

Table S1. Oligonucleotides used in this study

Name	Description	Sequence	Gene
XhoI-5'Hmga2	Primer for generation of $\Delta Hmga2$	5'-CCCCCTCGAGCAACCCTCTCCGCCTCCAACCTCT-3'	Hmga2
Clal-3'Hmga2	Primer for generation of $\Delta Hmga2$	5'-CCCCATCGATAATGTCGGCGCCCCCTAATCCTC-3'	Hmga2
$\Delta Hmga2$ Forward	$\Delta Hmga2$ -specific (<i>Hmga2</i> cDNA-specific) primer for genotyping of $\Delta Hmga2$	5'-GAGCCAACCTGTGAGCCCT-3'	Hmga2
$\Delta Hmga2$ Reverse	$\Delta Hmga2$ -specific (PGK-PA-specific) primer for genotyping of $\Delta Hmga2$	5'-CCTTCCATTCAAATGTAGGTACTCTGTTC-3'	Pgk
Cre 5'	Genotyping primer for Tie1-cre	5'-CCAATTTACTGACCGTACACC-3'	Cre
Cre 3'	Genotyping primer for Tie1-cre	5'-TTACGTATATCCTGGCAGCG-3'	Cre
Piga lox-13+8	Genotyping primer for LoxPiga	5'-GGACCACCTCAGCATGGCCAA-3'	Piga
Piga lox600rev	Genotyping primer for LoxPiga	5'-TATTTTCAGGATTCAGTGCTGC-3'	Piga
Bubble-linker 1	For generation of bubble-linker	5'-CTCTCCCTTCTCGAATCGTAACCGTTCGTACGAGAATCGCTGTCCTCTCCTTC -3'	N/A
Bubble-linker 2	For generation of bubble-linker	5'-CGGAAGGAGAGGACGCTGTCTGTGCGAAGGTAAGGAACGGACGAGAGAAGGGAGAG-3'	N/A
Linker-specific primer 1	For bubble linker-mediated first PCR (specific for bubble)	5'-CGAATCGTAACCGTTCGTACGAGAATCGC- 3'	N/A
Transgene-specific primer 1	For bubble linker-mediated first PCR (specific for PGK-PROM)	5'-AGACGTGCTACTTCCATTTGTCACGTCCTG-3'	Pgk
Linker-specific primer 2	For bubble linker-mediated nested PCR (specific for bubble)	5'-CCGTTTCGTACGAGAATCGCTGTCC-3'	N/A
Transgene-specific primer 2	For bubble linker-mediated nested PCR (specific for PGK-PROM)	5'-TGTAGCGCCAAGTGCCCAGC-3'	Pgk
Hmga2 qPCR F	qRT-PCR forward primer	5'-AACCTGTGAGCCCTCTCCTAA-3'	Hmga2
Hmga2 qPCR R	qRT-PCR reverse primer	5'-GCCGTTTTTCTCCAATGGTC-3'	Hmga2
Hprt1 qPCR F	qRT-PCR forward primer	5'-GTTGGATACAGGCCAGACTTTGTT-3'	Hprt1
Hprt1 qPCR R	qRT-PCR reverse primer	5'-GATTCAACTTGCGCTCATCTTAGCC-3'	Hprt1
Jak2 qPCR F	qRT-PCR forward primer	5'-TTTTCCCTCCCCAGAAGAAG-3'	Jak2
Jak2 qPCR R	qRT-PCR reverse primer	5'-TGCCTCCATTTCTGTCATTG-3'	Jak2
Actb qPCR F	qRT-PCR forward primer	5'-GGGAAATCGTGCGTGACATCAAAG-3'	Actb
Actb qPCR R	qRT-PCR reverse primer	5'-TGTGTTGGCATAGAGGTCTTTAC-3'	Actb

Information of the primers for generation of $\Delta Hmga2$, genotyping of mice, qRT-PCR, and bubble linker-mediated PCR, and oligonucleotides for making bubble-linker are shown.

Table S2. Antibodies used in this study

Antibody	Experiment	Clone	Vendor
Gr1 FITC (or biotin)	Flow cytometry	Ly6C/G	BD Biosciences
Ter119 PE	Flow cytometry	Ly-76	BD Biosciences
TCR beta PE	Flow cytometry	H57-597	BD Biosciences
CD45/B220 PE (or biotin)	Flow cytometry	RA3-6B2	BD Biosciences
CD115 PE*	Flow cytometry	FMS, CSF-1R	eBioscience
CD45.1 PE (or biotin)	Flow cytometry	A20	BD Biosciences
CD45.2 FITC	Flow cytometry	104	BD Biosciences
CD24 FITC	Flow cytometry	M1/69	BD Biosciences
FLAER	Flow cytometry	FLAER†	Pinewood Scientific
Cy-chrome	Flow cytometry	-	BD Biosciences
CD3	Flow cytometric progenitor analysis and cell sorting	145-2C11	eBioscience
CD4	Flow cytometric progenitor analysis and cell sorting	L3T4	eBioscience
CD5	Flow cytometric progenitor analysis and cell sorting	53.7.3	eBioscience
CD8	Flow cytometric progenitor analysis and cell sorting	53.6.7	eBioscience
B220	Flow cytometric progenitor analysis and cell sorting	RA3-6B2	eBioscience
Gr1	Flow cytometric progenitor analysis and cell sorting	RB6-8C5	eBioscience
Ter119	Flow cytometric progenitor analysis and cell sorting	Ly-76	eBioscience
CD11b	Flow cytometric progenitor analysis and cell sorting	m170	eBioscience
CD127	Flow cytometric progenitor analysis and cell sorting	A7R34	eBioscience
PE-Cy7	Flow cytometric progenitor analysis and cell sorting		eBioscience
CD34 PE	Flow cytometric progenitor analysis and cell sorting	RAM34	eBioscience
CD16/32 APC	Flow cytometric progenitor analysis and cell sorting	93	eBioscience
Ly-6A/E (Sca-1) Pacific Blue	Flow cytometric progenitor analysis and cell sorting	D7	iCyt Biolegend
CD117 APC-Cy7	Flow cytometric progenitor analysis and cell sorting	c-kit, 2B8	eBioscience
CD117 PE	Phosflow analysis	c-kit	BD Biosciences
Ly-6A/E (Sca-1) PE-Cy5	Phosflow analysis	D7	eBioscience
pStat3 Alexa Fluor488	Phosflow analysis	pY705	BD Biosciences
PStat5 Alexa Fluor488	Phosflow analysis	pY694	BD Biosciences
HMGA2	Western blot	-	OXIS
Rabbit	Western blot	IRDye 680	LI-COR
β-actin	Western blot	-	Abcam
JAK2	Western blot	D2E12	Cell Signaling Technology
Phospho-Stat3 (Tyr705)	Western blot	D3A7	Cell Signaling Technology
Stat3	Western blot	-	Cell Signaling Technology
Phospho-Stat5 (Tyr694)	Western blot	-	Cell Signaling Technology
Stat5	Western blot	-	Cell Signaling Technology
Phospho-Akt (Ser473)	Western blot	D9E	Cell Signaling Technology
Akt	Western blot	-	Cell Signaling Technology

* CD115 PE was used for the detection of monocytes. † FLAER is fluorescently labeled aerolysin. BD Biosciences, San Jose, CA; eBiosciences, San Diego, CA; Pinewood Scientific, Victoria, Canada; iCyt Biolegend, Champaign, IL; OXIS, Foster City, CA; LI-COR, Lincoln, NE; Abcam, Cambridge, MA; Cell Signaling Technology, Danvers, MA.

