 4
8057821	DNAH7	-1.7428436	down	dynein, axonemal, heavy chain 7
8147030	STMN2	-1.74431	down	stathmin-like 2

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7900555	RP4-692D3.1	-1.7458683	down	hypothetical protein LOC728621
7902660	WDR63	-1.7468843	down	WD repeat domain 63
8171561	SCML2	-1.7474759	down	sex comb on midleg-like 2 (Drosophila)
7946439	TMEM9B	-1.7498833	down	TMEM9 domain family, member B
7974587	ACTR10	-1.750395	down	actin-related protein 10 homolog (S. cerevisiae)
7903239	AGL	-1.7507683	down	amylo-1, 6-glucosidase, 4-alpha-glucanotransferase (gl
8121895	TRMT11	-1.7509094	down	tRNA methyltransferase 11 homolog (S. cerevisiae)
8147156	WWP1	-1.7513005	down	WW domain containing E3 ubiquitin protein ligase 1
8093191	DLG1	-1.7514851	down	discs, large homolog 1 (Drosophila)
8041257	SLC30A6	-1.7523648	down	solute carrier family 30 (zinc transporter), member 6
7969228	ALG11 UTP14C	-1.7534826	down	asparagine-linked glycosylation 11 homolog (S. cerevisi
8079198	ZNF660	-1.7539084	down	zinc finger protein 660
7940775	RARRES3	-1.7548462	down	retinoic acid receptor responder (tazarotene induced)
8091306	PLSCR4	-1.7549807	down	phospholipid scramblase 4
7915286	PPT1	-1.7551259	down	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis,
8046628	RBM45	-1.755147	down	RNA binding motif protein 45
7944667	SORL1	-1.758937	down	sortilin-related receptor, L(DLR class) A repeats-contair
8078962	EIF1B	-1.7626078	down	eukaryotic translation initiation factor 1B
7929012	STAMBPL1	-1.7634155	down	STAM binding protein-like 1
7936567	RAB11FIP2	-1.7645977	down	RAB11 family interacting protein 2 (class I)
8120239	TMEM14A	-1.7654653	down	transmembrane protein 14A
7944751	C11orf63	-1.7659746	down	chromosome 11 open reading frame 63
7907171	BLZF1	-1.7678186	down	basic leucine zipper nuclear factor 1 (JEM-1)
8148059	DEPDC6	-1.7691463	down	DEP domain containing 6
8127903	KIAA1009	-1.7712104	down	
8108693	PCDHB4	-1.7718077	down	protocadherin beta 4
8102938	RNF150	-1.7731825	down	ring finger protein 150
8051963	SRBD1	-1.7731867	down	S1 RNA binding domain 1
8151768	RUNX1T1	-1.7741407	down	runt-related transcription factor 1; translocated to, 1 (
8169186	TBC1D8B	-1.7748243	down	TBC1 domain family, member 8B (with GRAM domain)
8046502	SCRN3	-1.7752714	down	secernin 3
8047577	ALS2CR8	-1.7756617	down	amyotrophic lateral sclerosis 2 (juvenile) chromosome
8057045	FKBP7	-1.7757622	down	FK506 binding protein 7

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7946288	ZNF214	-1.7760806	down	zinc finger protein 214
7930454	PDCD4	-1.7768835	down	programmed cell death 4 (neoplastic transformation in
7936201	C10orf79	-1.777726	down	chromosome 10 open reading frame 79
8067932	C21orf34	-1.7792534	down	chromosome 21 open reading frame 34
8103881	RWDD4A	-1.7801113	down	RWD domain containing 4A
8092134	PLD1	-1.7805501	down	phospholipase D1, phosphatidylcholine-specific
8156164	LOC389765	-1.7808619	down	similar to KIF27C
8015349	KRT19	-1.7811311	down	keratin 19
8106252	HEXB	-1.7812723	down	hexosaminidase B (beta polypeptide)
8041967	C2orf30	-1.7814752	down	chromosome 2 open reading frame 30
7972713	EFNB2	-1.7834342	down	ephrin-B2
8035842	ZNF91	-1.7838113	down	zinc finger protein 91
8104321	ADAMTS16	-1.7842075	down	ADAM metalloproteinase with thrombospondin type 1
7987361	ZNF770	-1.7845427	down	zinc finger protein 770
7934278	P4HA1	-1.7869198	down	procollagen-proline, 2-oxoglutarate 4-dioxygenase (pro
8161288	CNTNAP3   CNTNA	-1.7873373	down	contactin associated protein-like 3   contactin associat
8152280	LRP12	-1.7881595	down	low density lipoprotein-related protein 12
8113717	MGC32805	-1.7885945	down	
8117054	CAP2	-1.7889225	down	CAP, adenylate cyclase-associated protein, 2 (yeast)
8129181	GOPC   ROS1	-1.7919991	down	golgi associated PDZ and coiled-coil motif containing
8150908	IMPAD1	-1.7948045	down	inositol monophosphatase domain containing 1
8113097	KIAA0825	-1.7957158	down	
8149551	PSD3	-1.7961006	down	pleckstrin and Sec7 domain containing 3
8058161	ORC2L	-1.7966342	down	origin recognition complex, subunit 2-like (yeast)
8163109	C9orf4	-1.7986205	down	chromosome 9 open reading frame 4
8147580	VPS13B	-1.8000036	down	vacuolar protein sorting 13 homolog B (yeast)
7990700	WDR61	-1.8005174	down	WD repeat domain 61
8120468	BAI3	-1.8024827	down	brain-specific angiogenesis inhibitor 3
7962058	TMTC1	-1.8039742	down	transmembrane and tetratricopeptide repeat containir
8160040	PTPRD	-1.8042555	down	protein tyrosine phosphatase, receptor type, D
8121161	KIAA0776	-1.8055143	down	
7989037	CCPG1	-1.8063515	down	cell cycle progression 1
8149500	MTUS1	-1.8073988	down	mitochondrial tumor suppressor 1

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8068612	WRB	-1.8078679	down	tryptophan rich basic protein
8129231	C6orf60	-1.8087298	down	chromosome 6 open reading frame 60
8132369	EPDR1	-1.810229	down	ependymin related protein 1 (zebrafish)
8173414	SLC7A3	-1.8112093	down	solute carrier family 7 (cationic amino acid transporter)
7916356	C1orf41	-1.8115413	down	chromosome 1 open reading frame 41
8121002	C6orf162	-1.8129759	down	chromosome 6 open reading frame 162
8148070	COL14A1	-1.8134013	down	collagen, type XIV, alpha 1
8139228	C7orf25	-1.8148613	down	chromosome 7 open reading frame 25
8037430	ZNF404	-1.814923	down	zinc finger protein 404
8144726	TUSC3	-1.8150952	down	tumor suppressor candidate 3
8140620	PCLO	-1.8169723	down	piccolo (presynaptic cytomatrix protein)
7974125	KIAA0423	-1.8171631	down	
7901915	ALG6	-1.8172532	down	asparagine-linked glycosylation 6 homolog (S. cerevisia)
7917875	F3	-1.8176312	down	coagulation factor III (thromboplastin, tissue factor)
8156604	C9orf102	-1.818301	down	chromosome 9 open reading frame 102
8151686	MMP16	-1.8189049	down	matrix metalloproteinase 16 (membrane-inserted)
7969677	MBNL2	-1.8189343	down	muscleblind-like 2 (Drosophila)
8036324	ZNF260	-1.8200707	down	zinc finger protein 260
8146225	C8orf40	-1.8207812	down	chromosome 8 open reading frame 40
8146625	NKAIN3	-1.822274	down	Na <sup>+</sup> /K <sup>+</sup> transporting ATPase interacting 3
7962013	ERGIC2	-1.8257408	down	ERGIC and golgi 2
7914550	ZBTB8OS	-1.8275282	down	zinc finger and BTB domain containing 8 opposite strand
7978376	STXBP6	-1.8307303	down	syntaxin binding protein 6 (amisyn)
7933139	ZNF33B	-1.8317744	down	zinc finger protein 33B
8102567	PRDM5	-1.8322209	down	PR domain containing 5
8070411	C21orf88   LOC100	-1.832775	down	chromosome 21 open reading frame 88   similar to C2
8167998	AR	-1.8341084	down	androgen receptor (dihydrotestosterone receptor; test
8098263	PALLD	-1.8369318	down	palladin, cytoskeletal associated protein
7994237	LCMT1	-1.838702	down	leucine carboxyl methyltransferase 1
8156060	TLE4	-1.8387449	down	transducin-like enhancer of split 4 (E(sp1) homolog, Dr
8108733	PCDHB12	-1.8387892	down	protocadherin beta 12
8123467	C6orf70	-1.8417041	down	chromosome 6 open reading frame 70
8113103	KIAA0825	-1.8418199	down	

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8154670	IFT74	-1.8418845	down	intraflagellar transport 74 homolog (Chlamydomonas)
8140579	CACNA2D1	-1.8418992	down	calcium channel, voltage-dependent, alpha 2/delta subunit
7965523	NR2C1	-1.8428693	down	nuclear receptor subfamily 2, group C, member 1
8089954	IQCB1	-1.8440082	down	IQ motif containing B1
8100478	AASDH	-1.8456246	down	aminoadipate-semialdehyde dehydrogenase
8089203	SENP7	-1.8469316	down	SUMO1/sentrin specific peptidase 7
7957570	PLXNC1	-1.8470054	down	plexin C1
8107164	HISPPD1	-1.8479518	down	histidine acid phosphatase domain containing 1
7903565	GPSM2	-1.8487318	down	G-protein signaling modulator 2 (AGS3-like, C. elegans)
8151756	TMEM55A	-1.8506933	down	transmembrane protein 55A
8112822	DMGDH	-1.8508649	down	dimethylglycine dehydrogenase
7973756	KIAA1333	-1.8513589	down	
8134122	AKAP9	-1.8522336	down	A kinase (PRKA) anchor protein (yotiao) 9
8059642	SLC16A14	-1.8536597	down	solute carrier family 16, member 14 (monocarboxylic acid)
8118455	C4A C4B	-1.8546927	down	complement component 4A (Rodgers blood group)   C4B
8118409	C4A C4B	-1.8559186	down	complement component 4A (Rodgers blood group)   C4B
8122327	CCDC28A	-1.8560725	down	coiled-coil domain containing 28A
7929562	ZNF518A	-1.8577529	down	zinc finger protein 518A
7971486	C13orf18 LOC728	-1.8580612	down	chromosome 13 open reading frame 18   hypothetical protein
7943376	KIAA1377	-1.8585356	down	
7967933	IFT88	-1.8617692	down	intraflagellar transport 88 homolog (Chlamydomonas)
8102464	TRAM1L1	-1.8618282	down	translocation associated membrane protein 1-like 1
7933092	ZNF248	-1.8620741	down	zinc finger protein 248
8179399	C4A C4B	-1.863249	down	complement component 4A (Rodgers blood group)   C4B
8160138	NFIB	-1.8646704	down	nuclear factor I/B
8093145	C3orf34	-1.866445	down	chromosome 3 open reading frame 34
8147396	INTS8	-1.868438	down	integrator complex subunit 8
8069668	CYYR1	-1.8694218	down	cysteine/tyrosine-rich 1
8145365	DOCK5	-1.8705282	down	dedicator of cytokinesis 5
8022572	OSBPL1A	-1.8706832	down	oxysterol binding protein-like 1A
8121768	PKIB	-1.871881	down	protein kinase (cAMP-dependent, catalytic) inhibitor beta
8128592	ATG5	-1.8734434	down	
7902367	ACADM	-1.8738265	down	acyl-Coenzyme A dehydrogenase, C-4 to C-12 straight chain



Supplemental Table 1c  
eMSC vs. eSF

8056829	CIR	-1.8740877	down	CBF1 interacting corepressor
8014100	C17orf75	-1.875734	down	chromosome 17 open reading frame 75
8083282	HPS3	-1.877846	down	Hermansky-Pudlak syndrome 3
8080926	ARL6IP5	-1.8788558	down	ADP-ribosylation-like factor 6 interacting protein 5
7935613	HPSE2	-1.8791653	down	heparanase 2
7951545	EXPH5	-1.8836313	down	exophilin 5
8092328	MCCC1	-1.8847487	down	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8046833	FLJ44048	-1.8863239	down	
8074845	ZNF280B	-1.8882222	down	zinc finger protein 280B
8066402	C20orf111	-1.8885736	down	chromosome 20 open reading frame 111
8163257	LPAR1	-1.8888264	down	lysophosphatidic acid receptor 1
8107850	CHSY3	-1.8893166	down	chondroitin sulfate synthase 3
8142332	IMMP2L	-1.8910954	down	IMP2 inner mitochondrial membrane peptidase-like (S.
8094226	LOC285550	-1.8929316	down	
8012918	CDRT4 FAM18B2	-1.8942027	down	CMT1A duplicated region transcript 4   family with seq
7937079	BNIP3	-1.8955761	down	BCL2/adenovirus E1B 19kDa interacting protein 3
7976073	FLRT2	-1.8958735	down	fibronectin leucine rich transmembrane protein 2
8146717	SGK3 C8orf44	-1.8958759	down	serum/glucocorticoid regulated kinase family, member
8173812	NSBP1	-1.8971746	down	nucleosomal binding protein 1
8170538	GABRQ	-1.8990538	down	gamma-aminobutyric acid (GABA) receptor, theta
7997396	ATMIN	-1.9010019	down	ATM interactor
8052125	ASB3	-1.9013255	down	ankyrin repeat and SOCS box-containing 3
7975632	ZADH1	-1.9028869	down	zinc binding alcohol dehydrogenase, domain containin
8157233	HSDL2	-1.9074131	down	hydroxysteroid dehydrogenase like 2
7950883	OR7E13P	-1.908097	down	olfactory receptor, family 7, subfamily E, member 13 p
8122672	MAP3K7IP2	-1.9094791	down	mitogen-activated protein kinase kinase kinase 7 inter
7998952	TIGD7	-1.9097396	down	tigger transposable element derived 7
7974166	FANCM	-1.9109043	down	Fanconi anemia, complementation group M
7911989	RPL22	-1.9122212	down	ribosomal protein L22
7916185	ZCCHC11	-1.9131982	down	zinc finger, CCHC domain containing 11
8110971	CMBL	-1.9141635	down	carboxymethylenebutenolidase homolog (Pseudomon
8110147	C5orf25	-1.9142604	down	chromosome 5 open reading frame 25
8104394	ADCY2	-1.9145302	down	adenylate cyclase 2 (brain)

Supplemental Table 1c  
eMSC vs. eSF

7916570	OMA1 DAB1	-1.9147593	down	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )
8004184	XAF1	-1.9156884	down	XIAP associated factor 1
8022612	ZNF521	-1.9161694	down	zinc finger protein 521
7971541	SUCLA2	-1.9165365	down	succinate-CoA ligase, ADP-forming, beta subunit
7988467	FBN1	-1.9174244	down	fibrillin 1
8136177	KIAA0265	-1.9214919	down	
8120362	C6orf65	-1.9215738	down	chromosome 6 open reading frame 65
8162019	KIF27 LOC389765	-1.9218144	down	kinesin family member 27   similar to KIF27C
7952484	LOC219854	-1.9220387	down	
8041676	DYNC2LI1	-1.9221565	down	dynein, cytoplasmic 2, light intermediate chain 1
8123246	SLC22A3	-1.9234761	down	solute carrier family 22 (extraneuronal monoamine tra
7927799	REEP3	-1.9241508	down	receptor accessory protein 3
8022559	ANKRD29	-1.9243333	down	ankyrin repeat domain 29
7957417	TMTC2	-1.9279039	down	transmembrane and tetratricopeptide repeat containir
8159984	C9orf46	-1.9281257	down	chromosome 9 open reading frame 46
8020973	FHOD3	-1.9317919	down	formin homology 2 domain containing 3
7947274	MPPED2	-1.9325019	down	metallophosphoesterase domain containing 2
7916862	GPR177	-1.9345247	down	G protein-coupled receptor 177
8102440	ARSJ	-1.9363123	down	arylsulfatase family, member J
8107234	MAN2A1	-1.9373786	down	mannosidase, alpha, class 2A, member 1
8174235	TCEAL5	-1.9447964	down	transcription elongation factor A (SII)-like 5
8147019	C8orf70	-1.946681	down	chromosome 8 open reading frame 70
8102362	TIFA	-1.947387	down	TRAF-interacting protein with forkhead-associated don
7969390	PIBF1	-1.947413	down	progesterone immunomodulatory binding factor 1
8157027	NIPSNAP3B	-1.9482085	down	nipsnap homolog 3B ( <i>C. elegans</i> )
8113050	CETN3	-1.9519542	down	centrin, EF-hand protein, 3 (CDC31 homolog, yeast)
7939298	CAT	-1.952417	down	catalase
8149825	STC1	-1.9531399	down	stanniocalcin 1
8053648	KRCC1	-1.9538848	down	lysine-rich coiled-coil 1
8060758	PRNP	-1.9540286	down	prion protein (p27-30) (Creutzfeldt-Jakob disease, Gers
7910030	C1orf67 DNAH14	-1.9559509	down	chromosome 1 open reading frame 67   dynein, axone
8098021	GRIA2	-1.9573991	down	glutamate receptor, ionotropic, AMPA 2
8151496	ZNF704	-1.9577143	down	zinc finger protein 704

Supplemental Table 1c  
eMSC vs. eSF

7946365	STK33	-1.9640713	down	serine/threonine kinase 33
8139488	IGFBP3	-1.9660294	down	insulin-like growth factor binding protein 3
8142697	POT1	-1.966949	down	
7921987	TMCO1	-1.9692202	down	transmembrane and coiled-coil domains 1
7934570	KCNMA1	-1.9704126	down	potassium large conductance calcium-activated channel
8022473	ESCO1	-1.9711133	down	establishment of cohesion 1 homolog 1 ( <i>S. cerevisiae</i> )
8169603	LONRF3	-1.971864	down	LON peptidase N-terminal domain and ring finger 3
8147273	SLC26A7 LOC100:	-1.9727888	down	solute carrier family 26, member 7   similar to hCG200
7974229	KLHDC2	-1.9728713	down	kelch domain containing 2
8057677	SLC40A1	-1.9741724	down	solute carrier family 40 (iron-regulated transporter), m
8168968	GPRASP1	-1.9747423	down	G protein-coupled receptor associated sorting protein
8117045	RBM24	-1.9752814	down	RNA binding motif protein 24
8171024	LOC401622	-1.9766308	down	similar to LINE-1 reverse transcriptase homolog
8091511	P2RY14	-1.9788653	down	purinergic receptor P2Y, G-protein coupled, 14
7930882	FAM45A FAM45E	-1.9793437	down	family with sequence similarity 45, member A   family
8081503	DZIP3	-1.9796017	down	DAZ interacting protein 3, zinc finger
7974214	KLHDC1	-1.983837	down	kelch domain containing 1
8125415	C6orf10	-1.9848379	down	chromosome 6 open reading frame 10
8096176	PTPN13	-1.9859627	down	protein tyrosine phosphatase, non-receptor type 13 (A
7974725	C14orf100	-1.9862149	down	chromosome 14 open reading frame 100
8161892	GNA14	-1.9871131	down	guanine nucleotide binding protein (G protein), alpha 1
8145361	NEFM	-1.989982	down	neurofilament, medium polypeptide 150kDa
8052233	C2orf63	-1.9922494	down	chromosome 2 open reading frame 63
8107632	SNX24	-1.9926301	down	sorting nexin 24
7907297	FMO4	-1.9930322	down	flavin containing monooxygenase 4
8150691	EFCAB1	-1.993388	down	EF-hand calcium binding domain 1
8098041	TMEM144	-1.9961305	down	transmembrane protein 144
7947512	DKFZP586H2123	-1.9971675	down	regeneration associated muscle protease
7924476	TAF1A	-1.9975125	down	TATA box binding protein (TBP)-associated factor, RNA
7903908	CEPT1	-1.9975238	down	choline/ethanolamine phosphotransferase 1
8144230	ZNF596	-1.9984012	down	zinc finger protein 596
8016390	COPZ2	-1.9990067	down	coatamer protein complex, subunit zeta 2
8114354	NME5	-1.9997973	down	non-metastatic cells 5, protein expressed in (nucleosid

Supplemental Table 1c  
eMSC vs. eSF

8150565	RNF170	-2.000481	down	ring finger protein 170
7950654	ALG8	-2.0005765	down	asparagine-linked glycosylation 8 homolog ( <i>S. cerevisia</i>
8103563	DDX60	-2.001267	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60
7932637	ANKRD26	-2.0019863	down	ankyrin repeat domain 26
7954810	LRRK2	-2.0019977	down	leucine-rich repeat kinase 2
7962427	PUS7L	-2.0026958	down	pseudouridylate synthase 7 homolog ( <i>S. cerevisiae</i> )-lik
8069553	NRIP1	-2.0049274	down	nuclear receptor interacting protein 1
7915775	IPP	-2.005309	down	intracisternal A particle-promoted polypeptide
8088526	THOC7	-2.0095904	down	THO complex 7 homolog ( <i>Drosophila</i> )
8092970	APOD	-2.0099716	down	apolipoprotein D
8142497	CTTNBP2	-2.0100884	down	cortactin binding protein 2
8106743	VCAN	-2.0109525	down	versican
8044700	DPP10	-2.0117044	down	dipeptidyl-peptidase 10
7970569	SACS	-2.0177324	down	spastic ataxia of Charlevoix-Saguenay (sacsin)
8009301	PRKCA	-2.0186586	down	protein kinase C, alpha
7909801	LYPLAL1	-2.0187128	down	lysophospholipase-like 1
7988426	SLC30A4	-2.0196183	down	solute carrier family 30 (zinc transporter), member 4
8101659	SPARCL1	-2.0203226	down	SPARC-like 1 (mast9, hevin)
7953200	CCND2	-2.0207922	down	cyclin D2
8097307	INTU	-2.0209992	down	inturned planar cell polarity effector homolog ( <i>Drosopl</i>
8108744	PCDHB14	-2.0211763	down	protocadherin beta 14
8088491	CADPS	-2.0212207	down	Ca <sup>2+</sup> -dependent secretion activator
8173647	ZDHHC15	-2.0270119	down	zinc finger, DHHC-type containing 15
7972269	TGDS	-2.0281975	down	TDP-glucose 4,6-dehydratase
8115600	LOC63920	-2.033619	down	transposon-derived Buster3 transposase-like
7993756	ACSM3	-2.034617	down	acyl-CoA synthetase medium-chain family member 3
7927631	DKK1	-2.03479	down	dickkopf homolog 1 ( <i>Xenopus laevis</i> )
7965022	KRR1	-2.0374966	down	
7984298	DIS3L	-2.0382106	down	DIS3 mitotic control homolog ( <i>S. cerevisiae</i> )-like
8056102	CD302	-2.0394692	down	
8078360	STT3B	-2.039832	down	STT3, subunit of the oligosaccharyltransferase complex
7959834	GLT1D1	-2.041807	down	glycosyltransferase 1 domain containing 1
8105633	PPWD1	-2.0458734	down	peptidylprolyl isomerase domain and WD repeat conta

Supplemental Table 1c  
eMSC vs. eSF

7917276	LPAR3	-2.0496833	down	lysophosphatidic acid receptor 3
8101587	MAPK10	-2.0503688	down	mitogen-activated protein kinase 10
8061227	SLC24A3	-2.052043	down	solute carrier family 24 (sodium/potassium/calcium ex
8147375	DPY19L4	-2.056213	down	dpv-19-like 4 (C. elegans)
8141872	NAPEPLD	-2.0568612	down	N-acyl phosphatidylethanolamine phospholipase D
7910611	KCNK1	-2.060127	down	potassium channel, subfamily K, member 1
8116983	CD83	-2.0614803	down	
8083616	MLF1	-2.0674279	down	myeloid leukemia factor 1
8111772	DAB2	-2.068214	down	disabled homolog 2, mitogen-responsive phosphoprot
8046078	B3GALT1	-2.0683026	down	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, pc
7990714	CHRNA3	-2.0695639	down	cholinergic receptor, nicotinic, alpha 3
7982366	SCG5	-2.0743136	down	secretogranin V (7B2 protein)
8042086	VRK2	-2.0751143	down	vaccinia related kinase 2
7973770	SCFD1	-2.075641	down	sec1 family domain containing 1
8121916	RSPO3	-2.0765674	down	R-spondin 3 homolog (Xenopus laevis)
8095758	RCHY1	-2.0773234	down	ring finger and CHY zinc finger domain containing 1
8101762	SNCA	-2.0808847	down	synuclein, alpha (non A4 component of amyloid precur
7922268	KIFAP3	-2.0854895	down	kinesin-associated protein 3
8172708	NUDT11	-2.086601	down	nudix (nucleoside diphosphate linked moiety X)-type n
8022118	EPB41L3	-2.091654	down	erythrocyte membrane protein band 4.1-like 3
8122827	C6orf97	-2.0960412	down	chromosome 6 open reading frame 97
7976818	SNORD114-6	-2.0984929	down	small nucleolar RNA, C/D box 114-6
8155883	OSTF1	-2.0993018	down	osteoclast stimulating factor 1
8161460	CNTNAP3B LOC38	-2.1016364	down	contactin associated protein-like 3B   similar to KIAA17
8046380	ITGA6	-2.1028225	down	integrin, alpha 6
7962312	ABCD2	-2.1041982	down	ATP-binding cassette, sub-family D (ALD), member 2
8106494	BHMT2	-2.1068196	down	betaine-homocysteine methyltransferase 2
8068644	IGSF5	-2.1082056	down	immunoglobulin superfamily, member 5
7954985	TMEM117	-2.1086073	down	transmembrane protein 117
8158671	ASS1	-2.1098044	down	argininosuccinate synthetase 1
7926596	COMMD3	-2.1107287	down	COMM domain containing 3
7924309	ESRRG	-2.11375	down	estrogen-related receptor gamma
8155540	CNTNAP3B LOC38	-2.116974	down	contactin associated protein-like 3B   similar to KIAA17

Supplemental Table 1c  
eMSC vs. eSF

8057719	HIBCH	-2.1172435	down	3-hydroxyisobutyryl-Coenzyme A hydrolase
7932598	C10orf63	-2.117908	down	chromosome 10 open reading frame 63
8008566	STXBP4	-2.1202226	down	syntaxin binding protein 4
8173825	RPS6KA6	-2.1222274	down	ribosomal protein S6 kinase, 90kDa, polypeptide 6
8035896	TSHZ3	-2.1258872	down	teashirt zinc finger homeobox 3
8112107	PPAP2A	-2.1295407	down	phosphatidic acid phosphatase type 2A
7978391	NOVA1	-2.134708	down	neuro-oncological ventral antigen 1
8171901	MAP3K7IP3	-2.1347272	down	mitogen-activated protein kinase kinase 7 inter:
8077472	GRM7	-2.1359773	down	glutamate receptor, metabotropic 7
8044417	TMEM87B	-2.1380727	down	transmembrane protein 87B
8156575	ATMIN	-2.1382012	down	ATM interactor
8173955	SYTL4	-2.1383183	down	synaptotagmin-like 4 (granuphilin-a)
8167897	RRAGB	-2.13841	down	Ras-related GTP binding B
8151684	C8orf57 LOC1001	-2.1413221	down	chromosome 8 open reading frame 57   hypothetical L
8108475	LOC492311	-2.1438532	down	similar to bovine IgA regulatory protein
7951565	ARHGAP20	-2.1453626	down	Rho GTPase activating protein 20
7922976	PTGS2	-2.1483924	down	prostaglandin-endoperoxide synthase 2 (prostaglandin
8047174	SLC39A10	-2.1536736	down	solute carrier family 39 (zinc transporter), member 10
8106689	CKMT2	-2.1544304	down	creatine kinase, mitochondrial 2 (sarcomeric)
8147469	PGCP	-2.1558876	down	plasma glutamate carboxypeptidase
8099218	PPP2R2C	-2.1583042	down	protein phosphatase 2 (formerly 2A), regulatory subun
8105348	LOC493869	-2.1627436	down	similar to RIKEN cDNA 2310016C16
8099476	PROM1	-2.167288	down	prominin 1
7947496	SLC1A2	-2.1684313	down	solute carrier family 1 (glial high affinity glutamate trar
8051637	DHX57	-2.1711946	down	DEAH (Asp-Glu-Ala-Asp/His) box polypeptide 57
7980580	GALC	-2.175086	down	galactosylceramidase
8102065	BDH2	-2.1761668	down	3-hydroxybutyrate dehydrogenase, type 2
8169580	IL13RA1	-2.1799853	down	interleukin 13 receptor, alpha 1
8046488	CDCA7	-2.1803074	down	cell division cycle associated 7
7974816	SLC38A6	-2.1821072	down	solute carrier family 38, member 6
8146427	PCMTD1 LOC100:	-2.1829607	down	protein-L-isoaspartate (D-aspartate) O-methyltransfer:
7965060	BBS10	-2.1835012	down	Bardet-Biedl syndrome 10
8000574	NUPR1	-2.1854472	down	nuclear protein 1

