

Protein Kinase A: A Master Kinase of Granulosa Cell Differentiation

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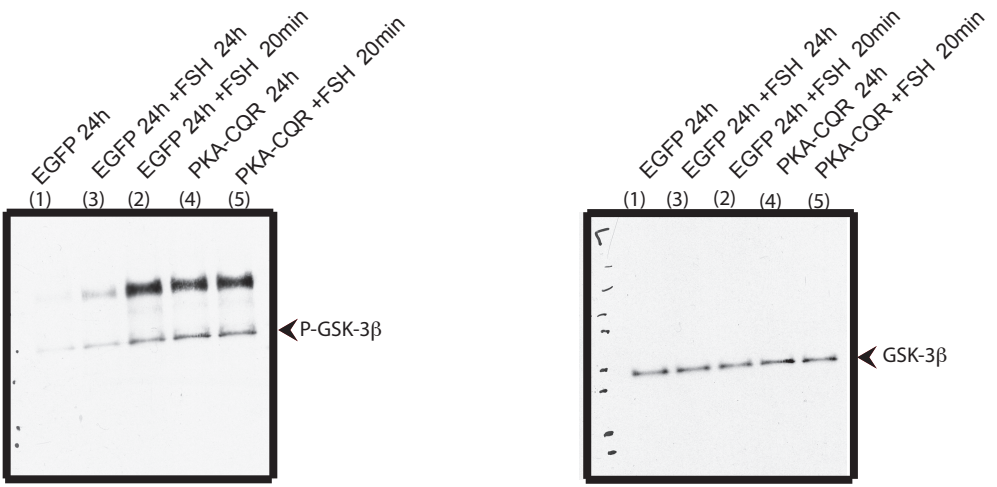
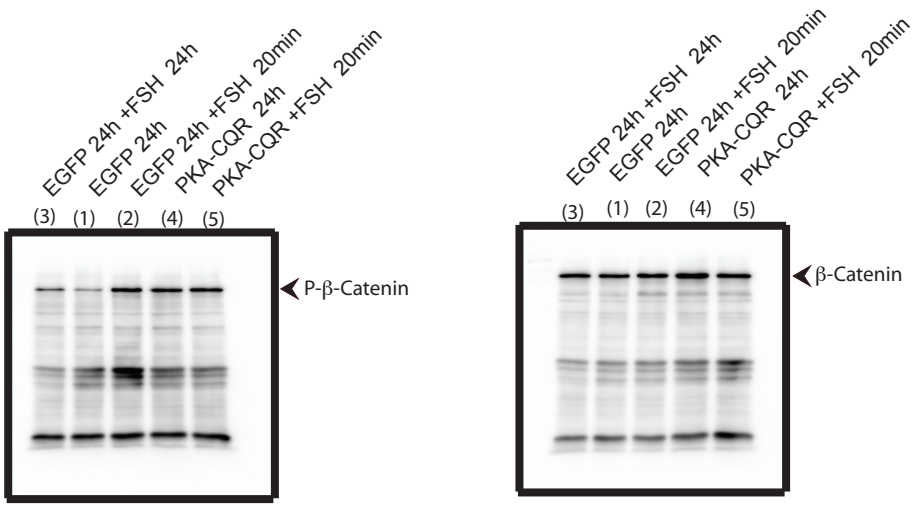
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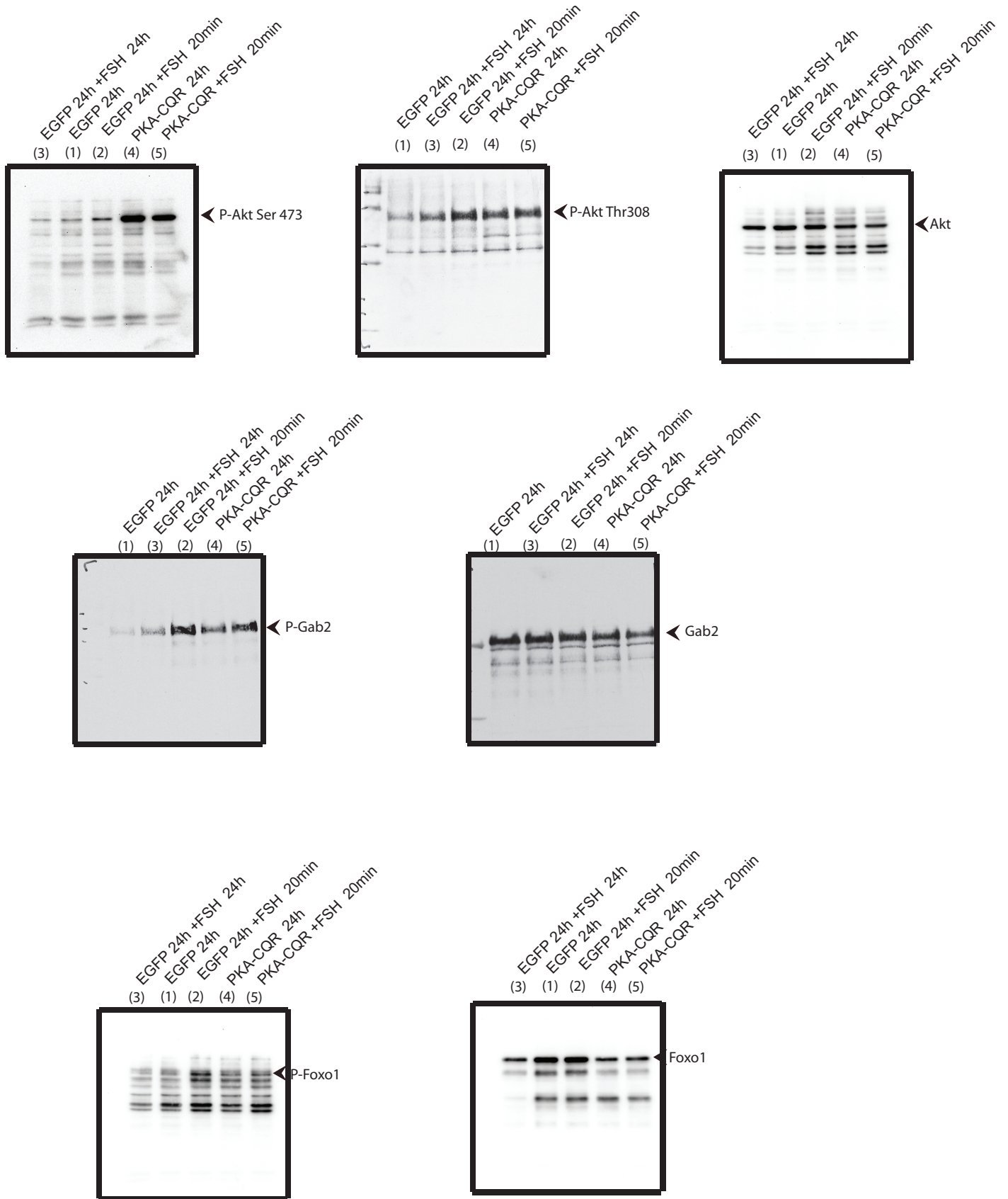
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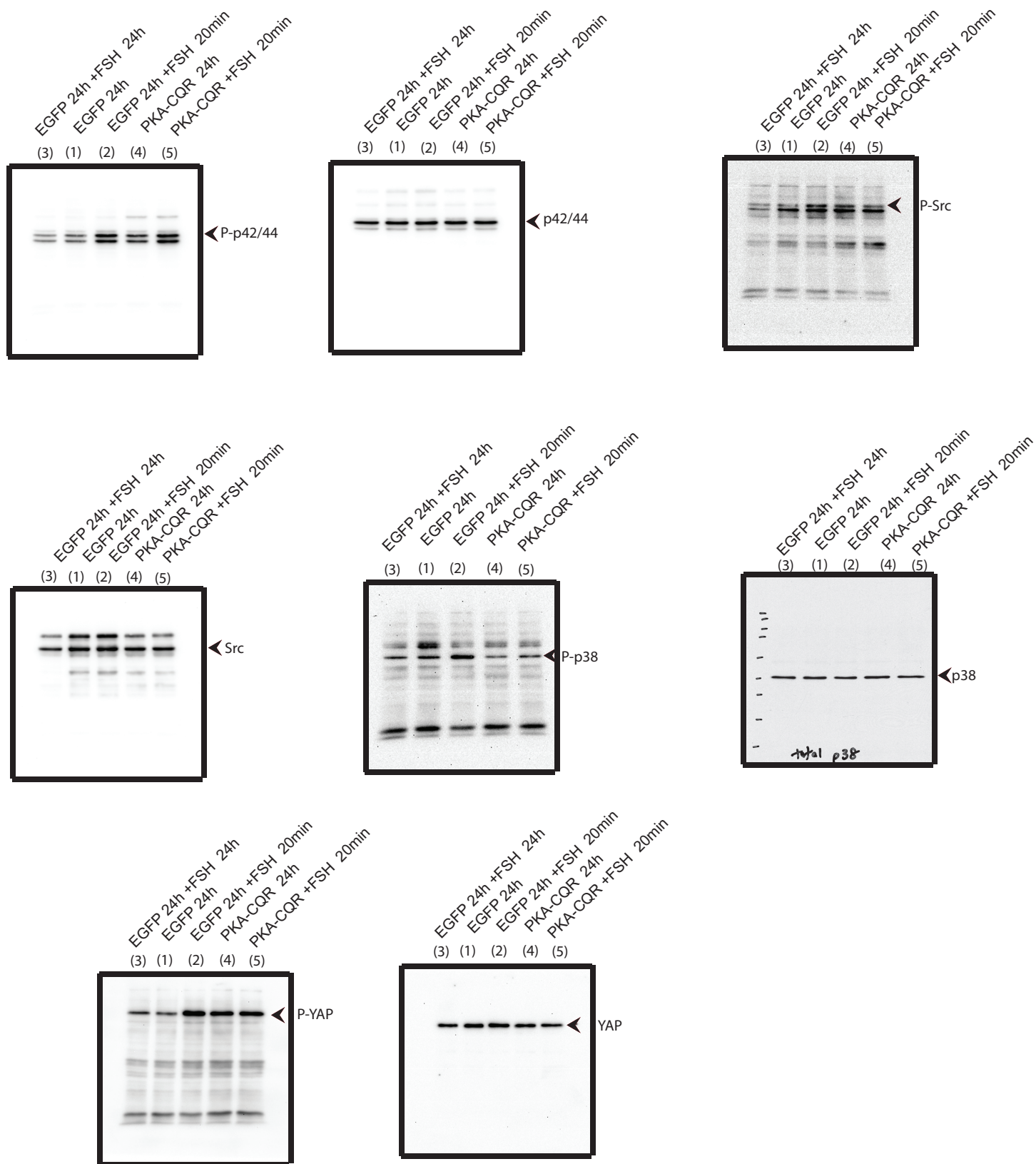
Supplementary Figure 1. Uncropped blots used in the construction of composite of Figure 1 in text. Numbers in parentheses correspond to lane identification numbers in Figure 1.



Supplementary Figure 2. Uncropped blots used in the construction of composite of Figure 2 in text. Numbers in parentheses correspond to lane identification numbers in Figure 2.



Supplementary Figure 3. Uncropped blots used in the construction of composite of Figure 3 in text. Numbers in parentheses correspond to lane identification numbers in Figure 3.



Supplementary Table S1. Transcripts increased or decreased > 2-fold by either FSH or PKA-CQR