Table S3. The list of all differentially expressed (> 2-fold, p<0.01) genes in KLS cells

Public ID	Gene Symbol	P value	Fold-Change
NM_007499	Atm	0.00003563	13.3646
NM_001001492	Lca5l	0.00752162	9.5695
NM_007977	F8	0.00868892	8.77421
NM_001003910	BC030307	0.00060952	7.99593
NM_015805	Atp9b	0.00112216	7.32754
NM_178076	Mcf2l	0.00715462	7.27836
NM_001099634	Myof	0.00777988	7.23849
NM_026347	lah1	0.00824754	7.16775
NM_007868	Dmd	0.00208188	7.15168
NM_031997	Tmem2	0.00203775	7.06163
NM_010435	Hira	0.00106620	7.04548
NM_177561	Usp46	0.00288632	6.80447
NM_029525	Prex2	0.00370425	6.70425
NM_001025371	RP23-433P19.11	0.00326279	6.60182
NM_011256	Pitpnm2	0.00677989	6.52638
NM_013829	Plcb4	0.00336265	6.40778
NM_145396	Tbl3	0.00443288	6.37874
BC003944	Vps16	0.00944217	6.26051
NM_011875	Psmd13	0.00851120	6.19794
NM_016691	Clcn5	0.00275415	6.19608
NM_178382	Flrt3	0.00348537	6.02808
NM_177140	D230037D09Rik	0.00660372	5.95927
NM_029977	Polq	0.00199382	5.93618
NM_177208	Dopey1	0.00610467	5.77917
NM_026422	Mrrf	0.00632111	5.75587
NM_133867	Eps8l3	0.00147078	5.692
NM_001122829	Upf1	0.00498045	5.67556
NM_019864	Atr	0.00349744	5.61269
BC058107	2410089E03Rik	0.00261544	5.60838
NM_027807	Cul5	0.00393293	5.48184
XR_034062	LOC100047913	0.00352947	5.31413
NM_009029	Rb1	0.00153565	5.22218
NM_031384	Tex11	0.00261214	5.18325
NM_153533	Tenc1	0.00342979	5.12191
NM_199195	Bckdhb	0.00456365	5.09388
NM_172120	Vps41	0.00295652	5.0856
NM_013864	Ndrq2	0.00419192	5.06076
NM_008713	Nos3	0.00011900	4.98135
NM_010324	Got1	0.00094005	4.97253
NM_013600	Msh5	0.00413176	4.96541
BC052447	4930402H24Rik	0.00273123	4.96103
NM_175337	Mlh3	0.00000927	4.9607
NM_012054	Aoah	0.00429461	4.95659
NM_007979	F9	0.00708885	4.93935
NM_133756	Gpn1	0.00061768	4.90572
NM_025662	Pigk	0.00346968	4.90475

NM_008125	Gjb2	0.00669879	4.89847
NM_010259	Gbp1	0.00897167	4.87401
NM_028838	Lrrc2	0.00610916	4.86618
NM_001033229	Cyp11b1	0.00562942	4.86421
NM_007601	Capn3	0.00557102	4.85618
NM_001081176	Polr3g	0.00050662	4.81861
NM_026934	Zc3h15	0.00385787	4.66823
NM_015828	Gne	0.00421603	4.65564
NM_023879	Rpgrip1	0.00416244	4.63987
ENSMUST00000094250	Lsm14b	0.00505906	4.61632
NM_001081549	Rcan1	0.00125721	4.60722
NM_175324	Acad11	0.00378013	4.60418
NM_011211	Ptprd	0.00611519	4.60349
NM_134044	AI413782	0.00053313	4.59364
NM_026327	1810048J11Rik	0.00090703	4.57411
NM_021297	Tlr4	0.00989623	4.53623
NM_178726	Ppm1l	0.00114993	4.51636
NM_024459	Ppp3r1	0.00456144	4.45982
AK016739	4933408J17Rik	0.00059133	4.44792
NM_021408	Ush2a	0.00545743	4.41137
NM_021458	Fzd3	0.00918144	4.37398
NM_001142322	Myo9b	0.00303981	4.3593
ENSMUST00000019464	Noxo1	0.00761250	4.35248
NM_008689	Nfkb1	0.00958683	4.30385
BC112416	D330045A20Rik	0.00068300	4.26718
NM_172456	Exog	0.00598745	4.25404
NM_030695	Lrba	0.00471633	4.24426
NM_139292	Reep6	0.00848142	4.1992
NM_001005608	Itgb4	0.00293711	4.18829
AK005822	Gm10345	0.00828638	4.18496
GQ225581	1700067C01Rik	0.00991203	4.14216
NM_007858	Diap1	0.00909360	4.12679
NM_001001979	Megf10	0.00256711	4.09051
NM_009885	Cel	0.00709565	4.07229
BC157950	Kalrn	0.00559603	4.07066
BC075697	Ktn1	0.00933002	4.06388
NM_001136072	Meis2	0.00890624	4.05611
NM_027164	Lrrc27	0.00471366	4.00615
NM_025696	Sorcs3	0.00051676	3.97493
NM_001024910	Sept10	0.00943819	3.97281
NM_146010	Tspan8	0.00160817	3.97264
NM_001024624	Cdkl5	0.00016210	3.96279
NM_207225	Hdac4	0.00275963	3.93085
ENSMUST00000088072	Tsga10	0.00539434	3.90957
NM_009376	Ift88	0.00876082	3.90723
NM_029017	Mrpl47	0.00199347	3.85687
NM_153399	Syne1	0.00134553	3.84109
NM_026222	Ccdc39	0.00852783	3.84017
NM_028783	Robo4	0.00091610	3.82462

ENSMUST00000113925	Zfx	0.00642963	3.82185
BC001985	Ap4s1	0.00820580	3.81753
NM_001033455	Ccdc27	0.00071379	3.74107
NM_001042715	Ccdc135	0.00479654	3.73665
NM_031177	Ift122	0.00604481	3.7307
BC112403	2310046O06Rik	0.00168877	3.68662
NM_011131	Pold1	0.00944096	3.68208
NM_146190	Tubgcp5	0.00499443	3.62321
NM_172658	Slco4c1	0.00713896	3.61608
NM_001001792	Zfp239	0.00887794	3.6134
NM_001025192	Cxadr	0.00516421	3.61035
BC132172	C330023M02Rik	0.00854334	3.60672
NM_153391	Wdr19	0.00057933	3.60017
NM_001048176	Cerkl	0.00681583	3.59403
NM_007993	Fbn1	0.00321358	3.57587
NM_172992	Phtf2	0.00398856	3.56983
NM_153744	Prkag3	0.00870135	3.56762
NM_011921	Aldh1a7	0.00615802	3.56623
ENSMUST00000033665	Map3k15	0.00623928	3.55921
NM_028003	Rpap3	0.00883096	3.54414
NM_011539	Tbxas1	0.00877585	3.53522
BC027356	Kars	0.00267283	3.53211
NM_001033382	Cacna2d4	0.00473084	3.51989
NM_197992	Pcgf1	0.00403810	3.48392
NR_027819	1810032O08Rik	0.00649281	3.48089
NM_007732	Col17a1	0.00886850	3.46951
NM_029394	Snx24	0.00902353	3.46945
NM_172674	Phf20	0.00108305	3.46572
ENSMUST00000050610	Kif2a	0.00030036	3.46358
NM_172867	Zfp462	0.00022335	3.45831
NM_133365	Dnahc5	0.00371747	3.43371
NM_145573	Mrps35	0.00220953	3.42939
NM_145952	Tbc1d12	0.00684130	3.40396
ENSMUST00000115077	Abcb8	0.00954838	3.3997
NM_153587	Rps6ka5	0.00947816	3.38833
NM_198019	Cep78	0.00627223	3.38625
NM_001081161	Fam171a1	0.00250291	3.37958
NM_029347	Fggy	0.00491930	3.37039
NM_008413	Jak2	0.00505137	3.3568
NM_001127363	Inpp5a	0.00299607	3.33522
NM_001122738	1110028C15Rik	0.00458924	3.32515
NM_020329	Dolpp1	0.00342718	3.32165
NM_001114637	Jmjd7	0.00329546	3.30132
NM_001162965	Sgsm1	0.00127923	3.29732
NM_016768	Pbx3	0.00689733	3.29403
ENSMUST00000050139	Ccrl1	0.00865088	3.28259
NM_207205	Igsf3	0.00869858	3.27852
NM_175158	Utp20	0.00461483	3.27816
NM_027547	Prdm5	0.00451515	3.26009