Supplemental Table 1c  
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8082869	PPP2R3A	-2.1860867	down	protein phosphatase 2 (formerly 2A), regulatory subun
8041179	CLIP4	-2.1864057	down	CAP-GLY domain containing linker protein family, mem
8123407	MLLT4	-2.1946006	down	myeloid/lymphoid or mixed-lineage leukemia (trithora
8112596	ANKRA2	-2.1968603	down	ankyrin repeat, family A (RFXANK-like), 2
8002492	HYDIN HYDIN2	-2.197245	down	hydrocephalus inducing homolog (mouse)   hydroceph
8154295	IL33	-2.1978114	down	interleukin 33
8137264	TMEM176A	-2.1998506	down	transmembrane protein 176A
8156905	TMEFF1	-2.2007315	down	transmembrane protein with EGF-like and two follistat
8131205	SDK1	-2.2045147	down	sidekick homolog 1, cell adhesion molecule (chicken)
8078319	ZCWPW2	-2.2094805	down	zinc finger, CW type with PWWP domain 2
7938629	PDE3B	-2.2095273	down	phosphodiesterase 3B, cGMP-inhibited
8142270	NRCAM	-2.2097669	down	neuronal cell adhesion molecule
7901720	PRKAA2	-2.2152	down	protein kinase, AMP-activated, alpha 2 catalytic subuni
7932554	ARHGAP21	-2.2159214	down	Rho GTPase activating protein 21
8143341	JHDM1D	-2.216986	down	jumonji C domain containing histone demethylase 1 hc
8018761	ST6GALNAC2	-2.2192018	down	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3
8077366	LRRN1	-2.2273417	down	leucine rich repeat neuronal 1
7964997	CAPS2	-2.2275329	down	calcyphosine 2
8123342	FGFR1OP CCR6	-2.2313519	down	FGFR1 oncogene partner   chemokine (C-C motif) rece
7953603	C1S	-2.234242	down	complement component 1, s subcomponent
7943779	C11orf1	-2.2349184	down	chromosome 11 open reading frame 1
7978407	PRKD1	-2.2358427	down	protein kinase D1
7954711	C12orf35	-2.248286	down	chromosome 12 open reading frame 35
8127425	LMBRD1	-2.2541418	down	LMBR1 domain containing 1
8145766	MST131	-2.256526	down	MSTP131
8008588	HLF	-2.2636495	down	hepatic leukemia factor
7992917	CLUAP1	-2.2682118	down	clusterin associated protein 1
8041561	MORN2	-2.2721016	down	MORN repeat containing 2
7962151	MGC24039	-2.274053	down	
8121043	ORC3L	-2.2752204	down	origin recognition complex, subunit 3-like (yeast)
8142143	COG5	-2.276566	down	component of oligomeric golgi complex 5
8131539	TMEM106B	-2.2770557	down	transmembrane protein 106B
8017704	FLJ32065	-2.2797651	down	

Supplemental Table 1c  
eMSC vs. eSF

7961083	CLEC2B	-2.2820961	down	C-type lectin domain family 2, member B
8173755	ITM2A	-2.2879496	down	integral membrane protein 2A
8133983	ADAM22	-2.2910159	down	ADAM metallopeptidase domain 22
8165642	TMEM203	-2.2943687	down	transmembrane protein 203
7938364	WEE1	-2.2983294	down	
8021946	COLEC12	-2.2984533	down	collectin sub-family member 12
8135734	C7orf58	-2.3025553	down	chromosome 7 open reading frame 58
8128013	RARS2	-2.3068678	down	arginyl-tRNA synthetase 2, mitochondrial
8147970	EBAG9	-2.309082	down	estrogen receptor binding site associated, antigen, 9
7972297	ABCC4	-2.3114502	down	ATP-binding cassette, sub-family C (CFTR/MRP), memb
8055496	LRP1B	-2.3127322	down	low density lipoprotein-related protein 1B (deleted in t
7933933	DNAJC12	-2.3197112	down	DnaJ (Hsp40) homolog, subfamily C, member 12
8163002	KLF4	-2.3205612	down	Kruppel-like factor 4 (gut)
8120613	RIMS1	-2.3208814	down	regulating synaptic membrane exocytosis 1
7987369	ATPBD4	-2.3244355	down	ATP binding domain 4
8044236	GCC2	-2.3246567	down	GRIP and coiled-coil domain containing 2
7909730	KCNK2	-2.3257232	down	potassium channel, subfamily K, member 2
7970844	KATNAL1	-2.3274724	down	katanin p60 subunit A-like 1
7964745	TMBIM4 LOC100:	-2.3301783	down	transmembrane BAX inhibitor motif containing 4   hyp
8081138	EPHA6	-2.3319073	down	EPH receptor A6
8106336	SV2C	-2.3412526	down	synaptic vesicle glycoprotein 2C
7976816	SNORD114-3	-2.3440459	down	small nucleolar RNA, C/D box 114-3
7969114	SETDB2	-2.350674	down	SET domain, bifurcated 2
7917912	DPYD	-2.3623912	down	dihydropyrimidine dehydrogenase
7917283	MCOLN2	-2.3650975	down	mucolipin 2
8078619	ITGA9	-2.3663678	down	integrin, alpha 9
8132376	STARD3NL	-2.3675396	down	STARD3 N-terminal like
8132399	C7orf36	-2.3681014	down	chromosome 7 open reading frame 36
8001423	RPGRIP1L	-2.3718705	down	RPGRIP1-like
7979131	GNG2	-2.3754613	down	guanine nucleotide binding protein (G protein), gamma
8122818	C6orf211	-2.3879743	down	chromosome 6 open reading frame 211
8147079	LRRCC1	-2.3912227	down	leucine rich repeat and coiled-coil domain containing 1
8154178	JAK2	-2.3961427	down	Janus kinase 2 (a protein tyrosine kinase)



Supplemental Table 1c  
eMSC vs. eSF

8120552	FAM135A	-2.4008982	down	family with sequence similarity 135, member A
8023575	CCBE1	-2.4046955	down	collagen and calcium binding EGF domains 1
8018038	ABCA5	-2.409236	down	ATP-binding cassette, sub-family A (ABC1), member 5
8172225	EFHC2	-2.4099045	down	EF-hand domain (C-terminal) containing 2
7981320	MEG3	-2.4177969	down	maternally expressed 3
8094184	C1QTNF7	-2.4200094	down	C1q and tumor necrosis factor related protein 7
8169015	TCEAL7	-2.4231367	down	transcription elongation factor A (SII)-like 7
7975459	SIPA1L1	-2.4418929	down	signal-induced proliferation-associated 1 like 1
8167603	CLCN5	-2.4437587	down	chloride channel 5 (nephrolithiasis 2, X-linked, Dent dis
8063536	TFAP2C	-2.446443	down	transcription factor AP-2 gamma (activating enhancer I
8121794	SMPDL3A	-2.4469676	down	sphingomyelin phosphodiesterase, acid-like 3A
8157487	PAPPA	-2.4515524	down	pregnancy-associated plasma protein A, pappalysin 1
7985268	FAH	-2.4522393	down	fumarylacetoacetate hydrolase (fumarylacetoacetase)
7936463	ABLIM1	-2.4548285	down	actin binding LIM protein 1
7961891	BHLHB3	-2.4676847	down	basic helix-loop-helix domain containing, class B, 3
8145611	FZD3	-2.4734063	down	frizzled homolog 3 (Drosophila)
7969861	ITGBL1	-2.474663	down	integrin, beta-like 1 (with EGF-like repeat domains)
8157193	ZNF483	-2.4751384	down	zinc finger protein 483
7959807	TMEM132B	-2.4756153	down	transmembrane protein 132B
8046003	GCA	-2.4760795	down	grancalcin, EF-hand calcium binding protein
8168412	LOC554203	-2.4798062	down	
8051864	hCG_1645220	-2.4886322	down	hCG1645220
8128837	C6orf186 DDO	-2.4913814	down	chromosome 6 open reading frame 186   D-aspartate t
7918134	AMY1A AMY1B /	-2.4914985	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (saliva
8144802	PDGFRL	-2.4980285	down	platelet-derived growth factor receptor-like
7903425	AMY1A AMY1B /	-2.4982636	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (saliva
7903440	AMY1A AMY1B /	-2.5002282	down	amylase, alpha 1A (salivary)   amylase, alpha 1B (saliva
8088548	LOC401070	-2.5006003	down	FLJ43791 protein
8019964	ARHGAP28	-2.5014386	down	Rho GTPase activating protein 28
7954245	PLEKHA5	-2.501675	down	pleckstrin homology domain containing, family A mem
8003667	SERPINF1	-2.5122	down	serpin peptidase inhibitor, clade F (alpha-2 antiplasmir
8063458	DOK5	-2.513279	down	docking protein 5
8105121	GHR	-2.5145493	down	growth hormone receptor

Supplemental Table 1c  
eMSC vs. eSF

8113433	EFNA5	-2.5146923	down	ephrin-A5
7931930	PRKCQ	-2.5162928	down	protein kinase C, theta
8097628	HHIP	-2.516935	down	hedgehog interacting protein
8151952	NPAL2	-2.5327394	down	NIPA-like domain containing 2
8103415	C4orf18	-2.5339086	down	chromosome 4 open reading frame 18
8095303	LPHN3	-2.5378976	down	latrophilin 3
8107814	ISOC1	-2.5399654	down	isochorismatase domain containing 1
8151475	TPD52	-2.5409083	down	tumor protein D52
8166355	CNKSR2	-2.5554676	down	connector enhancer of kinase suppressor of Ras 2
8162388	OMD	-2.5616353	down	osteomodulin
8109912	KCNIP1	-2.5651915	down	Kv channel interacting protein 1
7954481	SSPN	-2.5717344	down	sarcospan (Kras oncogene-associated gene)
7980146	NPC2	-2.5728505	down	Niemann-Pick disease, type C2
8113709	LOX	-2.5751064	down	lysyl oxidase
8120961	C6orf117	-2.58831	down	chromosome 6 open reading frame 117
7903407	AMY2B	-2.589043	down	amylase, alpha 2B (pancreatic)
8088550	PRICKLE2	-2.591346	down	prickle homolog 2 (Drosophila)
7951351	PDGFD	-2.5922506	down	platelet derived growth factor D
8102468	PRSS12	-2.594784	down	protease, serine, 12 (neurotrypsin, motopsin)
8003814	ASPA	-2.5984356	down	aspartoacylase (Canavan disease)
7917954	FRRS1	-2.598912	down	ferric-chelate reductase 1
7926545	PLXDC2	-2.6167903	down	plexin domain containing 2
8138977	DPY19L1	-2.6196647	down	dpy-19-like 1 (C. elegans)
8114778	GCSH LOC730107	-2.6316335	down	glycine cleavage system protein H (aminomethyl carrier)
7954469	RASSF8	-2.6411242	down	Ras association (RalGDS/AF-6) domain family (N-terminal)
7942964	TMEM135	-2.653541	down	transmembrane protein 135
8129482	SAMD3	-2.655974	down	sterile alpha motif domain containing 3
8128284	EPHA7	-2.6570187	down	EPH receptor A7
8144758	ZDHHC2	-2.6784148	down	zinc finger, DHHC-type containing 2
8168466	LOC100129513 LOC100134025	-2.6831808	down	similar to PRO0756   magnesium transporter 1
8104856	SPEF2 LOC100134025	-2.683479	down	sperm flagellar 2   hypothetical protein LOC100134025
8013341	MFAP4	-2.6901796	down	microfibrillar-associated protein 4
8041644	PLEKHH2	-2.692711	down	pleckstrin homology domain containing, family H (with)

Supplemental Table 1c  
eMSC vs. eSF

7957338	SYT1	-2.71316	down	synaptotagmin I
8135405	GPR22	-2.7220843	down	G protein-coupled receptor 22
8169617	PGRMC1	-2.7244217	down	progesterone receptor membrane component 1
8082597	COL6A6	-2.7264678	down	collagen type VI alpha 6
8094789	LIMCH1	-2.7320287	down	LIM and calponin homology domains 1
7922104	GCSH LOC730107	-2.7323089	down	glycine cleavage system protein H (aminomethyl carrier)
7989199	ALDH1A2	-2.7386894	down	aldehyde dehydrogenase 1 family, member A2
7902808	HS2ST1	-2.7401762	down	heparan sulfate 2-O-sulfotransferase 1
7961440	FLJ22662	-2.7442966	down	
8089145	ABI3BP	-2.7506993	down	ABI gene family, member 3 (NESH) binding protein
8162652	CTSL2	-2.7542622	down	cathepsin L2
8002999	GCSH LOC730107	-2.7585697	down	glycine cleavage system protein H (aminomethyl carrier)
7976826	SNORD114-26	-2.7635748	down	small nucleolar RNA, C/D box 114-26
7957298	NAV3	-2.7731707	down	neuron navigator 3
7926708	THNSL1	-2.7742796	down	threonine synthase-like 1 ( <i>S. cerevisiae</i> )
8111101	ANKH	-2.7792974	down	ankylosis, progressive homolog (mouse)
7907657	RALGPS2	-2.7835948	down	Ral GEF with PH domain and SH3 binding motif 2
8068353	SLC5A3 MRPS6	-2.7845619	down	solute carrier family 5 (inositol transporters), member 6
8022674	CDH2	-2.8073099	down	cadherin 2, type 1, N-cadherin (neuronal)
8123303	PACRG	-2.8359106	down	PARK2 co-regulated
8091537	IGSF10	-2.8419323	down	immunoglobulin superfamily, member 10
8103601	DDX60L	-2.848707	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 60-like
8081288	TMEM45A	-2.8528566	down	transmembrane protein 45A
8081959	STXBP5L	-2.856164	down	syntaxin binding protein 5-like
7947553	LRRC4C	-2.857907	down	leucine rich repeat containing 4C
7937772	IGF2	-2.8654819	down	insulin-like growth factor 2 (somatomedin A)
8155121	NPR2	-2.8848069	down	natriuretic peptide receptor B/guanylate cyclase B (atrial)
8059878	IQCA LOC100129	-2.9185126	down	IQ motif containing with AAA domain   hypothetical protein
8128894	REV3L	-2.9298532	down	REV3-like, catalytic subunit of DNA polymerase zeta (yeast)
8140650	SEMA3E	-2.9331741	down	sema domain, immunoglobulin domain (Ig), short basic
8022927	SLC39A6	-2.934382	down	solute carrier family 39 (zinc transporter), member 6
8083471	SGEF	-2.9458275	down	Src homology 3 domain-containing guanine nucleotide
7903414	AMY2A AMY1A /	-2.9527886	down	amylase, alpha 2A (pancreatic)   amylase, alpha 1A (salivary)

Supplemental Table 1c  
eMSC vs. eSF

7925457	RGS7	-2.959834	down	regulator of G-protein signaling 7
8169145	MUM1L1	-2.964102	down	melanoma associated antigen (mutated) 1-like 1
8083968	NLGN1	-2.9653366	down	neuroligin 1
7958000	CHPT1	-2.9674933	down	choline phosphotransferase 1
8150428	SFRP1	-3.0254004	down	secreted frizzled-related protein 1
8080938	MITF	-3.0390928	down	microphthalmia-associated transcription factor
7962274	KIF21A	-3.0398488	down	kinesin family member 21A
7962212	PKP2	-3.051184	down	plakophilin 2
8111490	PRLR	-3.0597997	down	prolactin receptor
7965941	GLT8D2	-3.0709858	down	glycosyltransferase 8 domain containing 2
8160346	PTPLAD2	-3.0817268	down	protein tyrosine phosphatase-like A domain containing
7951165	PGR	-3.0952022	down	progesterone receptor
8122099	ENPP1	-3.1042657	down	ectonucleotide pyrophosphatase/phosphodiesterase 1
8092169	TNFSF10	-3.1188369	down	tumor necrosis factor (ligand) superfamily, member 10
8131666	ITGB8	-3.124336	down	integrin, beta 8
8113641	CDO1	-3.1262503	down	cysteine dioxygenase, type I
8044225	SULT1C4	-3.143447	down	sulfotransferase family, cytosolic, 1C, member 4
8150962	TOX	-3.1624212	down	thymocyte selection-associated high mobility group bo
8059680	HTR2B	-3.1874542	down	5-hydroxytryptamine (serotonin) receptor 2B
8054281	LONRF2	-3.200171	down	LON peptidase N-terminal domain and ring finger 2
7968154	ATP8A2	-3.2225847	down	ATPase, aminophospholipid transporter-like, class I, ty
7959893	GPR133	-3.2340968	down	G protein-coupled receptor 133
8068361	SLC5A3	-3.2365248	down	solute carrier family 5 (inositol transporters), member
7930714	ATRNL1	-3.2417023	down	attractin-like 1
8177222	CD24	-3.242357	down	
8139087	SFRP4	-3.243047	down	secreted frizzled-related protein 4
7935776	PRO1933	-3.2483141	down	
8052382	FANCL	-3.2487218	down	Fanconi anemia, complementation group L
8088180	WNT5A	-3.26243	down	wingless-type MMTV integration site family, member 5
7983638	DTWD1	-3.2769423	down	DTW domain containing 1
7932584	PRTFDC1	-3.2863226	down	phosphoribosyl transferase domain containing 1
8142471	WNT2	-3.288999	down	wingless-type MMTV integration site family member 2
7965873	IGF1	-3.2933903	down	insulin-like growth factor 1 (somatomedin C)

Supplemental Table 1c  
eMSC vs. eSF

8107594	SNCAIP	-3.3036582	down	synuclein, alpha interacting protein (synphilin)
7977933	SLC7A8	-3.3197718	down	solute carrier family 7 (cationic amino acid transporter)
8173933	PCDH19	-3.3342843	down	protocadherin 19
8041508	QPCT	-3.365722	down	glutaminyl-peptide cyclotransferase (glutaminyl cyclase)
8099593	KCNIP4	-3.3666427	down	Kv channel interacting protein 4
7923578	FMOD	-3.3734398	down	fibromodulin
8008609	ANKFN1	-3.3925338	down	ankyrin-repeat and fibronectin type III domain containing
7962375	PRICKLE1	-3.4098704	down	prickle homolog 1 (Drosophila)
8063729	EDN3	-3.4326637	down	endothelin 3
8107823	ADAMTS19	-3.4616218	down	ADAM metallopeptidase with thrombospondin type 1 motif
7958352	BTBD11	-3.4908156	down	BTB (POZ) domain containing 11
8137485	DPP6	-3.496906	down	dipeptidyl-peptidase 6
7902425	ST6GALNAC3	-3.5042655	down	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,6-galactose
8161423	KGFLP2 KGFLP1 f	-3.5089965	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-like protein 2
8161455	KGFLP2 KGFLP1 f	-3.5163457	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-like protein 2
7917255	SSX2IP	-3.5235357	down	synovial sarcoma, X breakpoint 2 interacting protein
8155487	KGFLP1 KGFLP2 f	-3.526204	down	keratinocyte growth factor-like protein 1   keratinocyte growth factor-like protein 1
8122660	UST	-3.527889	down	uronyl-2-sulfotransferase
8080964	GLT8D4	-3.5376415	down	glycosyltransferase 8 domain containing 4
7946454	SCUBE2	-3.5558124	down	signal peptide, CUB domain, EGF-like 2
7922130	DPT	-3.5766788	down	dermatopontin
7957260	GLIPR1	-3.5767138	down	GLI pathogenesis-related 1 (glioma)
8174029	TAF7L	-3.5819721	down	TAF7-like RNA polymerase II, TATA box binding protein
8138789	JAZF1	-3.6005058	down	JAZF zinc finger 1
8152522	ENPP2	-3.6319048	down	ectonucleotide pyrophosphatase/phosphodiesterase 2
7964987	KCNC2	-3.6759121	down	potassium voltage-gated channel, Shaw-related subfamily 2
8004955	LOC284033	-3.6905363	down	
7976814	SNORD114-2	-3.6956022	down	small nucleolar RNA, C/D box 114-2
8103399	PDGFC	-3.7138798	down	platelet derived growth factor C
8096116	AGPAT9	-3.7545593	down	1-acylglycerol-3-phosphate O-acyltransferase 9
7976810	SNORD113-3	-3.7663043	down	small nucleolar RNA, C/D box 113-3
8137250	GIMAP2	-3.7756329	down	GTPase, IMAP family member 2
8056611	LRP2	-3.8227642	down	low density lipoprotein-related protein 2

Supplemental Table 1c  
eMSC vs. eSF

7976812	SNORD113-4	-3.8859015	down	small nucleolar RNA, C/D box 113-4
8052355	EFEMP1	-3.889878	down	EGF-containing fibulin-like extracellular matrix protein
7921099	CRABP2	-3.9014454	down	cellular retinoic acid binding protein 2
8176234	CLIC2	-3.9131584	down	chloride intracellular channel 2
8151999	RGS22	-4.0088735	down	regulator of G-protein signaling 22
7952341	ASAM	-4.0235605	down	adipocyte-specific adhesion molecule
8100578	EPHA5	-4.047006	down	EPH receptor A5
8154100	VLDLR	-4.0677013	down	very low density lipoprotein receptor
8127854	ME1	-4.0994987	down	malic enzyme 1, NADP(+)-dependent, cytosolic
7961900	ITPR2	-4.182877	down	inositol 1,4,5-triphosphate receptor, type 2
8111993	FGF10	-4.2004323	down	fibroblast growth factor 10
7980485	DIO2	-4.229441	down	deiodinase, iodothyronine, type II
8066822	SULF2	-4.3506527	down	sulfatase 2
7954899	CNTN1	-4.6336703	down	contactin 1
7967993	FGF9	-4.6853166	down	fibroblast growth factor 9 (glia-activating factor)
8175696	GABRA3	-4.7933373	down	gamma-aminobutyric acid (GABA) A receptor, alpha 3
8111998	HCN1	-4.830883	down	hyperpolarization activated cyclic nucleotide-gated pot
8056151	PLA2R1	-4.8743978	down	phospholipase A2 receptor 1, 180kDa
8140534	SEMA3C	-4.8934417	down	sema domain, immunoglobulin domain (Ig), short basic
7917304	MCOLN3	-4.935482	down	mucolipin 3
8111255	CDH10	-5.0371003	down	cadherin 10, type 2 (T2-cadherin)
8161755	ALDH1A1	-5.2886124	down	aldehyde dehydrogenase 1 family, member A1
8053315	LRRTM4	-5.32911	down	leucine rich repeat transmembrane neuronal 4
8123744	F13A1	-5.3918233	down	coagulation factor XIII, A1 polypeptide
8174670	RP13-347D8.3	-5.5966787	down	KIAA1210 protein
8163672	DIPAS	-5.623481	down	DIPLA1-antisense expressed
8160168	FREM1	-5.7075853	down	FRAS1 related extracellular matrix 1
7898057	PDPN	-5.913045	down	podoplanin
8155898	PCSK5	-5.955172	down	proprotein convertase subtilisin/kexin type 5
7957861	TMEM16D	-6.268341	down	transmembrane protein 16D
8140556	HGF	-6.2717314	down	hepatocyte growth factor (hepapoietin A; scatter facto
8120967	NT5E	-6.524017	down	5'-nucleotidase, ecto (CD73)
8121749	GJA1	-6.5280848	down	gap junction protein, alpha 1, 43kDa

Supplemental Table 1c  
eMSC vs. eSF

8089714	LSAMP	-6.6095963	down	limbic system-associated membrane protein
8081001	ROBO2	-6.727335	down	roundabout, axon guidance receptor, homolog 2 (Dros
7933194	CXCL12	-7.009148	down	chemokine (C-X-C motif) ligand 12 (stromal cell-derive
8102587	C4orf31	-7.619471	down	chromosome 4 open reading frame 31
8107798	SLC27A6	-7.7193003	down	solute carrier family 27 (fatty acid transporter), membe
7897522	RBP7	-8.294218	down	retinol binding protein 7, cellular
8162373	OGN	-8.776683	down	osteoglycin
8167592	PAGE4	-9.136015	down	P antigen family, member 4 (prostate associated)
8095080	PDGFRA	-9.456953	down	platelet-derived growth factor receptor, alpha polypep
8083494	MME	-11.776522	down	membrane metallo-endopeptidase
7972239	SLITRK6	-12.137406	down	SLIT and NTRK-like family, member 6
8126784	PLA2G7	-15.874383	down	phospholipase A2, group VII (platelet-activating factor

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

Transcripts Cluster Id	Genesymbol	eEPPCOS vs. eEPCtrl	Regulation	Genedescription
8108256	MYOT	3.91	up	myotilin
7957140	LGR5	3.87	up	leucine-rich repeat-containing G protein-coupled receptor
7932407	ST8SIA6	3.78	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase
8157446	ORM1	3.15	up	orosomucoid 1
7965226	RASSF9	3.02	up	Ras association (RalGDS/AF-6) domain family (N-terminal)
7901048	SNORD46	3.01	up	small nucleolar RNA, C/D box 46
8108251	NPY6R	2.99	up	neuropeptide Y receptor Y6 (pseudogene)
8134339	PEG10	2.90	up	paternally expressed 10
8157450	ORM2	2.88	up	orosomucoid 2
8017061	TEX14	2.85	up	testis expressed 14
8092165	GHSR	2.79	up	growth hormone secretagogue receptor
7932420	PTPLA	2.72	up	protein tyrosine phosphatase-like (proline instead of catalytic)
8019831	CLUL1	2.70	up	clusterin-like 1 (retinal)
8077270	CHL1	2.64	up	cell adhesion molecule with homology to L1CAM (close homolog)
8112274	ELOVL7	2.52	up	ELOVL family member 7, elongation of long chain fatty acid synthase
8017057	C17orf47	2.50	up	chromosome 17 open reading frame 47
8140650	SEMA3E	2.48	up	sema domain, immunoglobulin domain (Ig), short basic cytoplasmic tail
8120679	DDX43	2.46	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
8124650	UBD GABBR1	2.43	up	ubiquitin D   gamma-aminobutyric acid (GABA) B receptor
8091243	PCOLCE2	2.41	up	procollagen C-endopeptidase enhancer 2
7902738	CLCA4	2.40	up	chloride channel, calcium activated, family member 4
8141843	LOC100133005 LOC1	2.39	up	hypothetical protein FLJ21767   similar to RAS p21 protein
8178295	UBD GABBR1	2.38	up	ubiquitin D   gamma-aminobutyric acid (GABA) B receptor
8131803	IL6	2.35	up	interleukin 6 (interferon, beta 2)
7939237	C11orf41	2.31	up	chromosome 11 open reading frame 41
7930714	ATRNL1	2.30	up	attractin-like 1
8059376	SERPINE2	2.25	up	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1)
8046428	RAPGEF4	2.25	up	Rap guanine nucleotide exchange factor (GEF) 4
7931748	IDI2	2.23	up	isopentenyl-diphosphate delta isomerase 2
8105596	RGS7BP	2.21	up	regulator of G-protein signaling 7 binding protein
8019709	RNU2 RNU2B WDR74	2.15	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain
8006433	CCL2	2.14	up	chemokine (C-C motif) ligand 2



Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7917850	ARHGAP29	2.13	up	Rho GTPase activating protein 29
7922969	PDC	2.12	up	phosducin
8160912	C9orf131	2.12	up	chromosome 9 open reading frame 131
8170635	ZNF275	2.12	up	zinc finger protein 275
8114856	PLAC8L1	2.12	up	PLAC8-like 1
8019707	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8005204	144A CCDC144B CCD1	2.11	up	coiled-coil domain containing 144A   coiled-coil domain
8019639	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019705	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019637	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019641	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019635	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019631	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019703	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019633	RNU2 RNU2B WDR74	2.11	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8135585	LOC100128868	2.09	up	testin-related protein TRG
8054200	LYG2	2.09	up	lysozyme G-like 2
8096744	CYP2U1	2.08	up	cytochrome P450, family 2, subfamily U, polypeptide 1
7932453	NEBL	2.08	up	nebulin
8021301	RAB27B	2.06	up	
7968632	RP11-251J8.3	2.06	up	hypothetical LOC646871
8155591	20B RP11-195B21.3 C	2.05	up	ankyrin repeat domain 20B   hypothetical LOC644249
8019802	RNU2 RNU2B WDR74	2.05	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8124562	ZNF323	2.04	up	zinc finger protein 323
8083743	ARL14	2.04	up	ADP-ribosylation factor-like 14
8100464	NMU	2.03	up	neuromedin U
8066745	ZNF334	2.02	up	zinc finger protein 334
8172022	TMEM47	2.02	up	transmembrane protein 47
8045688	TNFAIP6	2.01	up	tumor necrosis factor, alpha-induced protein 6
8100378	LOC402176	2.01	up	similar to 60S ribosomal protein L21
8083839	GPR160	2.00	up	G protein-coupled receptor 160
8053741	ANKRD20A3 ANKRD20	2.00	up	ankyrin repeat domain 20B   ankyrin repeat domain 20 f
8140686	SEMA3D	2.00	up	sema domain, immunoglobulin domain (Ig), short basic c