ID	ENTREZ GENE NAME (Up-regulated Genes)	FSH/C	PKA-CQR/C	FSH/PKA
<i>scd1</i>	stearoyl-CoA desaturase (delta-9-desaturase)	18.184	2.005	9.07
<i>vcam1</i>	vascular cell adhesion molecule 1	8.652	1.734	4.99
<i>rgcc</i>	regulator of cell cycle	7.606	1.792	4.24
<i>a2m</i>	alpha-2-macroglobulin	5.191	1.440	3.60
RGD1565844	ring finger protein 138, retrogene 1	7.157	2.144	3.34
<i>tmem150c</i>	transmembrane protein 150C	4.956	1.495	3.32
<i>defb24</i>	defensin, beta 119	13.103	4.059	3.23
<i>nfe2</i>	nuclear factor, erythroid 2	12.116	3.947	3.07
<i>ttyh2</i>	tweety family member 2	5.340	1.884	2.83
<i>eml1</i>	echinoderm microtubule associated protein like 1	3.481	1.245	2.80
<i>folr1</i>	folate receptor 1 (adult)	4.255	1.545	2.75
<i>hamp</i>	hepcidin antimicrobial peptide	7.918	2.989	2.65
<i>g0s2</i>	G0/G1 switch 2	6.082	2.319	2.62
<i>slc6a6</i>	solute carrier family 6 (neurotransmitter transporter), member 6	7.040	2.703	2.60
<i>slc7a8</i>	solute carrier family 7 (amino acid transporter light chain, L system), member 8	3.694	1.425	2.59
<i>adamts9</i>	ADAM metalloproteinase with thrombospondin type 1 motif, 9	6.881	2.700	2.55
<i>cxcr4</i>	chemokine (C-X-C motif) receptor 4	13.944	5.487	2.54
<i>kcnq5</i>	potassium voltage-gated channel, KQT-like subfamily, member 5	3.356	1.328	2.53
<i>crisp1</i>	cysteine-rich secretory protein 1	2.931	1.195	2.45
<i>hla-dra</i>	major histocompatibility complex, class II, DR alpha	2.636	1.086	2.43
<i>s100b</i>	S100 calcium binding protein B	4.113	1.724	2.39
<i>chst1</i>	carbohydrate (keratan sulfate Gal-6) sulfotransferase 1	8.111	3.435	2.36
<i>rbm47</i>	RNA binding motif protein 47	13.385	5.716	2.34
<i>ccl2</i>	chemokine (C-C motif) ligand 2	2.507	1.079	2.32
<i>exoc3l2</i>	exocyst complex component 3-like 2	5.836	2.535	2.30
<i>rnf125</i>	ring finger protein 125, E3 ubiquitin protein ligase	2.216	0.964	2.30
<i>fdxr</i>	ferredoxin reductase	6.571	2.887	2.28
<i>pdlim4</i>	PDZ and LIM domain 4	2.952	1.304	2.26
<i>apln</i>	apelin	6.109	2.711	2.25
<i>orm1</i>	orosomuroid 1	2.583	1.149	2.25
<i>susd3</i>	sushi domain containing 3	4.260	1.912	2.23
<i>pla2g1b</i>	phospholipase A2, group IB (pancreas)	4.425	2.025	2.19
<i>abcc9</i>	ATP-binding cassette, sub-family C (CFTR/MRP), member 9	5.650	2.586	2.18
<i>bpifb6</i>	BPI fold containing family B, member 6	2.484	1.141	2.18
<i>cbr3</i>	carbonyl reductase 3	3.888	1.788	2.17
<i>gas7</i>	growth arrest-specific 7	2.669	1.232	2.17
<i>chrbn4</i>	cholinergic receptor, nicotinic, beta 4 (neuronal)	3.517	1.630	2.16
<i>scn1b</i>	sodium channel, voltage-gated, type I, beta subunit	2.220	1.042	2.13
<i>crabp2</i>	cellular retinoic acid binding protein 2	14.101	6.640	2.12
<i>hoga1</i>	4-hydroxy-2-oxoglutarate aldolase 1	2.366	1.120	2.11
<i>lamb3</i>	laminin, beta 3	3.334	1.590	2.10
<i>hsd11b1</i>	hydroxysteroid (11-beta) dehydrogenase 1	6.083	2.925	2.08
<i>st8sia5</i>	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 5	2.637	1.289	2.05
<i>cd74</i>	CD74 molecule, major histocompatibility complex, class II invariant chain	2.297	1.128	2.04
<i>tmem86a</i>	transmembrane protein 86A	11.081	5.558	1.99
<i>eppin</i>	EPPIN-WFDC6 readthrough	5.488	2.764	1.99
<i>tspan33</i>	tetraspanin 33	2.498	1.264	1.98
<i>fam195a</i>	family with sequence similarity 195, member A	4.862	2.469	1.97
<i>mt2a</i>	metallothionein 2A	4.664	2.372	1.97
<i>tm7sf2</i>	transmembrane 7 superfamily member 2	2.838	1.454	1.95

<i>kcnq1</i>	potassium voltage-gated channel, KQT-like subfamily, member 1	8.726	4.487	1.94
<i>sgk1</i>	serum/glucocorticoid regulated kinase 1	5.548	2.857	1.94
<i>cldn11</i>	claudin 11	5.075	2.641	1.92
<i>id4</i>	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein	6.183	3.227	1.92
<i>gprc5b</i>	G protein-coupled receptor, class C, group 5, member B	3.015	1.582	1.91
<i>reep1</i>	receptor accessory protein 1	2.299	1.212	1.90
<i>mmp19</i>	matrix metalloproteinase 19	3.000	1.585	1.89
<i>mro</i>	maestro	7.587	4.058	1.87
<i>tlcd1</i>	TLC domain containing 1	2.697	1.446	1.87
<i>mxra8</i>	matrix-remodelling associated 8	2.001	1.078	1.86
<i>cml1</i>	N-acetyltransferase 8B (GCN5-related, putative, gene/pseudogene)	3.006	1.642	1.83
<i>mvd</i>	mevalonate (diphospho) decarboxylase	2.847	1.557	1.83
<i>tmem178b</i>	transmembrane protein 178B	4.387	2.400	1.83
<i>nefh</i>	neurofilament, heavy polypeptide	3.218	1.764	1.82
<i>ubash3b</i>	ubiquitin associated and SH3 domain containing B	3.380	1.853	1.82
<i>dclk1</i>	doublecortin-like kinase 1	2.063	1.133	1.82
<i>ebp</i>	emopamil binding protein (sterol isomerase)	2.183	1.201	1.82
<i>rpp25</i>	ribonuclease P/MRP 25kDa subunit	4.116	2.265	1.82
RGD1308117	chromosome 8 open reading frame 58	2.787	1.535	1.82
<i>mrp</i>	melanocortin 2 receptor accessory protein	10.419	5.781	1.80
<i>gstm1</i>	glutathione S-transferase mu 5	2.711	1.505	1.80
<i>efnb1</i>	ephrin-B1	2.815	1.568	1.80
<i>gda</i>	guanine deaminase	2.452	1.367	1.79
RGD1305464	chromosome 15 open reading frame 39	3.814	2.128	1.79
<i>hopx</i>	HOP homeobox	2.164	1.211	1.79
<i>sgcg</i>	sarcoglycan, gamma (35kDa dystrophin-associated glycoprotein)	2.648	1.484	1.78
<i>n4bp2l1</i>	NEDD4 binding protein 2-like 1	2.471	1.385	1.78
<i>uhrf1bp1l</i>	UHRF1 binding protein 1-like	2.708	1.531	1.77
<i>agpat2</i>	1-acylglycerol-3-phosphate O-acyltransferase 2	2.131	1.205	1.77
<i>aacs</i>	acetoacetyl-CoA synthetase	2.264	1.285	1.76
<i>kcnq2</i>	potassium voltage-gated channel, subfamily G, member 2	3.097	1.760	1.76
<i>ppl</i>	periplakin	3.739	2.128	1.76
<i>nt5e</i>	5'-nucleotidase, ecto (CD73)	5.112	2.910	1.76
<i>sepp1</i>	selenoprotein P, plasma, 1	3.086	1.760	1.75
<i>ppm1l</i>	protein phosphatase, Mg2+/Mn2+ dependent, 1L	2.902	1.658	1.75
<i>cyp4f4</i>	cytochrome P450, family 4, subfamily F, polypeptide 8	3.229	1.848	1.75
<i>mafB</i>	v-maf avian musculoaponeurotic fibrosarcoma oncogene homolog B	2.823	1.620	1.74
<i>hpgd</i>	hydroxyprostaglandin dehydrogenase 15-(NAD)	4.152	2.390	1.74
<i>rora</i>	RAR-related orphan receptor A	2.148	1.240	1.73
<i>aox1</i>	aldehyde oxidase 1	3.590	2.075	1.73
<i>timp3</i>	TIMP metalloproteinase inhibitor 3	2.147	1.242	1.73
<i>neu2</i>	sialidase 2 (cytosolic sialidase)	2.078	1.209	1.72
<i>ddit4</i>	DNA-damage-inducible transcript 4	14.896	8.669	1.72
<i>sema6d</i>	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6D	3.443	2.005	1.72
<i>kcnt1</i>	potassium channel, subfamily T, member 1	3.137	1.830	1.71
<i>ptpn5</i>	protein tyrosine phosphatase, non-receptor type 5 (striatum-enriched)	2.148	1.255	1.71
<i>cmb1</i>	carboxymethylenebutenolidase homolog (Pseudomonas)	2.485	1.461	1.70
<i>nppc</i>	natriuretic peptide C	5.824	3.428	1.70
<i>aldh1l1</i>	aldehyde dehydrogenase 1 family, member L1	2.062	1.217	1.69
<i>gstm7</i>	glutathione S-transferase mu 2 (muscle)	4.114	2.430	1.69
<i>cbfa2t3</i>	core-binding factor, runt domain, alpha subunit 2; translocated to, 3	4.469	2.657	1.68
<i>klhdc8a</i>	kelch domain containing 8A	2.030	1.210	1.68
<i>fam110b</i>	family with sequence similarity 110, member B	2.023	1.206	1.68
<i>nr0b2</i>	nuclear receptor subfamily 0, group B, member 2	2.773	1.670	1.66
<i>id2</i>	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein	2.308	1.394	1.66
<i>entpd5</i>	ectonucleoside triphosphate diphosphohydrolase 5	2.082	1.264	1.65

<i>hsd11b2</i>	hydroxysteroid (11-beta) dehydrogenase 2	3.511	2.134	1.65
<i>cml5</i>	camello-like 5	6.102	3.712	1.64
<i>flvcr2</i>	feline leukemia virus subgroup C cellular receptor family, member 2	3.682	2.248	1.64
<i>notch1</i>	notch 1	2.266	1.384	1.64
<i>mir351</i>	microRNA 351	5.162	3.154	1.64
<i>pgap2</i>	post-GPI attachment to proteins 2	2.311	1.413	1.64
<i>fkbp5</i>	FK506 binding protein 5	2.821	1.726	1.63
<i>ass1</i>	argininosuccinate synthase 1	18.488	11.350	1.63
<i>enpp1</i>	ectonucleotide pyrophosphatase/phosphodiesterase 1	2.030	1.249	1.63
<i>unc79</i>	unc-79 homolog (C. elegans)	3.361	2.068	1.63
<i>upk1b</i>	uroplakin 1B	4.040	2.488	1.62
<i>map7d2</i>	MAP7 domain containing 2	2.419	1.495	1.62
<i>litaf</i>	lipopolysaccharide-induced TNF factor	4.049	2.503	1.62
<i>appbp2</i>	amyloid beta precursor protein (cytoplasmic tail) binding protein 2	2.389	1.477	1.62
<i>iqgap2</i>	IQ motif containing GTPase activating protein 2	2.149	1.333	1.61
<i>aldh3b1</i>	aldehyde dehydrogenase 3 family, member B1	2.085	1.295	1.61
<i>nqo1</i>	NAD(P)H dehydrogenase, quinone 1	3.117	1.942	1.61
<i>osgin1</i>	oxidative stress induced growth inhibitor 1	17.605	10.993	1.60
<i>rbks</i>	ribokinase	2.193	1.372	1.60
<i>dnajc15</i>	DnaJ (Hsp40) homolog, subfamily C, member 15	2.760	1.727	1.60
<i>clint1</i>	clathrin interactor 1	2.200	1.379	1.60
<i>mmd2</i>	monocyte to macrophage differentiation-associated 2	7.769	4.870	1.60
<i>tmem178a</i>	transmembrane protein 178A	5.522	3.466	1.59
<i>plac1</i>	placenta-specific 1	3.486	2.197	1.59
<i>adck3</i>	aarF domain containing kinase 3	2.212	1.398	1.58
<i>actr6</i>	ARP6 actin-related protein 6 homolog (yeast)	2.509	1.586	1.58
<i>b4galt6</i>	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 6	3.001	1.901	1.58
<i>rmdn2</i>	regulator of microtubule dynamics 2	4.980	3.157	1.58
<i>mob4</i>	MOB family member 4, phocein	3.052	1.947	1.57
<i>soat1</i>	sterol O-acyltransferase 1	2.585	1.650	1.57
<i>reep2</i>	receptor accessory protein 2	3.066	1.959	1.57
<i>inmt</i>	indolethylamine N-methyltransferase	24.402	15.640	1.56
<i>star</i>	steroidogenic acute regulatory protein	14.132	9.110	1.55
<i>parm1</i>	prostate androgen-regulated mucin-like protein 1	6.033	3.908	1.54
<i>ccdc69</i>	coiled-coil domain containing 69	2.997	1.942	1.54
<i>calml3</i>	calmodulin-like 3	10.546	6.842	1.54
<i>aldh2</i>	aldehyde dehydrogenase 2 family (mitochondrial)	2.422	1.574	1.54
<i>fbxo16</i>	F-box protein 16	2.169	1.412	1.54
<i>scara5</i>	scavenger receptor class A, member 5 (putative)	7.304	4.757	1.54
<i>dcxr</i>	dicarbonyl/L-xylulose reductase	2.411	1.580	1.53
<i>c1qtnf1</i>	C1q and tumor necrosis factor related protein 1	2.209	1.455	1.52
<i>pc</i>	pyruvate carboxylase	2.144	1.416	1.51
<i>rab3a</i>	RAB3A, member RAS oncogene family	2.218	1.466	1.51
<i>lss</i>	lanosterol synthase (2,3-oxidosqualene-lanosterol cyclase)	2.137	1.418	1.51
<i>gramd1b</i>	GRAM domain containing 1B	3.233	2.147	1.51
<i>fads2</i>	fatty acid desaturase 2	2.500	1.661	1.51
<i>wwp2</i>	WW domain containing E3 ubiquitin protein ligase 2	3.864	2.589	1.49
<i>fam69b</i>	family with sequence similarity 69, member B	2.165	1.452	1.49
<i>mvk</i>	mevalonate kinase	2.105	1.414	1.49
<i>fbxo2</i>	F-box protein 2	2.520	1.697	1.48
<i>hist1h4h</i>	histone cluster 1, H4h	2.604	1.754	1.48
<i>spin2a</i>	spindlin family, member 2C	2.648	1.790	1.48
<i>slfn3</i>	schlafen family member 12	3.289	2.224	1.48
<i>uxs1</i>	UDP-glucuronate decarboxylase 1	2.558	1.731	1.48
<i>nudt10</i>	nudix (nucleoside diphosphate linked moiety X)-type motif 11	2.172	1.473	1.47