NM_023042	Recql	0.00794369	3.21834
NM_144931	Nae1	0.00742828	3.21538
NM_015785	Zpbp	0.00254358	3.21074
NM_007462	Apc	0.00215115	3.20934
NM_001081417	Chd7	0.00976187	3.20665
NM_027764	Rcbtb1	0.00717900	3.20232
NM_008484	Lamb3	0.00280145	3.18161
NM_145511	BC003331	0.00072989	3.17585
ENSMUST00000053096	Smg6	0.00238245	3.17206
NM_001013767	Capn11	0.00640280	3.16958
NM_172781	Klh4	0.00432423	3.15672
XR_032234	LOC675534	0.00379327	3.14372
NM_001081295	4631416L12Rik	0.00282078	3.14088
NM_133981	Alg9	0.00008324	3.12289
NM_146122	Dennd1a	0.00976604	3.11786
NM_009367	Tgfb2	0.00336539	3.10654
NM_001081252	Uggt2	0.00868890	3.10401
NM_194257	Fam118b	0.00892157	3.10163
NM_007834	Dscr3	0.00580425	3.0996
NM_001114312	4930506M07Rik	0.00817274	3.08009
NM_009641	Angpt4	0.00121616	3.06543
NM_172436	Slc25a12	0.00211373	3.04806
NM_020603	Wdr46	0.00458391	3.0426
NM_172743	Plekha7	0.00313924	3.04002
NM_001039546	Myo6	0.00932409	3.03261
BC026495	Fam161a	0.00246914	3.02448
ENSMUST00000086485	Atp2b4	0.00708361	3.01568
ENSMUST00000057389	Fam179b	0.00260444	3.01185
NM_018877	Setdb1	0.00502158	3.00764
NM_173440	Nrip1	0.00728694	3.00711
NM_054053	Gpr98	0.00529688	2.99796
NM_001045522	BC030499	0.00026459	2.99563
NM_026238	Narfl	0.00192283	2.97606
BC057872	Rab3gap2	0.00119020	2.97173
ENSMUST00000080483	Olf119	0.00827856	2.95674
NM_001013806	Ankrd13c	0.00217231	2.95356
NM_001079875	Spam1	0.00810761	2.9495
NM_027890	Susd2	0.00977046	2.93636
NM_025660	Ribc1	0.00367847	2.93546
NM_025473	Fam3a	0.00701521	2.93304
NM_026453	Mak16	0.00148214	2.92863
NM_001014398	Trcg1	0.00095985	2.92393
NM_177045	Cc2d1b	0.00959952	2.91551
NM_021557	Rdh11	0.00338788	2.91179
BC116270	Mtmr15	0.00318476	2.9019
NM_172803	Dock4	0.00435821	2.89745
BC021773	Glb1l	0.00568016	2.89584
NM_028817	Acsl3	0.00665362	2.87759
NM_009702	Aqr	0.00474888	2.87638

NM_028228	2610028A01Rik	0.00249388	2.86243
NM_029444	Six6os1	0.00705739	2.85188
NM_009686	Apbb2	0.00236443	2.84805
NM_145572	Gys2	0.00768475	2.84572
ENSMUST00000040739	Piwil4	0.00348976	2.84084
NM_172462	Zfp11	0.00316482	2.82288
NM_008760	Ogn	0.00584207	2.81879
NM_010207	Fgfr2	0.00487875	2.8082
NM_001033364	Pcdh24	0.00869341	2.80428
NM_016866	Stk39	0.00956790	2.80146
NM_030215	Wrnip1	0.00701316	2.79168
NM_009808	Casp12	0.00734692	2.79033
NM_025711	Aspn	0.00771972	2.78792
NM_001001882	Rtel1	0.00948282	2.78605
NM_008396	Itga2	0.00409187	2.78518
NM_181325	Slc25a15	0.00797901	2.77881
NM_001034899	Gm16432	0.00456798	2.778
NM_023256	Krt20	0.00329452	2.76115
NM_183182	BC055111	0.00191957	2.7606
NM_178710	Sik2	0.00803754	2.75518
NM_013790	Abcc5	0.00049782	2.75347
NM_008384	Inpp1	0.00668933	2.7431
NM_029835	5730590G19Rik	0.00670611	2.73602
NM_008478	L1cam	0.00061592	2.73494
NM_008032	Aff2	0.00210099	2.72454
NM_001081302	Trio	0.00059549	2.71474
NM_011431	Eftud2	0.00784328	2.71077
NM_016847	Avpr1a	0.00895508	2.70763
NM_145210	Oas1e	0.00479476	2.69887
NM_001039376	Pde4dip	0.00800661	2.67987
BC119816	Zmynd17	0.00072140	2.67837
NM_007688	Cfl2	0.00510234	2.67185
NM_001110204	Acvr1	0.00435205	2.66553
NM_133967	Zdhhc7	0.00938457	2.66326
NM_138953	Eil2	0.00679476	2.6604
NM_024228	Gdpd3	0.00516205	2.6502
NM_027475	Ecd	0.00894341	2.64176
NM_172050	Cd300e	0.00356115	2.63589
NM_001083897	Mpzl1	0.00996036	2.63455
NM_178909	Wdr92	0.00435814	2.6279
NM_001081153	Unc13c	0.00873569	2.62718
ENSMUST00000052570	Arid3b	0.00184012	2.62289
NM_008480	Lama1	0.00219901	2.61552
NM_029620	Pcolce2	0.00051101	2.61451
NM_024437	Nudt7	0.00930859	2.61192
NM_010019	Dapk2	0.00686850	2.60635
AK016179	4930558K02Rik	0.00773180	2.60522
BC048939	A130022J15Rik	0.00441001	2.5979
NM_008635	Mtap7	0.00705064	2.5898

NM_182805	Gpt	0.00582467	2.58627
NM_011030	P4ha1	0.00134429	2.56466
NM_001161355	Timd2	0.00798292	2.55837
NM_148946	Slc8a2	0.00957826	2.5553
NM_001005424	Gm996	0.00327400	2.55491
NM_175283	Srd5a1	0.00148647	2.55189
NM_019955	Ripk3	0.00292851	2.55042
NM_173180	Pmpca	0.00154725	2.54542
NM_001113331	Shc1	0.00313789	2.53684
NM_001033779	Gm5544	0.00885479	2.52995
NM_028398	Agxt2l2	0.00901282	2.52348
ENSMUST00000079469	Gm600	0.00876539	2.5214
ENSMUST00000107933	1700008O03Rik	0.00186023	2.51629
NM_019651	Ptpn9	0.00205752	2.50523
NM_018889	Pigb	0.00712383	2.50091
NM_029851	Dync2h1	0.00292134	2.49966
ENSMUST00000074390	Hmcn2	0.00419268	2.49377
NM_009970	Csf2ra	0.00055595	2.49249
NM_199467	F730047E07Rik	0.00688226	2.48526
NM_011857	Odz3	0.00284543	2.48045
NM_027089	4930579C15Rik	0.00460774	2.47588
NR_027957	Ppp4r1l	0.00714149	2.44563
NM_029801	1700021C14Rik	0.00533516	2.44044
NM_001039209	Gm13152	0.00417742	2.43759
NM_011159	Prkdc	0.00785475	2.43289
NM_012011	Eif2s3y	0.00437974	2.42249
NM_172473	Hace1	0.00799103	2.41074
NM_018883	Camkk1	0.00065300	2.40855
NM_007409	Adh1	0.00460863	2.40138
M19662	Mdk	0.00252215	2.3978
BC100361	Larp2	0.00445630	2.39587
NM_172748	Fbxl19	0.00100882	2.3956
NM_011800	Cdh20	0.00103799	2.39165
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NM_026557	Rchy1	0.00835919	-3.2484
NM_153139	Slc36a1	0.00925306	-3.25509
NM_181853	Trim66	0.00134733	-3.26073
NM_001113198	Mitf	0.00035458	-3.2656
BC053100	5730559C18Rik	0.00615670	-3.27875
NM_033552	Slc4a10	0.00291103	-3.28253
NM_019417	Pdlim4	0.00466272	-3.29047
NM_028421	Zc3hav1	0.00074924	-3.29639
NM_172831	E230025N22Rik	0.00193439	-3.31618
NM_001136065	Hipk2	0.00467570	-3.32039
NM_001081688	Tmprss9	0.00866706	-3.3375
NM_001081084	Cubn	0.00930357	-3.34656