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8013272	144A CCDC144B CCD	1.87	up	coiled-coil domain containing 144A   coiled-coil domain
8073192	UQCRFS1	1.86	up	ubiquinol-cytochrome c reductase, Rieske iron-sulfur pol
8116983	CD83	1.80	up	
7981960	SNRPN SNORD116-6	1.74	up	small nuclear ribonucleoprotein polypeptide N   small nu
8001410	AKTIP	1.67	up	AKT interacting protein
8149248	LRLE1 LOC100127885	1.63	up	liver-related low express protein 1   similar to liver-relat
7981951	SNRPN SNORD116-2	1.61	up	small nuclear ribonucleoprotein polypeptide N   small nu
8147273	LC26A7 LOC10013074	1.61	up	solute carrier family 26, member 7   similar to hCG2008!
8077366	LRRN1	1.56	up	leucine rich repeat neuronal 1
7926807	PDSS1	1.56	up	prenyl (decaprenyl) diphosphate synthase, subunit 1
8165642	TMEM203	1.55	up	transmembrane protein 203
7936673	RGS10	1.55	up	regulator of G-protein signaling 10
7926545	PLXDC2	1.54	up	plexin domain containing 2
8122554	RAB32	1.53	up	
8050176	ITGB1BP1	1.52	up	integrin beta 1 binding protein 1
8146794	DEPDC2	1.51	up	DEP domain containing 2
8034342	ZNF625 ZNF20	1.51	up	zinc finger protein 625   zinc finger protein 20
8083779	SERPINI1	1.51	up	serpin peptidase inhibitor, clade I (neuroserpin), membe
8054135	MGAT4A	1.50	up	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglu
7947248	KIF18A	1.50	up	kinesin family member 18A
8127563	COL12A1	1.49	up	collagen, type XII, alpha 1
8151032	GGH	1.49	up	gamma-glutamyl hydrolase (conjugase, folylpolygamma
8055702	NMI	1.44	up	N-myc (and STAT) interactor
7968789	C13orf15	1.42	up	chromosome 13 open reading frame 15
7904478	LOC51152 LOC1001290	1.41	up	melanoma antigen   hypothetical protein LOC10012903!
8161375	LOC100129030 LOC511	1.41	up	hypothetical protein LOC100129030   melanoma antigen
8155453	LOC100129030 LOC511	1.40	up	hypothetical protein LOC100129030   melanoma antigen
8122144	SNORA33	1.39	up	small nucleolar RNA, H/ACA box 33
8130578	SNORA20	1.38	up	small nucleolar RNA, H/ACA box 20
7905548	SPRR3	1.37	up	small proline-rich protein 3
7971541	SUCLA2	1.37	up	succinate-CoA ligase, ADP-forming, beta subunit
7922268	KIFAP3	1.35	up	kinesin-associated protein 3
8067839	LOC10132771 LOC10013	1.35	up	fibroblast growth factor 7 pseudogene 2   similar to kerat

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7974229	KLHDC2	1.34	up	kelch domain containing 2
8092169	TNFSF10	1.34	up	tumor necrosis factor (ligand) superfamily, member 10
8179055	ZNRD1	1.33	up	zinc ribbon domain containing 1
7960896	LOC650293 OR7E125F	1.33	up	seven transmembrane helix receptor   olfactory receptor
8097857	MND1	1.33	up	meiotic nuclear divisions 1 homolog ( <i>S. cerevisiae</i> )
8152340	NUDCD1	1.33	up	NudC domain containing 1
8161423	FGF7P2 LOC10013277	1.32	up	keratinocyte growth factor-like protein 2   keratinocyte ;
8059708	SNORA75	1.31	up	small nucleolar RNA, H/ACA box 75
8161455	FGF7P2 LOC10013277	1.31	up	keratinocyte growth factor-like protein 2   keratinocyte ;
8135587	CAV2	1.31	up	caveolin 2
8155487	FGF7P2 LOC10013277	1.31	up	keratinocyte growth factor-like protein 1   keratinocyte ;
8147132	CA2	1.31	up	carbonic anhydrase II
7951408	COP1	1.31	up	caspase-1 dominant-negative inhibitor pseudo-ICE
8019842	TYMS	1.31	up	thymidylate synthetase
7948900	SNORD30	1.29	up	small nucleolar RNA, C/D box 30
8058927	TMBIM1	1.27	up	transmembrane BAX inhibitor motif containing 1
8042144	REL	1.27	up	v-rel reticuloendotheliosis viral oncogene homolog (avian)
7986394	LRRC28	1.26	up	leucine rich repeat containing 28
8023191	SMAD2	1.25	up	SMAD family member 2
8098556	CCDC111	1.25	up	coiled-coil domain containing 111
8147516	MATN2	1.22	up	matrilin 2
7923086	ASPM	1.22	up	asp (abnormal spindle) homolog, microcephaly associated
8057056	TTN	1.22	up	titin
7965855	NUP37	1.21	up	nucleoporin 37kDa
8099807	GAFA3	1.21	up	FGF-2 activity-associated protein 3
8122705	PCMT1	1.21	up	protein-L-isoaspartate (D-aspartate) O-methyltransferase
8017597	hCG_1793136	1.21	up	similar to ribosomal protein L31
7943530	GRIA4	1.20	up	glutamate receptor, ionotropic, AMPA 4
7903407	AMY2B	1.19	up	amylase, alpha 2B (pancreatic)
7916570	OMA1 DAB1	1.19	up	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   c
8037053	CEACAM7	1.17	up	carcinoembryonic antigen-related cell adhesion molecule 7
7939559	TSPAN18	1.17	up	tetraspanin 18
8096538	RAP1GDS1	1.17	up	RAP1, GTP-GDP dissociation stimulator 1

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8171248	KAL1	1.17	up	Kallmann syndrome 1 sequence
7937020	MKI67	1.17	up	antigen identified by monoclonal antibody Ki-67
7929334	CEP55	1.16	up	centrosomal protein 55kDa
8157691	LOC729012	1.16	up	similar to Spindle and kinetochore-associated protein 2 (
8101322	MOP-1	1.16	up	
7945991	OR51E2	1.15	up	olfactory receptor, family 51, subfamily E, member 2
8092265	MRPL47	1.15	up	mitochondrial ribosomal protein L47
8175177	MBNL3	1.15	up	muscleblind-like 3 (Drosophila)
8120239	TMEM14A	1.15	up	transmembrane protein 14A
7935180	PDLIM1	1.15	up	PDZ and LIM domain 1 (elfin)
7954293	PDE3A	1.15	up	phosphodiesterase 3A, cGMP-inhibited
7917037	CRYZ	1.15	up	crystallin, zeta (quinone reductase)
7983630	FGF7	1.14	up	fibroblast growth factor 7 (keratinocyte growth factor)
8148040	MAL2	1.14	up	mal, T-cell differentiation protein 2
8166784	TSPAN7	1.14	up	tetraspanin 7
7950933	NOX4	1.14	up	NADPH oxidase 4
8066528	PIGT	1.13	up	phosphatidylinositol glycan anchor biosynthesis, class T
8043504	MAL	1.13	up	mal, T-cell differentiation protein
8042788	ACTG2	1.13	up	actin, gamma 2, smooth muscle, enteric
8149955	PBK	1.13	up	PDZ binding kinase
7984540	KIF23	1.12	up	kinesin family member 23
8079237	KIF15	1.12	up	kinesin family member 15
8007420	AOC3	1.12	up	amine oxidase, copper containing 3 (vascular adhesion p
8000636	00132247 DKFZp547E	1.11	up	similar to nuclear pore complex interacting protein   KIA
7972217	SPRY2	1.11	up	sprouty homolog 2 (Drosophila)
8017843	SLC16A6	1.11	up	solute carrier family 16, member 6 (monocarboxylic acid
8122365	GPR126	1.11	up	G protein-coupled receptor 126
7982757	CASC5	1.10	up	cancer susceptibility candidate 5
7938364	WEE1	1.10	up	
8120961	C6orf117	1.09	up	chromosome 6 open reading frame 117
7989708	MTFMT	1.09	up	mitochondrial methionyl-tRNA formyltransferase
7929258	KIF11	1.09	up	kinesin family member 11
7952205	MCAM	1.09	up	melanoma cell adhesion molecule

Supplemental Table 2a  
ePPCOS vs. eEPCtrl

7958031	C12orf48	1.08	up	chromosome 12 open reading frame 48
8132318	ANLN	1.08	up	anillin, actin binding protein
8131944	NFE2L3	1.08	up	nuclear factor (erythroid-derived 2)-like 3
8177931	C6orf205	1.08	up	chromosome 6 open reading frame 205
7983478	C15orf48	1.08	up	chromosome 15 open reading frame 48
8118069	C6orf205	1.08	up	chromosome 6 open reading frame 205
7929438	HELLS	1.07	up	helicase, lymphoid-specific
7923426	UBE2T	1.07	up	ubiquitin-conjugating enzyme E2T (putative)
8121916	RSPO3	1.07	up	R-spondin 3 homolog ( <i>Xenopus laevis</i> )
8171802	ACOT9	1.07	up	acyl-CoA thioesterase 9
8116724	FARS2	1.07	up	phenylalanyl-tRNA synthetase 2, mitochondrial
8014974	TOP2A	1.06	up	topoisomerase (DNA) II alpha 170kDa
8109712	HMMR	1.06	up	hyaluronan-mediated motility receptor (RHAMM)
7923991	PLXNA2	1.06	up	plexin A2
8135235	PMPCB	1.06	up	peptidase (mitochondrial processing) beta
8138289	ETV1	1.05	up	ets variant gene 1
8022902	C18orf37	1.05	up	chromosome 18 open reading frame 37
8057377	CCDC141 LOC285026	1.05	up	coiled-coil domain containing 141   hypothetical protein
8025601	ICAM1	1.05	up	intercellular adhesion molecule 1 (CD54), human rhinovi
8121911	C6orf173	1.05	up	chromosome 6 open reading frame 173
7935776	PRO1933	1.05	up	
7946579	LYVE1	1.05	up	lymphatic vessel endothelial hyaluronan receptor 1
8143957	RHEB	1.05	up	Ras homolog enriched in brain
7970513	C13orf3	1.05	up	chromosome 13 open reading frame 3
8061579	TPX2	1.05	up	
7972826	C13orf29	1.05	up	chromosome 13 open reading frame 29
8091799	C3orf57 LOC10012928	1.05	up	chromosome 3 open reading frame 57   hypothetical pr
8125775	C6orf125	1.04	up	chromosome 6 open reading frame 125
8006779	ARHGAP23	1.04	up	Rho GTPase activating protein 23
8056611	LRP2	1.04	up	low density lipoprotein-related protein 2
8102560	MAD2L1	1.04	up	MAD2 mitotic arrest deficient-like 1 (yeast)
8156905	TMEFF1	1.04	up	transmembrane protein with EGF-like and two follistatin
7944082	TAGLN	1.03	up	transgelin

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7915286	PPT1	1.03	up	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, n
8015323	KRT13 GUCA1B	1.03	up	keratin 13   guanylate cyclase activator 1B (retina)
7977615	RNASE1	1.03	up	ribonuclease, RNase A family, 1 (pancreatic)
8008588	HLF	1.03	up	hepatic leukemia factor
8139057	ELMO1	1.03	up	engulfment and cell motility 1
8178811	0133583 LOC1001336	1.03	up	
8005955	SNORD42A	1.02	up	small nucleolar RNA, C/D box 42A
8146957	PI15	1.02	up	peptidase inhibitor 15
8077323	CNTN4	1.01	up	contactin 4
8040655	SELI	1.01	up	selenoprotein I
7989647	KIAA0101	1.01	up	
8127637	TMEM30A	1.01	up	transmembrane protein 30A
8019857	NDC80	1.01	up	
7914218	TAF12	1.01	up	
8135218	LRRC17	1.01	up	leucine rich repeat containing 17
8155214	MELK	1.00	up	maternal embryonic leucine zipper kinase
7909789	TGFB2	-1.00	down	transforming growth factor, beta 2
8170990	SNORA36A	-1.00	down	small nucleolar RNA, H/ACA box 36A
7903393	S1PR1	-1.01	down	sphingosine-1-phosphate receptor 1
7902808	HS2ST1	-1.01	down	heparan sulfate 2-O-sulfotransferase 1
8055911	LOC100129449	-1.01	down	PRO2055
8154100	VLDLR	-1.01	down	very low density lipoprotein receptor
8097679	LSM6	-1.01	down	
8173179	RP11-278E11.2	-1.01	down	ubiquinol-cytochrome c reductase binding protein pseud
8092328	MCCC1	-1.02	down	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8105828	CCNB1	-1.02	down	cyclin B1
8179224	C6orf205	-1.02	down	chromosome 6 open reading frame 205
7906930	NUF2	-1.02	down	
7976812	SNORD113-4	-1.02	down	small nucleolar RNA, C/D box 113-4
8180003	0133583 LOC1001336	-1.03	down	
8126853	C6orf138	-1.03	down	chromosome 6 open reading frame 138
8162880	MRPL50	-1.03	down	mitochondrial ribosomal protein L50
8113220	ELL2	-1.04	down	elongation factor, RNA polymerase II, 2

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8155849	ANXA1	-1.04	down	annexin A1
8092578	ETV5	-1.04	down	ets variant gene 5 (ets-related molecule)
7971866	DIAPH3	-1.04	down	diaphanous homolog 3 (Drosophila)
8045587	ACVR2A	-1.04	down	activin A receptor, type IIA
8085145	RAD18	-1.04	down	
7925525	CEP170	-1.04	down	centrosomal protein 170kDa
8078544	MLH1	-1.05	down	mutL homolog 1, colon cancer, nonpolyposis type 2 (E. c
8174189	TMSL8 MG39900	-1.05	down	thymosin-like 8   thymosin beta15b
8152617	HAS2	-1.05	down	hyaluronan synthase 2
8081867	C3orf1	-1.05	down	chromosome 3 open reading frame 1
8055862	ARL5A	-1.05	down	ADP-ribosylation factor-like 5A
8054580	BUB1	-1.06	down	
7950810	SYTL2	-1.06	down	synaptotagmin-like 2
7982358	ARHGAP11A	-1.06	down	Rho GTPase activating protein 11A
7917516	GBP1 LOC400759	-1.06	down	guanylate binding protein 1, interferon-inducible, 67kDa
7977270	LOC388022	-1.06	down	hypothetical gene supported by AK131040
8155268	POLR1E	-1.06	down	polymerase (RNA) I polypeptide E, 53kDa
8056963	LOC100129455	-1.06	down	
7922137	NME7	-1.06	down	non-metastatic cells 7, protein expressed in (nucleoside-
8073334	RBX1	-1.06	down	ring-box 1
8126135	GLO1	-1.06	down	glyoxalase I
7998722	SNORD60	-1.06	down	small nucleolar RNA, C/D box 60
8033362	INSR	-1.06	down	insulin receptor
7927710	CDC2	-1.07	down	cell division cycle 2, G1 to S and G2 to M
8171041	VAMP7	-1.07	down	vesicle-associated membrane protein 7
8176962	VAMP7	-1.07	down	vesicle-associated membrane protein 7
8068612	WRB	-1.07	down	tryptophan rich basic protein
8107850	CHSY3	-1.07	down	chondroitin sulfate synthase 3
8090823	SLCO2A1	-1.07	down	solute carrier organic anion transporter family, member
8159006	RPL7A SNORD36B	-1.08	down	ribosomal protein L7a   small nucleolar RNA, C/D box 36
7953594	EMG1	-1.08	down	
8113800	FBN2	-1.08	down	fibrillin 2 (congenital contractural arachnodactyly)
8017235	APPBP2	-1.08	down	amyloid beta precursor protein (cytoplasmic tail) binding

Supplemental Table 2a  
ePPCOS vs. eEPCtrl

8118571	PSMB9	-1.09	down	proteasome (prosome, macropain) subunit, beta type, 9
8179495	PSMB9	-1.10	down	proteasome (prosome, macropain) subunit, beta type, 9
7953218	RAD51AP1	-1.10	down	RAD51 associated protein 1
8178211	PSMB9	-1.10	down	proteasome (prosome, macropain) subunit, beta type, 9
8178802	0133583 LOC1001336	-1.10	down	
8001496	NUDT21	-1.11	down	nudix (nucleoside diphosphate linked moiety X)-type mo
8054479	MALL	-1.12	down	mal, T-cell differentiation protein-like
8096771	DC2	-1.12	down	
8097628	HHIP	-1.12	down	hedgehog interacting protein
7970467	N6AMT2	-1.12	down	N-6 adenine-specific DNA methyltransferase 2 (putative)
8147447	PTDSS1	-1.12	down	phosphatidylserine synthase 1
8030978	LOC91664	-1.12	down	hypothetical protein BC007307
8167163	CXorf24	-1.13	down	chromosome X open reading frame 24
8020898	ZNF271	-1.13	down	zinc finger protein 271
8160531	C9orf72	-1.13	down	chromosome 9 open reading frame 72
8042495	RY1	-1.13	down	putative nucleic acid binding protein RY-1
8179399	C4A C4B	-1.14	down	complement component 4A (Rodgers blood group)   cor
8114010	IRF1	-1.14	down	interferon regulatory factor 1
8096415	MMRN1	-1.14	down	multimerin 1
8118455	C4A C4B	-1.14	down	complement component 4A (Rodgers blood group)   cor
8118409	C4A C4B	-1.14	down	complement component 4A (Rodgers blood group)   cor
7985053	FBXO22	-1.14	down	F-box protein 22
8141107	SLC25A13	-1.14	down	solute carrier family 25, member 13 (citrin)
8102643	CCNA2	-1.15	down	cyclin A2
7939314	EHF	-1.16	down	ets homologous factor
8169541	DOCK11	-1.16	down	dedicator of cytokinesis 11
8130129	NUP43	-1.17	down	nucleoporin 43kDa
8120838	TTK	-1.17	down	
7931187	BUB3	-1.17	down	
8116859	TMEM14C	-1.19	down	transmembrane protein 14C
8014956	NR1D1 THRA	-1.19	down	nuclear receptor subfamily 1, group D, member 1   thyr
8088979	VGLL3	-1.19	down	vestigial like 3 (Drosophila)
8138834	FKBP14	-1.19	down	FK506 binding protein 14, 22 kDa



Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7958253	OCC-1	-1.20	down	overexpressed in colon carcinoma-1
7966135	CORO1C	-1.20	down	coronin, actin binding protein, 1C
7962058	TMTC1	-1.21	down	transmembrane and tetratricopeptide repeat containing
8105348	LOC493869	-1.21	down	similar to RIKEN cDNA 2310016C16
8041383	LTBP1	-1.22	down	latent transforming growth factor beta binding protein 1
8108688	PCDHB3	-1.23	down	protocadherin beta 3
8035304	BST2	-1.24	down	bone marrow stromal cell antigen 2
7916898	DEPDC1	-1.25	down	DEP domain containing 1
7979307	DLG7	-1.25	down	discs, large homolog 7 (Drosophila)
8166140	MOSPD2	-1.26	down	motile sperm domain containing 2
7951593	FLJ45803	-1.26	down	
8088339	ARF4	-1.26	down	ADP-ribosylation factor 4
8170992	SNORA56	-1.26	down	small nucleolar RNA, H/ACA box 56
8093096	TCTEX1D2 TM4SF19	-1.26	down	Tctex1 domain containing 2   transmembrane 4 L six fan
7938366	WEE1	-1.27	down	
8006812	PSMB3	-1.27	down	proteasome (prosome, macropain) subunit, beta type, 3
7996934	NIP7	-1.28	down	nuclear import 7 homolog (S. cerevisiae)
7903119	ABCD3	-1.29	down	ATP-binding cassette, sub-family D (ALD), member 3
8156538	HIATL1	-1.29	down	hippocampus abundant transcript-like 1
8102800	SLC7A11	-1.29	down	solute carrier family 7, (cationic amino acid transporter,
7933872	EGR2	-1.30	down	early growth response 2 (Krox-20 homolog, Drosophila)
8112967	TMEM167	-1.30	down	transmembrane protein 167
8160016	RANBP6	-1.30	down	RAN binding protein 6
7956031	ORMDL2	-1.31	down	ORM1-like 2 (S. cerevisiae)
8167006	RP2	-1.31	down	retinitis pigmentosa 2 (X-linked recessive)
8108301	KIF20A	-1.31	down	kinesin family member 20A
8112980	EDIL3	-1.32	down	EGF-like repeats and discoidin I-like domains 3
7952046	MPZL2	-1.32	down	myelin protein zero-like 2
8127201	COL21A1	-1.33	down	collagen, type XXI, alpha 1
8010078	SNORD1C	-1.33	down	small nucleolar RNA, C/D box 1C
8113591	PGGT1B	-1.33	down	protein geranylgeranyltransferase type I, beta subunit
8158167	LCN2	-1.33	down	lipocalin 2
8124385	HIST1H4F HIST1H4K	-1.34	down	histone cluster 1, H4b   histone cluster 4, H4   histone cl

Supplemental Table 2a  
ePPCOS vs. eEPCtrl

7948995	ATL3	-1.35	down	atlastin 3
8069689	ADAMTS5	-1.35	down	ADAM metalloproteinase with thrombospondin type 1 m
8117834	PPP1R11	-1.35	down	protein phosphatase 1, regulatory (inhibitor) subunit 11
7986509	LOC441734	-1.35	down	similar to hypothetical protein DKFZp434I1020
8177744	PPP1R11	-1.35	down	protein phosphatase 1, regulatory (inhibitor) subunit 11
8095680	IL8	-1.36	down	interleukin 8
7986527	C15orf51	-1.36	down	chromosome 15 open reading frame 51
8159850	FLJ35024	-1.36	down	hypothetical LOC401491
8125919	FKBP5 LOC285847	-1.36	down	FK506 binding protein 5   hypothetical protein LOC2858.
8066275	PRO0628	-1.36	down	
7904506	^A1245 NBPF11 NBPF	-1.36	down	neuroblastoma breakpoint family, member 15   neurobl
8134257	GNG11	-1.38	down	guanine nucleotide binding protein (G protein), gamma :
7904562	NBPF14 NBPF20 NBPF	-1.38	down	neuroblastoma breakpoint family, member 16   neurobl
7953291	CD9	-1.38	down	
8116921	EDN1	-1.39	down	endothelin 1
7904874	'F14 NBPF20 NBPF9	-1.39	down	neuroblastoma breakpoint family, member 16   neurobl
8122265	TNFAIP3	-1.40	down	tumor necrosis factor, alpha-induced protein 3
8052355	EFEMP1	-1.40	down	EGF-containing fibulin-like extracellular matrix protein 1
7903214	LPPR4	-1.41	down	plasticity related gene 1
8081667	SLC35A5	-1.41	down	solute carrier family 35, member A5
7948906	SNORD27 SNHG1	-1.43	down	small nucleolar RNA, C/D box 27   small nucleolar RNA h
7951038	SNORA40 JOSD3	-1.43	down	small nucleolar RNA, H/ACA box 40   Josephin domain cc
7951178	TRPC6	-1.43	down	transient receptor potential cation channel, subfamily C,
8098204	CPE	-1.44	down	carboxypeptidase E
7948904	SNORD28	-1.44	down	small nucleolar RNA, C/D box 28
8052762	GFPT1	-1.45	down	glutamine-fructose-6-phosphate transaminase 1
8149551	PSD3	-1.45	down	pleckstrin and Sec7 domain containing 3
8169240	PRPS1	-1.49	down	phosphoribosyl pyrophosphate synthetase 1
7981943	SNRPN SNORD64 P/	-1.51	down	Prader-Willi/Angelman syndrome-5   small nuclear ribor
8029693	FOSB	-1.54	down	FBJ murine osteosarcoma viral oncogene homolog B
7964466	DCTN2	-1.55	down	dynactin 2 (p50)
7930870	TOMM22	-1.57	down	translocase of outer mitochondrial membrane 22 homol
8168146	KIF4A	-1.58	down	kinesin family member 4A

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8001067	HERC2P4	-1.60	down	hect domain and RLD 2 pseudogene 4
8083968	NLGN1	-1.60	down	neuroligin 1
8082408	SEC61A1	-1.61	down	Sec61 alpha 1 subunit ( <i>S. cerevisiae</i> )
8041561	MORN2	-1.64	down	MORN repeat containing 2
8120860	BCKDHB	-1.65	down	branched chain keto acid dehydrogenase E1, beta polypeptide
8007397	PSME3	-1.66	down	proteasome (prosome, macropain) activator subunit 3 (FtsH)
7944991	STT3A	-1.67	down	STT3, subunit of the oligosaccharyltransferase complex, alpha
8092970	APOD	-1.68	down	apolipoprotein D
8001099	HERC2P4	-1.68	down	hect domain and RLD 2 pseudogene 4
8010139	SEC14L1	-1.69	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
7920317	ILF2	-1.74	down	interleukin enhancer binding factor 2, 45kDa
7915504	ELOVL1	-1.75	down	elongation of very long chain fatty acids (FEN1/Elo2, SUV51)
8095303	LPHN3	-1.75	down	latrophilin 3
8030128	PPP1R15A	-1.79	down	protein phosphatase 1, regulatory (inhibitor) subunit 15A
8109194	SLC26A2	-1.79	down	solute carrier family 26 (sulfate transporter), member 2
7952339	LOC85389	-1.79	down	RNA, small nucleolar
7907135	SFT2D2	-1.79	down	SFT2 domain containing 2
8090448	RUVBL1	-1.81	down	RuvB-like 1 ( <i>E. coli</i> )
7941936	GSTP1	-1.82	down	glutathione S-transferase pi
8140840	STEAP4	-1.85	down	STEAP family member 4
7951662	CRYAB	-1.89	down	crystallin, alpha B
7952069	C11orf60	-1.91	down	chromosome 11 open reading frame 60
7954310	LOC100008588	-1.98	down	18S ribosomal RNA
7904726	TXNIP	-2.00	down	thioredoxin interacting protein
7922382	ANKRD45	-2.00	down	ankyrin repeat domain 45
8175835	BCAP31	-2.00	down	B-cell receptor-associated protein 31
7976073	FLRT2	-2.01	down	fibronectin leucine rich transmembrane protein 2
8093278	HGD LOC100132552	-2.01	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)
8089851	HGD LOC100132552	-2.01	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)
7907232	C1orf129	-2.01	down	chromosome 1 open reading frame 129
8107591	ZNF474	-2.01	down	zinc finger protein 474
8178598	CLIC1	-2.02	down	chloride intracellular channel 1
8011990	TEKT1	-2.02	down	tektin 1

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7897966	C1orf158	-2.03	down	chromosome 1 open reading frame 158
7904695	SEC22B	-2.03	down	SEC22 vesicle trafficking protein homolog B ( <i>S. cerevisiae</i> )
7920291	S100A16	-2.03	down	S100 calcium binding protein A16
7930593	C10orf81	-2.03	down	chromosome 10 open reading frame 81
7932744	ARMC4	-2.04	down	armadillo repeat containing 4
8075423	DUSP18	-2.04	down	dual specificity phosphatase 18
8085867	NEK10	-2.04	down	NIMA (never in mitosis gene a)- related kinase 10
8121015	C6orf165 SLC35A1	-2.05	down	chromosome 6 open reading frame 165   solute carrier f
8111864	C6	-2.06	down	complement component 6
8004889	WDR16	-2.07	down	WD repeat domain 16
8071737	MIF	-2.07	down	macrophage migration inhibitory factor (glycosylation-in
8117377	HIST1H1E	-2.07	down	histone cluster 1, H1e
8058462	MDH1B	-2.07	down	malate dehydrogenase 1B, NAD (soluble)
8131719	DNAH11	-2.07	down	dynein, axonemal, heavy chain 11
7912537	DHRS3	-2.07	down	dehydrogenase/reductase (SDR family) member 3
7908793	ELF3	-2.09	down	E74-like factor 3 (ets domain transcription factor, epithe
8172204	MAOB	-2.10	down	monoamine oxidase B
7925320	NID1	-2.10	down	nidogen 1
8122071	ENPP3	-2.11	down	ectonucleotide pyrophosphatase/phosphodiesterase 3
7939642	CREB3L1	-2.11	down	cAMP responsive element binding protein 3-like 1
8007561	G6PC3	-2.12	down	glucose 6 phosphatase, catalytic, 3
7899480	SNORA73A	-2.12	down	small nucleolar RNA, H/ACA box 73A
8138392	AGR3	-2.12	down	anterior gradient homolog 3 ( <i>Xenopus laevis</i> )
8015349	KRT19	-2.12	down	keratin 19
7976488	SERPINA5	-2.13	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
8148070	COL14A1	-2.13	down	collagen, type XIV, alpha 1
7959330	WDR66	-2.14	down	WD repeat domain 66
8117402	HIST1H4F HIST1H4K	-2.14	down	histone cluster 1, H4e   histone cluster 4, H4   histone cl
7981427	CKB	-2.15	down	creatine kinase, brain
7995681	MMP2	-2.17	down	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinas
7971077	POSTN	-2.17	down	periostin, osteoblast specific factor
8117955	MRPS18B	-2.18	down	mitochondrial ribosomal protein S18B
8179139	MRPS18B	-2.18	down	mitochondrial ribosomal protein S18B