<i>tfr</i>	transferrin receptor	2.526	1.717	1.47
<i>smco4</i>	single-pass membrane protein with coiled-coil domains 4	2.243	1.526	1.47
<i>ptplb</i>	protein tyrosine phosphatase-like (proline instead of catalytic arginine), member b	2.557	1.748	1.46
<i>sphk1</i>	sphingosine kinase 1	2.573	1.765	1.46
<i>slc16a6</i>	solute carrier family 16, member 6	3.632	2.496	1.46
<i>gal</i>	galanin/GMAP prepropeptide	5.008	3.444	1.45
<i>adam8</i>	ADAM metalloproteinase domain 8	2.013	1.388	1.45
RGD1563510	similar to RIKEN cDNA 8430427H17 gene	2.078	1.435	1.45
<i>ier5l</i>	immediate early response 5-like	2.020	1.397	1.45
<i>gsta3</i>	glutathione S-transferase alpha 3	2.531	1.754	1.44
<i>sbk1</i>	SH3 domain binding kinase 1	2.767	1.919	1.44
<i>mt3</i>	metallothionein 3	2.129	1.479	1.44
<i>abca1</i>	ATP-binding cassette, sub-family A (ABC1), member 1	2.262	1.573	1.44
<i>adam19</i>	ADAM metalloproteinase domain 19	2.779	1.940	1.43
<i>reep6</i>	receptor accessory protein 6	2.840	1.986	1.43
<i>xpnpep2</i>	X-prolyl aminopeptidase (aminopeptidase P) 2, membrane-bound	2.270	1.589	1.43
<i>clcf1</i>	cardiotrophin-like cytokine factor 1	3.609	2.536	1.42
<i>tgfb1</i>	transforming growth factor, beta-induced, 68kDa	3.860	2.714	1.42
<i>leprel4</i>	leprecan-like 4	2.001	1.416	1.41
<i>il18</i>	interleukin 18	4.042	2.864	1.41
<i>cyp11a1</i>	cytochrome P450, family 11, subfamily A, polypeptide 1	51.313	36.405	1.41
<i>gstm5</i>	glutathione S-transferase mu 3 (brain)	2.010	1.427	1.41
<i>fdft1</i>	farnesyl-diphosphate farnesyltransferase 1	2.826	2.007	1.41
<i>gale</i>	UDP-galactose-4-epimerase	2.500	1.780	1.40
<i>fam122b</i>	family with sequence similarity 122B	3.346	2.390	1.40
<i>gch1</i>	GTP cyclohydrolase 1	9.003	6.437	1.40
<i>aig1</i>	androgen-induced 1	2.156	1.542	1.40
<i>epha2</i>	EPH receptor A2	2.126	1.522	1.40
<i>galnt7</i>	polypeptide N-acetylgalactosaminyltransferase 7	2.126	1.524	1.40
<i>cgnl1</i>	cingulin-like 1	3.923	2.813	1.39
<i>id1</i>	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein	2.852	2.050	1.39
<i>phyh</i>	phytanoyl-CoA 2-hydroxylase	2.286	1.647	1.39
<i>mapkapk3</i>	mitogen-activated protein kinase-activated protein kinase 3	2.231	1.608	1.39
<i>gamt</i>	guanidinoacetate N-methyltransferase	2.016	1.454	1.39
<i>tsx</i>	testis specific X-linked gene	2.046	1.476	1.39
<i>irak2</i>	interleukin-1 receptor-associated kinase 2	3.532	2.552	1.38
<i>fuca1</i>	fucosidase, alpha-L- 1, tissue	2.441	1.764	1.38
<i>sfxn5</i>	sideroflexin 5	2.160	1.565	1.38
<i>baiap2</i>	BAI1-associated protein 2	2.618	1.897	1.38
<i>cotl1</i>	coactosin-like F-actin binding protein 1	11.008	7.983	1.38
<i>sh3tc2</i>	SH3 domain and tetratricopeptide repeats 2	2.066	1.499	1.38
<i>exoc3l1</i>	exocyst complex component 3-like 1	2.064	1.499	1.38
<i>lcn2</i>	lipocalin 2	3.111	2.261	1.38
<i>acs13</i>	acyl-CoA synthetase long-chain family member 3	2.137	1.562	1.37
LOC363060		2.175	1.591	1.37
<i>lpcat3</i>	lysophosphatidylcholine acyltransferase 3	2.488	1.823	1.36
<i>tekt1</i>	tektin 1	2.332	1.710	1.36
<i>dlgap1</i>	discs, large (Drosophila) homolog-associated protein 1	2.008	1.474	1.36
<i>bdh1</i>	3-hydroxybutyrate dehydrogenase, type 1	2.001	1.476	1.36
<i>anp32e</i>	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E	2.423	1.789	1.35
<i>msmo1</i>	methylsterol monooxygenase 1	2.020	1.493	1.35
<i>wipf3</i>	WAS/WASL interacting protein family, member 3	2.159	1.596	1.35
<i>slc25a1</i>	solute carrier family 25 (mitochondrial carrier, citrate transporter), member 1	2.099	1.553	1.35
<i>slc25a21</i>	solute carrier family 25 (mitochondrial oxoadipate carrier), member 21	4.359	3.226	1.35
<i>epb41l1</i>	erythrocyte membrane protein band 4.1-like 1	2.118	1.570	1.35
<i>il4r</i>	interleukin 4 receptor	2.260	1.677	1.35

<i>hpcal1</i>	hippocalcin-like 1	2.037	1.513	1.35
LOC688328		3.868	2.880	1.34
<i>msi2</i>	musashi RNA-binding protein 2	2.434	1.816	1.34
<i>scarb1</i>	scavenger receptor class B, member 1	25.153	18.772	1.34
<i>pcsk9</i>	proprotein convertase subtilisin/kexin type 9	2.150	1.608	1.34
<i>prlr</i>	prolactin receptor	5.444	4.084	1.33
<i>fam102a</i>	family with sequence similarity 102, member A	2.011	1.510	1.33
<i>cybb</i>	cytochrome b-245, beta polypeptide	2.988	2.255	1.33
<i>slc25a30</i>	solute carrier family 25, member 30	5.561	4.199	1.32
<i>dhcr7</i>	7-dehydrocholesterol reductase	2.860	2.163	1.32
<i>lmo2</i>	LIM domain only 2 (rhombotin-like 1)	2.919	2.208	1.32
<i>npas2</i>	neuronal PAS domain protein 2	7.096	5.368	1.32
<i>fhdc1</i>	FH2 domain containing 1	2.098	1.589	1.32
<i>cxcl12</i>	chemokine (C-X-C motif) ligand 12	2.444	1.855	1.32
<i>sod2</i>	superoxide dismutase 2, mitochondrial	2.733	2.080	1.31
<i>aadat</i>	aminoadipate aminotransferase	3.434	2.614	1.31
<i>acat2</i>	acetyl-CoA acetyltransferase 2	2.261	1.723	1.31
<i>nt5c3b</i>	5'-nucleotidase, cytosolic IIIB	2.008	1.536	1.31
<i>pla2g4a</i>	phospholipase A2, group IVA (cytosolic, calcium-dependent)	4.061	3.119	1.30
<i>cobl1</i>	cordon-bleu WH2 repeat protein-like 1	2.026	1.558	1.30
<i>isyna1</i>	inositol-3-phosphate synthase 1	3.369	2.592	1.30
<i>runx1</i>	runt-related transcription factor 1	3.459	2.687	1.29
<i>nkain3</i>	Na ⁺ /K ⁺ transporting ATPase interacting 3	2.071	1.610	1.29
<i>hspd1</i>	heat shock 60kDa protein 1 (chaperonin)	2.350	1.832	1.28
<i>reg3g</i>	regenerating islet-derived 3 gamma	2.437	1.900	1.28
<i>snapc1</i>	small nuclear RNA activating complex, polypeptide 1, 43kDa	2.097	1.639	1.28
<i>fasn</i>	fatty acid synthase	2.135	1.670	1.28
LOC100359971	hypothetical protein LOC100359971	2.309	1.810	1.28
<i>herpud1</i>	homocysteine-inducible, endoplasmic reticulum stress-inducible, ubiquitin-like domain member 1	2.329	1.827	1.27
LOC689176	similar to transmembrane protein 64	2.870	2.255	1.27
<i>dusp15</i>	dual specificity phosphatase 15	2.025	1.592	1.27
<i>abhd13</i>	abhydrolase domain containing 13	2.491	1.966	1.27
<i>srebf1</i>	sterol regulatory element binding transcription factor 1	2.277	1.800	1.27
<i>csdc2</i>	cold shock domain containing C2, RNA binding	2.501	1.982	1.26
<i>hmgcs1</i>	3-hydroxy-3-methylglutaryl-CoA synthase 1 (soluble)	2.232	1.769	1.26
<i>net1</i>	neuroepithelial cell transforming 1	3.361	2.669	1.26
<i>nfkbib</i>	nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, beta	2.052	1.631	1.26
<i>mfge8</i>	milk fat globule-EGF factor 8 protein	2.019	1.607	1.26
<i>lppr5</i>	lipid phosphate phosphatase-related protein type 5	2.399	1.917	1.25
<i>nr5a2</i>	nuclear receptor subfamily 5, group A, member 2	2.350	1.884	1.25
<i>hspe1</i>	heat shock 10kDa protein 1	2.340	1.887	1.24
<i>stard4</i>	StAR-related lipid transfer (START) domain containing 4	2.470	1.992	1.24
<i>plxnc1</i>	plexin C1	3.342	2.698	1.24
<i>sqle</i>	squalene epoxidase	2.423	1.960	1.24
<i>fzd8</i>	frizzled class receptor 8	2.156	1.745	1.24
<i>rnase4</i>	ribonuclease, RNase A family, 4	2.301	1.870	1.23
<i>nr1h3</i>	nuclear receptor subfamily 1, group H, member 3	2.440	1.983	1.23
<i>fam46c</i>	family with sequence similarity 46, member C	3.810	3.100	1.23
<i>filip1</i>	filamin A interacting protein 1	4.034	3.286	1.23
<i>etnk2</i>	ethanolamine kinase 2	3.136	2.556	1.23
<i>madd</i>	MAP-kinase activating death domain	2.099	1.733	1.21
<i>fam110c</i>	family with sequence similarity 110, member C	38.404	31.807	1.21
<i>micall2</i>	MICAL-like 2	2.848	2.372	1.20
<i>ptplad1</i>	protein tyrosine phosphatase-like A domain containing 1	3.308	2.757	1.20
<i>cx3cl1</i>	chemokine (C-X3-C motif) ligand 1	2.368	1.975	1.20
<i>efhd1</i>	EF-hand domain family, member D1	2.241	1.870	1.20