NM_146258	Stard13	0.00445003	-3.36649
BC147178	A430084P05Rik	0.00351078	-3.3707
NM_010204	Fgf6	0.00517794	-3.37141
NM_009463	Ucp1	0.00042299	-3.38652
NM_013920	Hnf4g	0.00810111	-3.40253
BC099580	1700057K13Rik	0.00123723	-3.43186
NM_001081091	Cep152	0.00617512	-3.44502
NM_001102474	Skint3	0.00734792	-3.45361
NM_183000	Accn3	0.00005265	-3.45397
NM_026835	Ms4a6d	0.00173652	-3.46345
NM_001040111	Arap1	0.00366261	-3.47213
NM_133987	Slc6a8	0.00791081	-3.48584
NM_145932	Osta	0.00092189	-3.51596
NM_007397	Acvr2b	0.00363512	-3.5934
NM_001081414	Grm5	0.00551335	-3.59973
BC130272	Fam65c	0.00997374	-3.60624
NM_203508	Fam12	0.00352481	-3.60772
ENSMUST00000100079	Ly75	0.00128985	-3.60794
NM_001111027	Runx1t1	0.00333439	-3.63593
NM_019471	Mmp10	0.00038599	-3.63701
NM_146001	Hip1	0.00275255	-3.63757
NM_007864	Dlg4	0.00021934	-3.6377
NM_007702	Cidea	0.00214630	-3.67869
NM_001081390	Palld	0.00993526	-3.74557
NM_001081035	Nav3	0.00487705	-3.75779
NM_001100395	Otof	0.00784378	-3.80809
ENSMUST00000065125	4930451C15Rik	0.00383835	-3.81875
NM_008447	Kif5a	0.00167263	-3.84868
NM_024432	Ubxn6	0.00596229	-3.89543
NM_009704	Areg	0.00802399	-3.90473
NM_080854	Slc34a3	0.00749096	-3.91957
NM_001037865	Col28a1	0.00962134	-3.93477
NM_027062	C8g	0.00722808	-3.95098
NM_009782	Cacna1e	0.00372868	-3.96205
NM_019507	Tbx21	0.00464970	-3.97019
NM_146191	Lrrk1	0.00232479	-3.97345
NM_008882	Plxna2	0.00225725	-4.0486
NM_170684	Cpne7	0.00192464	-4.12112
NM_023617	Aox3	0.00662524	-4.12717
BC023699	Atpgd1	0.00505439	-4.17178
NM_029847	Arsk	0.00573728	-4.17546
NM_053079	Slc15a1	0.00022755	-4.19093
NM_029465	Clec4g	0.00127785	-4.23494
NM_001004061	Fam170a	0.00775501	-4.2355
NM_028980	Ppp4r4	0.00125036	-4.26165
NM_028034	Tdrd12	0.00908015	-4.36505
NM_019467	Aif1	0.00681504	-4.41921
NM_028715	Fcho1	0.00988497	-4.45013
NM_008512	Lrp1	0.00038414	-4.48259

NM_177117	Dlec1	0.00006323	-4.51601
NM_053011	Lrp1b	0.00397935	-4.52126
NM_001081292	Map3k10	0.00276739	-4.58531
NM_001081185	Flnc	0.00538267	-4.6047
AK122464	Plekhh1	0.00098546	-4.70347
NM_009036	Rbpjl	0.00741424	-4.70984
NM_009619	Adam3	0.00069977	-4.87767
AJ491857	Sspo	0.00723764	-4.92937
NM_029372	1700011F14Rik	0.00295692	-4.92966
ENSMUST00000094950	Pgap1	0.00399215	-5.10525
NM_020606	Parva	0.00586851	-5.20248
NM_030026	Mccc2	0.00077238	-5.22805
NM_013919	Usp21	0.00115195	-5.25496
NM_027990	Lypd6b	0.00308669	-5.50117
NM_080470	Smc1b	0.00139413	-5.51
NM_201407	Dennd4b	0.00235899	-5.65283
ENSMUST00000115200	Nrf1	0.00060323	-5.70095
ENSMUST00000043406	Nox4	0.00835128	-5.72915
NM_173023	Catsperb	0.00176915	-5.78812
BC099618	Igh-6	0.00157219	-6.06717
NM_008340	Igfals	0.00166573	-6.07172
NM_011941	Mapkbp1	0.00512104	-6.21263
NM_172671	Lgr4	0.00554593	-6.27445
NM_009757	Bmp15	0.00193539	-6.63897
NM_009109	Ryr1	0.00030798	-7.24409
NM_144850	Rapgef3	0.00063220	-7.31513
ENSMUST00000018993	Wwc1	0.00899212	-7.39885
NM_010863	Myo1b	0.00232410	-8.07146
NM_172862	Frem2	0.00838941	-8.26939
ENSMUST00000103380	LOC100047070	0.00298262	-8.94678
NM_027759	Fsip1	0.00885647	-10.7575
NM_145499	Cyp2c70	0.00333836	-18.6819

Public ID and gene symbols of differentially expressed (> 2-fold, $p < 0.01$) genes are shown. In cases multiple probes correspond to the same gene, the result from probe that showed least p value without discrepancy in the up- or down-regulation is shown.

Table S4. The list of all differentially expressed (> 2-fold, p<0.01) genes in MEP cells

Public ID	Gene Symbol	P value	Fold change
NM_153533	Tenc1	0.00553511	10.9473
NM_001081129	Cntnap3	0.00056736	8.70436
NM_030025	Ccdc150	0.00784714	8.2626
ENSMUST00000049703	4930503B20Rik	0.00132755	7.44436
NM_182716	Nfasc	0.00141076	7.03913
NM_011510	Abcc8	0.00648485	6.46512
NM_133657	Cyp2a12	0.00323696	6.44811
NM_016927	Pkd2l2	0.00502266	6.37472
ENSMUST00000098484	4930579C12Rik	0.00330199	6.06608
NM_018744	Sema6a	0.00515062	5.97448
NM_001081250	Myh13	0.00238773	5.84077
NM_054103	Stk33	0.00025704	5.78009
NM_013491	Clcn1	0.00325664	5.77981
NM_178396	Car12	0.00113361	5.7303
NM_207683	Pik3c2g	0.00503511	5.72728
NM_026458	Abca14	0.00402712	5.59412
NM_198649	Ablim3	0.00121710	5.58875
NM_028266	Col16a1	0.00731708	5.4001
ENSMUST00000062827	1520401A03Rik	0.00621115	5.33699
NM_134028	Tubg2	0.00311095	5.29471
NM_009512	Slc27a5	0.00004659	5.13352
NM_146001	Hip1	0.00117670	5.04245
NM_007729	Col11a1	0.00712239	4.89573
NM_001104946	Gm2012	0.00579479	4.86863
NM_028981	Cacna1d	0.00432566	4.79181
NM_010018	Dao	0.00249345	4.53533
NM_001122635	1700021K14Rik	0.00627906	4.53188
NM_028957	Hyal5	0.00526927	4.53159
NM_172696	Inadl	0.00780564	4.46563
NM_134160	Mcoln3	0.00758010	4.45004
NM_028624	1110017D15Rik	0.00879034	4.42051
NM_130452	Bbox1	0.00555148	4.36666
NM_010007	Cyp2j5	0.00937482	4.3086
AK049811	5730410E15Rik	0.00129435	4.28844
NM_145388	Best2	0.00439278	4.2766
NM_053193	Cpsf1	0.00259807	4.25052
NM_019784	Tex21	0.00686084	4.22597
NM_008291	Hsd17b3	0.00329524	4.1984
NM_181988	Rerg	0.00556340	4.16698
NM_025807	Slc16a9	0.00734526	4.16693
NM_053271	Rims2	0.00923118	4.14285
NM_177756	Glt25d2	0.00387738	4.08928
AK053964	Ltbp1	0.00620776	3.96429
NM_175448	Rlbp1l2	0.00240871	3.93726
NM_054053	Gpr98	0.00252416	3.84135
NM_017396	Cyp3a41a	0.00037961	3.83069