Supplemental Table 2a  
ePPCOS vs. eEPCtrl

8117372	HIST1H2AC	-2.18	down	histone cluster 1, H2ac
8010243	SYNGR2	-2.18	down	synaptogyrin 2
8059576	PID1	-2.18	down	phosphotyrosine interaction domain containing 1
8177824	MRPS18B	-2.18	down	mitochondrial ribosomal protein S18B
8082478	COPG	-2.19	down	coatamer protein complex, subunit gamma
7991386	CIB1	-2.19	down	calcium and integrin binding 1 (calmyrin)
8057463	CERKL	-2.19	down	ceramide kinase-like
7974902	RHOJ	-2.20	down	ras homolog gene family, member J
8111019	DNAH5	-2.21	down	dynein, axonemal, heavy chain 5
7942791	.OC100008589 WDR81	-2.21	down	28S ribosomal RNA   WD repeat domain 88
7976443	IFI27	-2.22	down	interferon, alpha-inducible protein 27
7921862	C1orf192	-2.22	down	chromosome 1 open reading frame 192
7937802	CD81	-2.23	down	
7942941	CCDC81	-2.24	down	coiled-coil domain containing 81
7996198	CCDC113	-2.25	down	coiled-coil domain containing 113
8070603	RSPH1	-2.26	down	radial spoke head 1 homolog (Chlamydomonas)
7949588	CD248	-2.27	down	
7976496	SERPINA3	-2.27	down	serpin peptidase inhibitor, clade A (alpha-1 antitrypsin)
8175288	MOSPD1	-2.27	down	motile sperm domain containing 1
8019183	ACTG1	-2.28	down	actin, gamma 1
8096301	SPP1	-2.28	down	secreted phosphoprotein 1 (osteopontin, bone sialoprotein)
8003667	SERPINF1	-2.29	down	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, alpha-2 macroglobulin)
7912198	ENO1	-2.29	down	enolase 1, (alpha)
8129573	MOXD1	-2.30	down	monooxygenase, DBH-like 1
7959681	DNAH10	-2.31	down	dynein, axonemal, heavy chain 10
8137979	ACTB	-2.32	down	actin, beta
8151999	RGS22	-2.32	down	regulator of G-protein signaling 22
8091922	WDR49	-2.34	down	WD repeat domain 49
7981988	SNORD116-20 SNOR	-2.34	down	small nuclear ribonucleoprotein polypeptide N   small nuclear ribonucleoprotein polypeptide N
8078014	SLC6A6	-2.35	down	solute carrier family 6 (neurotransmitter transporter, tau)
8142646	IQUB	-2.35	down	IQ motif and ubiquitin domain containing
8162373	OGN	-2.36	down	osteoglycin
7981986	116-16 SNORD116-18	-2.37	down	small nuclear ribonucleoprotein polypeptide N   small nuclear ribonucleoprotein polypeptide N

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

7981982	116-16 SNORD116-18	-2.37	down	small nuclear ribonucleoprotein polypeptide N   small nu
7910229	ARF1	-2.38	down	ADP-ribosylation factor 1
7967620	DHX37 LOC100132564	-2.39	down	DEAH (Asp-Glu-Ala-His) box polypeptide 37   hypothetic
8055151	26C1B A26C1A FKSG3	-2.39	down	ANKRD26-like family C, member 1B   ANKRD26-like fami
8012896	PMP22	-2.39	down	peripheral myelin protein 22
7922418	SNORD74	-2.41	down	small nucleolar RNA, C/D box 74
8099524	LDB2	-2.41	down	LIM domain binding 2
8072876	LGALS1	-2.42	down	lectin, galactoside-binding, soluble, 1 (galectin 1)
8088315	ASB14 DNAH12	-2.43	down	ankyrin repeat and SOCS box-containing 14   dynein, axc
8004957	DNAH9	-2.43	down	dynein, axonemal, heavy chain 9
7912347	CASZ1	-2.44	down	castor zinc finger 1
7947156	MUC15	-2.44	down	mucin 15, cell surface associated
7957673	C12orf55 FLJ34470	-2.44	down	chromosome 12 open reading frame 55   hypothetical p
8055220	A26C1A A26C1B	-2.44	down	ANKRD26-like family C, member 1A   ANKRD26-like fami
7953603	C1S	-2.44	down	complement component 1, s subcomponent
8169350	LOC100134364	-2.46	down	
8088299	DNHD2	-2.47	down	dynein heavy chain domain 2
8088322	DNAH12L	-2.48	down	dynein, axonemal, heavy chain 12-like
8108217	TGFBI	-2.48	down	transforming growth factor, beta-induced, 68kDa
7950307	UCP2	-2.50	down	uncoupling protein 2 (mitochondrial, proton carrier)
7981976	SNRPN SNORD116-14	-2.52	down	small nuclear ribonucleoprotein polypeptide N   small nu
8134263	COL1A2	-2.53	down	collagen, type I, alpha 2
7943740	FLJ46266	-2.55	down	
8085062	IL5RA	-2.56	down	interleukin 5 receptor, alpha
8082012	SLC15A2	-2.57	down	solute carrier family 15 (H+/peptide transporter), memb
8121622	RSHL3	-2.58	down	radial spokehead-like 3
8090180	MUC13	-2.58	down	mucin 13, cell surface associated
8058857	IGFBP5	-2.59	down	insulin-like growth factor binding protein 5
7916629	C1orf87	-2.59	down	chromosome 1 open reading frame 87
7903959	C1orf88	-2.60	down	chromosome 1 open reading frame 88
8145470	DPYSL2	-2.61	down	dihydropyrimidinase-like 2
7981068	SERPINA1	-2.63	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
7900365	MFSD2	-2.64	down	major facilitator superfamily domain containing 2

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8010978	LOC100130876	-2.66	down	
8095080	PDGFRA	-2.66	down	platelet-derived growth factor receptor, alpha polypepti
7920337	INTS3	-2.67	down	integrator complex subunit 3
8046922	COL3A1	-2.70	down	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type I
8166671	CXorf22	-2.72	down	chromosome X open reading frame 22
7940323	MS4A8B	-2.73	down	membrane-spanning 4-domains, subfamily A, member 8
8091511	P2RY14	-2.74	down	purinergic receptor P2Y, G-protein coupled, 14
7932598	C10orf63	-2.74	down	chromosome 10 open reading frame 63
7915472	SLC2A1	-2.75	down	solute carrier family 2 (facilitated glucose transporter), n
7953385	GAPDH	-2.77	down	glyceraldehyde-3-phosphate dehydrogenase
8152522	ENPP2	-2.78	down	ectonucleotide pyrophosphatase/phosphodiesterase 2 (;
8157632	C9orf18	-2.79	down	chromosome 9 open reading frame 18
8094533	FLJ16686	-2.80	down	
8133360	CLDN4	-2.81	down	claudin 4
8166690	CXorf59	-2.82	down	chromosome X open reading frame 59
7918294	C1orf194	-2.86	down	chromosome 1 open reading frame 194
8008040	LRRC46	-2.87	down	leucine rich repeat containing 46
8150691	EFCAB1	-2.87	down	EF-hand calcium binding domain 1
8080863	FLJ44379	-2.89	down	similar to S-100 protein, alpha chain
8059905	COL6A3	-2.90	down	collagen, type VI, alpha 3
7905079	ST2H2AA3 HIST2H2A	-2.92	down	histone cluster 2, H2aa3   histone cluster 2, H2aa4
8040672	C2orf39	-2.93	down	chromosome 2 open reading frame 39
7899615	SERINC2 KIAA0746	-2.93	down	serine incorporator 2   KIAA0746 protein
8091887	ZBBX	-2.93	down	zinc finger, B-box domain containing
7919619	!AA3 HIST2H2AA4 HIS	-2.93	down	histone cluster 2, H2aa3   histone cluster 2, H2aa4   hist
8083494	MME	-2.94	down	membrane metallo-endopeptidase
8154892	DNAI1	-2.94	down	dynein, axonemal, intermediate chain 1
7900635	hCG_23177	-2.96	down	hCG23177
8123744	F13A1	-2.96	down	coagulation factor XIII, A1 polypeptide
7960947	A2M	-2.99	down	alpha-2-macroglobulin
7988467	FBN1	-3.14	down	fibrillin 1
8177858	TUBB	-3.17	down	tubulin, beta
8117995	TUBB	-3.17	down	tubulin, beta

Supplemental Table 2a  
eEPPCOS vs. eEPCtrl

8179174	TUBB	-3.18	down	tubulin, beta
7965873	IGF1	-3.24	down	insulin-like growth factor 1 (somatomedin C)
8028652	ZFP36	-3.34	down	zinc finger protein 36, C3H type, homolog (mouse)
7969288	OLFM4	-3.46	down	olfactomedin 4
7980485	DIO2	-3.53	down	deiodinase, iodothyronine, type II
8155747	C9orf135	-3.57	down	chromosome 9 open reading frame 135
7931108	DMBT1	-3.62	down	deleted in malignant brain tumors 1
8135341	FLJ23834	-3.74	down	
8063601	C20orf85	-3.76	down	chromosome 20 open reading frame 85
7985398	FAM154B	-3.79	down	family with sequence similarity 154, member B
8102792	PCDH18	-3.82	down	protocadherin 18
8001800	CDH11	-3.83	down	cadherin 11, type 2, OB-cadherin (osteoblast)
7947512	DKFZP586H2123	-3.84	down	regeneration associated muscle protease
8054511	LOC205251	-3.87	down	
7965403	LUM	-4.03	down	lumican
8097692	EDNRA	-4.37	down	endothelin receptor type A
7968866	C13orf30	-4.97	down	chromosome 13 open reading frame 30
7960865	SLC2A3	-5.09	down	solute carrier family 2 (facilitated glucose transporter), n
8101659	SPARCL1	-5.10	down	SPARC-like 1 (mast9, hevin)
7965410	DCN	-5.57	down	decorin
8161755	ALDH1A1	-5.70	down	aldehyde dehydrogenase 1 family, member A1
8058765	FN1	-6.39	down	fibronectin 1
8115327	SPARC	-6.73	down	secreted protein, acidic, cysteine-rich (osteonectin)
7961514	MGP	-8.41	down	matrix Gla protein
8139087	SFRP4	-9.53	down	secreted frizzled-related protein 4



Supplemental Table 2b  
eENPCOS vs. eENCtrl

Transcripts Cluster Id	Genesymbol	eENPCOS vs. eENCtrl	Regulation	Genedescription
8130578	SNORA20	4.76	up	small nucleolar RNA, H/ACA box 20
8005955	SNORD42A	4.02	up	small nucleolar RNA, C/D box 42A
8148040	MAL2	3.14	up	mal, T-cell differentiation protein 2
8160912	C9orf131	3.07	up	chromosome 9 open reading frame 131
8017597	hCG_1793136	3.05	up	similar to ribosomal protein L31
8041561	MORN2	2.48	up	MORN repeat containing 2
7960896	.OC650293 OR7E125I	2.40	up	seven transmembrane helix receptor   olfactory recepto
8057056	TTN	2.29	up	titin
8005204	.44A CCDC144B CCD	2.25	up	coiled-coil domain containing 144A   coiled-coil domain
7931108	DMBT1	2.25	up	deleted in malignant brain tumors 1
8013272	.44A CCDC144B CCD	2.23	up	coiled-coil domain containing 144A   coiled-coil domain
8057377	CCDC141 LOC28502E	2.19	up	coiled-coil domain containing 141   hypothetical protein
8171041	VAMP7	2.19	up	vesicle-associated membrane protein 7
8176962	VAMP7	2.19	up	vesicle-associated membrane protein 7
8092970	APOD	2.16	up	apolipoprotein D
7909789	TGFB2	2.16	up	transforming growth factor, beta 2
8077366	LRRN1	2.14	up	leucine rich repeat neuronal 1
8014956	NR1D1 THRA	2.13	up	nuclear receptor subfamily 1, group D, member 1   thyr
7904478	C51152 LOC1001290	2.08	up	melanoma antigen   hypothetical protein LOC100129030
8173179	RP11-278E11.2	2.05	up	ubiquinol-cytochrome c reductase binding protein pseu
8161375	C100129030 LOC511	2.01	up	hypothetical protein LOC100129030   melanoma antigen
8155453	C100129030 LOC511	2.00	up	hypothetical protein LOC100129030   melanoma antigen
7901048	SNORD46	1.99	up	small nucleolar RNA, C/D box 46
8100378	LOC402176	1.87	up	similar to 60S ribosomal protein L21
7939237	C11orf41	1.73	up	chromosome 11 open reading frame 41
8120679	DDX43	1.59	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
7922382	ANKRD45	1.49	up	ankyrin repeat domain 45
8008588	HLF	1.48	up	hepatic leukemia factor
8174189	TMSL8 MGC39900	1.47	up	thymosin-like 8   thymosin beta15b
7905548	SPRR3	1.42	up	small proline-rich protein 3
8158167	LCN2	1.40	up	lipocalin 2
8017057	C17orf47	1.40	up	chromosome 17 open reading frame 47

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8124562	ZNF323	1.40	up	zinc finger protein 323
8155591	20B RP11-195B21.3	1.38	up	ankyrin repeat domain 20B   hypothetical LOC644249
8134339	PEG10	1.37	up	paternally expressed 10
8000636	00132247 DKFZp547I	1.37	up	similar to nuclear pore complex interacting protein   KIA
8092169	TNFSF10	1.36	up	tumor necrosis factor (ligand) superfamily, member 10
8053741	ANKRD20A3 ANKRD2	1.33	up	ankyrin repeat domain 20B   ankyrin repeat domain 20 f
7904726	TXNIP	1.32	up	thioredoxin interacting protein
8058462	MDH1B	1.30	up	malate dehydrogenase 1B, NAD (soluble)
8037053	CEACAM7	1.29	up	carcinoembryonic antigen-related cell adhesion molecule
8157450	ORM2	1.29	up	orosomuroid 2
8055702	NMI	1.28	up	N-myc (and STAT) interactor
8097628	HHIP	1.28	up	hedgehog interacting protein
8015323	KRT13 GUCA1B	1.27	up	keratin 13   guanylate cyclase activator 1B (retina)
8006433	CCL2	1.27	up	chemokine (C-C motif) ligand 2
7903214	LPPR4	1.27	up	plasticity related gene 1
8019802	RNU2 RNU2B WDR74	1.26	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019707	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019641	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019705	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019703	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019639	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019637	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019631	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019633	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019635	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8095680	IL8	1.25	up	interleukin 8
8019709	RNU2 RNU2B WDR74	1.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8172022	TMEM47	1.24	up	transmembrane protein 47
8108217	TGFB1	1.24	up	transforming growth factor, beta-induced, 68kDa
8091243	PCOLCE2	1.23	up	procollagen C-endopeptidase enhancer 2
7918294	C1orf194	1.23	up	chromosome 1 open reading frame 194
8166690	CXorf59	1.23	up	chromosome X open reading frame 59
7932744	ARMC4	1.23	up	armadillo repeat containing 4

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8157446	ORM1	1.22	up	orosomuroid 1
8108251	NPY6R	1.22	up	neuropeptide Y receptor Y6 (pseudogene)
7972826	C13orf29	1.21	up	chromosome 13 open reading frame 29
8118069	C6orf205	1.21	up	chromosome 6 open reading frame 205
8159850	FLJ35024	1.20	up	hypothetical LOC401491
7900365	MFSD2	1.19	up	major facilitator superfamily domain containing 2
8011990	TEKT1	1.19	up	tektin 1
8154892	DNAI1	1.19	up	dynein, axonemal, intermediate chain 1
8105596	RGS7BP	1.18	up	regulator of G-protein signaling 7 binding protein
8152522	ENPP2	1.18	up	ectonucleotide pyrophosphatase/phosphodiesterase 2 (;
8042144	REL	1.18	up	v-rel reticuloendotheliosis viral oncogene homolog (avian)
8054200	LYG2	1.18	up	lysozyme G-like 2
7968866	C13orf30	1.18	up	chromosome 13 open reading frame 30
7986527	C15orf51	1.17	up	chromosome 15 open reading frame 51
7986509	LOC441734	1.17	up	similar to hypothetical protein DKFZp434I1020
8056611	LRP2	1.17	up	low density lipoprotein-related protein 2
7983478	C15orf48	1.17	up	chromosome 15 open reading frame 48
7930593	C10orf81	1.17	up	chromosome 10 open reading frame 81
7942941	CCDC81	1.17	up	coiled-coil domain containing 81
7947156	MUC15	1.17	up	mucin 15, cell surface associated
8021301	RAB27B	1.17	up	
8043504	MAL	1.16	up	mal, T-cell differentiation protein
7945991	OR51E2	1.16	up	olfactory receptor, family 51, subfamily E, member 2
7932598	C10orf63	1.16	up	chromosome 10 open reading frame 63
8124650	UBD GABBR1	1.16	up	ubiquitin D   gamma-aminobutyric acid (GABA) B receptor
8177931	C6orf205	1.16	up	chromosome 6 open reading frame 205
8179224	C6orf205	1.16	up	chromosome 6 open reading frame 205
8083743	ARL14	1.15	up	ADP-ribosylation factor-like 14
8091799	3orf57 LOC10012928	1.15	up	chromosome 3 open reading frame 57   hypothetical protein
8170635	ZNF275	1.15	up	zinc finger protein 275
7983630	FGF7	1.14	up	fibroblast growth factor 7 (keratinocyte growth factor)
8094533	FLJ16686	1.14	up	
8042788	ACTG2	1.14	up	actin, gamma 2, smooth muscle, enteric

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8114010	IRF1	1.14	up	interferon regulatory factor 1
8122071	ENPP3	1.14	up	ectonucleotide pyrophosphatase/phosphodiesterase 3
7907232	C1orf129	1.13	up	chromosome 1 open reading frame 129
8004957	DNAH9	1.13	up	dynein, axonemal, heavy chain 9
7897966	C1orf158	1.13	up	chromosome 1 open reading frame 158
8118455	C4A C4B	1.13	up	complement component 4A (Rodgers blood group)   cor
8118409	C4A C4B	1.13	up	complement component 4A (Rodgers blood group)   cor
8140686	SEMA3D	1.13	up	sema domain, immunoglobulin domain (Ig), short basic c
8179399	C4A C4B	1.13	up	complement component 4A (Rodgers blood group)   cor
8111864	C6	1.13	up	complement component 6
8070603	RSPH1	1.13	up	radial spoke head 1 homolog (Chlamydomonas)
8066528	PIGT	1.12	up	phosphatidylinositol glycan anchor biosynthesis, class T
7981427	CKB	1.12	up	creatine kinase, brain
8004889	WDR16	1.12	up	WD repeat domain 16
7943530	GRIA4	1.12	up	glutamate receptor, ionotropic, AMPA 4
8003667	SERPINF1	1.11	up	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin,
8178295	UBD GABBR1	1.11	up	ubiquitin D   gamma-aminobutyric acid (GABA) B recept
8146957	PI15	1.11	up	peptidase inhibitor 15
8121015	C6orf165 SLC35A1	1.11	up	chromosome 6 open reading frame 165   solute carrier f
8015349	KRT19	1.10	up	keratin 19
7908793	ELF3	1.10	up	E74-like factor 3 (ets domain transcription factor, epithe
8138289	ETV1	1.10	up	ets variant gene 1
7948904	SNORD28	1.10	up	small nucleolar RNA, C/D box 28
8131719	DNAH11	1.10	up	dynein, axonemal, heavy chain 11
8045688	TNFAIP6	1.09	up	tumor necrosis factor, alpha-induced protein 6
8107850	CHSY3	1.08	up	chondroitin sulfate synthase 3
8152617	HAS2	1.08	up	hyaluronan synthase 2
8057463	CERKL	1.08	up	ceramide kinase-like
8121622	RSHL3	1.08	up	radial spokehead-like 3
8166671	CXorf22	1.08	up	chromosome X open reading frame 22
7950810	SYTL2	1.08	up	synaptotagmin-like 2
8028652	ZFP36	1.08	up	zinc finger protein 36, C3H type, homolog (mouse)
8077270	CHL1	1.08	up	cell adhesion molecule with homology to L1CAM (close t

Supplemental Table 2b  
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8116983	CD83	1.08	up	
7976812	SNORD113-4	1.07	up	small nucleolar RNA, C/D box 113-4
8077323	CNTN4	1.07	up	contactin 4
8121916	RSPO3	1.07	up	R-spondin 3 homolog ( <i>Xenopus laevis</i> )
7933872	EGR2	1.07	up	early growth response 2 (Krox-20 homolog, <i>Drosophila</i> )
7985398	FAM154B	1.06	up	family with sequence similarity 154, member B
8085062	IL5RA	1.06	up	interleukin 5 receptor, alpha
8171248	KAL1	1.06	up	Kallmann syndrome 1 sequence
8093278	HGD LOC100132552	1.06	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
7949588	CD248	1.06	up	
7959681	DNAH10	1.06	up	dynein, axonemal, heavy chain 10
8135218	LRRC17	1.05	up	leucine rich repeat containing 17
8089851	HGD LOC100132552	1.05	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
7903959	C1orf88	1.05	up	chromosome 1 open reading frame 88
7951593	FLJ45803	1.05	up	
8172204	MAOB	1.05	up	monoamine oxidase B
7931748	IDI2	1.05	up	isopentenyl-diphosphate delta isomerase 2
8142646	IQUB	1.05	up	IQ motif and ubiquitin domain containing
7904874	F14 NBPF20 NBPF9	1.05	up	neuroblastoma breakpoint family, member 16   neurobl
8088315	ASB14 DNAH12	1.05	up	ankyrin repeat and SOCS box-containing 14   dynein, axo
7932407	ST8SIA6	1.05	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase
8157632	C9orf18	1.05	up	chromosome 9 open reading frame 18
7957140	LGR5	1.05	up	leucine-rich repeat-containing G protein-coupled receptor
8040672	C2orf39	1.04	up	chromosome 2 open reading frame 39
8088299	DNHD2	1.04	up	dynein heavy chain domain 2
8155487	:GF7P2 LOC1001327	1.04	up	keratinocyte growth factor-like protein 1   keratinocyte g
8161455	:GF7P2 LOC1001327	1.04	up	keratinocyte growth factor-like protein 2   keratinocyte g
7970513	C13orf3	1.04	up	chromosome 13 open reading frame 3
8123744	F13A1	1.04	up	coagulation factor XIII, A1 polypeptide
8161423	:GF7P2 LOC1001327	1.04	up	keratinocyte growth factor-like protein 2   keratinocyte g
8080863	FLJ44379	1.04	up	similar to S-100 protein, alpha chain
7939642	CREB3L1	1.04	up	cAMP responsive element binding protein 3-like 1
8091887	ZBBX	1.04	up	zinc finger, B-box domain containing

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8113800	FBN2	1.04	up	fibrillin 2 (congenital contractural arachnodactyly)
7950307	UCP2	1.04	up	uncoupling protein 2 (mitochondrial, proton carrier)
8083494	MME	1.03	up	membrane metallo-endopeptidase
8147273	.C26A7 LOC10013074	1.03	up	solute carrier family 26, member 7   similar to hCG2008!
8138392	AGR3	1.03	up	anterior gradient homolog 3 ( <i>Xenopus laevis</i> )
8129573	MOXD1	1.03	up	monooxygenase, DBH-like 1
8092165	GHSR	1.03	up	growth hormone secretagogue receptor
8111019	DNAH5	1.03	up	dynein, axonemal, heavy chain 5
8140650	SEMA3E	1.03	up	sema domain, immunoglobulin domain (Ig), short basic c
7939314	EHF	1.03	up	ets homologous factor
8067839	00132771 LOC10013	1.03	up	fibroblast growth factor 7 pseudogene 2   similar to kera
8088322	DNAH12L	1.03	up	dynein, axonemal, heavy chain 12-like
7971541	SUCLA2	1.03	up	succinate-CoA ligase, ADP-forming, beta subunit
8017061	TEX14	1.02	up	testis expressed 14
8063601	C20orf85	1.02	up	chromosome 20 open reading frame 85
8140840	STEAP4	1.02	up	STEAP family member 4
8150691	EFCAB1	1.02	up	EF-hand calcium binding domain 1
7916629	C1orf87	1.02	up	chromosome 1 open reading frame 87
8147132	CA2	1.02	up	carbonic anhydrase II
7940323	MS4A8B	1.02	up	membrane-spanning 4-domains, subfamily A, member 8
7905079	ST2H2AA3 HIST2H2A	1.02	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
7902738	CLCA4	1.02	up	chloride channel, calcium activated, family member 4
8107591	ZNF474	1.02	up	zinc finger protein 474
8091922	WDR49	1.01	up	WD repeat domain 49
7919619	AA3 HIST2H2AA4 HI	1.01	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   hist
8088979	VGLL3	1.01	up	vestigial like 3 ( <i>Drosophila</i> )
7902808	HS2ST1	1.01	up	heparan sulfate 2-O-sulfotransferase 1
8030128	PPP1R15A	1.01	up	protein phosphatase 1, regulatory (inhibitor) subunit 15/
7904506	NA1245 NBPF11 NBP	1.01	up	neuroblastoma breakpoint family, member 15   neurobl
7943740	FLJ46266	1.01	up	
8091511	P2RY14	1.00	up	purinergic receptor P2Y, G-protein coupled, 14
7904562	NBPF14 NBPF20 NB	1.00	up	neuroblastoma breakpoint family, member 16   neurobl
8151999	RGS22	1.00	up	regulator of G-protein signaling 22

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8090180	MUC13	-1.00	down	mucin 13, cell surface associated
8025601	ICAM1	-1.00	down	intercellular adhesion molecule 1 (CD54), human rhinovi
7951662	CRYAB	-1.00	down	crystallin, alpha B
8093096	TCTEX1D2 TM4SF19	-1.01	down	Tctex1 domain containing 2   transmembrane 4 L six fan
8162373	OGN	-1.01	down	osteoglycin
8117377	HIST1H1E	-1.01	down	histone cluster 1, H1e
8066745	ZNF334	-1.01	down	zinc finger protein 334
8134257	GNG11	-1.01	down	guanine nucleotide binding protein (G protein), gamma 1
7954293	PDE3A	-1.01	down	phosphodiesterase 3A, cGMP-inhibited
8082012	SLC15A2	-1.01	down	solute carrier family 15 (H+/peptide transporter), memb
8095080	PDGFRA	-1.01	down	platelet-derived growth factor receptor, alpha polypepti
7958031	C12orf48	-1.02	down	chromosome 12 open reading frame 48
7932420	PTPLA	-1.02	down	protein tyrosine phosphatase-like (proline instead of cat
8096744	CYP2U1	-1.02	down	cytochrome P450, family 2, subfamily U, polypeptide 1
8008040	LRRC46	-1.02	down	leucine rich repeat containing 46
8169541	DOCK11	-1.02	down	dedicator of cytokinesis 11
7900635	hCG_23177	-1.02	down	hCG23177
8019831	CLUL1	-1.02	down	clusterin-like 1 (retinal)
7951178	TRPC6	-1.02	down	transient receptor potential cation channel, subfamily C,
8112274	ELOVL7	-1.02	down	ELOVL family member 7, elongation of long chain fatty ac
8052355	EFEMP1	-1.02	down	EGF-containing fibulin-like extracellular matrix protein 1
8029693	FOSB	-1.03	down	FBJ murine osteosarcoma viral oncogene homolog B
8133360	CLDN4	-1.03	down	claudin 4
8122265	TNFAIP3	-1.04	down	tumor necrosis factor, alpha-induced protein 3
8099524	LDB2	-1.04	down	LIM domain binding 2
8059905	COL6A3	-1.04	down	collagen, type VI, alpha 3
7965403	LUM	-1.04	down	lumican
8108256	MYOT	-1.04	down	myotilin
7932453	NEBL	-1.05	down	nebulette
8175288	MOSPD1	-1.05	down	motile sperm domain containing 1
7930714	ATRNL1	-1.05	down	attractin-like 1
8117372	HIST1H2AC	-1.06	down	histone cluster 1, H2ac
8134263	COL1A2	-1.06	down	collagen, type I, alpha 2