<i>gfpt2</i>	glutamine-fructose-6-phosphate transaminase 2	5.369	4.482	1.20
<i>creb3l1</i>	cAMP responsive element binding protein 3-like 1	3.667	3.069	1.19
<i>tns4</i>	tensin 4	2.418	2.037	1.19
<i>hist1h3h</i>	histone cluster 1, H3h	2.189	1.851	1.18
<i>por</i>	P450 (cytochrome) oxidoreductase	2.301	1.951	1.18
<i>map7</i>	microtubule-associated protein 7	2.234	1.903	1.17
<i>crispld2</i>	cysteine-rich secretory protein LCCL domain containing 2	2.445	2.092	1.17
<i>tle3</i>	transducin-like enhancer of split 3	2.114	1.814	1.17
<i>me2</i>	malic enzyme 2, NAD(+)-dependent, mitochondrial	2.240	1.927	1.16
<i>itga1</i>	integrin, alpha 1	2.164	1.866	1.16
<i>rasd1</i>	RAS, dexamethasone-induced 1	6.524	5.669	1.15
<i>ccl5</i>	chemokine (C-C motif) ligand 5	3.064	2.666	1.15
<i>nr5a1</i>	nuclear receptor subfamily 5, group A, member 1	2.356	2.051	1.15
<i>btbd11</i>	BTB (POZ) domain containing 11	3.000	2.622	1.14
<i>cyp51</i>	cytochrome P450, family 51, subfamily A, polypeptide 1	2.127	1.861	1.14
<i>cebpb</i>	CCAAT/enhancer binding protein (C/EBP), beta	2.020	1.769	1.14
<i>per1</i>	period circadian clock 1	2.143	1.880	1.14
<i>aldh1a3</i>	aldehyde dehydrogenase 1 family, member A3	3.873	3.404	1.14
<i>idi1</i>	isopentenyl-diphosphate delta isomerase 1	2.783	2.446	1.14
<i>phactr1</i>	phosphatase and actin regulator 1	2.074	1.833	1.13
<i>adipor2</i>	adiponectin receptor 2	2.157	1.908	1.13
<i>mageb16</i>	melanoma antigen family B, 16	3.454	3.058	1.13
<i>ifi27l2b</i>	interferon, alpha-inducible protein 27 like 2B	2.066	1.849	1.12
<i>hunk</i>	hormonally up-regulated Neu-associated kinase	2.361	2.123	1.11
<i>inhba</i>	inhibin, beta A	2.765	2.501	1.11
<i>fdx1</i>	ferredoxin 1	8.319	7.526	1.11
<i>sox18</i>	SRY (sex determining region Y)-box 18	2.920	2.642	1.11
<i>cd40</i>	CD40 molecule, TNF receptor superfamily member 5	2.343	2.126	1.10
<i>st3gal4</i>	ST3 beta-galactoside alpha-2,3-sialyltransferase 4	2.304	2.091	1.10
<i>alas1</i>	aminolevulinate, delta-, synthase 1	7.027	6.384	1.10
<i>rps6ka5</i>	ribosomal protein S6 kinase, polypeptide 5	2.513	2.286	1.10
<i>rasal1</i>	RAS protein activator like 1 (GAP1 like)	2.790	2.540	1.10
<i>brd8</i>	bromodomain containing 8	2.688	2.449	1.10
RGD1561113	chromosome 9 open reading frame 16	2.276	2.074	1.10
<i>hsd17b7</i>	hydroxysteroid (17-beta) dehydrogenase 7	2.841	2.592	1.10
<i>thrb</i>	thyroid hormone receptor, beta	2.248	2.051	1.10
<i>slc22a23</i>	solute carrier family 22, member 23	2.099	1.916	1.10
<i>bcat1</i>	branched chain amino-acid transaminase 1, cytosolic	2.378	2.190	1.09
<i>slc25a28</i>	solute carrier family 25 (mitochondrial iron transporter), member 28	2.002	1.857	1.08
<i>gde1</i>	glycerophosphodiester phosphodiesterase 1	2.363	2.206	1.07
<i>gclc</i>	glutamate-cysteine ligase, catalytic subunit	2.012	1.880	1.07
<i>tmem97</i>	transmembrane protein 97	2.471	2.309	1.07
<i>nabp1</i>	nucleic acid binding protein 1	2.047	1.914	1.07
<i>srxn1</i>	sulfiredoxin 1	3.015	2.850	1.06
<i>enc1</i>	ectodermal-neural cortex 1 (with BTB domain)	4.896	4.635	1.06
<i>ptgds</i>	prostaglandin D2 synthase 21kDa (brain)	13.259	12.594	1.05
<i>acsbg1</i>	acyl-CoA synthetase bubblegum family member 1	2.564	2.455	1.04
<i>lama4</i>	laminin, alpha 4	2.139	2.053	1.04
<i>ext1</i>	exostosin glycosyltransferase 1	2.166	2.079	1.04
<i>cxcr7</i>	atypical chemokine receptor 3	2.925	2.810	1.04
<i>nefm</i>	neurofilament, medium polypeptide	2.052	1.976	1.04
<i>hey2</i>	hes-related family bHLH transcription factor with YRPW motif 2	4.250	4.138	1.03
<i>gata4</i>	GATA binding protein 4	2.307	2.251	1.02
<i>inhbb</i>	inhibin, beta B	3.435	3.353	1.02
<i>inha</i>	inhibin, alpha	2.431	2.406	1.01
<i>pcdh18</i>	protocadherin 18	3.367	3.342	1.01

<i>prss35</i>	protease, serine, 35	2.147	2.134	1.01
<i>galnt6</i>	polypeptide N-acetylgalactosaminyltransferase 6	2.117	2.112	1.00
<i>egfr</i>	epidermal growth factor receptor	2.034	2.043	1.00
<i>gjb2</i>	gap junction protein, beta 2, 26kDa	6.820	6.872	0.99
<i>tmem45a</i>	transmembrane protein 45A	2.072	2.115	0.98
<i>fam43a</i>	family with sequence similarity 43, member A	2.016	2.069	0.97
<i>Orc1</i>	origin recognition complex, subunit 1	1.956	2.025	0.97
<i>car14</i>	carbonic anhydrase XIV	2.337	2.441	0.96
<i>kcne4</i>	potassium voltage-gated channel, Isk-related family, member 4	4.184	4.416	0.95
<i>giot1</i>	gonadotropin inducible ovarian transcription factor 1	5.711	6.072	0.94
<i>gdf11</i>	growth differentiation factor 11	1.931	2.057	0.94
LOC100910792	amphiphysin	3.053	3.299	0.93
<i>hsd17b1</i>	hydroxysteroid (17-beta) dehydrogenase 1	3.218	3.481	0.92
<i>rrm2</i>	ribonucleotide reductase M2	2.000	2.167	0.92
<i>oasl</i>	2'-5'-oligoadenylate synthetase-like	2.044	2.220	0.92
<i>cldn10</i>	claudin 10	7.175	7.800	0.92
<i>Ccrn4l</i>	CCR4 carbon catabolite repression 4-like (<i>S. cerevisiae</i>)	1.948	2.120	0.92
<i>vcan</i>	versican	2.053	2.238	0.92
<i>rgs2</i>	regulator of G-protein signaling 2, 24kDa	3.479	3.793	0.92
<i>Ccnd2</i>	cyclin D2	1.937	2.120	0.91
<i>clmp</i>	CXADR-like membrane protein	3.627	3.971	0.91
<i>dync1i1</i>	dynein, cytoplasmic 1, intermediate chain 1	2.344	2.579	0.91
<i>plau</i>	plasminogen activator, urokinase	2.244	2.475	0.91
<i>chst2</i>	carbohydrate (N-acetylglucosamine-6-O) sulfotransferase 2	2.577	2.901	0.89
<i>grk5</i>	G protein-coupled receptor kinase 5	3.056	3.476	0.88
<i>dyrk3</i>	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 3	2.627	3.031	0.87
<i>sik1</i>	salt inducible kinase 1	2.248	2.598	0.87
<i>chst8</i>	carbohydrate (N-acetylgalactosamine 4-O) sulfotransferase 8	3.028	3.533	0.86
<i>cthrc1</i>	collagen triple helix repeat containing 1	2.053	2.411	0.85
<i>dcaf12</i>	DDB1 and CUL4 associated factor 12-like 1	2.065	2.431	0.85
<i>ihh</i>	indian hedgehog	2.363	2.808	0.84
<i>crem</i>	cAMP responsive element modulator	3.300	3.966	0.83
<i>kif22</i>	kinesin family member 22	2.172	2.615	0.83
<i>Prkcb</i>	protein kinase C, beta	1.694	2.050	0.83
<i>nup62cl</i>	nucleoporin 62 C-terminal like	3.255	4.009	0.81
<i>Clc3</i>	chloride intracellular channel 3	1.819	2.243	0.81
<i>asphd2</i>	aspartate beta-hydroxylase domain containing 2	2.329	2.880	0.81
<i>Plekhd1</i>	pleckstrin homology domain containing, family D (with coiled-coil domains) member 1	1.812	2.249	0.81
<i>nr4a1</i>	nuclear receptor subfamily 4, group A, member 1	3.114	3.869	0.80
<i>Msh2</i>	mutS homolog 2	1.612	2.030	0.79
<i>Cd55</i>	CD55 molecule, decay accelerating factor for complement (Cromer blood group)	1.978	2.513	0.79
<i>gmn</i>	geminin, DNA replication inhibitor	3.456	4.518	0.76
<i>Ns5atp9</i>	KIAA0101	1.707	2.234	0.76
<i>Kif20a</i>	kinesin family member 20A	1.991	2.615	0.76
<i>cxcl13</i>	chemokine (C-X-C motif) ligand 13	2.773	3.655	0.76
<i>Pde4d</i>	phosphodiesterase 4D, cAMP-specific	1.838	2.435	0.75
<i>ephb3</i>	EPH receptor B3	2.641	3.552	0.74
<i>Angptl1</i>	angiopoietin-like 1	1.862	2.509	0.74
<i>osgin2</i>	oxidative stress induced growth inhibitor family member 2	5.898	8.088	0.73
<i>E2f8</i>	E2F transcription factor 8	1.500	2.062	0.73
<i>Cdt1</i>	chromatin licensing and DNA replication factor 1	1.569	2.196	0.71
<i>Isg15</i>	ISG15 ubiquitin-like modifier	1.527	2.189	0.70
<i>sult1b1</i>	sulfotransferase family, cytosolic, 1B, member 1	8.839	12.683	0.70
<i>lhcr</i>	luteinizing hormone/choriogonadotropin receptor	27.986	41.788	0.67
<i>Ednrb</i>	endothelin receptor type B	1.333	2.018	0.66

<i>grem2</i>	gremlin 2, DAN family BMP antagonist	3.198	4.890	0.65
<i>tnfaip6</i>	tumor necrosis factor, alpha-induced protein 6	30.148	46.638	0.65
<i>cftr</i>	cystic fibrosis transmembrane conductance regulator (ATP-binding cassette sub-family C, member 7)	2.248	3.484	0.65
<i>plat</i>	plasminogen activator, tissue	4.737	7.353	0.64
<i>Dio2</i>	deiodinase, iodothyronine, type II	1.389	2.179	0.64
<i>pde4b</i>	phosphodiesterase 4B, cAMP-specific	17.981	28.364	0.63
<i>Snap25</i>	synaptosomal-associated protein 25Kda	1.601	2.574	0.62
<i>Plk2</i>	polo-like kinase 2	1.446	2.335	0.62
<i>Sord</i>	sorbitol dehydrogenase	1.659	2.918	0.57
<i>adcyap1</i>	adenylate cyclase activating polypeptide 1 (pituitary)	2.964	5.229	0.57
<i>Car2</i>	carbonic anhydrase II	1.374	2.551	0.54
<i>Tmem252</i>	transmembrane protein 252	1.505	2.811	0.54
<i>cyp19a1</i>	cytochrome P450, family 19, subfamily A, polypeptide 1	29.441	59.709	0.49
<i>nap1l5</i>	nucleosome assembly protein 1-like 5	8.370	17.313	0.48
<i>Slc7a11</i>	solute carrier family 7, member 11	1.337	2.896	0.46
<i>Havcr1</i>	hepatitis A virus cellular receptor 1	0.947	2.095	0.45
<i>Nr4a3</i>	nuclear receptor subfamily 4, group A, member 3	1.805	4.200	0.43
<i>Cga</i>	glycoprotein hormones, alpha polypeptide	1.807	4.397	0.41
<i>Npy1r</i>	neuropeptide Y receptor Y1	1.973	4.826	0.41
<i>Pgr</i>	progesterone receptor	1.745	4.295	0.41
<i>akr1b8</i>	aldo-keto reductase family 1, member B10 (aldose reductase)	3.179	7.965	0.40
<i>fabp5</i>	fatty acid binding protein 5 (psoriasis-associated)	2.571	6.452	0.40
<i>Rgs1</i>	regulator of G-protein signaling 1	1.335	3.413	0.39
<i>ptgs2</i>	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	12.770	35.200	0.36
<i>scd</i>	stearoyl-Coenzyme A desaturase 2	2.132	5.995	0.36
<i>ereg</i>	epiregulin	5.369	18.101	0.30
<i>gja5</i>	gap junction protein, alpha 5, 40kDa	4.663	16.257	0.29
<i>areg</i>	amphiregulin	3.572	13.836	0.26
ID	ENTREZ GENE NAME (Down-regulated Genes)	C /FSH	C/PKA-CQR	FSH/PKA
<i>pamr1</i>	peptidase domain containing associated with muscle regeneration 1	-49.126	-3.030	0.06
<i>tnfrsf11b</i>	tumor necrosis factor receptor superfamily, member 11b	-65.433	-5.059	0.08
<i>fam65b</i>	family with sequence similarity 65, member B	-27.998	-3.010	0.11
<i>anpep</i>	alanyl (membrane) aminopeptidase	-20.897	-2.373	0.11
<i>rcan2</i>	regulator of calcineurin 2	-10.057	-1.242	0.12
<i>adamts5</i>	ADAM metalloproteinase with thrombospondin type 1 motif, 5	-17.976	-2.284	0.13
<i>agtr2</i>	angiotensin II receptor, type 2	-32.295	-4.116	0.13
<i>aspn</i>	asporin	-21.456	-2.862	0.13
<i>arhgap6</i>	Rho GTPase activating protein 6	-14.076	-2.005	0.14
<i>lox</i>	lysyl oxidase	-12.061	-1.825	0.15
<i>pdlim3</i>	PDZ and LIM domain 3	-21.345	-3.725	0.17
<i>agtr1a</i>	angiotensin II receptor, type 1	-21.200	-4.450	0.21
<i>lmcd1</i>	LIM and cysteine-rich domains 1	-19.922	-4.417	0.22
<i>cdh11</i>	cadherin 11, type 2, OB-cadherin (osteoblast)	-19.393	-4.352	0.22
<i>nov</i>	nephroblastoma overexpressed	-7.104	-1.633	0.23
<i>mfap5</i>	microfibrillar associated protein 5	-9.731	-2.253	0.23
<i>zcchc18</i>	zinc finger, CCHC domain containing 18	-6.376	-1.528	0.24
<i>fn1</i>	fibronectin 1	-10.737	-2.597	0.24
<i>p4ha3</i>	prolyl 4-hydroxylase, alpha polypeptide III	-20.228	-4.969	0.25
<i>cdo1</i>	cysteine dioxygenase type 1	-12.258	-3.078	0.25
<i>tagln</i>	transgelin	-15.064	-3.866	0.26
<i>ifitm1</i>	interferon induced transmembrane protein 1	-8.250	-2.119	0.26
<i>sybu</i>	syntabulin (syntaxin-interacting)	-5.469	-1.415	0.26
<i>cyp26b1</i>	cytochrome P450, family 26, subfamily B, polypeptide 1	-6.693	-1.769	0.26
<i>klf5</i>	Kruppel-like factor 5 (intestinal)	-15.351	-4.086	0.27