NM_001033541	Gm5127	0.00686723	3.79737
NM_009420	Crisp2	0.00538972	3.75265
NM_147219	Abca5	0.00568966	3.71218
NM_053270	Rims1	0.00651091	3.70274
NM_013839	Nr1h3	0.00296621	3.66605
NM_008032	Aff2	0.00315856	3.65171
NM_001033269	Eif4e1b	0.00568336	3.64941
NM_007980	Fabp2	0.00887235	3.57383
NM_018852	Scn9a	0.00377790	3.56577
NM_008941	Prss7	0.00106308	3.5405
NM_007736	Col4a5	0.00770506	3.49928
NM_175750	Plxna4	0.00180015	3.44127
NM_173023	Catsperb	0.00655291	3.42157
NM_207657	5031410I06Rik	0.00024082	3.4165
NM_178655	Ank2	0.00301302	3.41059
NM_080510	Trim69	0.00487556	3.39639
NM_001081033	Pde11a	0.00959289	3.36591
ENSMUST00000097884	Csmd2	0.00746771	3.35117
NM_001146292	Brunol4	0.00687959	3.34761
NM_028938	Lrriq3	0.00122695	3.34682
NM_013920	Hnf4g	0.00857460	3.33635
NM_021604	Agrn	0.00461172	3.32529
NM_025744	4933404M02Rik	0.00963495	3.32369
NM_013773	Tcl1b1	0.00979159	3.31042
NM_053011	Lrp1b	0.00922478	3.29677
NM_001083897	Mpzl1	0.00480827	3.2843
NM_001029987	Doxl2	0.00931897	3.27361
NM_012033	Tinag	0.00558143	3.26532
NM_007738	Col7a1	0.00777597	3.23921
BC068128	AI118078	0.00853229	3.23769
ENSMUST00000107287	Ptprd	0.00429763	3.22702
NM_019945	Mast1	0.00265987	3.21292
NM_007814	Cyp2b19	0.00866158	3.20698
NM_177002	C730048C13Rik	0.00712685	3.18747
NM_001039557	4922505G16Rik	0.00069265	3.1805
NM_009109	Ryr1	0.00572413	3.15415
NM_172277	Snx8	0.00962532	3.14322
NM_009399	Tnfrsf11a	0.00267033	3.09397
NM_001142804	Acss3	0.00780405	3.07082
NM_007734	Col4a3	0.00349567	3.06151
NM_007760	Crat	0.00630713	3.0186
NM_030599	Klrb1b	0.00522688	3.0072
NM_172775	Plxnb1	0.00138958	3.00542
BC120488	AU021034	0.00362697	2.97526
NM_021486	Bcmo1	0.00984832	2.96437
NM_013462	Adrb3	0.00447236	2.95392
NM_033526	Ubqln4	0.00063336	2.93995
NM_019587	Plxnb3	0.00147110	2.93859
NM_172570	Trim47	0.00885782	2.90344

NM_018732	Scn3a	0.00294717	2.89347
NM_172867	Zfp462	0.00043589	2.84471
NM_054073	Tsga13	0.00523521	2.83498
NM_001105252	Tmc5	0.00877844	2.83301
NM_148950	Pknox2	0.00199144	2.82307
NM_029444	Six6os1	0.00222311	2.79915
NM_172294	Sulf1	0.00319249	2.79246
NM_177376	Myo3b	0.00773086	2.78115
NM_183116	1110021L09Rik	0.00422688	2.76382
NM_007870	Dnase1l3	0.00599369	2.75982
XM_001478028	Lrrig1	0.00213951	2.74187
BC090250	9930023K05Rik	0.00317401	2.73517
NM_029983	Sla2	0.00593610	2.73049
NM_019581	Gtpbp2	0.00370718	2.7212
NM_028946	Nhedc1	0.00198772	2.71526
NM_199021	Dpp10	0.00638089	2.71
ENSMUST00000064948	Dnahc6	0.00522192	2.70524
ENSMUST00000033625	4930513O06Rik	0.00148516	2.7004
NM_033552	Slc4a10	0.00564466	2.69583
NM_008310	Htr1f	0.00637906	2.67674
NM_138305	Adcy3	0.00416282	2.66309
NM_008646	Cpamd8	0.00624055	2.6431
NM_026625	1700067P10Rik	0.00419344	2.63983
NM_001128086	Anks1b	0.00456437	2.61998
BC110558	Plac8l1	0.00556304	2.54916
NM_175506	Adamts19	0.00390723	2.54646
BC100412	1700001E04Rik	0.00095912	2.53236
NM_028733	Pacsin3	0.00453709	2.53107
AK030119	4932443G14	0.00244700	2.52648
NM_001013024	Usp13	0.00447326	2.51563
ENSMUST00000070189	Lrguk	0.00900321	2.51508
NM_001024142	Fbxo10	0.00459318	2.51128
NM_172857	Exd1	0.00291189	2.50831
ENSMUST00000046993	Dnahc3	0.00993089	2.50176
NM_146587	Olf1023	0.00519898	2.50066
AB197927	2010317E24Rik	0.00458282	2.49452
NM_001159297	Gcet2	0.00699809	2.48324
NM_009641	Angpt4	0.00270046	2.47561
ENSMUST00000048572	Hlx	0.00608543	2.46954
ENSMUST00000112911	Gm6432	0.00031014	2.45936
NM_053098	Lmod2	0.00856549	2.45673
ENSMUST00000009214	Rtdr1	0.00299471	2.45277
NM_021400	Prg4	0.00067365	2.44982
NM_172859	6330439K17Rik	0.00841585	2.44756
NM_198167	Tmem63b	0.00846329	2.44232
NM_019392	Tyro3	0.00197466	2.43839
ENSMUST00000107934	Shank1	0.00703160	2.43456
NM_183307	Ccdc63	0.00907176	2.43359
NM_009619	Adam3	0.00617635	2.42371

NM_027669	Sept12	0.00023786	2.42324
NM_153400	P2rx2	0.00052594	2.41584
NM_001033428	Tmem211	0.00575682	2.40945
ENSMUST00000096347	Enthd1	0.00415539	2.40898
NM_021408	Ush2a	0.00931839	2.40053
NM_177388	Slc41a2	0.00867383	2.39575
NM_007938	Epha6	0.00872754	2.39461
NM_015734	Col5a1	0.00894113	2.39243
NM_001001883	Hecw2	0.00487824	2.38939
BC016112	Col20a1	0.00424869	2.38018
NM_199465	Nexn	0.00672377	2.37982
NM_177905	Piwil4	0.00927214	2.37833
NM_146631	Olfr120	0.00295123	2.3693
ENSMUST00000028062	Vim	0.00885383	2.36922
NM_029614	Prss23	0.00080409	2.36922
NM_010623	Kif17	0.00882545	2.36435
NM_001100182	Cyp2j12	0.00906955	2.35403
NM_207654	Efna5	0.00528884	2.34889
NM_134023	Tbc1d10a	0.00277404	2.34216
AK016739	4933408J17Rik	0.00491548	2.3407
ENSMUST00000118246	Synj1	0.00297386	2.32696
NM_001105191	Vmn2r52	0.00326888	2.32348
NM_009118	Sag	0.00732683	2.32172
NM_001081242	Tln2	0.00210715	2.31328
NM_025989	Gp2	0.00662521	2.30366
NM_009916	Ccr4	0.00176901	2.29985
NM_021489	F12	0.00377723	2.29825
NM_175535	Arhgap20	0.00123068	2.29592
NM_011511	Abcc9	0.00469685	2.2908
NM_153067	Mrgpra3	0.00494038	2.29044
NM_181591	Txndc3	0.00641101	2.28857
NM_133882	C8b	0.00666046	2.26729
NM_023868	Ryr2	0.00252649	2.26386
ENSMUST00000088896	Tmcc1	0.00445031	2.25436
ENSMUST00000041220	Zhx3	0.00719769	2.2384
NM_080728	Myh7	0.00751925	2.22218
ENSMUST00000056994	4921513I03Rik	0.00043928	2.21503
NM_177265	6330512M04Rik	0.00943432	2.21349
NM_177664	D3Bwg0562e	0.00568169	2.20852
NM_008596	Sypl2	0.00121241	2.20656
NM_144794	Tmem63a	0.00298286	2.18198
ENSMUST00000048678	Lss	0.00151207	2.17296
NM_025489	Dnajc5b	0.00115849	2.17269
ENSMUST00000091023	4930589L23Rik	0.00101780	2.16926
NM_032005	Tbx19	0.00640615	2.16
NM_011167	PrI8a6	0.00581252	2.15919
NM_001033199	AI747448	0.00683022	2.15478
NM_207204	Ninl	0.00073614	2.15173
NM_011537	Tbx5	0.00220640	2.14128