Supplemental Table 2b  
eENPCOS vs. eENCtrl

7981068	SERPINA1	-1.06	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
8101659	SPARCL1	-1.07	down	SPARC-like 1 (mast9, hevin)
8054511	LOC205251	-1.07	down	
7959330	WDR66	-1.07	down	WD repeat domain 66
8154100	VLDLR	-1.07	down	very low density lipoprotein receptor
8127563	COL12A1	-1.07	down	collagen, type XII, alpha 1
8096301	SPP1	-1.07	down	secreted phosphoprotein 1 (osteopontin, bone sialoprot
8135341	FLJ23834	-1.07	down	
7968789	C13orf15	-1.07	down	chromosome 13 open reading frame 15
8146794	DEPDC2	-1.07	down	DEP domain containing 2
8155747	C9orf135	-1.07	down	chromosome 9 open reading frame 135
7947512	DKFZP586H2123	-1.07	down	regeneration associated muscle protease
8095303	LPHN3	-1.08	down	latrophilin 3
7968632	RP11-251J8.3	-1.08	down	hypothetical LOC646871
7915472	SLC2A1	-1.08	down	solute carrier family 2 (facilitated glucose transporter), n
7969288	OLFM4	-1.09	down	olfactomedin 4
7965873	IGF1	-1.10	down	insulin-like growth factor 1 (somatomedin C)
8175177	MBNL3	-1.10	down	muscleblind-like 3 (Drosophila)
8169350	LOC100134364	-1.10	down	
8147516	MATN2	-1.10	down	matrilin 2
7960947	A2M	-1.10	down	alpha-2-macroglobulin
8010243	SYNGR2	-1.11	down	synaptogyrin 2
8092578	ETV5	-1.11	down	ets variant gene 5 (ets-related molecule)
7953603	C1S	-1.11	down	complement component 1, s subcomponent
7912537	DHRS3	-1.11	down	dehydrogenase/reductase (SDR family) member 3
7965855	NUP37	-1.11	down	nucleoporin 37kDa
7917850	ARHGAP29	-1.12	down	Rho GTPase activating protein 29
8083839	GPR160	-1.12	down	G protein-coupled receptor 160
7899615	SERINC2 KIAA0746	-1.12	down	serine incorporator 2   KIAA0746 protein
8059376	SERPINE2	-1.12	down	serpin peptidase inhibitor, clade E (nexin, plasminogen a
7929334	CEP55	-1.12	down	centrosomal protein 55kDa
8046428	RAPGEF4	-1.12	down	Rap guanine nucleotide exchange factor (GEF) 4
8071737	MIF	-1.13	down	macrophage migration inhibitory factor (glycosylation-in



Supplemental Table 2b  
eENPCOS vs. eENCtrl

8127201	COL21A1	-1.13	down	collagen, type XXI, alpha 1
8083968	NLGN1	-1.13	down	neuroligin 1
8120961	C6orf117	-1.13	down	chromosome 6 open reading frame 117
8114856	PLAC8L1	-1.14	down	PLAC8-like 1
8059576	PID1	-1.14	down	phosphotyrosine interaction domain containing 1
8100464	NMU	-1.15	down	neuromedin U
8046922	COL3A1	-1.16	down	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type I
7927710	CDC2	-1.16	down	cell division cycle 2, G1 to S and G2 to M
7954310	LOC100008588	-1.16	down	18S ribosomal RNA
8120838	TTK	-1.17	down	
7942791	OC100008589 WDR8	-1.17	down	28S ribosomal RNA   WD repeat domain 88
8148070	COL14A1	-1.17	down	collagen, type XIV, alpha 1
7998722	SNORD60	-1.18	down	small nucleolar RNA, C/D box 60
8117402	HIST1H4F HIST1H4K	-1.19	down	histone cluster 1, H4e   histone cluster 4, H4   histone cl
7974902	RHOJ	-1.19	down	ras homolog gene family, member J
8115327	SPARC	-1.19	down	secreted protein, acidic, cysteine-rich (osteonectin)
7916898	DEPDC1	-1.19	down	DEP domain containing 1
8112980	EDIL3	-1.20	down	EGF-like repeats and discoidin I-like domains 3
7996198	CCDC113	-1.20	down	coiled-coil domain containing 113
8079237	KIF15	-1.20	down	kinesin family member 15
7965410	DCN	-1.20	down	decorin
7981988	SNORD116-20 SNOR	-1.21	down	small nuclear ribonucleoprotein polypeptide N   small nu
7967620	SNORD116-20 SNOR	-1.21	down	small nuclear ribonucleoprotein polypeptide N   small nu
7936673	RGS10	-1.22	down	regulator of G-protein signaling 10
7948906	SNORD27 SNHG1	-1.22	down	small nucleolar RNA, C/D box 27   small nucleolar RNA h
8007420	AOC3	-1.22	down	amine oxidase, copper containing 3 (vascular adhesion p
7922418	SNORD74	-1.22	down	small nucleolar RNA, C/D box 74
8007561	G6PC3	-1.22	down	glucose 6 phosphatase, catalytic, 3
7976073	FLRT2	-1.23	down	fibronectin leucine rich transmembrane protein 2
8138834	FKBP14	-1.24	down	FK506 binding protein 14, 22 kDa
7982358	ARHGAP11A	-1.24	down	Rho GTPase activating protein 11A
8012896	PMP22	-1.24	down	peripheral myelin protein 22
7937802	CD81	-1.24	down	

Supplemental Table 2b  
eENPCOS vs. eENCtrl

7916570	OMA1 DAB1	-1.25	down	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   c
7991386	CIB1	-1.25	down	calcium and integrin binding 1 (calmyrin)
8125775	C6orf125	-1.25	down	chromosome 6 open reading frame 125
8102792	PCDH18	-1.25	down	protocadherin 18
7960865	SLC2A3	-1.25	down	solute carrier family 2 (facilitated glucose transporter), n
7961514	MGP	-1.26	down	matrix Gla protein
8131944	NFE2L3	-1.27	down	nuclear factor (erythroid-derived 2)-like 3
8069689	ADAMTS5	-1.28	down	ADAM metallopeptidase with thrombospondin type 1 m
7944082	TAGLN	-1.28	down	transgelin
7958253	OCC-1	-1.29	down	overexpressed in colon carcinoma-1
8102643	CCNA2	-1.30	down	cyclin A2
8097857	MND1	-1.30	down	meiotic nuclear divisions 1 homolog ( <i>S. cerevisiae</i> )
7922969	PDC	-1.30	down	phosducin
7995681	MMP2	-1.30	down	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase
7957673	C12orf55 FLJ34470	-1.30	down	chromosome 12 open reading frame 55   hypothetical p
8132318	ANLN	-1.31	down	anillin, actin binding protein
7917516	GBP1 LOC400759	-1.31	down	guanylate binding protein 1, interferon-inducible, 67kDa
8085145	RAD18	-1.31	down	
8149955	PBK	-1.32	down	PDZ binding kinase
7976496	SERPINA3	-1.33	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
8179139	MRPS18B	-1.34	down	mitochondrial ribosomal protein S18B
8175835	BCAP31	-1.34	down	B-cell receptor-associated protein 31
8177824	MRPS18B	-1.34	down	mitochondrial ribosomal protein S18B
8117955	MRPS18B	-1.34	down	mitochondrial ribosomal protein S18B
8116724	FARS2	-1.34	down	phenylalanyl-tRNA synthetase 2, mitochondrial
8168146	KIF4A	-1.35	down	kinesin family member 4A
8061579	TPX2	-1.36	down	
8097692	EDNRA	-1.36	down	endothelin receptor type A
7920291	S100A16	-1.36	down	S100 calcium binding protein A16
7976488	SERPINA5	-1.36	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
7981982	116-16 SNORD116-1f	-1.37	down	small nuclear ribonucleoprotein polypeptide N   small n
7981986	116-16 SNORD116-1f	-1.37	down	small nuclear ribonucleoprotein polypeptide N   small n
7980485	DIO2	-1.37	down	deiodinase, iodothyronine, type II

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8055220	A26C1A A26C1B	-1.37	down	ANKRD26-like family C, member 1A   ANKRD26-like fami
7988467	FBN1	-1.37	down	fibrillin 1
7906930	NUF2	-1.39	down	
7935180	PDLIM1	-1.39	down	PDZ and LIM domain 1 (elfin)
8001800	CDH11	-1.41	down	cadherin 11, type 2, OB-cadherin (osteoblast)
7910229	ARF1	-1.42	down	ADP-ribosylation factor 1
8109712	HMMR	-1.42	down	hyaluronan-mediated motility receptor (RHAMM)
8083779	SERPINI1	-1.43	down	serpin peptidase inhibitor, clade I (neuroserpin), membe
8161755	ALDH1A1	-1.45	down	aldehyde dehydrogenase 1 family, member A1
8122554	RAB32	-1.45	down	
7929258	KIF11	-1.46	down	kinesin family member 11
7952339	LOC85389	-1.47	down	RNA, small nucleolar
7965226	RASSF9	-1.47	down	Ras association (RalGDS/AF-6) domain family (N-termina
7953218	RAD51AP1	-1.47	down	RAD51 associated protein 1
8155214	MELK	-1.48	down	maternal embryonic leucine zipper kinase
8055151	A26C1B A26C1A FKSG1	-1.49	down	ANKRD26-like family C, member 1B   ANKRD26-like fami
8102560	MAD2L1	-1.50	down	MAD2 mitotic arrest deficient-like 1 (yeast)
7984540	KIF23	-1.52	down	kinesin family member 23
8058765	FN1	-1.52	down	fibronectin 1
8085867	NEK10	-1.52	down	NIMA (never in mitosis gene a)- related kinase 10
8151032	GGH	-1.52	down	gamma-glutamyl hydrolase (conjugase, folic polygamma
7899480	SNORA73A	-1.52	down	small nucleolar RNA, H/ACA box 73A
7971866	DIAPH3	-1.53	down	diaphanous homolog 3 (Drosophila)
7947248	KIF18A	-1.54	down	kinesin family member 18A
7971077	POSTN	-1.55	down	periostin, osteoblast specific factor
8137979	ACTB	-1.56	down	actin, beta
8058857	IGFBP5	-1.56	down	insulin-like growth factor binding protein 5
7925320	NID1	-1.56	down	nidogen 1
7912347	CASZ1	-1.57	down	castor zinc finger 1
7904695	SEC22B	-1.58	down	SEC22 vesicle trafficking protein homolog B (S. cerevisiae
7937020	MKI67	-1.58	down	antigen identified by monoclonal antibody Ki-67
8054580	BUB1	-1.59	down	
8155849	ANXA1	-1.59	down	annexin A1

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eENPCOS vs. eENCtrl

8125919	FKBP5   LOC285847	-1.60	down	FK506 binding protein 5   hypothetical protein LOC2858
7970467	N6AMT2	-1.60	down	N-6 adenine-specific DNA methyltransferase 2 (putative)
8149551	PSD3	-1.61	down	pleckstrin and Sec7 domain containing 3
7951408	COP1	-1.61	down	caspase-1 dominant-negative inhibitor pseudo-ICE
7920337	INTS3	-1.66	down	integrator complex subunit 3
7982757	CASC5	-1.66	down	cancer susceptibility candidate 5
8135587	CAV2	-1.67	down	caveolin 2
8178598	CLIC1	-1.67	down	chloride intracellular channel 1
8075423	DUSP18	-1.67	down	dual specificity phosphatase 18
8019857	NDC80	-1.67	down	
7923086	ASPM	-1.69	down	asp (abnormal spindle) homolog, microcephaly associate
7948900	SNORD30	-1.69	down	small nucleolar RNA, C/D box 30
7953385	GAPDH	-1.70	down	glyceraldehyde-3-phosphate dehydrogenase
8020898	ZNF271	-1.70	down	zinc finger protein 271
8059708	SNORA75	-1.73	down	small nucleolar RNA, H/ACA box 75
8145470	DPYSL2	-1.73	down	dihydropyrimidinase-like 2
8108301	KIF20A	-1.74	down	kinesin family member 20A
8073192	UQCRF51	-1.76	down	ubiquinol-cytochrome c reductase, Rieske iron-sulfur pol
7979307	DLG7	-1.76	down	discs, large homolog 7 (Drosophila)
7981951	SNRPN   SNORD116-2	-1.80	down	small nuclear ribonucleoprotein polypeptide N   small nu
8014974	TOP2A	-1.80	down	topoisomerase (DNA) II alpha 170kDa
8019183	ACTG1	-1.81	down	actin, gamma 1
8105828	CCNB1	-1.81	down	cyclin B1
7962058	TMTC1	-1.83	down	transmembrane and tetratricopeptide repeat containing
7976443	IFI27	-1.84	down	interferon, alpha-inducible protein 27
7989647	KIAA0101	-1.86	down	
7921862	C1orf192	-1.87	down	chromosome 1 open reading frame 192
8019842	TYMS	-1.89	down	thymidylate synthetase
7923426	UBE2T	-1.91	down	ubiquitin-conjugating enzyme E2T (putative)
8130129	NUP43	-1.92	down	nucleoporin 43kDa
8072876	LGALS1	-1.94	down	lectin, galactoside-binding, soluble, 1 (galectin 1)
8078014	SLC6A6	-1.95	down	solute carrier family 6 (neurotransmitter transporter, tau
8006812	PSMB3	-1.96	down	proteasome (prosome, macropain) subunit, beta type, 3

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eENPCOS vs. eENCtrl

7981976	SNRPN SNORD116-14	-1.97	down	small nuclear ribonucleoprotein polypeptide N   small nu
8101322	MOP-1	-2.00	down	
7929438	HELLS	-2.00	down	helicase, lymphoid-specific
8179055	ZNRD1	-2.01	down	zinc ribbon domain containing 1
8010139	SEC14L1	-2.01	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
7974229	KLHDC2	-2.01	down	kelch domain containing 2
7903393	S1PR1	-2.01	down	sphingosine-1-phosphate receptor 1
8166784	TSPAN7	-2.01	down	tetraspanin 7
8088339	ARF4	-2.01	down	ADP-ribosylation factor 4
8078544	MLH1	-2.02	down	mutL homolog 1, colon cancer, nonpolyposis type 2 ( <i>E. c</i>
8034342	ZNF625 ZNF20	-2.02	down	zinc finger protein 625   zinc finger protein 20
8120239	TMEM14A	-2.02	down	transmembrane protein 14A
8033362	INSR	-2.02	down	insulin receptor
8050176	ITGB1BP1	-2.02	down	integrin beta 1 binding protein 1
7952205	MCAM	-2.02	down	melanoma cell adhesion molecule
7938366	WEE1	-2.02	down	
8042495	RY1	-2.03	down	putative nucleic acid binding protein RY-1
7925525	CEP170	-2.03	down	centrosomal protein 170kDa
8092328	MCCC1	-2.03	down	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8170990	SNORA36A	-2.03	down	small nucleolar RNA, H/ACA box 36A
8113220	ELL2	-2.03	down	elongation factor, RNA polymerase II, 2
7956031	ORMDL2	-2.03	down	ORM1-like 2 ( <i>S. cerevisiae</i> )
7986394	LRRC28	-2.04	down	leucine rich repeat containing 28
7989708	MTFMT	-2.04	down	mitochondrial methionyl-tRNA formyltransferase
8131803	IL6	-2.05	down	interleukin 6 (interferon, beta 2)
7922268	KIFAP3	-2.05	down	kinesin-associated protein 3
8127637	TMEM30A	-2.05	down	transmembrane protein 30A
7981960	SNRPN SNORD116-6	-2.05	down	small nuclear ribonucleoprotein polypeptide N   small nu
8177858	TUBB	-2.05	down	tubulin, beta
8179174	TUBB	-2.05	down	tubulin, beta
8117995	TUBB	-2.05	down	tubulin, beta
7952069	C11orf60	-2.05	down	chromosome 11 open reading frame 60
8006779	ARHGAP23	-2.05	down	Rho GTPase activating protein 23

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8157691	LOC729012	-2.05	down	similar to Spindle and kinetochore-associated protein 2 (
8143957	RHEB	-2.06	down	Ras homolog enriched in brain
7985053	FBXO22	-2.06	down	F-box protein 22
8035304	BST2	-2.06	down	bone marrow stromal cell antigen 2
8171802	ACOT9	-2.06	down	acyl-CoA thioesterase 9
8155268	POLR1E	-2.06	down	polymerase (RNA) I polypeptide E, 53kDa
8116921	EDN1	-2.07	down	endothelin 1
7922137	NME7	-2.07	down	non-metastatic cells 7, protein expressed in (nucleoside-
8022902	C18orf37	-2.08	down	chromosome 18 open reading frame 37
8160531	C9orf72	-2.08	down	chromosome 9 open reading frame 72
8126135	GLO1	-2.08	down	glyoxalase I
8081667	SLC35A5	-2.08	down	solute carrier family 35, member A5
8082408	SEC61A1	-2.09	down	Sec61 alpha 1 subunit ( <i>S. cerevisiae</i> )
7996934	NIP7	-2.09	down	nuclear import 7 homolog ( <i>S. cerevisiae</i> )
7948995	ATL3	-2.10	down	atlastin 3
8149248	LRLE1   LOC100127885	-2.10	down	liver-related low express protein 1   similar to liver-relat
8147447	PTDSS1	-2.11	down	phosphatidylserine synthase 1
8152340	NUDCD1	-2.11	down	NudC domain containing 1
8041383	LTBP1	-2.11	down	latent transforming growth factor beta binding protein 1
8156538	HIATL1	-2.12	down	hippocampus abundant transcript-like 1
8099807	GAFA3	-2.12	down	FGF-2 activity-associated protein 3
8167006	RP2	-2.12	down	retinitis pigmentosa 2 (X-linked recessive)
7964466	DCTN2	-2.13	down	dynactin 2 (p50)
7926807	PDSS1	-2.13	down	prenyl (decaprenyl) diphosphate synthase, subunit 1
8135235	PMPCB	-2.13	down	peptidase (mitochondrial processing) beta
8159006	RPL7A   SNORD36B	-2.13	down	ribosomal protein L7a   small nucleolar RNA, C/D box 36
8055911	LOC100129449	-2.13	down	PRO2055
8122705	PCMT1	-2.14	down	protein-L-isoaspartate (D-aspartate) O-methyltransferas
8017235	APPBP2	-2.14	down	amyloid beta precursor protein (cytoplasmic tail) binding
8001410	AKTIP	-2.15	down	AKT interacting protein
7914218	TAF12	-2.16	down	
8179495	PSMB9	-2.16	down	proteasome (prosome, macropain) subunit, beta type, 9
8178211	PSMB9	-2.16	down	proteasome (prosome, macropain) subunit, beta type, 9

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8118571	PSMB9	-2.16	down	proteasome (prosome, macropain) subunit, beta type, 9
8139057	ELMO1	-2.16	down	engulfment and cell motility 1
8081867	C3orf1	-2.16	down	chromosome 3 open reading frame 1
7941936	GSTP1	-2.17	down	glutathione S-transferase pi
8141107	SLC25A13	-2.17	down	solute carrier family 25, member 13 (citrin)
7920317	ILF2	-2.17	down	interleukin enhancer binding factor 2, 45kDa
8001067	HERC2P4	-2.18	down	hect domain and RLD 2 pseudogene 4
7950933	NOX4	-2.18	down	NADPH oxidase 4
7966135	CORO1C	-2.18	down	coronin, actin binding protein, 1C
8082478	COPG	-2.19	down	coatamer protein complex, subunit gamma
8092265	MRPL47	-2.20	down	mitochondrial ribosomal protein L47
8055862	ARL5A	-2.20	down	ADP-ribosylation factor-like 5A
7977615	RNASE1	-2.20	down	ribonuclease, RNase A family, 1 (pancreatic)
8068612	WRB	-2.20	down	tryptophan rich basic protein
7931187	BUB3	-2.20	down	
8102800	SLC7A11	-2.21	down	solute carrier family 7, (cationic amino acid transporter, ,
8098556	CCDC111	-2.21	down	coiled-coil domain containing 111
8166140	MOSPD2	-2.21	down	motile sperm domain containing 2
8160016	RANBP6	-2.22	down	RAN binding protein 6
8096415	MMRN1	-2.22	down	multimerin 1
8120860	BCKDHB	-2.22	down	branched chain keto acid dehydrogenase E1, beta polype
8001099	HERC2P4	-2.22	down	hect domain and RLD 2 pseudogene 4
8109194	SLC26A2	-2.23	down	solute carrier family 26 (sulfate transporter), member 2
8073334	RBX1	-2.24	down	ring-box 1
7944991	STT3A	-2.26	down	STT3, subunit of the oligosaccharyltransferase complex, I
7972217	SPRY2	-2.29	down	sprouty homolog 2 (Drosophila)
8040655	SELI	-2.29	down	selenoprotein I
8045587	ACVR2A	-2.29	down	activin A receptor, type IIA
7953594	EMG1	-2.29	down	
8165642	TMEM203	-2.31	down	transmembrane protein 203
8054479	MALL	-2.32	down	mal, T-cell differentiation protein-like
8096771	DC2	-2.32	down	
8096538	RAP1GDS1	-2.33	down	RAP1, GTP-GDP dissociation stimulator 1

Supplemental Table 2b  
eENPCOS vs. eENCtrl

8122365	GPR126	-2.34	down	G protein-coupled receptor 126
8126853	C6orf138	-2.34	down	chromosome 6 open reading frame 138
8001496	NUDT21	-2.35	down	nudix (nucleoside diphosphate linked moiety X)-type mo
7939559	TSPAN18	-2.35	down	tetraspanin 18
7903407	AMY2B	-2.35	down	amylase, alpha 2B (pancreatic)
8112967	TMEM167	-2.35	down	transmembrane protein 167
8030978	LOC91664	-2.37	down	hypothetical protein BC007307
8122144	SNORA33	-2.38	down	small nucleolar RNA, H/ACA box 33
8108688	PCDHB3	-2.39	down	protocadherin beta 3
8124385	HIST1H4F HIST1H4K	-2.39	down	histone cluster 1, H4b   histone cluster 4, H4   histone cl
7903119	ABCD3	-2.41	down	ATP-binding cassette, sub-family D (ALD), member 3
7938364	WEE1	-2.42	down	
8116859	TMEM14C	-2.42	down	transmembrane protein 14C
8056963	LOC100129455	-2.45	down	
8007397	PSME3	-2.45	down	proteasome (prosome, macropain) activator subunit 3 (F
7915504	ELOVL1	-2.45	down	elongation of very long chain fatty acids (FEN1/Elo2, SUF
8178802	LOC133583 LOC1001336	-2.45	down	
8090823	SLCO2A1	-2.46	down	solute carrier organic anion transporter family, member
8054135	MGAT4A	-2.46	down	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglu
7923991	PLXNA2	-2.46	down	plexin A2
8180003	LOC133583 LOC1001336	-2.47	down	
7915286	PPT1	-2.47	down	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, n
8178811	LOC133583 LOC1001336	-2.48	down	
8113591	PGGT1B	-2.49	down	protein geranylgeranyltransferase type I, beta subunit
8090448	RUVBL1	-2.49	down	RuvB-like 1 (E. coli)
8170992	SNORA56	-2.50	down	small nucleolar RNA, H/ACA box 56
8177744	PPP1R11	-2.51	down	protein phosphatase 1, regulatory (inhibitor) subunit 11
8117834	PPP1R11	-2.52	down	protein phosphatase 1, regulatory (inhibitor) subunit 11
8097679	LSM6	-2.52	down	
7953291	CD9	-2.53	down	
7912198	ENO1	-2.55	down	enolase 1, (alpha)
8066275	PRO0628	-2.57	down	
8121911	C6orf173	-2.57	down	chromosome 6 open reading frame 173



Supplemental Table 2b  
eENPCOS vs. eENCtrl

8156905	TMEFF1	-2.61	down	transmembrane protein with EGF-like and two follistatin
8052762	GFPT1	-2.66	down	glutamine-fructose-6-phosphate transaminase 1
8010078	SNORD1C	-2.68	down	small nucleolar RNA, C/D box 1C
7946579	LYVE1	-2.69	down	lymphatic vessel endothelial hyaluronan receptor 1
8135585	LOC100128868	-2.70	down	testin-related protein TRG
8098204	CPE	-2.70	down	carboxypeptidase E
7917037	CRYZ	-2.71	down	crystallin, zeta (quinone reductase)
8058927	TMBIM1	-2.78	down	transmembrane BAX inhibitor motif containing 1
7907135	SFT2D2	-2.80	down	SFT2 domain containing 2
8023191	SMAD2	-2.80	down	SMAD family member 2
8169240	PRPS1	-2.88	down	phosphoribosyl pyrophosphate synthetase 1
7935776	PRO1933	-2.97	down	
8141843	LOC100133005   LOC1	-2.98	down	hypothetical protein FLJ21767   similar to RAS p21 prote
7926545	PLXDC2	-3.15	down	plexin domain containing 2
8105348	LOC493869	-3.27	down	similar to RIKEN cDNA 2310016C16
7981943	SNRPN  SNORD64  P,	-3.31	down	Prader-Willi/Angelman syndrome-5   small nuclear ribor
8162880	MRPL50	-3.34	down	mitochondrial ribosomal protein L50
8139087	SFRP4	-3.53	down	secreted frizzled-related protein 4
7930870	TOMM22	-3.54	down	translocase of outer mitochondrial membrane 22 homol
8167163	CXorf24	-4.21	down	chromosome X open reading frame 24
7951038	SNORA40  JOSD3	-4.37	down	small nucleolar RNA, H/ACA box 40   Josephin domain cc
8017843	SLC16A6	-4.65	down	solute carrier family 16, member 6 (monocarboxylic acid
7977270	LOC388022	-4.76	down	hypothetical gene supported by AK131040
7952046	MPZL2	-5.42	down	myelin protein zero-like 2
8010978	LOC100130876	-5.43	down	

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

Transcripts Cluster Id	Genesymbol	eSFPCOS vs. eSFCtrl	Regulation	Genedescription
8056611	LRP2	3.62	up	low density lipoprotein-related protein 2
7943530	GRIA4	3.36	up	glutamate receptor, ionotropic, AMPA 4
8006433	CCL2	3.31	up	chemokine (C-C motif) ligand 2
8159850	FLJ35024	3.05	up	hypothetical LOC401491
7948900	SNORD30	2.91	up	small nucleolar RNA, C/D box 30
8025601	ICAM1	2.87	up	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
8010978	LOC100130876	2.86	up	
8147132	CA2	2.84	up	carbonic anhydrase II
7922418	SNORD74	2.79	up	small nucleolar RNA, C/D box 74
7948906	SNORD27 SNHG1	2.52	up	small nucleolar RNA, C/D box 27   small nucleolar RNA host gene (non-
8122265	TNFAIP3	2.51	up	tumor necrosis factor, alpha-induced protein 3
8092578	ETV5	2.51	up	ets variant gene 5 (ets-related molecule)
7974902	RHOJ	2.49	up	ras homolog gene family, member J
8092169	TNFSF10	2.46	up	tumor necrosis factor (ligand) superfamily, member 10
8154100	VLDLR	2.43	up	very low density lipoprotein receptor
7948904	SNORD28	2.41	up	small nucleolar RNA, C/D box 28
8042144	REL	2.39	up	v-rel reticuloendotheliosis viral oncogene homolog (avian)
8014956	NR1D1 THRA	2.35	up	nuclear receptor subfamily 1, group D, member 1   thyroid hormone re
7986509	LOC441734	2.34	up	similar to hypothetical protein DKFZp43411020
7986527	C15orf51	2.34	up	chromosome 15 open reading frame 51
8146794	DEPDC2	2.32	up	DEP domain containing 2
8019802	JU2 RNU2B WDR	2.31	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8116983	CD83	2.30	up	
7952339	LOC85389	2.30	up	RNA, small nucleolar
7942791	C100008589 WDF	2.27	up	28S ribosomal RNA   WD repeat domain 88
8019709	JU2 RNU2B WDR	2.26	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8138289	ETV1	2.26	up	ets variant gene 1
8030128	PPP1R15A	2.25	up	protein phosphatase 1, regulatory (inhibitor) subunit 15A
8019631	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019707	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019641	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019639	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