<i>pdk4</i>	pyruvate dehydrogenase kinase, isozyme 4	-10.918	-2.924	0.27
<i>col11a1</i>	collagen, type XI, alpha 1	-5.845	-1.588	0.27
<i>pcdh19</i>	protocadherin 19	-3.469	-0.973	0.28
<i>bdnf</i>	brain-derived neurotrophic factor	-13.213	-3.779	0.29
<i>dkk3</i>	dickkopf WNT signaling pathway inhibitor 3	-6.044	-1.739	0.29
<i>rassf4</i>	Ras association (RalGDS/AF-6) domain family member 4	-5.787	-1.725	0.30
<i>lrrfip1</i>	leucine rich repeat (in FLII) interacting protein 1	-6.875	-2.067	0.30
<i>nr0b1</i>	nuclear receptor subfamily 0, group B, member 1	-5.932	-1.829	0.31
<i>xdh</i>	xanthine dehydrogenase	-6.348	-2.008	0.32
<i>scn4b</i>	sodium channel, voltage-gated, type IV, beta subunit	-2.607	-0.848	0.33
<i>nxn12</i>	nucleoredoxin-like 2	-3.471	-1.137	0.33
<i>ptges</i>	prostaglandin E synthase	-2.902	-0.957	0.33
<i>rapgef5</i>	Rap guanine nucleotide exchange factor (GEF) 5	-4.450	-1.475	0.33
<i>hrct1</i>	histidine rich carboxyl terminus 1	-5.601	-1.873	0.33
<i>cyr61</i>	cysteine-rich, angiogenic inducer, 61	-10.668	-3.617	0.34
<i>spon1</i>	spondin 1, extracellular matrix protein	-2.552	-0.877	0.34
<i>sorbs1</i>	sorbin and SH3 domain containing 1	-10.278	-3.581	0.35
<i>popdc2</i>	popeye domain containing 2	-7.931	-2.778	0.35
<i>kcnk2</i>	potassium channel, subfamily K, member 2	-4.033	-1.429	0.35
<i>lims2</i>	LIM and senescent cell antigen-like domains 2	-18.396	-6.532	0.36
<i>sytl2</i>	synaptotagmin-like 2	-7.234	-2.605	0.36
<i>fry</i>	furry homolog (Drosophila)	-3.380	-1.221	0.36
<i>ehd4</i>	EH-domain containing 4	-6.173	-2.251	0.36
<i>atoh8</i>	atonal homolog 8 (Drosophila)	-4.205	-1.541	0.37
<i>lhfp</i>	lipoma HMGIC fusion partner	-6.795	-2.493	0.37
<i>irx3</i>	iroquois homeobox 3	-4.883	-1.804	0.37
<i>cidea</i>	cell death-inducing DFFA-like effector a	-4.669	-1.728	0.37
<i>mcam</i>	melanoma cell adhesion molecule	-5.335	-1.980	0.37
<i>fgf18</i>	fibroblast growth factor 18	-5.195	-1.952	0.38
<i>filip1l</i>	filamin A interacting protein 1-like	-4.738	-1.809	0.38
<i>cav2</i>	caveolin 2	-10.074	-3.858	0.38
<i>fam181b</i>	family with sequence similarity 181, member B	-3.585	-1.373	0.38
<i>ydjc</i>	YdjC homolog (bacterial)	-6.100	-2.340	0.38
<i>tex14</i>	testis expressed 14	-5.622	-2.161	0.38
<i>coch</i>	cochlin	-3.618	-1.394	0.39
<i>limch1</i>	LIM and calponin homology domains 1	-2.766	-1.067	0.39
<i>tgfb2</i>	transforming growth factor, beta 2	-7.033	-2.714	0.39
<i>serping1</i>	serpin peptidase inhibitor, clade G (C1 inhibitor), member 1	-6.239	-2.418	0.39
<i>nid1</i>	nidogen 1	-5.972	-2.331	0.39
<i>dcn</i>	decorin	-4.563	-1.790	0.39
<i>ptplad2</i>	protein tyrosine phosphatase-like A domain containing 2	-4.295	-1.688	0.39
<i>meox2</i>	mesenchyme homeobox 2	-12.977	-5.140	0.40
<i>cdc42ep3</i>	CDC42 effector protein (Rho GTPase binding) 3	-8.467	-3.366	0.40
<i>spp1</i>	secreted phosphoprotein 1	-5.676	-2.270	0.40
<i>mgp</i>	matrix Gla protein	-2.850	-1.143	0.40
<i>pgm2l1</i>	phosphoglucomutase 2-like 1	-4.461	-1.795	0.40
<i>ptger3</i>	prostaglandin E receptor 3 (subtype EP3)	-5.398	-2.175	0.40
<i>angpt2</i>	angiopoietin 2	-4.724	-1.928	0.41
<i>rnf182</i>	ring finger protein 182	-4.836	-2.007	0.42
<i>hook1</i>	hook microtubule-tethering protein 1	-3.315	-1.377	0.42
<i>cav1</i>	caveolin 1, caveolae protein, 22kDa	-6.089	-2.559	0.42
<i>cbln1</i>	cerebellin 1 precursor	-2.534	-1.072	0.42
<i>cald1</i>	caldesmon 1	-9.697	-4.145	0.43
<i>htra2</i>	HtrA serine peptidase 2	-2.502	-1.075	0.43
<i>crim1</i>	cysteine rich transmembrane BMP regulator 1 (chordin-like)	-4.597	-1.986	0.43

<i>slc16a7</i>	solute carrier family 16 (monocarboxylate transporter), member 7	-4.587	-1.990	0.43
<i>arnt2</i>	aryl-hydrocarbon receptor nuclear translocator 2	-5.966	-2.657	0.45
<i>lpar1</i>	lysophosphatidic acid receptor 1	-6.300	-2.811	0.45
<i>otud1</i>	OTU deubiquitinase 1	-5.878	-2.627	0.45
<i>clu</i>	clusterin	-3.626	-1.622	0.45
<i>akap12</i>	A kinase (PRKA) anchor protein 12	-7.955	-3.566	0.45
<i>rgma</i>	repulsive guidance molecule family member a	-3.307	-1.483	0.45
<i>tspan8</i>	tetraspanin 8	-6.199	-2.781	0.45
<i>apcdd1</i>	adenomatosis polyposis coli down-regulated 1	-3.312	-1.488	0.45
<i>adm</i>	adrenomedullin	-8.220	-3.713	0.45
<i>tdrd7</i>	tudor domain containing 7	-4.721	-2.140	0.45
<i>ryr2</i>	ryanodine receptor 2 (cardiac)	-3.291	-1.497	0.45
<i>tfcp2l1</i>	transcription factor CP2-like 1	-3.378	-1.541	0.46
<i>kif23</i>	kinesin family member 23	-2.322	-1.077	0.46
<i>runx1t1</i>	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)	-8.384	-3.889	0.46
<i>ets1</i>	v-ets avian erythroblastosis virus E26 oncogene homolog 1	-6.238	-2.916	0.47
<i>serpinf1</i>	serpin peptidase inhibitor, clade F (alpha-2 antiplasmin, pigment epithelium derived factor), member 1	-2.396	-1.121	0.47
<i>ppp1r3c</i>	protein phosphatase 1, regulatory subunit 3C	-4.658	-2.198	0.47
<i>pik3ip1</i>	phosphoinositide-3-kinase interacting protein 1	-3.485	-1.647	0.47
<i>sqrdl</i>	sulfide quinone reductase-like (yeast)	-4.214	-1.992	0.47
<i>kcnab1</i>	potassium voltage-gated channel, shaker-related subfamily, beta member 1	-2.198	-1.046	0.48
<i>procr</i>	protein C receptor, endothelial	-2.237	-1.067	0.48
<i>prss23</i>	protease, serine, 23	-2.927	-1.398	0.48
<i>pawr</i>	PRKC, apoptosis, WT1, regulator	-3.825	-1.827	0.48
LOC100363275	G protein-coupled receptor 124	-3.091	-1.477	0.48
<i>sspn</i>	sarcospan	-3.604	-1.749	0.49
<i>ccdc3</i>	coiled-coil domain containing 3	-3.125	-1.519	0.49
<i>me3</i>	malic enzyme 3, NADP(+)-dependent, mitochondrial	-3.184	-1.550	0.49
<i>fam84a</i>	family with sequence similarity 84, member A	-4.677	-2.277	0.49
<i>ppp1r14a</i>	protein phosphatase 1, regulatory (inhibitor) subunit 14A	-2.903	-1.422	0.49
<i>mid1</i>	midline 1 (Opitz/BBB syndrome)	-4.857	-2.393	0.49
<i>got1l1</i>	glutamic-oxaloacetic transaminase 1-like 1	-3.667	-1.820	0.50
<i>dmd</i>	dystrophin	-2.047	-1.026	0.50
<i>kcnk6</i>	potassium channel, subfamily K, member 6	-4.185	-2.121	0.51
<i>hbq1b</i>	hemoglobin, theta 1	-2.573	-1.305	0.51
<i>diaph3</i>	diaphanous-related formin 3	-2.639	-1.340	0.51
<i>wwc2</i>	WW and C2 domain containing 2	-2.573	-1.309	0.51
<i>mcart1l</i>	solute carrier family 25, member 53	-2.260	-1.157	0.51
RGD1561724	similar to mKIAA0716 protein	-3.249	-1.665	0.51
<i>cys1</i>	cystin 1	-3.078	-1.592	0.52
LOC685067	guanylate binding protein 7	-2.432	-1.269	0.52
<i>cdc42ep2</i>	CDC42 effector protein (Rho GTPase binding) 2	-3.087	-1.621	0.53
<i>sik2</i>	salt-inducible kinase 2	-2.713	-1.425	0.53
<i>vwa1</i>	von Willebrand factor A domain containing 1	-3.322	-1.747	0.53
<i>cd83</i>	CD83 molecule	-4.058	-2.136	0.53
<i>slco3a1</i>	solute carrier organic anion transporter family, member 3A1	-2.402	-1.266	0.53
<i>omd</i>	osteomodulin	-2.276	-1.212	0.53
<i>myo1d</i>	myosin ID	-3.516	-1.874	0.53
<i>mboat1</i>	membrane bound O-acyltransferase domain containing 1	-3.174	-1.695	0.53
<i>fam46a</i>	family with sequence similarity 46, member A	-3.008	-1.613	0.54
<i>calhm2</i>	calcium homeostasis modulator 2	-3.571	-1.917	0.54
<i>rbpms</i>	RNA binding protein with multiple splicing	-3.166	-1.705	0.54
<i>ccdc109b</i>	coiled-coil domain containing 109B	-2.324	-1.254	0.54
<i>cspg4</i>	chondroitin sulfate proteoglycan 4	-2.224	-1.201	0.54
<i>st6galnac3</i>	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-	-3.612	-1.952	0.54