NM_008354	Il12rb2	0.00557564	2.12005
BC151034	Pdzrn4	0.00271544	2.10559
NM_177030	Dock6	0.00312011	2.10233
NM_144890	BC018465	0.00459914	2.09654
NM_027971	Serpinb12	0.00209503	2.09427
NM_080455	Tshz2	0.00219433	2.0919
ENSMUST00000085554	C130038G02Rik	0.00404081	2.07175
NM_008010	Fgfr3	0.00733871	2.05909
NM_001081249	Vcan	0.00737183	2.05761
NM_008843	Pip	0.00236116	2.05661
NM_011426	Siglec1	0.00152960	2.05328
NM_147221	Glis1	0.00591795	2.05281
BC015298	Muc3	0.00828438	2.04785
NM_145423	Slc5a8	0.00319161	2.04343
BC063072	Kirrel3	0.00393942	2.03972
NM_172838	Slc16a12	0.00418000	2.03325
NM_031194	Slc22a8	0.00534368	2.03256
AF060570	Robo3	0.00858572	2.03125
ENSMUST00000069943	Gm14318	0.00186688	2.0231
DQ664197	Gm1110	0.00228504	2.01942
NM_017470	Dnalc4	0.00216599	2.01032
NM_198024	Ranbp3l	0.00723670	2.00363
NM_080595	Emid1	0.00582781	2.00147
BC147482	Gm962	0.00475880	-2.00079
NM_001009573	Unc13d	0.00967918	-2.00794
NM_001122683	Bdh1	0.00642240	-2.00806
NM_007788	Csnk2a1	0.00228759	-2.01009
NM_013719	Eif2ak4	0.00983537	-2.0132
NM_001048192	Agbl5	0.00748912	-2.01466
NM_026493	Cspp1	0.00747745	-2.02244
NM_021458	Fzd3	0.00525767	-2.02265
NM_028331	C1qtnf6	0.00569375	-2.02419
NM_023220	2010106G01Rik	0.00040644	-2.02442
NM_030721	Acox3	0.00042867	-2.02507
NM_007663	Cdh16	0.00680799	-2.02597
NM_001102430	Arfgef1	0.00193837	-2.02964
NM_145824	Ranbp10	0.00570998	-2.03384
NM_001002764	Smg6	0.00205591	-2.03457
NM_199057	Rusc2	0.00398886	-2.03474
NM_010631	Kifc3	0.00030726	-2.04014
NM_001142322	Myo9b	0.00040617	-2.04254
NM_173788	Npr2	0.00252266	-2.04263
ENSMUST00000039517	Syde2	0.00375386	-2.04485
NM_011132	Pole	0.00439420	-2.04716
NM_183268	Defa20	0.00259697	-2.04851
NM_025836	Plin3	0.00844479	-2.04996
NM_001104541	Vmn2r92	0.00271309	-2.05584
NM_001042504	Pitx2	0.00230582	-2.05613
NM_181588	Cmb1	0.00671850	-2.05628

NM_010050	Dio2	0.00039952	-2.05777
NM_010078	Drp2	0.00127248	-2.06098
BC092140	4930579K19Rik	0.00724359	-2.06589
NM_172261	Ppp1r9b	0.00489612	-2.06767
NM_001145835	Ralgds	0.00519080	-2.07206
NM_001128198	Vps13d	0.00574268	-2.07296
NM_001037727	Arhgap25	0.00840930	-2.07646
NM_001033280	Gm94	0.00058790	-2.07851
NM_029606	Ccdc46	0.00918451	-2.07872
NM_011138	Pou2f2	0.00022005	-2.07964
NM_146183	Zfp428	0.00952184	-2.08346
NM_008904	Ppargc1a	0.00114803	-2.08593
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AK129029	Gm10033	0.00503649	-2.84188
NM_177697	Vwa3a	0.00318310	-2.85214
AF283559	Rps2	0.00454170	-2.85907
NM_025660	Ribc1	0.00799451	-2.86306
NM_172800	Sdk2	0.00612606	-2.86767
NM_028119	Ddb2	0.00751928	-2.87195
NM_001029936	Cytsb	0.00978215	-2.87599
NM_027880	Telo2	0.00037815	-2.87888
NM_019866	Spib	0.00815097	-2.88134
NM_008739	Nsd1	0.00061903	-2.88409
NM_175515	Intu	0.00942515	-2.88682
NM_009369	Tgfb1	0.00755021	-2.89497
NM_026327	1810048J11Rik	0.00267260	-2.89595
NM_001013813	Maml2	0.00716664	-2.89817
NM_178714	Lrnf5	0.00312437	-2.89828
NM_023525	Cad	0.00345901	-2.90221
ENSMUST00000062608	Asxl3	0.00573874	-2.90412
NM_001033489	Rnf207	0.00767359	-2.9175
NM_028710	Arsg	0.00887100	-2.92039
NM_145990	Cdk5rap2	0.00235683	-2.9377
NM_019535	Sh3gl2	0.00927698	-2.94047
NM_025730	Lrrk2	0.00919432	-2.94854
NM_177379	Grit	0.00124548	-2.94884
NM_027442	Ddo	0.00992781	-2.95263
NM_001081106	Cytl1	0.00182480	-2.95439
NM_033398	Jmjd6	0.00322485	-2.96057
NM_027238	Ttc39b	0.00844565	-2.96147
NM_020574	Kcne3	0.00853369	-2.97152
NM_009496	Vamp1	0.00975941	-2.9742
NM_001083927	Tle3	0.00520625	-2.98516
NM_010140	Epha3	0.00184861	-2.98789
NM_029629	Fahd2a	0.00188177	-2.9892
NM_021327	Tnip1	0.00256307	-2.99708

ENSMUST00000037552	Lepr	0.00439709	-2.99929
NM_017406	Atf6b	0.00446685	-2.99994
NM_001081178	Gpr116	0.00402309	-3.00071
BC117982	Ccdc135	0.00644368	-3.00235
NM_172162	Hinfp	0.00061968	-3.0078
NM_172053	Adamts16	0.00074497	-3.01871
NM_011777	Zyx	0.00782057	-3.02309
NM_020268	Klk1b27	0.00069570	-3.02533
BC005433	Map4k1	0.00372334	-3.02544
NM_011857	Odz3	0.00134489	-3.03074
NM_172768	Gramd1b	0.00652109	-3.03538
NM_009728	Atp10a	0.00727374	-3.0395
NM_153177	Eif2c4	0.00255800	-3.0412
NM_001001602	Dab2ip	0.00918410	-3.04461
NM_013851	Abca8b	0.00468715	-3.0464
NM_001040692	Slc6a18	0.00434173	-3.04972
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NM_172668	Lrp4	0.00608578	-3.11442
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NM_008484	Lamb3	0.00298090	-3.12109
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NM_181853	Trim66	0.00154353	-3.12789
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NM_025696	Sorcs3	0.00107234	-3.13218
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NM_146091	Atl3	0.00313475	-3.13995
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NM_013806	Abcc2	0.00267661	-3.14713
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NM_153391	Wdr19	0.00113275	-3.15281
XM_146277	Gm501	0.00293069	-3.15518
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NM_019568	Cxcl14	0.00594072	-3.16655
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NR_004843	Chkb-cpt1b	0.00022277	-3.1812