8019633	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019635	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019637	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019705	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8019703	JU2 RNU2B WDR	2.25	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD repeat domain 7
8008588	HLF	2.21	up	hepatic leukemia factor
8179399	C4A C4B	2.20	up	complement component 4A (Rodgers blood group)   complement com
8118409	C4A C4B	2.20	up	complement component 4A (Rodgers blood group)   complement com
8118455	C4A C4B	2.19	up	complement component 4A (Rodgers blood group)   complement com
7954310	LOC100008588	2.19	up	18S ribosomal RNA
8114010	IRF1	2.17	up	interferon regulatory factor 1
8028652	ZFP36	2.12	up	zinc finger protein 36, C3H type, homolog (mouse)
7933872	EGR2	2.11	up	early growth response 2 (Krox-20 homolog, Drosophila)
8000636	132247 DKFZp54	2.10	up	similar to nuclear pore complex interacting protein   KIAA0220-like pro
7904506	1245 NBPF11 NB	2.05	up	neuroblastoma breakpoint family, member 15   neuroblastoma breakp
7904562	1BPF14 NBPF20 N	2.04	up	neuroblastoma breakpoint family, member 16   neuroblastoma breakp
8131944	NFE2L3	2.03	up	nuclear factor (erythroid-derived 2)-like 3
8029693	FOSB	2.03	up	FBJ murine osteosarcoma viral oncogene homolog B
7904874	14 NBPF20 NBPF5	2.02	up	neuroblastoma breakpoint family, member 16   neuroblastoma breakp
8160912	C9orf131	1.92	up	chromosome 9 open reading frame 131
8059708	SNORA75	1.83	up	small nucleolar RNA, H/ACA box 75
8013272	4A CCDC144B CC	1.82	up	coiled-coil domain containing 144A   coiled-coil domain containing 144
8059576	PID1	1.82	up	phosphotyrosine interaction domain containing 1
7951593	FLJ45803	1.81	up	
7972826	C13orf29	1.77	up	chromosome 13 open reading frame 29
8066275	PRO0628	1.77	up	
8169350	LOC100134364	1.73	up	
7995681	MMP2	1.72	up	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase, 72kDa type
7981986	16-16 SNORD116-	1.67	up	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
7981982	16-16 SNORD116-	1.67	up	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
8005204	4A CCDC144B CC	1.65	up	coiled-coil domain containing 144A   coiled-coil domain containing 144
8058857	IGFBP5	1.63	up	insulin-like growth factor binding protein 5
8077366	LRRN1	1.62	up	leucine rich repeat neuronal 1

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

8117995	TUBB	1.62	up	tubulin, beta
8177858	TUBB	1.62	up	tubulin, beta
8179174	TUBB	1.61	up	tubulin, beta
7981976	NRPN SNORD116-1	1.59	up	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
8055911	LOC100129449	1.57	up	PRO2055
7904478	51152 LOC100129449	1.57	up	melanoma antigen   hypothetical protein LOC100129030
8117372	HIST1H2AC	1.56	up	histone cluster 1, H2ac
7939237	C11orf41	1.56	up	chromosome 11 open reading frame 41
8117402	HIST1H4F HIST1H4H	1.55	up	histone cluster 1, H4e   histone cluster 4, H4   histone cluster 2, H4b
8095680	IL8	1.54	up	interleukin 8
7947512	DKFZP586H2123	1.54	up	regeneration associated muscle protease
7969288	OLFM4	1.54	up	olfactomedin 4
7981988	SNORD116-20 SNCR	1.52	up	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
7907135	SFT2D2	1.51	up	SFT2 domain containing 2
7905548	SPRR3	1.51	up	small proline-rich protein 3
7905079	HIST2AA3 HIST2H2	1.49	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
7919619	HIST2H2AA4 HIST2H2A3	1.49	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   histone cluster 2, H2aa3
7904726	TXNIP	1.49	up	thioredoxin interacting protein
8152522	ENPP2	1.49	up	ectonucleotide pyrophosphatase/phosphodiesterase 2 (autotaxin)
7977270	LOC388022	1.48	up	hypothetical gene supported by AK131040
7981943	NRPN SNORD64 SNORD116-1	1.48	up	Prader-Willi/Angelman syndrome-5   small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
7953385	GAPDH	1.45	up	glyceraldehyde-3-phosphate dehydrogenase
7915472	SLC2A1	1.45	up	solute carrier family 2 (facilitated glucose transporter), member 1
8155453	100129030 LOC511001	1.41	up	hypothetical protein LOC100129030   melanoma antigen
8161375	100129030 LOC511001	1.41	up	hypothetical protein LOC100129030   melanoma antigen
8102800	SLC7A11	1.40	up	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11
8030978	LOC91664	1.39	up	hypothetical protein BC007307
7960896	OR650293 OR7E12	1.37	up	seven transmembrane helix receptor   olfactory receptor, family 7, subfamily 12, member 2
8130578	SNORA20	1.36	up	small nucleolar RNA, H/ACA box 20
7920337	INTS3	1.35	up	integrator complex subunit 3
7965873	IGF1	1.34	up	insulin-like growth factor 1 (somatomedin C)
8140650	SEMA3E	1.33	up	sema domain, immunoglobulin domain (Ig), short basic domain, secreted
7904695	SEC22B	1.32	up	SEC22 vesicle trafficking protein homolog B (S. cerevisiae)

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

7937802	CD81	1.31	up	
8092165	GHSR	1.31	up	growth hormone secretagogue receptor
7960947	A2M	1.31	up	alpha-2-macroglobulin
7931748	IDI2	1.30	up	isopentenyl-diphosphate delta isomerase 2
8156538	HIATL1	1.30	up	hippocampus abundant transcript-like 1
7903119	ABCD3	1.30	up	ATP-binding cassette, sub-family D (ALD), member 3
8159006	RPL7A SNORD36B	1.29	up	ribosomal protein L7a   small nucleolar RNA, C/D box 36B
8113800	FBN2	1.29	up	fibrillin 2 (congenital contractural arachnodactyly)
8095303	LPHN3	1.28	up	latrophilin 3
8015323	KRT13 GUCA1B	1.28	up	keratin 13   guanylate cyclase activator 1B (retina)
8100378	LOC402176	1.28	up	similar to 60S ribosomal protein L21
7910229	ARF1	1.28	up	ADP-ribosylation factor 1
8123744	F13A1	1.27	up	coagulation factor XIII, A1 polypeptide
8037053	CEACAM7	1.27	up	carcinoembryonic antigen-related cell adhesion molecule 7
8179224	C6orf205	1.27	up	chromosome 6 open reading frame 205
7926545	PLXDC2	1.27	up	plexin domain containing 2
8019183	ACTG1	1.26	up	actin, gamma 1
8055220	A26C1A A26C1B	1.26	up	ANKRD26-like family C, member 1A   ANKRD26-like family C, member 1B
8175835	BCAP31	1.24	up	B-cell receptor-associated protein 31
8058927	TMBIM1	1.24	up	transmembrane BAX inhibitor motif containing 1
8179139	MRPS18B	1.24	up	mitochondrial ribosomal protein S18B
8177824	MRPS18B	1.24	up	mitochondrial ribosomal protein S18B
8007561	G6PC3	1.24	up	glucose 6 phosphatase, catalytic, 3
8118069	C6orf205	1.24	up	chromosome 6 open reading frame 205
8158167	LCN2	1.24	up	lipocalin 2
8117834	PPP1R11	1.24	up	protein phosphatase 1, regulatory (inhibitor) subunit 11
8177744	PPP1R11	1.24	up	protein phosphatase 1, regulatory (inhibitor) subunit 11
7925320	NID1	1.23	up	nidogen 1
7899480	SNORA73A	1.23	up	small nucleolar RNA, H/ACA box 73A
8117955	MRPS18B	1.23	up	mitochondrial ribosomal protein S18B
8055151	ANKRD26 A26C1A FKBP1B	1.23	up	ANKRD26-like family C, member 1B   ANKRD26-like family C, member 1A   FKBP1B
8177931	C6orf205	1.23	up	chromosome 6 open reading frame 205
8066528	PIGT	1.22	up	phosphatidylinositol glycan anchor biosynthesis, class T

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

7944991	STT3A	1.22	up	STT3, subunit of the oligosaccharyltransferase complex, homolog A (S. cerevisiae)
8082408	SEC61A1	1.22	up	Sec61 alpha 1 subunit (S. cerevisiae)
7900365	MFSD2	1.21	up	major facilitator superfamily domain containing 2
8124385	IST1H4F HIST1H4I	1.21	up	histone cluster 1, H4b   histone cluster 4, H4   histone cluster 2, H4b
8113591	PGGT1B	1.20	up	protein geranylgeranyltransferase type I, beta subunit
7981427	CKB	1.20	up	creatine kinase, brain
8152617	HAS2	1.19	up	hyaluronan synthase 2
8149248	LE1 LOC10012781	1.19	up	liver-related low express protein 1   similar to liver-related low express
7967620	X37 LOC1001325	1.19	up	DEAH (Asp-Glu-Ala-His) box polypeptide 37   hypothetical protein LOC1001325
8117377	HIST1H1E	1.19	up	histone cluster 1, H1e
8095080	PDGFRA	1.19	up	platelet-derived growth factor receptor, alpha polypeptide
8139087	SFRP4	1.19	up	secreted frizzled-related protein 4
7951038	SNORA40 JOSD3	1.18	up	small nucleolar RNA, H/ACA box 40   Josephin domain containing 3
8155591	B RP11-195B21.3	1.18	up	ankyrin repeat domain 20B   hypothetical LOC644249   coiled-coil domain
8137979	ACTB	1.17	up	actin, beta
8045587	ACVR2A	1.17	up	activin A receptor, type IIA
7960865	SLC2A3	1.17	up	solute carrier family 2 (facilitated glucose transporter), member 3
8108251	NPY6R	1.17	up	neuropeptide Y receptor Y6 (pseudogene)
8078014	SLC6A6	1.16	up	solute carrier family 6 (neurotransmitter transporter, taurine), member 6
7930870	TOMM22	1.16	up	translocase of outer mitochondrial membrane 22 homolog (yeast)
8001099	HERC2P4	1.16	up	hect domain and RLD 2 pseudogene 4
7922969	PDC	1.16	up	phosducin
8134263	COL1A2	1.16	up	collagen, type I, alpha 2
7998722	SNORD60	1.16	up	small nucleolar RNA, C/D box 60
7985398	FAM154B	1.15	up	family with sequence similarity 154, member B
8001067	HERC2P4	1.15	up	hect domain and RLD 2 pseudogene 4
8126853	C6orf138	1.14	up	chromosome 6 open reading frame 138
7939559	TSPAN18	1.14	up	tetraspanin 18
8101659	SPARCL1	1.14	up	SPARC-like 1 (mast9, hevin)
8131719	DNAH11	1.14	up	dynein, axonemal, heavy chain 11
7920317	ILF2	1.13	up	interleukin enhancer binding factor 2, 45kDa
8145470	DPYSL2	1.13	up	dihydropyrimidinase-like 2
7953603	C1S	1.13	up	complement component 1, s subcomponent

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8161755	ALDH1A1	1.13	up	aldehyde dehydrogenase 1 family, member A1
8178295	UBD GABBR1	1.13	up	ubiquitin D   gamma-aminobutyric acid (GABA) B receptor, 1
8075423	DUSP18	1.13	up	dual specificity phosphatase 18
8010078	SNORD1C	1.12	up	small nucleolar RNA, C/D box 1C
8006779	ARHGAP23	1.11	up	Rho GTPase activating protein 23
8059905	COL6A3	1.11	up	collagen, type VI, alpha 3
8092970	APOD	1.11	up	apolipoprotein D
8133360	CLDN4	1.10	up	claudin 4
8134339	PEG10	1.10	up	paternally expressed 10
7923991	PLXNA2	1.10	up	plexin A2
7939314	EHF	1.10	up	ets homologous factor
7959330	WDR66	1.10	up	WD repeat domain 66
8157446	ORM1	1.09	up	orosomuroid 1
7903393	S1PR1	1.09	up	sphingosine-1-phosphate receptor 1
8169240	PRPS1	1.09	up	phosphoribosyl pyrophosphate synthetase 1
7915504	ELOVL1	1.09	up	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3, yeast)
8033362	INSR	1.09	up	insulin receptor
8017057	C17orf47	1.08	up	chromosome 17 open reading frame 47
8130129	NUP43	1.08	up	nucleoporin 43kDa
7976496	SERPINA3	1.08	up	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin)
7945991	OR51E2	1.08	up	olfactory receptor, family 51, subfamily E, member 2
8090823	SLCO2A1	1.08	up	solute carrier organic anion transporter family, member 2A1
8121622	RSHL3	1.08	up	radial spokehead-like 3
8091511	P2RY14	1.08	up	purinergic receptor P2Y, G-protein coupled, 14
7981068	SERPINA1	1.08	up	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin)
7922137	NME7	1.07	up	non-metastatic cells 7, protein expressed in (nucleoside-diphosphate ki
8167163	CXorf24	1.07	up	chromosome X open reading frame 24
7950307	UCP2	1.07	up	uncoupling protein 2 (mitochondrial, proton carrier)
8115327	SPARC	1.07	up	secreted protein, acidic, cysteine-rich (osteonectin)
8113220	ELL2	1.07	up	elongation factor, RNA polymerase II, 2
8082012	SLC15A2	1.07	up	solute carrier family 15 (H+/peptide transporter), member 2
8170990	SNORA36A	1.07	up	small nucleolar RNA, H/ACA box 36A
8157450	ORM2	1.07	up	orosomuroid 2

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8154892	DNAI1	1.06	up	dynein, axonemal, intermediate chain 1
8178598	CLIC1	1.06	up	chloride intracellular channel 1
7988467	FBN1	1.06	up	fibrillin 1
8053741	ANKRD20A3 ANKRD	1.06	up	ankyrin repeat domain 20B   ankyrin repeat domain 20 family, membe
8124650	UBD GABBR1	1.06	up	ubiquitin D   gamma-aminobutyric acid (GABA) B receptor, 1
7930593	C10orf81	1.06	up	chromosome 10 open reading frame 81
7976812	SNORD113-4	1.06	up	small nucleolar RNA, C/D box 113-4
8088322	DNAH12L	1.05	up	dynein, axonemal, heavy chain 12-like
7957673	C12orf55 FLJ34470	1.05	up	chromosome 12 open reading frame 55   hypothetical protein LOC6431
8052762	GFPT1	1.05	up	glutamine-fructose-6-phosphate transaminase 1
8090180	MUC13	1.05	up	mucin 13, cell surface associated
8012896	PMP22	1.05	up	peripheral myelin protein 22
8112274	ELOVL7	1.05	up	ELOVL family member 7, elongation of long chain fatty acids (yeast)
7941936	GSTP1	1.05	up	glutathione S-transferase pi
7952205	MCAM	1.05	up	melanoma cell adhesion molecule
8120679	DDX43	1.05	up	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43
8148040	MAL2	1.04	up	mal, T-cell differentiation protein 2
8072876	LGALS1	1.04	up	lectin, galactoside-binding, soluble, 1 (galectin 1)
8008040	LRRC46	1.04	up	leucine rich repeat containing 46
7968866	C13orf30	1.04	up	chromosome 13 open reading frame 30
8135341	FLJ23834	1.04	up	
8043504	MAL	1.04	up	mal, T-cell differentiation protein
7959681	DNAH10	1.04	up	dynein, axonemal, heavy chain 10
8035304	BST2	1.04	up	bone marrow stromal cell antigen 2
7931108	DMBT1	1.04	up	deleted in malignant brain tumors 1
7991386	CIB1	1.04	up	calcium and integrin binding 1 (calmyrin)
8083743	ARL14	1.03	up	ADP-ribosylation factor-like 14
8054135	MGAT4A	1.03	up	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglucosaminyltrans
8081667	SLC35A5	1.03	up	solute carrier family 35, member A5
8057056	TTN	1.03	up	titin
8017235	APPBP2	1.03	up	amyloid beta precursor protein (cytoplasmic tail) binding protein 2
7952069	C11orf60	1.03	up	chromosome 11 open reading frame 60
8173179	RP11-278E11.2	1.03	up	ubiquinol-cytochrome c reductase binding protein pseudogene



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8034342	ZNF625 ZNF20	1.03	up	zinc finger protein 625   zinc finger protein 20
8141107	SLC25A13	1.03	up	solute carrier family 25, member 13 (citrin)
7946579	LYVE1	1.02	up	lymphatic vessel endothelial hyaluronan receptor 1
8085062	IL5RA	1.02	up	interleukin 5 receptor, alpha
7921862	C1orf192	1.02	up	chromosome 1 open reading frame 192
8054200	LYG2	1.02	up	lysozyme G-like 2
8147447	PTDSS1	1.02	up	phosphatidylserine synthase 1
8139057	ELMO1	1.02	up	engulfment and cell motility 1
8046922	COL3A1	1.02	up	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type IV, autosomal c
8172022	TMEM47	1.01	up	transmembrane protein 47
7920291	S100A16	1.01	up	S100 calcium binding protein A16
8108256	MYOT	1.01	up	myotilin
7948995	ATL3	1.01	up	atlastin 3
8083494	MME	1.01	up	membrane metallo-endopeptidase
8057377	CDC141 LOC285026	1.01	up	coiled-coil domain containing 141   hypothetical protein LOC285026
8066745	ZNF334	1.01	up	zinc finger protein 334
8077270	CHL1	1.01	up	cell adhesion molecule with homology to L1CAM (close homolog of L1)
7939642	CREB3L1	1.00	up	cAMP responsive element binding protein 3-like 1
8010243	SYNGR2	1.00	up	synaptogyrin 2
7897966	C1orf158	1.00	up	chromosome 1 open reading frame 158
8080863	FLJ44379	-1.00	down	similar to S-100 protein, alpha chain
7902738	CLCA4	-1.00	down	chloride channel, calcium activated, family member 4
7932453	NEBL	-1.00	down	nebulette
7899615	SERINC2 KIAA0746	-1.00	down	serine incorporator 2   KIAA0746 protein
8101322	MOP-1	-1.01	down	
8056963	LOC100129455	-1.01	down	
7965403	LUM	-1.01	down	lumican
8004889	WDR16	-1.01	down	WD repeat domain 16
7917850	ARHGAP29	-1.01	down	Rho GTPase activating protein 29
8120860	BCKDHB	-1.01	down	branched chain keto acid dehydrogenase E1, beta polypeptide (maple s
8108688	PCDHB3	-1.01	down	protocadherin beta 3
7943740	FLJ46266	-1.01	down	
8142646	IQUB	-1.01	down	IQ motif and ubiquitin domain containing

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8003667	SERPINF1	-1.02	down	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pigment epithe
8160016	RANBP6	-1.02	down	RAN binding protein 6
7903959	C1orf88	-1.02	down	chromosome 1 open reading frame 88
8155268	POLR1E	-1.02	down	polymerase (RNA) I polypeptide E, 53kDa
8088299	DNHD2	-1.02	down	dynein heavy chain domain 2
8017061	TEX14	-1.02	down	testis expressed 14
8001496	NUDT21	-1.02	down	nudix (nucleoside diphosphate linked moiety X)-type motif 21
7932407	ST8SIA6	-1.02	down	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6
7907232	C1orf129	-1.02	down	chromosome 1 open reading frame 129
8093278	GD LOC10013255	-1.02	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)   similar to h
8017597	hCG_1793136	-1.02	down	similar to ribosomal protein L31
8122071	ENPP3	-1.02	down	ectonucleotide pyrophosphatase/phosphodiesterase 3
8063601	C20orf85	-1.02	down	chromosome 20 open reading frame 85
7957140	LGR5	-1.03	down	leucine-rich repeat-containing G protein-coupled receptor 5
8089851	GD LOC10013255	-1.03	down	homogentisate 1,2-dioxygenase (homogentisate oxidase)   similar to h
7912198	ENO1	-1.03	down	enolase 1, (alpha)
8091799	orf57 LOC1001292	-1.03	down	chromosome 3 open reading frame 57   hypothetical protein LOC1001
8088315	ASB14 DNAH12	-1.03	down	ankyrin repeat and SOCS box-containing 14   dynein, axonemal, heavy
7996934	NIP7	-1.03	down	nuclear import 7 homolog ( <i>S. cerevisiae</i> )
7983478	C15orf48	-1.03	down	chromosome 15 open reading frame 48
7950933	NOX4	-1.03	down	NADPH oxidase 4
8040672	C2orf39	-1.03	down	chromosome 2 open reading frame 39
8091887	ZBBX	-1.04	down	zinc finger, B-box domain containing
7940323	MS4A8B	-1.04	down	membrane-spanning 4-domains, subfamily A, member 8B
8010139	SEC14L1	-1.04	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
8099524	LDB2	-1.04	down	LIM domain binding 2
8111019	DNAH5	-1.04	down	dynein, axonemal, heavy chain 5
7968632	RP11-251J8.3	-1.04	down	hypothetical LOC646871
8091922	WDR49	-1.04	down	WD repeat domain 49
8143957	RHEB	-1.04	down	Ras homolog enriched in brain
8102792	PCDH18	-1.05	down	protocadherin 18
7912347	CASZ1	-1.05	down	castor zinc finger 1
8094533	FLJ16686	-1.05	down	

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7947156	MUC15	-1.05	down	mucin 15, cell surface associated
8005955	SNORD42A	-1.05	down	small nucleolar RNA, C/D box 42A
8116921	EDN1	-1.05	down	endothelin 1
7942941	CCDC81	-1.05	down	coiled-coil domain containing 81
8107591	ZNF474	-1.05	down	zinc finger protein 474
7985053	FBXO22	-1.05	down	F-box protein 22
8124562	ZNF323	-1.05	down	zinc finger protein 323
8085867	NEK10	-1.06	down	NIMA (never in mitosis gene a)- related kinase 10
8057463	CERKL	-1.06	down	ceramide kinase-like
8019831	CLUL1	-1.06	down	clusterin-like 1 (retinal)
7903407	AMY2B	-1.06	down	amylase, alpha 2B (pancreatic)
8114856	PLAC8L1	-1.06	down	PLAC8-like 1
8138392	AGR3	-1.07	down	anterior gradient homolog 3 ( <i>Xenopus laevis</i> )
8040655	SELI	-1.07	down	selenoprotein I
8007420	AOC3	-1.07	down	amine oxidase, copper containing 3 (vascular adhesion protein 1)
7900635	hCG_23177	-1.07	down	hCG23177
7953594	EMG1	-1.07	down	
8140686	SEMA3D	-1.07	down	sema domain, immunoglobulin domain (Ig), short basic domain, secreted
7972217	SPRY2	-1.07	down	sprouty homolog 2 ( <i>Drosophila</i> )
8118571	PSMB9	-1.07	down	proteasome (prosome, macropain) subunit, beta type, 9 (large multifurcated)
7956031	ORMDL2	-1.07	down	ORM1-like 2 ( <i>S. cerevisiae</i> )
8179495	PSMB9	-1.07	down	proteasome (prosome, macropain) subunit, beta type, 9 (large multifurcated)
8138834	FKBP14	-1.07	down	FK506 binding protein 14, 22 kDa
8178211	PSMB9	-1.07	down	proteasome (prosome, macropain) subunit, beta type, 9 (large multifurcated)
7922382	ANKRD45	-1.08	down	ankyrin repeat domain 45
7918294	C1orf194	-1.08	down	chromosome 1 open reading frame 194
7965226	RASSF9	-1.08	down	Ras association (RalGDS/AF-6) domain family (N-terminal) member 9
8157632	C9orf18	-1.08	down	chromosome 9 open reading frame 18
8166671	CXorf22	-1.08	down	chromosome X open reading frame 22
7916629	C1orf87	-1.08	down	chromosome 1 open reading frame 87
8011990	TEKT1	-1.08	down	tektin 1
8083839	GPR160	-1.08	down	G protein-coupled receptor 160
8178811	33583 LOC10013:	-1.08	down	

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8082478	COPG	-1.08	down	coatomer protein complex, subunit gamma
8001800	CDH11	-1.09	down	cadherin 11, type 2, OB-cadherin (osteoblast)
8111864	C6	-1.09	down	complement component 6
8116724	FARS2	-1.09	down	phenylalanyl-tRNA synthetase 2, mitochondrial
8166784	TSPAN7	-1.09	down	tetraspanin 7
8166690	CXorf59	-1.09	down	chromosome X open reading frame 59
7966135	CORO1C	-1.10	down	coronin, actin binding protein, 1C
8122365	GPR126	-1.10	down	G protein-coupled receptor 126
8085145	RAD18	-1.10	down	
7976488	SERPINA5	-1.10	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteinase, antitrypsin)
7908793	ELF3	-1.10	down	E74-like factor 3 (ets domain transcription factor, epithelial-specific )
7932420	PTPLA	-1.11	down	protein tyrosine phosphatase-like (proline instead of catalytic arginine)
8088339	ARF4	-1.11	down	ADP-ribosylation factor 4
8180003	33583 LOC10013:	-1.12	down	
7951178	TRPC6	-1.12	down	transient receptor potential cation channel, subfamily C, member 6
8092328	MCCC1	-1.12	down	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8054511	LOC205251	-1.12	down	
7926807	PDSS1	-1.12	down	prenyl (decaprenyl) diphosphate synthase, subunit 1
8004957	DNAH9	-1.12	down	dynein, axonemal, heavy chain 9
8100464	NMU	-1.13	down	neuromedin U
7925525	CEP170	-1.13	down	centrosomal protein 170kDa
7915286	PPT1	-1.13	down	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, neuronal 1, infa
8170992	SNORA56	-1.14	down	small nucleolar RNA, H/ACA box 56
8046428	RAPGEF4	-1.14	down	Rap guanine nucleotide exchange factor (GEF) 4
7932744	ARMC4	-1.14	down	armadillo repeat containing 4
8090448	RUVBL1	-1.14	down	RuvB-like 1 (E. coli)
7989708	MTFMT	-1.14	down	mitochondrial methionyl-tRNA formyltransferase
8070603	RSPH1	-1.14	down	radial spoke head 1 homolog (Chlamydomonas)
8020898	ZNF271	-1.14	down	zinc finger protein 271
8160531	C9orf72	-1.14	down	chromosome 9 open reading frame 72
8151999	RGS22	-1.15	down	regulator of G-protein signaling 22
7976073	FLRT2	-1.15	down	fibronectin leucine rich transmembrane protein 2
8109194	SLC26A2	-1.15	down	solute carrier family 26 (sulfate transporter), member 2

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8050176	ITGB1BP1	-1.15	down	integrin beta 1 binding protein 1
7980485	DIO2	-1.16	down	deiodinase, iodothyronine, type II
8125919	FKBP5 LOC285847	-1.16	down	FK506 binding protein 5   hypothetical protein LOC285847
7952046	MPZL2	-1.16	down	myelin protein zero-like 2
7938366	WEE1	-1.16	down	
8121015	C6orf165 SLC35A1	-1.16	down	chromosome 6 open reading frame 165   solute carrier family 35 (CMP
8017843	SLC16A6	-1.16	down	solute carrier family 16, member 6 (monocarboxylic acid transporter 7)
8083779	SERPINI1	-1.16	down	serpin peptidase inhibitor, clade I (neuroserpin), member 1
8054479	MALL	-1.17	down	mal, T-cell differentiation protein-like
8146957	PI15	-1.17	down	peptidase inhibitor 15
8096415	MMRN1	-1.17	down	multimerin 1
8172204	MAOB	-1.17	down	monoamine oxidase B
8022902	C18orf37	-1.17	down	chromosome 18 open reading frame 37
8078544	MLH1	-1.17	down	mutL homolog 1, colon cancer, nonpolyposis type 2 (E. coli)
8129573	MOXD1	-1.17	down	monooxygenase, DBH-like 1
8096301	SPP1	-1.18	down	secreted phosphoprotein 1 (osteopontin, bone sialoprotein I, early T-ly
8091243	PCOLCE2	-1.18	down	procollagen C-endopeptidase enhancer 2
8059376	SERPINE2	-1.18	down	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibit
7931187	BUB3	-1.18	down	
8007397	PSME3	-1.19	down	proteasome (prosome, macropain) activator subunit 3 (PA28 gamma; k
8021301	RAB27B	-1.19	down	
8116859	TMEM14C	-1.19	down	transmembrane protein 14C
7929438	HELLS	-1.19	down	helicase, lymphoid-specific
8178802	33583 LOC10013:	-1.20	down	
7949588	CD248	-1.20	down	
7901048	SNORD46	-1.20	down	small nucleolar RNA, C/D box 46
7977615	RNASE1	-1.21	down	ribonuclease, RNase A family, 1 (pancreatic)
7932598	C10orf63	-1.21	down	chromosome 10 open reading frame 63
8098556	CCDC111	-1.21	down	coiled-coil domain containing 111
7976443	IFI27	-1.21	down	interferon, alpha-inducible protein 27
8096744	CYP2U1	-1.21	down	cytochrome P450, family 2, subfamily U, polypeptide 1
8170635	ZNF275	-1.21	down	zinc finger protein 275
8150691	EFCAB1	-1.22	down	EF-hand calcium binding domain 1