	sialyltransferase 3			
<i>col4a4</i>	collagen, type IV, alpha 4	-4.166	-2.262	0.54
<i>ccdc141</i>	coiled-coil domain containing 141	-3.960	-2.152	0.54
<i>tnc</i>	tenascin C	-4.489	-2.440	0.54
<i>rhobtb1</i>	Rho-related BTB domain containing 1	-3.081	-1.679	0.54
<i>lipa</i>	lipase A, lysosomal acid, cholesterol esterase	-2.505	-1.367	0.55
<i>setdb2</i>	SET domain, bifurcated 2	-2.999	-1.637	0.55
<i>sipa1l2</i>	signal-induced proliferation-associated 1 like 2	-2.509	-1.377	0.55
<i>kcnma1</i>	potassium large conductance calcium-activated channel, subfamily M, alpha member 1	-2.723	-1.496	0.55
<i>col14a1</i>	collagen, type XIV, alpha 1	-2.995	-1.646	0.55
<i>wipf1</i>	WAS/WASL interacting protein family, member 1	-3.311	-1.826	0.55
<i>ankrd28</i>	ankyrin repeat domain 28	-2.874	-1.586	0.55
<i>tgfb1i1</i>	transforming growth factor beta 1 induced transcript 1	-3.733	-2.065	0.55
<i>b3gnt5</i>	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 5	-4.080	-2.259	0.55
<i>cxadr</i>	coxsackie virus and adenovirus receptor	-2.276	-1.262	0.55
<i>metrnl</i>	meteorin, glial cell differentiation regulator-like	-2.594	-1.440	0.56
LOC100909788	uncharacterized LOC100909788	-2.344	-1.303	0.56
<i>lpar6</i>	lysophosphatidic acid receptor 6	-3.551	-1.981	0.56
<i>nrg1</i>	neuregulin 1	-3.469	-1.943	0.56
<i>rimklb</i>	ribosomal modification protein rimK-like family member B	-3.498	-1.962	0.56
<i>pcdh20</i>	protocadherin 20	-3.644	-2.048	0.56
RGD1562284	glutaminyl-peptide cyclotransferase	-2.841	-1.598	0.56
<i>dab2</i>	Dab, mitogen-responsive phosphoprotein, homolog 2 (Drosophila)	-2.880	-1.625	0.56
<i>zfp608</i>	zinc finger protein 608	-4.445	-2.522	0.57
LOC361016	chromosome 3 open reading frame 67	-2.404	-1.364	0.57
RGD1309651	chromosome 16 open reading frame 74	-2.015	-1.145	0.57
<i>gcom1</i>	myocardial zonula adherens protein	-4.054	-2.310	0.57
<i>col3a1</i>	collagen, type III, alpha 1	-3.681	-2.099	0.57
<i>lgals8</i>	lectin, galactoside-binding, soluble, 8	-3.395	-1.940	0.57
<i>esyt1</i>	extended synaptotagmin-like protein 1	-2.804	-1.604	0.57
<i>fads3</i>	fatty acid desaturase 3	-3.330	-1.908	0.57
<i>inadl</i>	InaD-like (Drosophila)	-3.403	-1.952	0.57
<i>tmem140</i>	transmembrane protein 140	-2.960	-1.699	0.57
<i>fabp3</i>	fatty acid binding protein 3, muscle and heart (mammary-derived growth inhibitor)	-2.521	-1.448	0.57
<i>hs6st1</i>	heparan sulfate 6-O-sulfotransferase 1	-2.425	-1.401	0.58
<i>tpm1</i>	tropomyosin 1, alpha	-4.671	-2.700	0.58
<i>akap5</i>	A kinase (PRKA) anchor protein 5	-5.740	-3.319	0.58
<i>faxdc2</i>	fatty acid hydroxylase domain containing 2	-2.376	-1.375	0.58
<i>ptprd</i>	protein tyrosine phosphatase, receptor type, D	-2.275	-1.318	0.58
<i>tubb2b</i>	tubulin, beta 2B class IIb	-3.081	-1.787	0.58
<i>itpr1</i>	inositol 1,4,5-trisphosphate receptor, type 1	-2.330	-1.352	0.58
LOC100910319	uncharacterized LOC100910319	-4.831	-2.804	0.58
<i>rasl11b</i>	RAS-like, family 11, member B	-2.036	-1.182	0.58
<i>ptprk</i>	protein tyrosine phosphatase, receptor type, K	-2.245	-1.313	0.58
<i>klhdc8b</i>	kelch domain containing 8B	-2.798	-1.637	0.59
<i>rbms3</i>	RNA binding motif, single stranded interacting protein 3	-2.890	-1.691	0.59
<i>six4</i>	SIX homeobox 4	-4.106	-2.408	0.59
<i>stc1</i>	stanniocalcin 1	-6.415	-3.765	0.59
<i>cd9</i>	CD9 molecule	-2.155	-1.267	0.59
<i>fgl2</i>	fibrinogen-like 2	-2.920	-1.717	0.59
<i>plxdc2</i>	plexin domain containing 2	-2.909	-1.711	0.59
<i>foxp2</i>	forkhead box P2	-3.065	-1.805	0.59
<i>arhgef25</i>	Rho guanine nucleotide exchange factor (GEF) 25	-3.027	-1.784	0.59
<i>pkp2</i>	plakophilin 2	-2.840	-1.677	0.59
<i>fam101b</i>	family with sequence similarity 101, member B	-2.640	-1.561	0.59
<i>slc24a3</i>	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3	-2.815	-1.669	0.59

<i>slc31a2</i>	solute carrier family 31 (copper transporter), member 2	-2.808	-1.669	0.59
LOC689770	C-type lectin domain family 2, member D	-3.265	-1.943	0.60
<i>gpm6a</i>	glycoprotein M6A	-2.061	-1.229	0.60
<i>rell1</i>	RELT-like 1	-2.236	-1.335	0.60
<i>ppap2b</i>	phosphatidic acid phosphatase type 2B	-3.764	-2.248	0.60
<i>car3</i>	carbonic anhydrase III, muscle specific	-10.956	-6.545	0.60
<i>bmp4</i>	bone morphogenetic protein 4	-5.959	-3.562	0.60
<i>ppp2r1b</i>	protein phosphatase 2, regulatory subunit A, beta	-2.440	-1.462	0.60
<i>trim47</i>	tripartite motif containing 47	-2.478	-1.490	0.60
<i>fhl2</i>	four and a half LIM domains 2	-3.512	-2.114	0.60
<i>phex</i>	phosphate regulating endopeptidase homolog, X-linked	-2.726	-1.642	0.60
<i>s1pr2</i>	sphingosine-1-phosphate receptor 2	-2.887	-1.741	0.60
LOC100911506	uncharacterized LOC100911506	-2.612	-1.578	0.60
<i>arhgef26</i>	Rho guanine nucleotide exchange factor (GEF) 26	-3.018	-1.825	0.60
<i>spink8</i>	serine peptidase inhibitor, Kazal type 8 (putative)	-11.814	-7.174	0.61
<i>pam</i>	peptidylglycine alpha-amidating monooxygenase	-2.200	-1.339	0.61
<i>reln</i>	reelin	-2.272	-1.383	0.61
<i>cebpd</i>	CCAAT/enhancer binding protein (C/EBP), delta	-4.080	-2.486	0.61
<i>slc2a13</i>	solute carrier family 2 (facilitated glucose transporter), member 13	-2.445	-1.497	0.61
<i>cobl</i>	cordon-bleu WH2 repeat protein	-2.554	-1.565	0.61
<i>jdp2</i>	Jun dimerization protein 2	-2.151	-1.326	0.62
<i>ddah1</i>	dimethylarginine dimethylaminohydrolase 1	-2.323	-1.435	0.62
<i>tmeff1</i>	transmembrane protein with EGF-like and two follistatin-like domains 1	-3.238	-2.004	0.62
<i>sh3bp4</i>	SH3-domain binding protein 4	-2.541	-1.574	0.62
LOC100912462	uncharacterized LOC100912462	-3.001	-1.859	0.62
<i>amotl2</i>	angiomin like 2	-2.691	-1.668	0.62
<i>pip4k2a</i>	phosphatidylinositol-5-phosphate 4-kinase, type II, alpha	-2.657	-1.647	0.62
<i>cpq</i>	carboxypeptidase Q	-2.753	-1.707	0.62
<i>scn1a</i>	sodium channel, voltage-gated, type I, alpha subunit	-2.508	-1.556	0.62
<i>rhoj</i>	ras homolog family member J	-2.102	-1.307	0.62
<i>ramp1</i>	receptor (G protein-coupled) activity modifying protein 1	-2.386	-1.484	0.62
LOC684173	TNF receptor-associated factor 5	-3.430	-2.137	0.62
<i>gca</i>	grancalcin, EF-hand calcium binding protein	-2.857	-1.782	0.62
<i>cd200</i>	CD200 molecule	-2.867	-1.791	0.62
LOC100912373	uncharacterized LOC100912373	-3.338	-2.096	0.63
<i>tmcc3</i>	transmembrane and coiled-coil domain family 3	-3.187	-2.004	0.63
<i>cst3</i>	cystatin C	-2.604	-1.638	0.63
<i>bche</i>	butyrylcholinesterase	-2.847	-1.793	0.63
<i>maff</i>	v-maf avian musculoaponeurotic fibrosarcoma oncogene homolog F	-2.823	-1.780	0.63
<i>stxbp6</i>	syntaxin binding protein 6 (amisyn)	-4.123	-2.604	0.63
<i>nupr1</i>	nuclear protein, transcriptional regulator, 1	-2.145	-1.356	0.63
<i>col4a5</i>	collagen, type IV, alpha 5	-2.521	-1.594	0.63
<i>ppic</i>	peptidylprolyl isomerase C (cyclophilin C)	-3.238	-2.057	0.64
<i>sowahc</i>	sosondawah ankyrin repeat domain family member C	-2.419	-1.537	0.64
<i>ptp4a3</i>	protein tyrosine phosphatase type IVA, member 3	-3.758	-2.400	0.64
LOC100912470	uncharacterized LOC100912470	-2.405	-1.538	0.64
LOC684871	chromosome 8 open reading frame 4	-2.231	-1.428	0.64
<i>wwc1</i>	WW and C2 domain containing 1	-2.320	-1.485	0.64
<i>rgs7bp</i>	regulator of G-protein signaling 7 binding protein	-5.807	-3.719	0.64
<i>hspb1</i>	heat shock 27kDa protein 1	-3.293	-2.110	0.64
<i>slc8a1</i>	solute carrier family 8 (sodium/calcium exchanger), member 1	-3.022	-1.939	0.64
<i>serpinb6b</i>	serine (or cysteine) peptidase inhibitor, clade B, member 6b	-3.048	-1.958	0.64
<i>gls</i>	glutaminase	-2.559	-1.644	0.64
<i>zfp2</i>	zinc finger protein, FOG family member 2	-2.345	-1.508	0.64
<i>bmp2</i>	bone morphogenetic protein 2	-2.051	-1.320	0.64
<i>sclt1</i>	sodium channel and clathrin linker 1	-2.625	-1.691	0.64

<i>csrp1</i>	cysteine and glycine-rich protein 1	-3.724	-2.399	0.64
<i>serpinb6</i>	serpin peptidase inhibitor, clade B (ovalbumin), member 6	-2.873	-1.852	0.64
<i>mal2</i>	mal, T-cell differentiation protein 2 (gene/pseudogene)	-3.556	-2.293	0.64
<i>fam159b</i>	family with sequence similarity 159, member B	-2.276	-1.472	0.65
<i>etl4</i>	KIAA1217	-2.751	-1.780	0.65
<i>itga6</i>	integrin, alpha 6	-2.115	-1.369	0.65
<i>cttnbp2</i>	cortactin binding protein 2	-2.067	-1.340	0.65
<i>phlpp1</i>	PH domain and leucine rich repeat protein phosphatase 1	-2.216	-1.440	0.65
<i>meis1</i>	Meis homeobox 1	-2.277	-1.484	0.65
<i>pkig</i>	protein kinase (cAMP-dependent, catalytic) inhibitor gamma	-2.433	-1.586	0.65
<i>rab11fip1</i>	RAB11 family interacting protein 1 (class I)	-2.568	-1.676	0.65
<i>dsp</i>	desmoplakin	-2.749	-1.795	0.65
<i>fam124a</i>	family with sequence similarity 124A	-2.392	-1.562	0.65
<i>hdac5</i>	histone deacetylase 5	-3.595	-2.354	0.65
<i>angpt1</i>	angiopoietin 1	-4.010	-2.629	0.66
<i>hbegf</i>	heparin-binding EGF-like growth factor	-6.384	-4.191	0.66
<i>slc43a1</i>	solute carrier family 43 (amino acid system L transporter), member 1	-2.213	-1.456	0.66
<i>mitf</i>	microphthalmia-associated transcription factor	-3.143	-2.069	0.66
<i>akt3</i>	v-akt murine thymoma viral oncogene homolog 3	-2.311	-1.525	0.66
<i>gadd45b</i>	growth arrest and DNA-damage-inducible, beta	-5.789	-3.826	0.66
<i>foxo1</i>	forkhead box O1	-2.133	-1.412	0.66
<i>ank2</i>	ankyrin 2, neuronal	-2.895	-1.922	0.66
<i>il15</i>	interleukin 15	-2.082	-1.383	0.66
<i>samd11</i>	sterile alpha motif domain containing 11	-2.071	-1.377	0.66
<i>tslp</i>	thymic stromal lymphopoietin	-3.707	-2.468	0.67
<i>tbc1d23</i>	TBC1 domain family, member 23	-2.902	-1.934	0.67
<i>tspan2</i>	tetraspanin 2	-4.651	-3.107	0.67
<i>cnrip1</i>	cannabinoid receptor interacting protein 1	-2.140	-1.432	0.67
<i>fam20c</i>	family with sequence similarity 20, member C	-2.052	-1.377	0.67
<i>perp</i>	PERP, TP53 apoptosis effector	-2.421	-1.628	0.67
<i>col5a2</i>	collagen, type V, alpha 2	-2.490	-1.675	0.67
<i>b3galnt1</i>	beta-1,3-N-acetylgalactosaminyltransferase 1 (globoside blood group)	-2.625	-1.766	0.67
<i>pcbd1</i>	pterin-4 alpha-carbinolamine dehydratase/dimerization cofactor of hepatocyte nuclear factor 1 alpha	-2.211	-1.488	0.67
<i>ppp1r1a</i>	protein phosphatase 1, regulatory (inhibitor) subunit 1A	-2.185	-1.472	0.67
<i>klf6</i>	Kruppel-like factor 6	-3.565	-2.403	0.67
<i>irs1</i>	insulin receptor substrate 1	-2.468	-1.668	0.68
<i>rnf180</i>	ring finger protein 180	-2.599	-1.763	0.68
<i>magee1</i>	melanoma antigen family E, 1	-2.265	-1.537	0.68
<i>actn1</i>	actinin, alpha 1	-3.247	-2.208	0.68
<i>micd1</i>	microtubule associated monooxygenase, calponin and LIM domain containing 1	-2.866	-1.958	0.68
<i>EIF4E3</i>	eukaryotic translation initiation factor 4E family member 3	-2.980	-2.037	0.68
<i>dock5</i>	dedicator of cytokinesis 5	-2.867	-1.971	0.69
<i>foxp1</i>	forkhead box P1	-2.812	-1.935	0.69
<i>arx</i>	aristaless related homeobox	-3.520	-2.423	0.69
<i>tmem136</i>	transmembrane protein 136	-2.036	-1.403	0.69
<i>dock11</i>	dedicator of cytokinesis 11	-2.860	-1.971	0.69
<i>ccdc80</i>	coiled-coil domain containing 80	-2.519	-1.736	0.69
<i>flnb</i>	filamin B, beta	-2.413	-1.664	0.69
<i>pea15</i>	phosphoprotein enriched in astrocytes 15	-2.064	-1.425	0.69
<i>morc4</i>	MORC family CW-type zinc finger 4	-2.312	-1.598	0.69
<i>mterfd3</i>	MTERF domain containing 3	-2.400	-1.664	0.69
<i>ajuba</i>	ajuba LIM protein	-2.180	-1.513	0.69
<i>rab30</i>	RAB30, member RAS oncogene family	-2.984	-2.075	0.70
<i>TCF7L2</i>	transcription factor 7-like 2 (T-cell specific, HMG-box)	-2.176	-1.515	0.70
<i>cpne8</i>	copine VIII	-2.411	-1.682	0.70