NM_007758	Cr2	0.00305520	-3.18681
NM_175539	Dcaf12l2	0.00334557	-3.19583
NM_001024137	Pla2g4d	0.00586926	-3.19753
NM_175276	Fhod3	0.00045738	-3.19791
NM_010024	Dct	0.00414983	-3.20336
NM_007407	Adcyap1r1	0.00178867	-3.21226
NM_001017426	Kdm6b	0.00351640	-3.22354
NM_023597	Wdr31	0.00166126	-3.23085
NM_027777	Pex1	0.00060681	-3.23776
NM_213729	Inca1	0.00745408	-3.23933
NM_172476	Tmc7	0.00619823	-3.25108
NM_001081039	Dock9	0.00242320	-3.25978
NM_001001183	Tmem204	0.00706559	-3.26723
NM_026067	Eri1	0.00591486	-3.26793
NM_177773	4933408B17Rik	0.00317175	-3.2691
NM_013557	Eif2ak1	0.00104791	-3.27283
NM_008980	Ptpa	0.00943109	-3.28184
NM_145619	Parp3	0.00828059	-3.28767
NM_029017	Mrpl47	0.00317883	-3.29064
NM_001013405	D9Ert402e	0.00063603	-3.2972
NM_030210	Aacs	0.00369838	-3.30974
NM_011521	Sdc4	0.00403581	-3.31375
NM_139145	Hlcs	0.00514591	-3.31642
BC115639	4930550C14Rik	0.00739890	-3.32467
NM_172516	Dstyk	0.00943212	-3.36036
NM_177857	Dennd2c	0.00384785	-3.36373
L27105	Nf2	0.00448178	-3.37838
NM_032543	Rnf123	0.00824296	-3.39181
NM_021280	Plcg1	0.00742805	-3.40534
NM_008788	Pcolce	0.00891615	-3.4084
NM_008194	Gyk	0.00434262	-3.41755
NM_178702	Radil	0.00766649	-3.41902
NM_007564	Zfp3611	0.00427352	-3.41931
AF090403	Qk	0.00426496	-3.43712
NM_009660	Alox15	0.00608445	-3.4448
NM_001005608	Itgb4	0.00501849	-3.44721
NM_010362	Gsto1	0.00924926	-3.45334
NM_008797	Pcx	0.00991027	-3.47101
BC046771	B230312A22Rik	0.00094269	-3.47837
NM_018873	RP23-157O10.7	0.00189248	-3.47954
NM_011670	Uchl1	0.00167384	-3.48765
NM_183016	Cdc42bpb	0.00647895	-3.49224
NM_001024705	Prmp5	0.00849708	-3.50691
XM_890873	Gm6661	0.00171510	-3.51232
NM_146173	Tspan33	0.00962436	-3.51682
ENSMUST00000021468	Nin	0.00893615	-3.52216
NM_177328	Grm7	0.00630613	-3.52356
NM_010863	Myo1b	0.00572868	-3.52597
NM_010923	Nnat	0.00144026	-3.53152

NM_199447	Rrp12	0.00299398	-3.53436
NM_009928	Col15a1	0.00140910	-3.56827
NM_010597	Kcnab1	0.00751223	-3.58261
NM_001035510	Zcchc18	0.00537482	-3.61179
NM_178118	Dixdc1	0.00621904	-3.61439
NM_009778	C3	0.00305834	-3.61641
NM_008880	Plscr2	0.00742158	-3.62412
NM_198664	Tbc1d2	0.00335891	-3.6288
NM_011580	Thbs1	0.00571970	-3.6306
NM_194342	Unc84b	0.00329826	-3.64633
NM_148922	Mdm1	0.00103004	-3.65129
NM_021322	Wdr4	0.00280055	-3.67828
ENSMUST00000031817	Herc5	0.00882962	-3.68411
NM_007403	Adam8	0.00180511	-3.69002
NM_028288	Cul4b	0.00042633	-3.69557
BC035522	AU022252	0.00236608	-3.69924
NM_017378	Pcdh12	0.00274990	-3.70211
NM_001102474	Skint3	0.00750149	-3.70375
NM_015731	Atp9a	0.00369257	-3.72049
NM_028306	Hspa12b	0.00790899	-3.72646
NM_027156	Ddx51	0.00034116	-3.73497
NM_134156	Actn1	0.00974720	-3.74154
NM_145227	Oas2	0.00285527	-3.75017
NM_001037928	Gm11992	0.00413524	-3.75753
NM_027059	1700023A16Rik	0.00177443	-3.76301
NM_172781	Klhl4	0.00255457	-3.76532
NM_010700	Ldlr	0.00295196	-3.7876
NM_001035228	St3gal5	0.00378808	-3.80926
NM_001081175	Itpkb	0.00365958	-3.81839
NM_198037	Cachd1	0.00280164	-3.822
NM_001141932	Rbms1	0.00849065	-3.82604
BC118613	1110038D17Rik	0.00260440	-3.82814
NM_145382	BC021381	0.00731682	-3.83447
NM_028200	1300018I17Rik	0.00872753	-3.8503
NM_011058	Pdgfra	0.00190602	-3.86675
NM_008817	Peg3	0.00603374	-3.86802
NM_001037717	Slc38a6	0.00970174	-3.8781
NM_007732	Col17a1	0.00645528	-3.9
BC067204	Sbf2	0.00116760	-3.91053
NM_009955	Dpysl2	0.00377468	-3.9125
NM_145926	Mgat4b	0.00578154	-3.91943
NM_144552	Stxbp6	0.00852351	-3.92152
NM_008029	Flt4	0.00799688	-3.92584
NM_007868	Dmd	0.00720161	-3.9371
NM_011539	Tbxas1	0.00924907	-3.94553
NM_021565	Midn	0.00159868	-3.94899
NM_133191	Eps8l2	0.00329788	-3.95715
BC048379	Zfyve26	0.00039028	-3.95882
NM_144920	Plekha5	0.00780212	-3.96184

NM_001003910	BC030307	0.00382258	-3.96458
NM_133952	Unc45a	0.00282518	-3.9801
NM_176922	Itga11	0.00109997	-3.98049
BC130272	Fam65c	0.00767813	-3.98363
NM_207228	Tsga10	0.00850337	-3.99078
NM_007854	Slc29a2	0.00615853	-4.00152
NM_001024624	Cdkl5	0.00710521	-4.01016
NM_015728	Slc33a1	0.00325225	-4.02188
NM_029270	Arhgap24	0.00221007	-4.05955
NM_008812	Padi2	0.00321056	-4.06458
NM_178710	Sik2	0.00246106	-4.06903
NM_030113	Arhgap10	0.00998780	-4.08929
NM_007499	Atm	0.00039186	-4.0965
NM_001099631	Sh2d5	0.00402812	-4.1017
DQ867033	Agbl1	0.00863916	-4.12875
NM_008664	Myom2	0.00199553	-4.12964
NM_001081191	Eml5	0.00063447	-4.14088
NM_025508	Gmpr	0.00423954	-4.14562
NM_010593	Jup	0.00998343	-4.15077
NM_001160400	Meqf8	0.00433995	-4.16347
NM_011565	Tead2	0.00752636	-4.1761
NM_009301	Svs5	0.00103986	-4.2294
NM_001081215	Ddx60	0.00328081	-4.24165
NM_031174	Dscam	0.00592739	-4.25592
NM_021287	Spnb3	0.00051986	-4.26762
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NM_007945	Eps8	0.00706926	-4.31157
ENSMUST00000055297	Pkd1l1	0.00194018	-4.32718
NM_146191	Lrrk1	0.00653252	-4.328
NM_008781	Pax3	0.00337147	-4.35188
NM_133238	Cd209a	0.00649298	-4.36708
AK017896	C2cd2	0.00174832	-4.38548
NM_053178	Acsbg1	0.00446389	-4.39763
ENSMUST00000062286	Rnf180	0.00228433	-4.41724
NM_013709	Sh3yl1	0.00569129	-4.44426
NM_001081064	Pdzd2	0.00135404	-4.46115
NM_011403	Slc4a1	0.00134908	-4.46196
NM_009743	Bcl2l1	0.00660098	-4.47278
NM_007905	Phc1	0.00060126	-4.48616
ENSMUST00000095456	Mcf2l	0.00593750	-4.49588
NM_018814	Pcnx	0.00395074	-4.52462
NM_008712	Nos1	0.00841795	-4.55434
NM_017398	Diap2	0.00645178	-4.57996
NM_001085390	Dusp5	0.00056926	-4.62499
NM_019709	Mbtps1	0.00054868	-4.65433
NM_008644	Prol1	0.00757386	-4.65513
NM_207682	Kif1b	0.00800723	-4.75988
NM_021301	Slc15a2	0.00241574	-4.76146
NM_001081358	Lrrc7	0.00887490	-4.76418