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8157691	LOC729012	-1.22	down	similar to Spindle and kinetochore-associated protein 2 (Protein FAM3C)
8105596	RGS7BP	-1.22	down	regulator of G-protein signaling 7 binding protein
8112967	TMEM167	-1.22	down	transmembrane protein 167
8175177	MBNL3	-1.22	down	muscleblind-like 3 (Drosophila)
7916570	OMA1 DAB1	-1.23	down	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   disabled homol
7930714	ATRNL1	-1.23	down	attractin-like 1
7996198	CCDC113	-1.23	down	coiled-coil domain containing 113
8096771	DC2	-1.24	down	
7965410	DCN	-1.24	down	decorin
8167006	RP2	-1.25	down	retinitis pigmentosa 2 (X-linked recessive)
8041383	LTBP1	-1.25	down	latent transforming growth factor beta binding protein 1
8131803	IL6	-1.25	down	interleukin 6 (interferon, beta 2)
7909789	TGFB2	-1.25	down	transforming growth factor, beta 2
7986394	LRRC28	-1.25	down	leucine rich repeat containing 28
8098204	CPE	-1.26	down	carboxypeptidase E
8176962	VAMP7	-1.26	down	vesicle-associated membrane protein 7
8171041	VAMP7	-1.27	down	vesicle-associated membrane protein 7
7935776	PRO1933	-1.27	down	
8126135	GLO1	-1.27	down	glyoxalase I
7964466	DCTN2	-1.27	down	dynactin 2 (p50)
8096538	RAP1GDS1	-1.28	down	RAP1, GTP-GDP dissociation stimulator 1
8141843	OC100133005 LOC	-1.28	down	hypothetical protein FLJ21767   similar to RAS p21 protein activator 4
8155747	C9orf135	-1.28	down	chromosome 9 open reading frame 135
8122144	SNORA33	-1.28	down	small nucleolar RNA, H/ACA box 33
8127637	TMEM30A	-1.29	down	transmembrane protein 30A
7912537	DHRS3	-1.29	down	dehydrogenase/reductase (SDR family) member 3
8058765	FN1	-1.30	down	fibronectin 1
8081867	C3orf1	-1.31	down	chromosome 3 open reading frame 1
7922268	KIFAP3	-1.31	down	kinesin-associated protein 3
8071737	MIF	-1.32	down	macrophage migration inhibitory factor (glycosylation-inhibiting factor)
8099807	GAFA3	-1.32	down	FGF-2 activity-associated protein 3
8068612	WRB	-1.32	down	tryptophan rich basic protein
8107850	CHSY3	-1.32	down	chondroitin sulfate synthase 3

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8058462	MDH1B	-1.33	down	malate dehydrogenase 1B, NAD (soluble)
8001410	AKTIP	-1.33	down	AKT interacting protein
8171248	KAL1	-1.33	down	Kallmann syndrome 1 sequence
8148070	COL14A1	-1.34	down	collagen, type XIV, alpha 1
8135235	PMPCB	-1.34	down	peptidase (mitochondrial processing) beta
7944082	TAGLN	-1.34	down	transgelin
8083968	NLGN1	-1.34	down	neuroligin 1
7914218	TAF12	-1.35	down	
8042788	ACTG2	-1.35	down	actin, gamma 2, smooth muscle, enteric
8140840	STEAP4	-1.35	down	STEAP family member 4
8135585	LOC100128868	-1.37	down	testin-related protein TRG
8166140	MOSPD2	-1.38	down	motile sperm domain containing 2
7950810	SYTL2	-1.40	down	synaptotagmin-like 2
7974229	KLHDC2	-1.40	down	kelch domain containing 2
8175288	MOSPD1	-1.41	down	motile sperm domain containing 1
8120239	TMEM14A	-1.41	down	transmembrane protein 14A
7903214	LPPR4	-1.42	down	plasticity related gene 1
7961514	MGP	-1.44	down	matrix Gla protein
8122705	PCMT1	-1.45	down	protein-L-isoaspartate (D-aspartate) O-methyltransferase
7970467	N6AMT2	-1.45	down	N-6 adenine-specific DNA methyltransferase 2 (putative)
8162880	MRPL50	-1.46	down	mitochondrial ribosomal protein L50
8055862	ARL5A	-1.46	down	ADP-ribosylation factor-like 5A
7971541	SUCLA2	-1.47	down	succinate-CoA ligase, ADP-forming, beta subunit
8105348	LOC493869	-1.47	down	similar to RIKEN cDNA 2310016C16
8077323	CNTN4	-1.48	down	contactin 4
7953291	CD9	-1.49	down	
8108217	TGFBI	-1.50	down	transforming growth factor, beta-induced, 68kDa
7938364	WEE1	-1.50	down	
8156905	TMEFF1	-1.51	down	transmembrane protein with EGF-like and two follistatin-like domains :
8042495	RY1	-1.52	down	putative nucleic acid binding protein RY-1
8165642	TMEM203	-1.54	down	transmembrane protein 203
8171802	ACOT9	-1.54	down	acyl-CoA thioesterase 9
7954293	PDE3A	-1.54	down	phosphodiesterase 3A, cGMP-inhibited

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

8179055	ZNRD1	-1.55	down	zinc ribbon domain containing 1
8023191	SMAD2	-1.56	down	SMAD family member 2
8015349	KRT19	-1.56	down	keratin 19
7971077	POSTN	-1.56	down	periostin, osteoblast specific factor
8073334	RBX1	-1.59	down	ring-box 1
8006812	PSMB3	-1.61	down	proteasome (prosome, macropain) subunit, beta type, 3
8041561	MORN2	-1.65	down	MORN repeat containing 2
8097692	EDNRA	-1.66	down	endothelin receptor type A
8149551	PSD3	-1.67	down	pleckstrin and Sec7 domain containing 3
8127201	COL21A1	-1.67	down	collagen, type XXI, alpha 1
8097679	LSM6	-1.69	down	
8152340	NUDCD1	-1.73	down	NudC domain containing 1
8088979	VGLL3	-1.83	down	vestigial like 3 (Drosophila)
7962058	TMTC1	-1.84	down	transmembrane and tetratricopeptide repeat containing 1
7917037	CRYZ	-1.93	down	crystallin, zeta (quinone reductase)
8162373	OGN	-1.97	down	osteoglycin
8092265	MRPL47	-1.97	down	mitochondrial ribosomal protein L47
8054580	BUB1	-2.00	down	
8105828	CCNB1	-2.01	down	cyclin B1
8127563	COL12A1	-2.02	down	collagen, type XII, alpha 1
8135218	LRRC17	-2.03	down	leucine rich repeat containing 17
7970513	C13orf3	-2.03	down	chromosome 13 open reading frame 3
7958031	C12orf48	-2.04	down	chromosome 12 open reading frame 48
8093096	CTEX1D2 TM4SF1	-2.04	down	Tctex1 domain containing 2   transmembrane 4 L six family member 15
7968789	C13orf15	-2.04	down	chromosome 13 open reading frame 15
7965855	NUP37	-2.04	down	nucleoporin 37kDa
8125775	C6orf125	-2.05	down	chromosome 6 open reading frame 125
7916898	DEPDC1	-2.07	down	DEP domain containing 1
8147516	MATN2	-2.09	down	matrilin 2
8120961	C6orf117	-2.09	down	chromosome 6 open reading frame 117
8135587	CAV2	-2.12	down	caveolin 2
7947248	KIF18A	-2.12	down	kinesin family member 18A
8155849	ANXA1	-2.12	down	annexin A1



Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

8055702	NMI	-2.12	down	N-myc (and STAT) interactor
7951662	CRYAB	-2.13	down	crystallin, alpha B
7981960	NRPN SNORD116-	-2.15	down	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
7917516	GBP1 LOC400759	-2.16	down	guanylate binding protein 1, interferon-inducible, 67kDa   interferon-ir
8134257	GNG11	-2.16	down	guanine nucleotide binding protein (G protein), gamma 11
8174189	TMSL8 MGC3990C	-2.17	down	thymosin-like 8   thymosin beta15b
7935180	PDLIM1	-2.17	down	PDZ and LIM domain 1 (elfin)
8097628	HHIP	-2.21	down	hedgehog interacting protein
8169541	DOCK11	-2.23	down	dedicator of cytokinesis 11
8168146	KIF4A	-2.24	down	kinesin family member 4A
8147273	26A7 LOC100130	-2.25	down	solute carrier family 26, member 7   similar to hCG2008599
7981951	NRPN SNORD116-	-2.25	down	small nuclear ribonucleoprotein polypeptide N   small nucleolar RNA, C
8155214	MELK	-2.25	down	maternal embryonic leucine zipper kinase
8045688	TNFAIP6	-2.25	down	tumor necrosis factor, alpha-induced protein 6
8102643	CCNA2	-2.27	down	cyclin A2
8122554	RAB32	-2.30	down	
7953218	RAD51AP1	-2.30	down	RAD51 associated protein 1
8019842	TYMS	-2.34	down	thymidylate synthetase
8121916	RSPO3	-2.35	down	R-spondin 3 homolog (Xenopus laevis)
8073192	UQCRCFS1	-2.36	down	ubiquinol-cytochrome c reductase, Rieske iron-sulfur polypeptide 1
7936673	RGS10	-2.37	down	regulator of G-protein signaling 10
8079237	KIF15	-2.40	down	kinesin family member 15
7951408	COP1	-2.41	down	caspase-1 dominant-negative inhibitor pseudo-ICE
8061579	TPX2	-2.43	down	
8102560	MAD2L1	-2.44	down	MAD2 mitotic arrest deficient-like 1 (yeast)
7902808	HS2ST1	-2.44	down	heparan sulfate 2-O-sulfotransferase 1
7971866	DIAPH3	-2.45	down	diaphanous homolog 3 (Drosophila)
8112980	EDIL3	-2.50	down	EGF-like repeats and discoidin I-like domains 3
8120838	TTK	-2.54	down	
8069689	ADAMTS5	-2.56	down	ADAM metallopeptidase with thrombospondin type 1 motif, 5 (aggreca
7958253	OCC-1	-2.57	down	overexpressed in colon carcinoma-1
8052355	EFEMP1	-2.59	down	EGF-containing fibulin-like extracellular matrix protein 1
8108301	KIF20A	-2.61	down	kinesin family member 20A

Supplemental Table 2c  
eSFPCOS vs. eSFCtrl

8109712	HMMR	-2.61	down	hyaluronan-mediated motility receptor (RHAMM)
7982757	CASC5	-2.66	down	cancer susceptibility candidate 5
8132318	ANLN	-2.69	down	anillin, actin binding protein
8151032	GGH	-2.72	down	gamma-glutamyl hydrolase (conjugase, foylpolypolyglutamyl hydro
7937020	MKI67	-2.73	down	antigen identified by monoclonal antibody Ki-67
7929334	CEP55	-2.75	down	centrosomal protein 55kDa
7982358	ARHGAP11A	-2.83	down	Rho GTPase activating protein 11A
7906930	NUF2	-2.95	down	
8121911	C6orf173	-2.97	down	chromosome 6 open reading frame 173
7923086	ASPM	-3.02	down	asp (abnormal spindle) homolog, microcephaly associated (Drosophila)
7929258	KIF11	-3.03	down	kinesin family member 11
8097857	MND1	-3.04	down	meiotic nuclear divisions 1 homolog (S. cerevisiae)
7923426	UBE2T	-3.06	down	ubiquitin-conjugating enzyme E2T (putative)
7927710	CDC2	-3.07	down	cell division cycle 2, G1 to S and G2 to M
8019857	NDC80	-3.07	down	
8014974	TOP2A	-3.11	down	topoisomerase (DNA) II alpha 170kDa
7984540	KIF23	-3.15	down	kinesin family member 23
8149955	PBK	-3.36	down	PDZ binding kinase
7979307	DLG7	-3.48	down	discs, large homolog 7 (Drosophila)
8161455	iF7P2 LOC100132'	-3.60	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-l
8155487	iF7P2 LOC100132'	-3.61	down	keratinocyte growth factor-like protein 1   keratinocyte growth factor-l
8161423	iF7P2 LOC100132'	-3.65	down	keratinocyte growth factor-like protein 2   keratinocyte growth factor-l
7983630	FGF7	-3.74	down	fibroblast growth factor 7 (keratinocyte growth factor)
8067839	0132771 LOC1001	-3.97	down	fibroblast growth factor 7 pseudogene 2   similar to keratinocyte grow
7989647	KIAA0101	-4.11	down	

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

Transcripts Cluster Id	Genesymbol	eMSCPCOS vs. eMSCCtrl	Regulation	Genedescription
7905548	SPRR3	6.65	up	small proline-rich protein 3
8158167	LCN2	5.06	up	lipocalin 2
8037053	CEACAM7	3.62	up	carcinoembryonic antigen-related cell adhesion molecule
7951593	FLJ45803	3.19	up	
8019802	RNU2 RNU2B WDR74	2.60	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8177931	C6orf205	2.55	up	chromosome 6 open reading frame 205
8019641	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019639	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019707	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019705	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019703	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019631	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019635	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019637	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019633	RNU2 RNU2B WDR74	2.55	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8019709	RNU2 RNU2B WDR74	2.53	up	RNA, U2 small nuclear   RNA, U2B small nuclear   WD re
8015323	KRT13 GUCA1B	2.47	up	keratin 13   guanylate cyclase activator 1B (retina)
8118069	C6orf205	2.47	up	chromosome 6 open reading frame 205
8066528	PIGT	2.35	up	phosphatidylinositol glycan anchor biosynthesis, class T
8179224	C6orf205	2.34	up	chromosome 6 open reading frame 205
8014956	NR1D1 THRA	2.33	up	nuclear receptor subfamily 1, group D, member 1   thyr
7943530	GRIA4	2.26	up	glutamate receptor, ionotropic, AMPA 4
8043504	MAL	2.26	up	mal, T-cell differentiation protein
7998722	SNORD60	2.25	up	small nucleolar RNA, C/D box 60
8095680	IL8	2.24	up	interleukin 8
7983478	C15orf48	2.24	up	chromosome 15 open reading frame 48
8055911	LOC100129449	2.11	up	PRO2055
7939314	EHF	2.08	up	ets homologous factor
8059708	SNORA75	2.04	up	small nucleolar RNA, H/ACA box 75
8005204	144A CCDC144B CCD	2.03	up	coiled-coil domain containing 144A   coiled-coil domain
7972826	C13orf29	2.03	up	chromosome 13 open reading frame 29
8025601	ICAM1	2.00	up	intercellular adhesion molecule 1 (CD54), human rhinovi

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8013272	144A CCDC144B CCD	1.99	up	coiled-coil domain containing 144A   coiled-coil domain
8102800	SLC7A11	1.93	up	solute carrier family 7, (cationic amino acid transporter,
8170990	SNORA36A	1.88	up	small nucleolar RNA, H/ACA box 36A
8092169	TNFSF10	1.78	up	tumor necrosis factor (ligand) superfamily, member 10
8148040	MAL2	1.77	up	mal, T-cell differentiation protein 2
8015349	KRT19	1.77	up	keratin 19
8122265	TNFAIP3	1.74	up	tumor necrosis factor, alpha-induced protein 3
8000636	00132247 DKFZp547E	1.71	up	similar to nuclear pore complex interacting protein   KIA
7908793	ELF3	1.67	up	E74-like factor 3 (ets domain transcription factor, epithe
7986509	LOC441734	1.63	up	similar to hypothetical protein DKFZp434I1020
7986527	C15orf51	1.63	up	chromosome 15 open reading frame 51
8116983	CD83	1.59	up	
7957140	LGR5	1.57	up	leucine-rich repeat-containing G protein-coupled recept
7948904	SNORD28	1.54	up	small nucleolar RNA, C/D box 28
8008588	HLF	1.53	up	hepatic leukemia factor
8160912	C9orf131	1.52	up	chromosome 9 open reading frame 131
8155849	ANXA1	1.51	up	annexin A1
8042144	REL	1.49	up	v-rel reticuloendotheliosis viral oncogene homolog (avian
8152522	ENPP2	1.48	up	ectonucleotide pyrophosphatase/phosphodiesterase 2 (;
8100378	LOC402176	1.46	up	similar to 60S ribosomal protein L21
8028652	ZFP36	1.46	up	zinc finger protein 36, C3H type, homolog (mouse)
8131803	IL6	1.44	up	interleukin 6 (interferon, beta 2)
8140650	SEMA3E	1.43	up	sema domain, immunoglobulin domain (Ig), short basic c
8123744	F13A1	1.42	up	coagulation factor XIII, A1 polypeptide
7939237	C11orf41	1.41	up	chromosome 11 open reading frame 41
8157450	ORM2	1.41	up	orosomuroid 2
8161375	LOC100129030 LOC511	1.39	up	hypothetical protein LOC100129030   melanoma antigen
8030128	PPP1R15A	1.39	up	protein phosphatase 1, regulatory (inhibitor) subunit 15/
8155453	LOC100129030 LOC511	1.39	up	hypothetical protein LOC100129030   melanoma antigen
8147132	CA2	1.38	up	carbonic anhydrase II
7905079	ST2H2AA3 HIST2H2A	1.38	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4
7952339	LOC85389	1.38	up	RNA, small nucleolar
7919619	AA3 HIST2H2AA4 HIS	1.38	up	histone cluster 2, H2aa3   histone cluster 2, H2aa4   hist

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8112274	ELOVL7	1.36	up	ELOVL family member 7, elongation of long chain fatty a
8133360	CLDN4	1.36	up	claudin 4
8092578	ETV5	1.35	up	ets variant gene 5 (ets-related molecule)
7922418	SNORD74	1.35	up	small nucleolar RNA, C/D box 74
8159006	RPL7A SNORD36B	1.34	up	ribosomal protein L7a   small nucleolar RNA, C/D box 36
8116921	EDN1	1.34	up	endothelin 1
8017597	hCG_1793136	1.32	up	similar to ribosomal protein L31
8124650	UBD GABBR1	1.31	up	ubiquitin D   gamma-aminobutyric acid (GABA) B recept
7969288	OLFM4	1.30	up	olfactomedin 4
8178295	UBD GABBR1	1.28	up	ubiquitin D   gamma-aminobutyric acid (GABA) B recept
7904478	LOC51152 LOC1001290	1.27	up	melanoma antigen   hypothetical protein LOC10012903
8017843	SLC16A6	1.26	up	solute carrier family 16, member 6 (monocarboxylic acid
7899615	SERINC2 KIAA0746	1.26	up	serine incorporator 2   KIAA0746 protein
7981068	SERPINA1	1.25	up	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
8135585	LOC100128868	1.25	up	testin-related protein TRG
7976443	IFI27	1.24	up	interferon, alpha-inducible protein 27
8114010	IRF1	1.24	up	interferon regulatory factor 1
7904562	NBPF14 NBPF20 NBI	1.24	up	neuroblastoma breakpoint family, member 16   neurobl
7920291	S100A16	1.23	up	S100 calcium binding protein A16
7904506	NA1245 NBPF11 NBPI	1.23	up	neuroblastoma breakpoint family, member 15   neurobl
7950307	UCP2	1.23	up	uncoupling protein 2 (mitochondrial, proton carrier)
7960896	LOC650293 OR7E125F	1.22	up	seven transmembrane helix receptor   olfactory recepto
7974902	RHOJ	1.22	up	ras homolog gene family, member J
7915472	SLC2A1	1.22	up	solute carrier family 2 (facilitated glucose transporter), n
8092328	MCCC1	1.22	up	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)
8124385	HIST1H4F HIST1H4K	1.21	up	histone cluster 1, H4b   histone cluster 4, H4   histone cl
7900365	MFSD2	1.21	up	major facilitator superfamily domain containing 2
8078014	SLC6A6	1.21	up	solute carrier family 6 (neurotransmitter transporter, tau
8029693	FOSB	1.21	up	FBJ murine osteosarcoma viral oncogene homolog B
7917850	ARHGAP29	1.21	up	Rho GTPase activating protein 29
8155591	20B RP11-195B21.3 C	1.20	up	ankyrin repeat domain 20B   hypothetical LOC644249
7971077	POSTN	1.20	up	periostin, osteoblast specific factor
8159850	FLJ35024	1.19	up	hypothetical LOC401491

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8131719	DNAH11	1.19	up	dynein, axonemal, heavy chain 11
8091922	WDR49	1.19	up	WD repeat domain 49
7904874	'F14 NBPF20 NBPF9	1.19	up	neuroblastoma breakpoint family, member 16   neurobl
7948900	SNORD30	1.18	up	small nucleolar RNA, C/D box 30
8054479	MALL	1.18	up	mal, T-cell differentiation protein-like
7931748	IDI2	1.18	up	isopentenyl-diphosphate delta isomerase 2
7902738	CLCA4	1.17	up	chloride channel, calcium activated, family member 4
8173179	RP11-278E11.2	1.16	up	ubiquinol-cytochrome c reductase binding protein pseud
8053741	ANKRD20A3 ANKRD20	1.16	up	ankyrin repeat domain 20B   ankyrin repeat domain 20 f
8113591	PGGT1B	1.16	up	protein geranylgeranyltransferase type I, beta subunit
7951038	SNORA40 JOSD3	1.16	up	small nucleolar RNA, H/ACA box 40   Josephin domain co
8082012	SLC15A2	1.16	up	solute carrier family 15 (H+/peptide transporter), memb
8117372	HIST1H2AC	1.16	up	histone cluster 1, H2ac
8117834	PPP1R11	1.15	up	protein phosphatase 1, regulatory (inhibitor) subunit 11
8177744	PPP1R11	1.15	up	protein phosphatase 1, regulatory (inhibitor) subunit 11
8101659	SPARCL1	1.14	up	SPARC-like 1 (mast9, hevin)
8021301	RAB27B	1.14	up	
8101322	MOP-1	1.14	up	
8059576	PID1	1.14	up	phosphotyrosine interaction domain containing 1
8077366	LRRN1	1.13	up	leucine rich repeat neuronal 1
7991386	CIB1	1.12	up	calcium and integrin binding 1 (calmyrin)
8056611	LRP2	1.12	up	low density lipoprotein-related protein 2
7981982	116-16 SNORD116-18	1.12	up	small nuclear ribonucleoprotein polypeptide N   small nu
7981986	116-16 SNORD116-18	1.11	up	small nuclear ribonucleoprotein polypeptide N   small nu
8108251	NPY6R	1.11	up	neuropeptide Y receptor Y6 (pseudogene)
8117402	HIST1H4F HIST1H4K	1.11	up	histone cluster 1, H4e   histone cluster 4, H4   histone cl
7967620	DXH37 LOC100132564	1.11	up	DEAH (Asp-Glu-Ala-His) box polypeptide 37   hypothetical
7948906	SNORD27 SNHG1	1.10	up	small nucleolar RNA, C/D box 27   small nucleolar RNA h
8180003	133583 LOC1001336	1.10	up	
8077270	CHL1	1.10	up	cell adhesion molecule with homology to L1CAM (close r
7985398	FAM154B	1.10	up	family with sequence similarity 154, member B
8178811	133583 LOC1001336	1.10	up	
7932453	NEBL	1.09	up	nebulin

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

7953594	EMG1	1.09	up	
8083743	ARL14	1.09	up	ADP-ribosylation factor-like 14
8001410	AKTIP	1.09	up	AKT interacting protein
8097857	MND1	1.09	up	meiotic nuclear divisions 1 homolog ( <i>S. cerevisiae</i> )
8117377	HIST1H1E	1.09	up	histone cluster 1, H1e
7931108	DMBT1	1.08	up	deleted in malignant brain tumors 1
8034342	ZNF625 ZNF20	1.08	up	zinc finger protein 625   zinc finger protein 20
7933872	EGR2	1.08	up	early growth response 2 ( <i>Krox-20</i> homolog, <i>Drosophila</i> )
7930593	C10orf81	1.08	up	chromosome 10 open reading frame 81
8178802	J133583 LOC1001336	1.07	up	
8056963	LOC100129455	1.07	up	
8166784	TSPAN7	1.07	up	tetraspanin 7
7942791	LOC100008589 WDR8	1.07	up	28S ribosomal RNA   WD repeat domain 88
8010243	SYNGR2	1.07	up	synaptogyrin 2
7954310	LOC100008588	1.07	up	18S ribosomal RNA
8083839	GPR160	1.07	up	G protein-coupled receptor 160
8157446	ORM1	1.07	up	orosomucoid 1
7959330	WDR66	1.07	up	WD repeat domain 66
8149248	LRLE1 LOC100127885	1.07	up	liver-related low express protein 1   similar to liver-relat
8007561	G6PC3	1.06	up	glucose 6 phosphatase, catalytic, 3
8092165	GHSR	1.06	up	growth hormone secretagogue receptor
8090823	SLCO2A1	1.06	up	solute carrier organic anion transporter family, member
8169350	LOC100134364	1.06	up	
7912347	CASZ1	1.06	up	castor zinc finger 1
7897966	C1orf158	1.06	up	chromosome 1 open reading frame 158
7940323	MS4A8B	1.06	up	membrane-spanning 4-domains, subfamily A, member 8
7965410	DCN	1.06	up	decorin
8143957	RHEB	1.05	up	Ras homolog enriched in brain
7922969	PDC	1.05	up	phosducin
8057377	CCDC141 LOC285026	1.05	up	coiled-coil domain containing 141   hypothetical protein
8011990	TEKT1	1.05	up	tektin 1
7976496	SERPINA3	1.05	up	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
8097628	HHIP	1.05	up	hedgehog interacting protein

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8115327	SPARC	1.05	up	secreted protein, acidic, cysteine-rich (osteonectin)
7939642	CREB3L1	1.05	up	cAMP responsive element binding protein 3-like 1
7932407	ST8SIA6	1.04	up	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase
8088315	ASB14 DNAH12	1.04	up	ankyrin repeat and SOCS box-containing 14   dynein, axonemal, heavy chain 12
7916629	C1orf87	1.04	up	chromosome 1 open reading frame 87
8111019	DNAH5	1.04	up	dynein, axonemal, heavy chain 5
8134339	PEG10	1.04	up	paternally expressed 10
8138289	ETV1	1.04	up	ets variant gene 1
8004889	WDR16	1.04	up	WD repeat domain 16
8107591	ZNF474	1.04	up	zinc finger protein 474
8098556	CCDC111	1.04	up	coiled-coil domain containing 111
8057056	TTN	1.03	up	titin
8054200	LYG2	1.03	up	lysozyme G-like 2
8004957	DNAH9	1.03	up	dynein, axonemal, heavy chain 9
8166690	CXorf59	1.03	up	chromosome X open reading frame 59
8033362	INSR	1.03	up	insulin receptor
8121911	C6orf173	1.03	up	chromosome 6 open reading frame 173
7907232	C1orf129	1.03	up	chromosome 1 open reading frame 129
8122365	GPR126	1.03	up	G protein-coupled receptor 126
8154100	VLDLR	1.02	up	very low density lipoprotein receptor
7901048	SNORD46	1.02	up	small nucleolar RNA, C/D box 46
8008040	LRRC46	1.02	up	leucine rich repeat containing 46
8113220	ELL2	1.02	up	elongation factor, RNA polymerase II, 2
8089851	HGD LOC100132552	1.01	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
8093278	HGD LOC100132552	1.01	up	homogentisate 1,2-dioxygenase (homogentisate oxidase)
8155747	C9orf135	1.01	up	chromosome 9 open reading frame 135
8080863	FLJ44379	1.01	up	similar to S-100 protein, alpha chain
8139087	SFRP4	1.01	up	secreted frizzled-related protein 4
8019831	CLUL1	1.01	up	clusterin-like 1 (retinal)
8085062	IL5RA	1.01	up	interleukin 5 receptor, alpha
8131944	NFE2L3	1.01	up	nuclear factor (erythroid-derived 2)-like 3
7926545	PLXDC2	1.01	up	plexin domain containing 2
7904726	TXNIP	1.01	up	thioredoxin interacting protein