<i>cntrl</i>	centriolin	-2.136	-1.491	0.70
<i>svil</i>	supervillin	-2.048	-1.431	0.70
<i>spats2l</i>	spermatogenesis associated, serine-rich 2-like	-3.854	-2.694	0.70
LOC100909928	uncharacterized LOC100909928	-2.322	-1.625	0.70
<i>tmem98</i>	transmembrane protein 98	-2.096	-1.467	0.70
<i>fstl1</i>	follistatin-like 1	-2.146	-1.503	0.70
<i>nexn</i>	nexilin (F actin binding protein)	-6.872	-4.824	0.70
<i>cpe</i>	carboxypeptidase E	-4.147	-2.922	0.70
RGD1559896	chromosome 1 open reading frame 198	-2.995	-2.111	0.70
<i>pon3</i>	paraoxonase 3	-2.074	-1.462	0.70
<i>rin2</i>	Ras and Rab interactor 2	-2.413	-1.701	0.70
<i>emp2</i>	epithelial membrane protein 2	-2.110	-1.488	0.71
<i>vcl</i>	vinculin	-2.635	-1.859	0.71
<i>synj2</i>	synaptojanin 2	-2.337	-1.649	0.71
<i>anxa1</i>	annexin A1	-2.139	-1.514	0.71
<i>zfp36l2</i>	ZFP36 ring finger protein-like 2	-2.511	-1.778	0.71
<i>pdlim1</i>	PDZ and LIM domain 1	-2.507	-1.776	0.71
<i>celf2</i>	CUGBP, Elav-like family member 2	-3.195	-2.264	0.71
<i>ankrd44</i>	ankyrin repeat domain 44	-2.014	-1.430	0.71
<i>apbb1</i>	amyloid beta (A4) precursor protein-binding, family B, member 1 (Fe65)	-2.063	-1.465	0.71
<i>nacad</i>	NAC alpha domain containing	-3.534	-2.511	0.71
<i>gnai1</i>	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1	-2.180	-1.549	0.71
<i>myadm</i>	myeloid-associated differentiation marker	-2.974	-2.122	0.71
<i>alcam</i>	activated leukocyte cell adhesion molecule	-2.833	-2.030	0.72
<i>ndrg2</i>	NDRG family member 2	-2.172	-1.557	0.72
<i>pycard</i>	PYD and CARD domain containing	-2.019	-1.450	0.72
<i>ptpla</i>	protein tyrosine phosphatase-like (proline instead of catalytic arginine), member A	-3.638	-2.616	0.72
<i>myo1c</i>	myosin IC	-2.994	-2.156	0.72
<i>c1qtnf7</i>	C1q and tumor necrosis factor related protein 7	-4.259	-3.070	0.72
<i>tdrp</i>	testis development related protein	-2.006	-1.446	0.72
<i>ndrg4</i>	NDRG family member 4	-2.021	-1.457	0.72
<i>rasgrp3</i>	RAS guanyl releasing protein 3 (calcium and DAG-regulated)	-6.037	-4.354	0.72
LOC100910189	uncharacterized LOC100910189	-2.753	-1.987	0.72
<i>rippy1</i>	rippy1 homolog (zebrafish)	-2.836	-2.048	0.72
LOC100361913	RIKEN cDNA 2200002D01 gene	-2.562	-1.852	0.72
<i>cldn2</i>	claudin 2	-5.555	-4.027	0.72
Phf17	jade family PHD finger 1	-2.224	-1.608	0.72
LOC100912219	uncharacterized LOC100912219	-2.603	-1.888	0.73
<i>tmem106a</i>	transmembrane protein 106A	-2.283	-1.659	0.73
<i>stard13</i>	StAR-related lipid transfer (START) domain containing 13	-8.422	-6.124	0.73
<i>slc12a2</i>	solute carrier family 12 (sodium/potassium/chloride transporter), member 2	-2.360	-1.717	0.73
<i>hectd2</i>	HECT domain containing E3 ubiquitin protein ligase 2	-2.590	-1.885	0.73
<i>nipal2</i>	NIPA-like domain containing 2	-2.049	-1.493	0.73
<i>stx3</i>	syntaxin 3	-2.703	-1.972	0.73
<i>lima1</i>	LIM domain and actin binding 1	-2.535	-1.850	0.73
<i>fez2</i>	fasciculation and elongation protein zeta 2 (zygin II)	-2.021	-1.477	0.73
<i>dzip1l</i>	DAZ interacting zinc finger protein 1-like	-2.296	-1.678	0.73
<i>zc2hc1a</i>	zinc finger, C2HC-type containing 1A	-2.995	-2.190	0.73
<i>zfp445</i>	zinc finger protein 445	-2.007	-1.468	0.73
<i>prnp</i>	prion protein	-2.253	-1.653	0.73
<i>cnst</i>	consortin, connexin sorting protein	-2.590	-1.904	0.74
<i>col8a1</i>	collagen, type VIII, alpha 1	-2.338	-1.719	0.74
<i>sun2</i>	Sad1 and UNC84 domain containing 2	-2.192	-1.616	0.74
<i>thbd</i>	thrombomodulin	-2.925	-2.162	0.74
<i>plcd1</i>	phospholipase C, delta 1	-2.037	-1.521	0.75
<i>itgb3</i>	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)	-2.390	-1.785	0.75

<i>rnd3</i>	Rho family GTPase 3	-2.351	-1.759	0.75
<i>chn1</i>	chimerin 1	-2.507	-1.879	0.75
<i>gypc</i>	glycophorin C (Gerbich blood group)	-2.492	-1.873	0.75
<i>pkia</i>	protein kinase (cAMP-dependent, catalytic) inhibitor alpha	-3.027	-2.279	0.75
<i>gnb4</i>	guanine nucleotide binding protein (G protein), beta polypeptide 4	-2.356	-1.775	0.75
<i>basp1</i>	brain abundant, membrane attached signal protein 1	-2.068	-1.560	0.75
<i>myl4</i>	myosin, light chain 4, alkali; atrial, embryonic	-2.056	-1.560	0.76
<i>zyx</i>	zyxin	-2.309	-1.756	0.76
LOC100362894	hypothetical protein LOC100362894	-2.465	-1.878	0.76
<i>anxa3</i>	annexin A3	-3.018	-2.300	0.76
<i>ahnak</i>	AHNAK nucleoprotein	-2.083	-1.590	0.76
<i>fxyd6</i>	FXD domain containing ion transport regulator 6	-2.091	-1.601	0.77
<i>atp10a</i>	ATPase, class V, type 10A	-2.298	-1.761	0.77
<i>nap13</i>	nucleosome assembly protein 1-like 3	-2.049	-1.572	0.77
<i>csgalnact2</i>	chondroitin sulfate N-acetylgalactosaminyltransferase 2	-2.333	-1.794	0.77
<i>farp1</i>	FERM, RhoGEF (ARHGEF) and pleckstrin domain protein 1 (chondrocyte-derived)	-2.046	-1.576	0.77
LOC100910396	uncharacterized LOC100910396	-2.162	-1.669	0.77
<i>pls3</i>	plastin 3	-2.134	-1.652	0.77
<i>map1b</i>	microtubule-associated protein 1B	-2.042	-1.584	0.78
<i>acta2</i>	actin, alpha 2, smooth muscle, aorta	-3.181	-2.473	0.78
<i>slc38a4</i>	solute carrier family 38, member 4	-3.148	-2.456	0.78
<i>hip1</i>	huntingtin interacting protein 1	-2.723	-2.126	0.78
<i>tes</i>	testis derived transcript (3 LIM domains)	-2.498	-1.961	0.79
<i>vldlr</i>	very low density lipoprotein receptor	-2.231	-1.752	0.79
<i>cr1l</i>	complement component (3b/4b) receptor 1-like	-2.021	-1.589	0.79
<i>rabgap1l</i>	RAB GTPase activating protein 1-like	-2.150	-1.691	0.79
<i>clic4</i>	chloride intracellular channel 4	-2.310	-1.817	0.79
<i>edn1</i>	endothelin 1	-6.288	-4.948	0.79
<i>pxdc1</i>	PX domain containing 1	-2.425	-1.914	0.79
<i>kank2</i>	KN motif and ankyrin repeat domains 2	-2.078	-1.643	0.79
<i>fgf13</i>	fibroblast growth factor 13	-2.085	-1.650	0.79
<i>rras2</i>	related RAS viral (r-ras) oncogene homolog 2	-2.138	-1.692	0.79
<i>nek6</i>	NIMA-related kinase 6	-2.236	-1.770	0.79
<i>myh9</i>	myosin, heavy chain 9, non-muscle	-2.218	-1.756	0.79
<i>ptger2</i>	prostaglandin E receptor 2 (subtype EP2), 53kDa	-3.654	-2.900	0.79
LOC500300	chromosome 10 open reading frame 10	-3.555	-2.823	0.79
<i>ankh</i>	ANKH inorganic pyrophosphate transport regulator	-2.002	-1.594	0.80
<i>dpysl3</i>	dihydropyrimidinase-like 3	-4.249	-3.396	0.80
<i>ldb3</i>	LIM domain binding 3	-2.583	-2.067	0.80
<i>sema3a</i>	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3A	-2.144	-1.717	0.80
<i>rrad</i>	Ras-related associated with diabetes	-2.250	-1.802	0.80
<i>atf3</i>	activating transcription factor 3	-2.141	-1.717	0.80
<i>irs2</i>	insulin receptor substrate 2	-2.415	-1.938	0.80
<i>tmem51</i>	transmembrane protein 51	-2.008	-1.613	0.80
<i>ankrd1</i>	ankyrin repeat domain 1 (cardiac muscle)	-4.748	-3.827	0.81
LOC100362819	autism susceptibility candidate 2	-2.380	-1.920	0.81
<i>chmp4c</i>	charged multivesicular body protein 4C	-2.405	-1.942	0.81
<i>rnd1</i>	Rho family GTPase 1	-2.513	-2.031	0.81
<i>gata3</i>	GATA binding protein 3	-3.144	-2.543	0.81
<i>pdgfc</i>	platelet derived growth factor C	-2.267	-1.838	0.81
<i>pdlim7</i>	PDZ and LIM domain 7 (enigma)	-2.210	-1.796	0.81
<i>mef2c</i>	myocyte enhancer factor 2C	-3.346	-2.728	0.82
<i>gpnmb</i>	glycoprotein (transmembrane) nmb	-2.083	-1.699	0.82
<i>gpr176</i>	G protein-coupled receptor 176	-2.250	-1.841	0.82
<i>spry1</i>	sprouty homolog 1, antagonist of FGF signaling (Drosophila)	-2.366	-1.941	0.82
MGC95152	similar to B230212L03Rik protein	-2.180	-1.779	0.82