Supplemental Table 2d  
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8075423	DUSP18	1.00	up	dual specificity phosphatase 18
7965403	LUM	1.00	up	lumican
7968789	C13orf15	1.00	up	chromosome 13 open reading frame 15
8058927	TMBIM1	1.00	up	transmembrane BAX inhibitor motif containing 1
8111864	C6	1.00	up	complement component 6
8161755	ALDH1A1	1.00	up	aldehyde dehydrogenase 1 family, member A1
8157632	C9orf18	-1.00	down	chromosome 9 open reading frame 18
7959681	DNAH10	-1.01	down	dynein, axonemal, heavy chain 10
8154892	DNAI1	-1.01	down	dynein, axonemal, intermediate chain 1
7981943	SNRPN SNORD64 P/	-1.01	down	Prader-Willi/Angelman syndrome-5   small nuclear ribor
7976073	FLRT2	-1.01	down	fibronectin leucine rich transmembrane protein 2
8151032	GGH	-1.01	down	gamma-glutamyl hydrolase (conjugase, folylpolygamma
7961514	MGP	-1.01	down	matrix Gla protein
8035304	BST2	-1.02	down	bone marrow stromal cell antigen 2
8092970	APOD	-1.02	down	apolipoprotein D
8150691	EFCAB1	-1.02	down	EF-hand calcium binding domain 1
8017061	TEX14	-1.02	down	testis expressed 14
7965226	RASSF9	-1.02	down	Ras association (RalGDS/AF-6) domain family (N-termina
8176962	VAMP7	-1.02	down	vesicle-associated membrane protein 7
7968866	C13orf30	-1.02	down	chromosome 13 open reading frame 30
8171041	VAMP7	-1.02	down	vesicle-associated membrane protein 7
8147273	LC26A7 LOC10013074	-1.02	down	solute carrier family 26, member 7   similar to hCG2008
8175835	BCAP31	-1.02	down	B-cell receptor-associated protein 31
7941936	GSTP1	-1.02	down	glutathione S-transferase pi
8054135	MGAT4A	-1.02	down	mannosyl (alpha-1,3-)-glycoprotein beta-1,4-N-acetylglu
8179055	ZNRD1	-1.03	down	zinc ribbon domain containing 1
8141843	LOC100133005 LOC1	-1.03	down	hypothetical protein FLJ21767   similar to RAS p21 prote
8170635	ZNF275	-1.03	down	zinc finger protein 275
7903393	S1PR1	-1.03	down	sphingosine-1-phosphate receptor 1
8006779	ARHGAP23	-1.04	down	Rho GTPase activating protein 23
7915504	ELOVL1	-1.04	down	elongation of very long chain fatty acids (FEN1/Elo2, SUR
8157691	LOC729012	-1.04	down	similar to Spindle and kinetochore-associated protein 2 (
7900635	hCG_23177	-1.04	down	hCG23177

Supplemental Table 2d  
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8118409	C4A C4B	-1.04	down	complement component 4A (Rodgers blood group)   cor
8121015	C6orf165 SLC35A1	-1.04	down	chromosome 6 open reading frame 165   solute carrier f
8112967	TMEM167	-1.04	down	transmembrane protein 167
8118455	C4A C4B	-1.04	down	complement component 4A (Rodgers blood group)   cor
7903959	C1orf88	-1.04	down	chromosome 1 open reading frame 88
8121622	RSHL3	-1.05	down	radial spokehead-like 3
8179399	C4A C4B	-1.05	down	complement component 4A (Rodgers blood group)   cor
8094533	FLJ16686	-1.05	down	
8088322	DNAH12L	-1.05	down	dynein, axonemal, heavy chain 12-like
8040672	C2orf39	-1.05	down	chromosome 2 open reading frame 39
8140686	SEMA3D	-1.05	down	sema domain, immunoglobulin domain (Ig), short basic c
8139057	ELMO1	-1.05	down	engulfment and cell motility 1
8083494	MME	-1.05	down	membrane metallo-endopeptidase
7907135	SFT2D2	-1.06	down	SFT2 domain containing 2
8046428	RAPGEF4	-1.06	down	Rap guanine nucleotide exchange factor (GEF) 4
7930870	TOMM22	-1.06	down	translocase of outer mitochondrial membrane 22 homol
7947156	MUC15	-1.06	down	mucin 15, cell surface associated
7932744	ARMC4	-1.06	down	armadillo repeat containing 4
8124562	ZNF323	-1.06	down	zinc finger protein 323
7985053	FBXO22	-1.06	down	F-box protein 22
8057463	CERKL	-1.06	down	ceramide kinase-like
7939559	TSPAN18	-1.06	down	tetraspanin 18
8114856	PLAC8L1	-1.06	down	PLAC8-like 1
7904695	SEC22B	-1.07	down	SEC22 vesicle trafficking protein homolog B ( <i>S. cerevisiae</i>
8010978	LOC100130876	-1.07	down	
8030978	LOC91664	-1.07	down	hypothetical protein BC007307
7960865	SLC2A3	-1.07	down	solute carrier family 2 (facilitated glucose transporter), n
8166671	CXorf22	-1.07	down	chromosome X open reading frame 22
8066745	ZNF334	-1.07	down	zinc finger protein 334
8130578	SNORA20	-1.07	down	small nucleolar RNA, H/ACA box 20
8088299	DNHD2	-1.08	down	dynein heavy chain domain 2
7968632	RP11-251J8.3	-1.08	down	hypothetical LOC646871
8120679	DDX43	-1.08	down	DEAD (Asp-Glu-Ala-Asp) box polypeptide 43

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8010139	SEC14L1	-1.08	down	SEC14-like 1 ( <i>S. cerevisiae</i> )
8138392	AGR3	-1.08	down	anterior gradient homolog 3 ( <i>Xenopus laevis</i> )
7943740	FLJ46266	-1.09	down	
8175288	MOSPD1	-1.09	down	motile sperm domain containing 1
7926807	PDSS1	-1.09	down	prenyl (decaprenyl) diphosphate synthase, subunit 1
8151999	RGS22	-1.09	down	regulator of G-protein signaling 22
7995681	MMP2	-1.09	down	matrix metalloproteinase 2 (gelatinase A, 72kDa gelatinase)
8001099	HERC2P4	-1.10	down	hect domain and RLD 2 pseudogene 4
7983630	FGF7	-1.10	down	fibroblast growth factor 7 (keratinocyte growth factor)
7957673	C12orf55 FLJ34470	-1.10	down	chromosome 12 open reading frame 55   hypothetical p
8090180	MUC13	-1.10	down	mucin 13, cell surface associated
8059905	COL6A3	-1.10	down	collagen, type VI, alpha 3
7977615	RNASE1	-1.10	down	ribonuclease, RNase A family, 1 (pancreatic)
8156905	TMEFF1	-1.11	down	transmembrane protein with EGF-like and two follistatin
8142646	IQUB	-1.11	down	IQ motif and ubiquitin domain containing
8179495	PSMB9	-1.11	down	proteasome (prosome, macropain) subunit, beta type, 9
8063601	C20orf85	-1.11	down	chromosome 20 open reading frame 85
8118571	PSMB9	-1.11	down	proteasome (prosome, macropain) subunit, beta type, 9
8178211	PSMB9	-1.11	down	proteasome (prosome, macropain) subunit, beta type, 9
8146794	DEPDC2	-1.11	down	DEP domain containing 2
8120860	BCKDHB	-1.12	down	branched chain keto acid dehydrogenase E1, beta polypeptide
7981976	SNRPN SNORD116-14	-1.12	down	small nuclear ribonucleoprotein polypeptide N   small nuclear
8108256	MYOT	-1.12	down	myotilin
7953385	GAPDH	-1.12	down	glyceraldehyde-3-phosphate dehydrogenase
7952205	MCAM	-1.12	down	melanoma cell adhesion molecule
7932420	PTPLA	-1.12	down	protein tyrosine phosphatase-like (proline instead of cat)
8001067	HERC2P4	-1.13	down	hect domain and RLD 2 pseudogene 4
8092265	MRPL47	-1.13	down	mitochondrial ribosomal protein L47
7935776	PRO1933	-1.14	down	
8055151	26C1B A26C1A FKSG3	-1.14	down	ANKRD26-like family C, member 1B   ANKRD26-like family
8126853	C6orf138	-1.14	down	chromosome 6 open reading frame 138
7932598	C10orf63	-1.14	down	chromosome 10 open reading frame 63
8108688	PCDHB3	-1.14	down	protocadherin beta 3

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8093096	TCTEX1D2 TM4SF19	-1.14	down	Tctex1 domain containing 2   transmembrane 4 L six farr
7918294	C1orf194	-1.14	down	chromosome 1 open reading frame 194
8097692	EDNRA	-1.15	down	endothelin receptor type A
8126135	GLO1	-1.15	down	glyoxalase I
7951408	COP1	-1.15	down	caspase-1 dominant-negative inhibitor pseudo-ICE
8096744	CYP2U1	-1.15	down	cytochrome P450, family 2, subfamily U, polypeptide 1
8012896	PMP22	-1.15	down	peripheral myelin protein 22
8055702	NMI	-1.15	down	N-myc (and STAT) interactor
7923991	PLXNA2	-1.15	down	plexin A2
8058765	FN1	-1.15	down	fibronectin 1
7912537	DHRS3	-1.15	down	dehydrogenase/reductase (SDR family) member 3
8050176	ITGB1BP1	-1.16	down	integrin beta 1 binding protein 1
8006433	CCL2	-1.16	down	chemokine (C-C motif) ligand 2
7960947	A2M	-1.16	down	alpha-2-macroglobulin
8054511	LOC205251	-1.16	down	
8003667	SERPINF1	-1.16	down	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin,
7937020	MKI67	-1.16	down	antigen identified by monoclonal antibody Ki-67
8096301	SPP1	-1.16	down	secreted phosphoprotein 1 (osteopontin, bone sialoprot
8096771	DC2	-1.17	down	
8007397	PSME3	-1.17	down	proteasome (prosome, macropain) activator subunit 3 (F
8099524	LDB2	-1.17	down	LIM domain binding 2
7910229	ARF1	-1.17	down	ADP-ribosylation factor 1
8085867	NEK10	-1.17	down	NIMA (never in mitosis gene a)- related kinase 10
8100464	NMU	-1.17	down	neuromedin U
8041561	MORN2	-1.17	down	MORN repeat containing 2
7925320	NID1	-1.18	down	nidogen 1
7935180	PDLIM1	-1.18	down	PDZ and LIM domain 1 (elfin)
7953603	C1S	-1.18	down	complement component 1, s subcomponent
7899480	SNORA73A	-1.18	down	small nucleolar RNA, H/ACA box 73A
8046922	COL3A1	-1.18	down	collagen, type III, alpha 1 (Ehlers-Danlos syndrome type I
7952046	MPZL2	-1.18	down	myelin protein zero-like 2
8134257	GNG11	-1.19	down	guanine nucleotide binding protein (G protein), gamma 1
8179139	MRPS18B	-1.19	down	mitochondrial ribosomal protein S18B

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8055220	A26C1A A26C1B	-1.19	down	ANKRD26-like family C, member 1A   ANKRD26-like fami
8177824	MRPS18B	-1.19	down	mitochondrial ribosomal protein S18B
8117955	MRPS18B	-1.19	down	mitochondrial ribosomal protein S18B
7902808	HS2ST1	-1.19	down	heparan sulfate 2-O-sulfotransferase 1
8167006	RP2	-1.20	down	retinitis pigmentosa 2 (X-linked recessive)
7914218	TAF12	-1.20	down	
8017235	APPBP2	-1.20	down	amyloid beta precursor protein (cytoplasmic tail) binding
7953291	CD9	-1.21	down	
7965873	IGF1	-1.21	down	insulin-like growth factor 1 (somatomedin C)
8178598	CLIC1	-1.21	down	chloride intracellular channel 1
8091243	PCOLCE2	-1.22	down	procollagen C-endopeptidase enhancer 2
7996198	CCDC113	-1.22	down	coiled-coil domain containing 113
7942941	CCDC81	-1.22	down	coiled-coil domain containing 81
8072876	LGALS1	-1.22	down	lectin, galactoside-binding, soluble, 1 (galectin 1)
8162373	OGN	-1.22	down	osteoglycin
7976488	SERPINA5	-1.22	down	serpin peptidase inhibitor, clade A (alpha-1 antiproteina
7925525	CEP170	-1.22	down	centrosomal protein 170kDa
8017057	C17orf47	-1.23	down	chromosome 17 open reading frame 47
8005955	SNORD42A	-1.23	down	small nucleolar RNA, C/D box 42A
8091887	ZBBX	-1.23	down	zinc finger, B-box domain containing
8169240	PRPS1	-1.23	down	phosphoribosyl pyrophosphate synthetase 1
8161423	FGF7P2 LOC10013277	-1.23	down	keratinocyte growth factor-like protein 2   keratinocyte
8155487	FGF7P2 LOC10013277	-1.24	down	keratinocyte growth factor-like protein 1   keratinocyte
8122071	ENPP3	-1.24	down	ectonucleotide pyrophosphatase/phosphodiesterase 3
8160016	RANBP6	-1.24	down	RAN binding protein 6
7929438	HELLS	-1.24	down	helicase, lymphoid-specific
8161455	FGF7P2 LOC10013277	-1.24	down	keratinocyte growth factor-like protein 2   keratinocyte
8071737	MIF	-1.24	down	macrophage migration inhibitory factor (glycosylation-in
8141107	SLC25A13	-1.25	down	solute carrier family 25, member 13 (citrin)
7922382	ANKRD45	-1.25	down	ankyrin repeat domain 45
7984540	KIF23	-1.25	down	kinesin family member 23
7966135	CORO1C	-1.25	down	coronin, actin binding protein, 1C
8145470	DPYSL2	-1.25	down	dihydropyrimidinase-like 2

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7958031	C12orf48	-1.26	down	chromosome 12 open reading frame 48
8045587	ACVR2A	-1.26	down	activin A receptor, type IIA
8168146	KIF4A	-1.26	down	kinesin family member 4A
8098204	CPE	-1.26	down	carboxypeptidase E
7949588	CD248	-1.26	down	
8134263	COL1A2	-1.27	down	collagen, type I, alpha 2
8137979	ACTB	-1.27	down	actin, beta
7972217	SPRY2	-1.27	down	sprouty homolog 2 (Drosophila)
7952069	C11orf60	-1.27	down	chromosome 11 open reading frame 60
8116859	TMEM14C	-1.27	down	transmembrane protein 14C
8120961	C6orf117	-1.27	down	chromosome 6 open reading frame 117
8042495	RY1	-1.27	down	putative nucleic acid binding protein RY-1
7931187	BUB3	-1.28	down	
7950933	NOX4	-1.28	down	NADPH oxidase 4
7982757	CASC5	-1.28	down	cancer susceptibility candidate 5
8067839	LOC100132771   LOC10013	-1.29	down	fibroblast growth factor 7 pseudogene 2   similar to kerat
8019183	ACTG1	-1.29	down	actin, gamma 1
8095080	PDGFRA	-1.29	down	platelet-derived growth factor receptor, alpha polypeptide
8022902	C18orf37	-1.29	down	chromosome 18 open reading frame 37
7930714	ATRNL1	-1.30	down	attractin-like 1
8121916	RSPO3	-1.30	down	R-spondin 3 homolog (Xenopus laevis)
7989708	MTFMT	-1.30	down	mitochondrial methionyl-tRNA formyltransferase
8122144	SNORA33	-1.31	down	small nucleolar RNA, H/ACA box 33
7947512	DKFZP586H2123	-1.32	down	regeneration associated muscle protease
7947248	KIF18A	-1.32	down	kinesin family member 18A
8081867	C3orf1	-1.32	down	chromosome 3 open reading frame 1
7917037	CRYZ	-1.32	down	crystallin, zeta (quinone reductase)
8040655	SELI	-1.33	down	selenoprotein I
8129573	MOXD1	-1.33	down	monooxygenase, DBH-like 1
8058857	IGFBP5	-1.33	down	insulin-like growth factor binding protein 5
8127563	COL12A1	-1.33	down	collagen, type XII, alpha 1
8105828	CCNB1	-1.33	down	cyclin B1
7922137	NME7	-1.35	down	non-metastatic cells 7, protein expressed in (nucleoside-

Supplemental Table 2d  
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7981988	SNORD116-20 SNOR	-1.35	down	small nuclear ribonucleoprotein polypeptide N   small nu
8105596	RGS7BP	-1.35	down	regulator of G-protein signaling 7 binding protein
7981427	CKB	-1.35	down	creatine kinase, brain
8082408	SEC61A1	-1.35	down	Sec61 alpha 1 subunit ( <i>S. cerevisiae</i> )
8091511	P2RY14	-1.35	down	purinergic receptor P2Y, G-protein coupled, 14
8108301	KIF20A	-1.35	down	kinesin family member 20A
7909789	TGFB2	-1.36	down	transforming growth factor, beta 2
7937802	CD81	-1.36	down	
8061579	TPX2	-1.37	down	
8014974	TOP2A	-1.37	down	topoisomerase (DNA) II alpha 170kDa
8122554	RAB32	-1.37	down	
8078544	MLH1	-1.37	down	mutL homolog 1, colon cancer, nonpolyposis type 2 ( <i>E. c</i>
7974229	KLHDC2	-1.38	down	kelch domain containing 2
8179174	TUBB	-1.38	down	tubulin, beta
8117995	TUBB	-1.38	down	tubulin, beta
8177858	TUBB	-1.38	down	tubulin, beta
7953218	RAD51AP1	-1.38	down	RAD51 associated protein 1
8052355	EFEMP1	-1.38	down	EGF-containing fibulin-like extracellular matrix protein 1
8172022	TMEM47	-1.39	down	transmembrane protein 47
8096415	MMRN1	-1.39	down	multimerin 1
7938364	WEE1	-1.39	down	
8001800	CDH11	-1.39	down	cadherin 11, type 2, OB-cadherin (osteoblast)
8019842	TYMS	-1.40	down	thymidylate synthetase
8066275	PRO0628	-1.40	down	
8090448	RUVBL1	-1.40	down	RuvB-like 1 ( <i>E. coli</i> )
8160531	C9orf72	-1.40	down	chromosome 9 open reading frame 72
8147447	PTDSS1	-1.41	down	phosphatidylserine synthase 1
7903407	AMY2B	-1.42	down	amylase, alpha 2B (pancreatic)
7920317	ILF2	-1.42	down	interleukin enhancer binding factor 2, 45kDa
7922268	KIFAP3	-1.42	down	kinesin-associated protein 3
8109712	HMMR	-1.43	down	hyaluronan-mediated motility receptor (RHAMM)
8081667	SLC35A5	-1.43	down	solute carrier family 35, member A5
7927710	CDC2	-1.43	down	cell division cycle 2, G1 to S and G2 to M

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8147516	MATN2	-1.44	down	matrilin 2
8096538	RAP1GDS1	-1.44	down	RAP1, GTP-GDP dissociation stimulator 1
8102792	PCDH18	-1.44	down	protocadherin 18
8127637	TMEM30A	-1.44	down	transmembrane protein 30A
7923086	ASPM	-1.45	down	asp (abnormal spindle) homolog, microcephaly associate
8068612	WRB	-1.45	down	tryptophan rich basic protein
8174189	TMSL8   MGC39900	-1.46	down	thymosin-like 8   thymosin beta15b
8109194	SLC26A2	-1.47	down	solute carrier family 26 (sulfate transporter), member 2
8054580	BUB1	-1.47	down	
8052762	GFPT1	-1.48	down	glutamine-fructose-6-phosphate transaminase 1
8097679	LSM6	-1.48	down	
7977270	LOC388022	-1.48	down	hypothetical gene supported by AK131040
8155214	MELK	-1.49	down	maternal embryonic leucine zipper kinase
7944991	STT3A	-1.49	down	STT3, subunit of the oligosaccharyltransferase complex, l
8073334	RBX1	-1.49	down	ring-box 1
8055862	ARL5A	-1.49	down	ADP-ribosylation factor-like 5A
8059376	SERPINE2	-1.49	down	serpin peptidase inhibitor, clade E (nexin, plasminogen a
8073192	UQCRFS1	-1.50	down	ubiquinol-cytochrome c reductase, Rieske iron-sulfur pol
8058462	MDH1B	-1.50	down	malate dehydrogenase 1B, NAD (soluble)
8156538	HIATL1	-1.50	down	hippocampus abundant transcript-like 1
7903119	ABCD3	-1.50	down	ATP-binding cassette, sub-family D (ALD), member 3
7916898	DEPDC1	-1.50	down	DEP domain containing 1
8010078	SNORD1C	-1.51	down	small nucleolar RNA, C/D box 1C
8166140	MOSPD2	-1.51	down	motile sperm domain containing 2
7946579	LYVE1	-1.51	down	lymphatic vessel endothelial hyaluronan receptor 1
8135235	PMPCB	-1.52	down	peptidase (mitochondrial processing) beta
8001496	NUDT21	-1.52	down	nudix (nucleoside diphosphate linked moiety X)-type mo
8135341	FLJ23834	-1.52	down	
8135218	LRRC17	-1.52	down	leucine rich repeat containing 17
8070603	RSPH1	-1.52	down	radial spoke head 1 homolog (Chlamydomonas)
7951662	CRYAB	-1.54	down	crystallin, alpha B
7906930	NUF2	-1.54	down	
7964466	DCTN2	-1.55	down	dynactin 2 (p50)



Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

7988467	FBN1	-1.55	down	fibrillin 1
7982358	ARHGAP11A	-1.55	down	Rho GTPase activating protein 11A
8088339	ARF4	-1.57	down	ADP-ribosylation factor 4
8120838	TTK	-1.57	down	
7936673	RGS10	-1.57	down	regulator of G-protein signaling 10
8135587	CAV2	-1.58	down	caveolin 2
7938366	WEE1	-1.59	down	
8132318	ANLN	-1.59	down	anillin, actin binding protein
8120239	TMEM14A	-1.61	down	transmembrane protein 14A
8079237	KIF15	-1.61	down	kinesin family member 15
7956031	ORMDL2	-1.61	down	ORM1-like 2 ( <i>S. cerevisiae</i> )
8069689	ADAMTS5	-1.61	down	ADAM metalloproteinase with thrombospondin type 1 m
8152340	NUDCD1	-1.61	down	NudC domain containing 1
7929258	KIF11	-1.63	down	kinesin family member 11
8122705	PCMT1	-1.64	down	protein-L-isoaspartate (D-aspartate) O-methyltransferase
7948995	ATL3	-1.65	down	atlastin 3
7971866	DIAPH3	-1.65	down	diaphanous homolog 3 ( <i>Drosophila</i> )
8082478	COPG	-1.66	down	coatamer protein complex, subunit gamma
7921862	C1orf192	-1.68	down	chromosome 1 open reading frame 192
7970513	C13orf3	-1.68	down	chromosome 13 open reading frame 3
7979307	DLG7	-1.69	down	discs, large homolog 7 ( <i>Drosophila</i> )
7920337	INTS3	-1.70	down	integrator complex subunit 3
7980485	DIO2	-1.71	down	deiodinase, iodothyronine, type II
8162880	MRPL50	-1.72	down	mitochondrial ribosomal protein L50
7917516	GBP1 LOC400759	-1.72	down	guanylate binding protein 1, interferon-inducible, 67kDa
8148070	COL14A1	-1.73	down	collagen, type XIV, alpha 1
8125775	C6orf125	-1.74	down	chromosome 6 open reading frame 125
7958253	OCC-1	-1.77	down	overexpressed in colon carcinoma-1
8169541	DOCK11	-1.78	down	dedicator of cytokinesis 11
7912198	ENO1	-1.79	down	enolase 1, (alpha)
7915286	PPT1	-1.80	down	palmitoyl-protein thioesterase 1 (ceroid-lipofuscinosis, n
8108217	TGFBI	-1.80	down	transforming growth factor, beta-induced, 68kDa
7996934	NIP7	-1.81	down	nuclear import 7 homolog ( <i>S. cerevisiae</i> )

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8171802	ACOT9	-1.81	down	acyl-CoA thioesterase 9
8102643	CCNA2	-1.82	down	cyclin A2
8165642	TMEM203	-1.83	down	transmembrane protein 203
7929334	CEP55	-1.83	down	centrosomal protein 55kDa
8155268	POLR1E	-1.83	down	polymerase (RNA) I polypeptide E, 53kDa
8170992	SNORA56	-1.84	down	small nucleolar RNA, H/ACA box 56
8105348	LOC493869	-1.87	down	similar to RIKEN cDNA 2310016C16
8019857	NDC80	-1.90	down	
8041383	LTBP1	-1.95	down	latent transforming growth factor beta binding protein 1
7981951	SNRPN SNORD116-2	-1.95	down	small nuclear ribonucleoprotein polypeptide N   small n
7965855	NUP37	-2.01	down	nucleoporin 37kDa
7971541	SUCLA2	-2.02	down	succinate-CoA ligase, ADP-forming, beta subunit
8006812	PSMB3	-2.03	down	proteasome (prosome, macropain) subunit, beta type, 3
8116724	FARS2	-2.03	down	phenylalanyl-tRNA synthetase 2, mitochondrial
8149955	PBK	-2.03	down	PDZ binding kinase
8095303	LPHN3	-2.03	down	latrophilin 3
8138834	FKBP14	-2.03	down	FK506 binding protein 14, 22 kDa
8102560	MAD2L1	-2.03	down	MAD2 mitotic arrest deficient-like 1 (yeast)
8130129	NUP43	-2.04	down	nucleoporin 43kDa
8172204	MAOB	-2.05	down	monoamine oxidase B
7923426	UBE2T	-2.05	down	ubiquitin-conjugating enzyme E2T (putative)
7962058	TMTC1	-2.06	down	transmembrane and tetratricopeptide repeat containing
8149551	PSD3	-2.06	down	pleckstrin and Sec7 domain containing 3
7989647	KIAA0101	-2.07	down	
8113800	FBN2	-2.08	down	fibrillin 2 (congenital contractural arachnodactyly)
8088979	VGLL3	-2.09	down	vestigial like 3 (Drosophila)
8045688	TNFAIP6	-2.09	down	tumor necrosis factor, alpha-induced protein 6
8140840	STEAP4	-2.10	down	STEAP family member 4
8152617	HAS2	-2.11	down	hyaluronan synthase 2
7916570	OMA1 DAB1	-2.11	down	OMA1 homolog, zinc metallopeptidase ( <i>S. cerevisiae</i> )   c
8099807	GFAF3	-2.11	down	FGF-2 activity-associated protein 3
8175177	MBNL3	-2.12	down	muscleblind-like 3 (Drosophila)
7951178	TRPC6	-2.13	down	transient receptor potential cation channel, subfamily C,

Supplemental Table 2d  
eMSCPCOS vs. eMSCCtrl

8107850	CHSY3	-2.15	down	chondroitin sulfate synthase 3
8085145	RAD18	-2.17	down	
8083968	NLGN1	-2.23	down	neuroligin 1
7903214	LPPR4	-2.23	down	plasticity related gene 1
8020898	ZNF271	-2.25	down	zinc finger protein 271
7950810	SYTL2	-2.26	down	synaptotagmin-like 2
7970467	N6AMT2	-2.27	down	N-6 adenine-specific DNA methyltransferase 2 (putative)
8127201	COL21A1	-2.31	down	collagen, type XXI, alpha 1
8023191	SMAD2	-2.31	down	SMAD family member 2
8167163	CXorf24	-2.34	down	chromosome X open reading frame 24
8077323	CNTN4	-2.35	down	contactin 4
7945991	OR51E2	-2.37	down	olfactory receptor, family 51, subfamily E, member 2
7954293	PDE3A	-2.37	down	phosphodiesterase 3A, cGMP-inhibited
8171248	KAL1	-2.38	down	Kallmann syndrome 1 sequence
8112980	EDIL3	-2.43	down	EGF-like repeats and discoidin I-like domains 3
8083779	SERPINI1	-2.48	down	serpin peptidase inhibitor, clade I (neuroserpin), member 1
7981960	SNRPN SNORD116-6	-2.56	down	small nuclear ribonucleoprotein polypeptide N   small nuclear ribonucleoprotein polypeptide N
8091799	3orf57 LOC10012928	-2.63	down	chromosome 3 open reading frame 57   hypothetical protein LOC10012928
8007420	AOC3	-2.65	down	amine oxidase, copper containing 3 (vascular adhesion protein 3)
7944082	TAGLN	-2.65	down	transgelin
7986394	LRRRC28	-2.67	down	leucine rich repeat containing 28
8146957	PI15	-2.79	down	peptidase inhibitor 15
8125919	FKBP5 LOC285847	-2.88	down	FK506 binding protein 5   hypothetical protein LOC285847
7976812	SNORD113-4	-3.03	down	small nucleolar RNA, C/D box 113-4
8042788	ACTG2	-3.12	down	actin, gamma 2, smooth muscle, enteric