<i>actn4</i>	actinin, alpha 4	-2.472	-2.040	0.83
<i>actg2</i>	actin, gamma 2, smooth muscle, enteric	-2.757	-2.291	0.83
<i>sertad4</i>	SERTA domain containing 4	-2.545	-2.116	0.83
<i>rasa1</i>	RAS p21 protein activator (GTPase activating protein) 1	-2.072	-1.728	0.83
<i>s1pr1</i>	sphingosine-1-phosphate receptor 1	-8.059	-6.742	0.84
<i>plcx2</i>	phosphatidylinositol-specific phospholipase C, X domain containing 2	-2.179	-1.840	0.84
<i>scn9a</i>	sodium channel, voltage-gated, type IX, alpha subunit	-4.290	-3.628	0.85
<i>f2r</i>	coagulation factor II (thrombin) receptor	-2.096	-1.773	0.85
<i>slc40a1</i>	solute carrier family 40 (iron-regulated transporter), member 1	-2.037	-1.724	0.85
<i>lxn</i>	latexin	-2.436	-2.067	0.85
<i>lphn3</i>	latrophilin 3	-2.606	-2.213	0.85
<i>tead3</i>	TEA domain family member 3	-2.056	-1.749	0.85
<i>lpar4</i>	lysophosphatidic acid receptor 4	-3.060	-2.612	0.85
<i>trpc4</i>	transient receptor potential cation channel, subfamily C, member 4	-2.029	-1.732	0.85
<i>arid5b</i>	AT rich interactive domain 5B (MRF1-like)	-3.669	-3.157	0.86
<i>map3k8</i>	mitogen-activated protein kinase kinase kinase 8	-2.002	-1.731	0.86
<i>camta1</i>	calmodulin binding transcription activator 1	-2.572	-2.247	0.87
<i>kctd9</i>	potassium channel tetramerization domain containing 9	-2.068	-1.810	0.88
<i>sbspon</i>	somatomedin B and thrombospondin, type 1 domain containing	-2.893	-2.540	0.88
<i>pla2r1</i>	phospholipase A2 receptor 1, 180kDa	-2.085	-1.834	0.88
<i>bbs7</i>	Bardet-Biedl syndrome 7	-2.022	-1.789	0.88
<i>plcx3</i>	phosphatidylinositol-specific phospholipase C, X domain containing 3	-2.061	-1.825	0.89
<i>cnksr3</i>	CNKSR family member 3	-3.084	-2.733	0.89
<i>rassf3</i>	Ras association (RalGDS/AF-6) domain family member 3	-2.112	-1.885	0.89
<i>pcgf5</i>	polycomb group ring finger 5	-2.781	-2.487	0.89
<i>scrn1</i>	secernin 1	-2.120	-1.897	0.89
<i>cryab</i>	crystallin, alpha B	-2.500	-2.242	0.90
<i>car5b</i>	carbonic anhydrase VB, mitochondrial	-2.050	-1.843	0.90
<i>rock2</i>	Rho-associated, coiled-coil containing protein kinase 2	-2.227	-2.009	0.90
<i>utrn</i>	utrophin	-2.037	-1.861	0.91
<i>scn7a</i>	sodium channel, voltage-gated, type VII, alpha subunit	-2.503	-2.289	0.91
<i>acta1</i>	actin, alpha 1, skeletal muscle	-5.001	-4.596	0.92
<i>myl9</i>	myosin, light chain 9, regulatory	-2.159	-1.987	0.92
<i>lrch1</i>	leucine-rich repeats and calponin homology (CH) domain containing 1	-3.168	-2.938	0.93
<i>adamts12</i>	ADAM metalloproteinase with thrombospondin type 1 motif, 12	-3.278	-3.084	0.94
<i>glipr1</i>	GLI pathogenesis-related 1	-2.012	-1.921	0.95
<i>vtcn1</i>	V-set domain containing T cell activation inhibitor 1	-2.387	-2.309	0.97
<i>f3</i>	coagulation factor III (thromboplastin, tissue factor)	-3.560	-3.476	0.98
<i>abcd2</i>	ATP-binding cassette, sub-family D (ALD), member 2	-2.139	-2.100	0.98
<i>klf7</i>	Kruppel-like factor 7 (ubiquitous)	-2.234	-2.257	1.01
<i>tnnc1</i>	troponin C type 1 (slow)	-3.005	-3.063	1.02
<i>testin</i>	RIKEN cDNA 4930486L24 gene	-2.778	-2.875	1.03
<i>Ghr</i>	Growth Hormone receptor	-1.932	-2.067	1.07
<i>trpc3</i>	transient receptor potential cation channel, subfamily C, member 3	-2.473	-2.656	1.07
<i>Cnn1</i>	Calponin 1	-1.920	-2.089	1.09
<i>tjp2</i>	tight junction protein 2	-2.054	-2.268	1.10
<i>tpm2</i>	tropomyosin 2, beta	-2.321	-2.673	1.15
<i>Hipk3</i>	Homeodomain Interacting Protein Kinase 3	-1.864	-2.221	1.19
<i>Arg1</i>	Arginase 1	-1.881	-2.285	1.21
<i>Gadd45g</i>	Growth Arrest and DNA-Damage Inducible	-1.567	-2.039	1.30
<i>tns3</i>	tensin 3	-2.035	-2.700	1.33
<i>lrrc39</i>	leucine rich repeat containing 39	-3.304	-4.767	1.44
<i>Fam198b</i>	family with sequence similarity 198, member B	-1.396	-2.341	1.68
<i>RGD1305254</i>	cell migration inducing protein, hyaluronan binding	-2.127	-3.616	1.70

Supplementary Table S2 Major functional categories and the associated genes identified by DAVID

analysis of transcripts regulated to a similar extent by FSH stimulation or PKA activation

Functional Categories	Gene Symbol
Cholesterol biosynthesis	CYP51, EBP, MVD, DHCR7, HMGCS1, MVK, CFTR, LSS, IDI1, HSD17B7, FDFT1
Steroid biosynthesis	CYP51, EBP, MVD, HSD17B1, DHCR7, HMGCS1, MVK, LSS, IDI1, HSD17B7, FDFT1
Actin cytoskeleton	MICALL2, LIMA1, ACTA1, PDLIM7, ACTN4, CRYAB, ACTN1, ZYX, MYH9, FLNB, VCL, CDC42EP2, TPM1, RASA1
Apoptosis	MEF2C, GCLC, MITF, FOXO1, CX3CL1, TIMP3, GCH1, EDNRB, ALDH1A3, PYCARD, PCSK9, NQO1, DDAH1, RASA1, IHH, GHR, HIP1, EGFR, BMP4, KCNMA1, PGAP2, HERPUD1, SGK1, CEBPB, ACTN4, MADD, CRYAB, MSH2, SPHK1, ANXA1, ITGA1, CST3, NR4A1, INHA, GAL, SOD2, INHBA, PLA2G4A, NOTCH1, NUPR1, F3, HIPK3, HSPB1, HSPD1, PERP, PRNP, APBB1, F2R
Regulation of Transcription	MEF2C, THRB, MITF, FOXO1, NPAS2, S1PR1, GATA3, GATA4, RUNX1, DDAH1, IHH, NR1H3, BMP4, SREBF1, KLF6, KLF7, BMP2, CEBPB, CEBPD, PCBD1, MAFB, NR4A1, SIX4, TEAD3, INHBA, NOTCH1, ZFPM2, NR5A2, APBB1, F2R, NR5A1
Protein kinases	EGFR, IRAK2, SGK1, ROCK2, MAPKAPK3, EPHB3, IRS1, PRKCB, RPS6KA5, HUNK, PLK2, SBK1, HIPK3, MAP3K8, RELN, DYRK3, GRK5, NEK6, DCLK1, AKT3
Chromatin organization,	HDAC5, RPS6KA5, PHF17, HOPX, NAP1L3, APBB1
G1/S transition of mitotic cell cycle	CCND2, ID4, EGFR, INHBA,

Supplementary Table S3. Major functional categories and the associated genes identified by DAVID analysis of transcripts that are regulated more effectively by FSH stimulation than PKA-CQR expression.

Functional Categories	Gene Symbol
Ion Homeostasis	AGTR2, CAV1, PTGER3, CCL2, ADM, AGTR1A, RYR2, LPAR1
Extracellular matrix binding	NID1, DCN, SPP1, CYR61
Apoptosis	AGTR2, BDNF, CCL2, HTRA2, ETS1, ARNT2, CLU, CIDEA, CD74, TGFB2, FN1
Cytoskeleton Organization	CAV1, SORBS1, CALD1, PDLIM3, GAS7
Regulation of Transcription	NFE2, MEOX2, ETS1, ARNT2, LRRFIP1, PAWR, NR0B1

Supplementary Table S4. Major functional categories and the associated genes identified by DAVID analysis of transcripts that are regulated more effectively by PKA-CQR expression than by by FSH stimulation.

Functional Categories	Gene Symbol
Ovulation	AREG, EREG, PGR, SNAP25, TNFAIP6, PTGS2
Transition metal Binding	NR4A3, PGR, CYP19A1, PTGS2, SCD
Integral to membrane	AREG, GJA5, HAVCR1, NPY1R, SLC7a11, SCD

Supplementary table S5: List of antibodies and conditions used for immunoblotting.

ANTIBODY	Supplier P/N	BLOCK & Conditions	1° ANTIBODY Dilution & Conditions	Post 1° WASHES	2° ANTIBODY Dilution & Conditions	Post 2° WASHES
Akt (PKB)	Cell Signaling #9272	0.5% Block/TBST 1-2hr RT	1:1000 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 0.5% Block/TBST 1.5hr RT	TBST 3x 5min
P-Akt (Ser473)	Cell Signaling #9271	0.5% Block/TBST 1-2hr RT	1:500 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 0.5% Block/TBST 1.5hr RT	TBST 3x 5min
P-Akt (Thr308)	Cell Signaling #9275	5% Milk/TBS 1-2hr RT	1:500 in 5% Milk/TBST + 0.1% Tween + azi TBS 3x 10min		Anti-Rabbit IgG-POD 1:500 in 5% Milk/TBS	TBS 3x 10min
β-Catenin	Santa Cruz #7199	3% BSA/TBST 1-2hr RT	1:1000 in 3% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% BSA/TBST 1.5hr RT	TBST 3x 5min
P-β-Catenin (Ser552)	Cell Signaling #9566	3% BSA/TBST 1-2hr RT	1:1000 in 3% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% BSA/TBST 1.5hr RT	TBST 3x 5min
CREB	Millipore #06-863	3% Milk/PBS 1-2hr RT	1:1000 in 3% Milk/PBS O/N 4°C	MQ-H ₂ O 2x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% Milk/PBS 1.5hr RT	MQ-H ₂ O 2x 5min 0.05% Tween/PBS 1x 5min
P-CREB (Ser133)	Millipore #05-667	3% Milk/TBS 1-2hr RT	1:100 in 3% Milk/TBS O/N 4°C	MQ-H ₂ O 2x 5min	SIGMA Anti-Mouse IgG-POD 1:10,000 in 3% Milk/TBS 1.5hr RT	MQ-H ₂ O 5x Rinse MQ-H ₂ O 2x 5min 0.05% Tween/TBS 1x 5min MQ-H ₂ O 5x Rinse
FoxO1	Cell Signaling #2880	5% Milk/TBST 1-2hr RT	1:2000 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 5% Milk/TBST 1.5hr RT	TBST 3x 5min
P-FoxO1 (Ser256)	Santa Cruz #sc101681	0.5% Block/TBST 1-2hr RT	1:100 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 0.5% Block/TBST 1.5hr RT	TBST 3x 5min
GAB2	EMD Millipore #06-967	5% Milk/TBS 1-2 hr RT	1:1000 in 5% Milk/TBS + azide	TBS 3x 10min	Anti-Rabbit IgG-POD 1:1500 in 5% Milk/TBS	TBS 3x 10min
P-GAB2 (Ser159)	Cell Signaling #3884	5% Milk/TBS 1-2 hr RT	1:1000 in 5% Milk/TBS + azide	TBS 3x 10min	Anti-Rabbit IgG-POD 1:1000 in 5% Milk/TBS	TBS 3x 10min
GSK-3β	Cell Signaling #9315	5% Milk/TBS 1-2 hr RT	1:1000 in 5% Milk/TBS + azide	TBS 3x 10min	Anti-Rabbit IgG-POD 1:1000 in 5% Milk/TBS	TBS 3x 10min
P-GSK-3β (Ser9)	Cell Signaling #9336	5% Milk/TBS 1-2 hr RT	1:1000 in 5% Milk/TBS + azide	TBS 3x 10min	Anti-Rabbit IgG-POD 1:1000 in 5% Milk/TBS	TBS 3x 10min
P-p38 (Thr180/Tyr182) (MAPK)	Cell Signaling #4511 (Rab mAb)	5% Milk/TBST 1-2hr RT	1:1000 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 5% Milk/TBST 1.5hr RT	TBST 3x 5min
p42/44 (ERK 1&2)	Millipore #06-182	3% Milk/PBS 1-2hr RT	1:10,000 in 3% Milk/PBS O/N 4°C	MQ-H ₂ O 2x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% Milk/PBS 1.5hr RT	MQ-H ₂ O 2x 5min 0.05% Tween/PBS 1x 5min MQ-H ₂ O 5x Rinse
P-p42/44 (Thr202/Tyr204) (P-ERK 1&2)	Cell Signaling #9109	0.5% Block/TBST 1-2hr RT	1:2000 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 0.5% Block/TBST 1.5hr RT	TBST 3x 5min
PKAc	Transduction Labs #610981 (BD)	0.5% Block/TBS 1-2hr RT	1:500 in 0.5% Block/TBS O/N 4°C	TBST 3x 5min	SIGMA Anti-Mouse IgG-POD 1:10,000 in 0.5% Block/TBS 1.5hr RT	TBST 3x 5min
cSrc	Santa Cruz #sc18	3% Milk/TBST 1-2hr RT	1:1000 in 3% Milk/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% Milk/TBST 1.5hr RT	TBST 3x 5min
P-Src (Tyr416)	Cell Signaling #6943	5% Milk/TBST 1-2hr RT	1:1000 in 5% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 5% Milk/TBST 1.5hr RT	TBST 3x 5min
YAP	Cell Signaling #12395	3% BSA/TBST 1-2hr RT	1:1000 in 3% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Mouse IgG-POD 1:10,000 in 3% BSA/TBST 1.5hr RT	TBST 3x 5min
P-YAP (Ser127)	Cell Signaling #13008	3% BSA/TBST 1-2hr RT	1:1000 in 3% BSA/TBST O/N 4°C	TBST 3x 5min	SIGMA Anti-Rabbit IgG-POD 1:10,000 in 3% BSA/TBST 1.5hr RT	TBST 3x 5min