NM_028150	Supt7l	0.00233710	-4.77764
NM_001081335	Cul9	0.00369938	-4.78732
NM_007856	Dhcr7	0.00900455	-4.81813
ENSMUST00000027295	Sema4c	0.00133498	-4.81881
AF313800	Bcas3	0.00256830	-4.84981
NM_028228	2610028A01Rik	0.00051701	-4.89868
NM_133992	Usp52	0.00960366	-4.92152
ENSMUST00000063007	Fam161a	0.00862806	-4.93889
NM_001029873	Unc13a	0.00334960	-4.94873
NM_001039700	Pkd1l3	0.00709108	-4.95497
NM_007976	F5	0.00168525	-4.95526
NM_144868	Pcnxl3	0.00851399	-4.9631
NM_010570	Irs1	0.00779640	-4.99329
NM_177461	Micall1	0.00883058	-5.01434
NM_001033293	Uap1l1	0.00157263	-5.02489
NM_026922	Atp2c2	0.00760495	-5.04726
NM_019434	Mcm3ap	0.00603521	-5.07929
NM_007957	Esx1	0.00699400	-5.1733
NM_007717	Cmah	0.00863282	-5.17421
NM_178397	Faf2	0.00578749	-5.1993
NM_178666	Themis	0.00037953	-5.21771
NM_001040403	Flot2	0.00816085	-5.22281
NM_028188	Rusc1	0.00934733	-5.22577
AB183189	Tcra	0.00753090	-5.22703
NM_145933	St6gal1	0.00190794	-5.24405
NM_013887	Opn4	0.00236086	-5.24625
ENSMUST00000050372	Crb2	0.00859872	-5.27745
NM_008230	Hdc	0.00633701	-5.28866
NM_007740	Col9a1	0.00093199	-5.3042
NM_153546	Mboat1	0.00682103	-5.33522
NM_053139	Pcdhb14	0.00444107	-5.3433
NM_028152	Mms19	0.00137663	-5.34432
ENSMUST00000094950	Pgap1	0.00653225	-5.35333
NM_008934	Proc	0.00741061	-5.46382
NM_025921	2610002M06Rik	0.00343869	-5.50868
NM_011204	Ptpn13	0.00961227	-5.51323
NM_012045	Pla2g2f	0.00739814	-5.52077
NM_016693	Map3k6	0.00266507	-5.53801
AF167554	Tnfrsf19	0.00029993	-5.547
NM_007988	Fasn	0.00142083	-5.56415
NM_008085	Gapdhs	0.00945046	-5.59717
NM_026925	Pnlip	0.00219114	-5.64641
ENSMUST00000091364	1700008P02Rik	0.00234215	-5.72934
NM_031870	Msh4	0.00958287	-5.75156
BC095961	Homer3	0.00941117	-5.78512
NM_008238	Foxn1	0.00653992	-5.80277
NM_181594	Edc4	0.00112489	-5.82667
NM_032610	Spnb4	0.00116127	-5.84217
NM_172808	Antxrl	0.00158892	-5.92416

NM_001113353	Synj2	0.00096424	-6.00968
NM_134080	Flnb	0.00832431	-6.0168
NM_009782	Cacna1e	0.00137174	-6.04168
NM_010748	Lyst	0.00799037	-6.0434
NM_013783	Mme11	0.00189938	-6.10835
NM_010304	Gna15	0.00833391	-6.13839
NM_172133	Adap2	0.00890519	-6.24384
NM_029851	Dync2h1	0.00275758	-6.2612
NM_007769	Dmbt1	0.00815935	-6.30318
NM_009012	Rad50	0.00444159	-6.38626
NM_177056	Tmem198	0.00329305	-6.38817
NM_018793	Tyk2	0.00741924	-6.73143
NM_010722	Lmnb2	0.00068032	-6.82965
NM_030679	Myh1	0.00208152	-6.85737
NM_019923	Itpr2	0.00861122	-6.87742
NM_007378	Abca4	0.00759466	-6.96618
NM_009904	Clgn	0.00999306	-6.97711
NM_001159521	Plxnb2	0.00061084	-6.99003
NM_134000	Traf3ip2	0.00526870	-7.05325
NM_001033301	Fhdc1	0.00961412	-7.11526
NM_207239	Gtf3c1	0.00822070	-7.28746
NM_001076554	Spna2	0.00033862	-7.30996
NM_019472	Myo10	0.00440925	-7.43811
NM_011652	Ttn	0.00145345	-7.43888
NM_001081182	Atp8b2	0.00475596	-7.82498
NM_019689	Arid3b	0.00853387	-7.82806
NM_001081302	Trio	0.00045748	-7.98878
ENSMUST00000112149	Frmpd4	0.00615020	-8.00709
NM_176987	4732471D19Rik	0.00130124	-8.20251
NM_016850	Irf7	0.00334571	-8.23036
NM_001145830	Plcb1	0.00548519	-8.83075
NM_133979	Ano10	0.00771030	-8.83468
NM_172601	Rab2b	0.00010500	-8.98287
NM_001159507	Grip2	0.00322455	-9.04836
NM_013727	Azi2	0.00137839	-9.07207
XM_917532	Gm7298	0.00072706	-9.07352
NM_021022	Abcb11	0.00448732	-9.61403
NM_029870	A930001N09Rik	0.00380747	-9.72689
NM_023045	Xpo7	0.00089546	-10.6001
NM_010587	Itsn1	0.00555199	-11.1553
NM_001039472	Kif21b	0.00039547	-12.7775
NM_010233	<td>0.00489278</td> <td>-12.8508</td>	0.00489278	-12.8508
NM_001099635	Myh3	0.00161664	-13.1
NM_134137	Lars	0.00960611	-14.084
NM_011436	Sorl1	0.00628512	-14.8725

Public ID and gene symbols of differentially expressed (> 2-fold, p<0.01) genes are shown. In cases multiple probes correspond to the same gene, the result from probe that showed least p value without discrepancy in the up- or down-regulation is shown.

Table S5. The 10 most significant pathways in KLS cells

No.	Name of pathway	P value
1	Signal transduction_Calcium signaling	0.000025330
2	Immune response_NF-AT signaling and leukocyte interactions	0.000267773
3	Development_Angiotensin signaling via STATs	0.000374560
4	Immune response_CD16 signaling in NK cells	0.000404481
5	Apoptosis and survival_HTR1A signaling	0.000425576
6	Development_A2B receptor: action via G-protein alpha s	0.000425576
7	Regulation of lipid metabolism_Regulation of fatty acid synthase activity in hepatocytes	0.000455882
8	DNA damage_DNA-damage-induced responses	0.000587154
9	Regulation of lipid metabolism_Regulation of lipid metabolism via LXR, NF-Y and SREBP	0.000848396
10	Development_Role of IL-8 in angiogenesis	0.000951584

Gene ontology analysis using MetaCore software determined significant pathways in differentially expressed genes in KLS cells shown in Supplemental Table 3. The 10 most significant pathways in this analysis among 650 signaling pathways in MetaCore database are shown.

Table S6. The 10 most significant pathways in MEP cells

No.	Name of pathway	P value
1	Cytoskeleton remodeling_Cytoskeleton remodeling	0.000000027
2	Cell adhesion_Integrin-mediated cell adhesion and migration	0.000007231
3	Immune response_Alternative complement pathway	0.000011750
4	Cytoskeleton remodeling_TGF, WNT and cytoskeletal remodeling	0.000016142
5	Cell adhesion_Chemokines and adhesion	0.000026833
6	Immune response_Lectin induced complement pathway	0.000067214
7	Cytoskeleton remodeling_Integrin outside-in signaling	0.000067214
8	Immune response_Classical complement pathway	0.000104131
9	Muscle contraction_ACM regulation of smooth muscle contraction	0.001033465
10	Cell adhesion_Ephrin signaling	0.001682536

The MetaCore software determined significant pathways in differentially expressed genes in MEP cells shown in Supplemental Table 4. The 10 most significant pathways in this analysis among 650 signaling pathways in MetaCore database are shown.

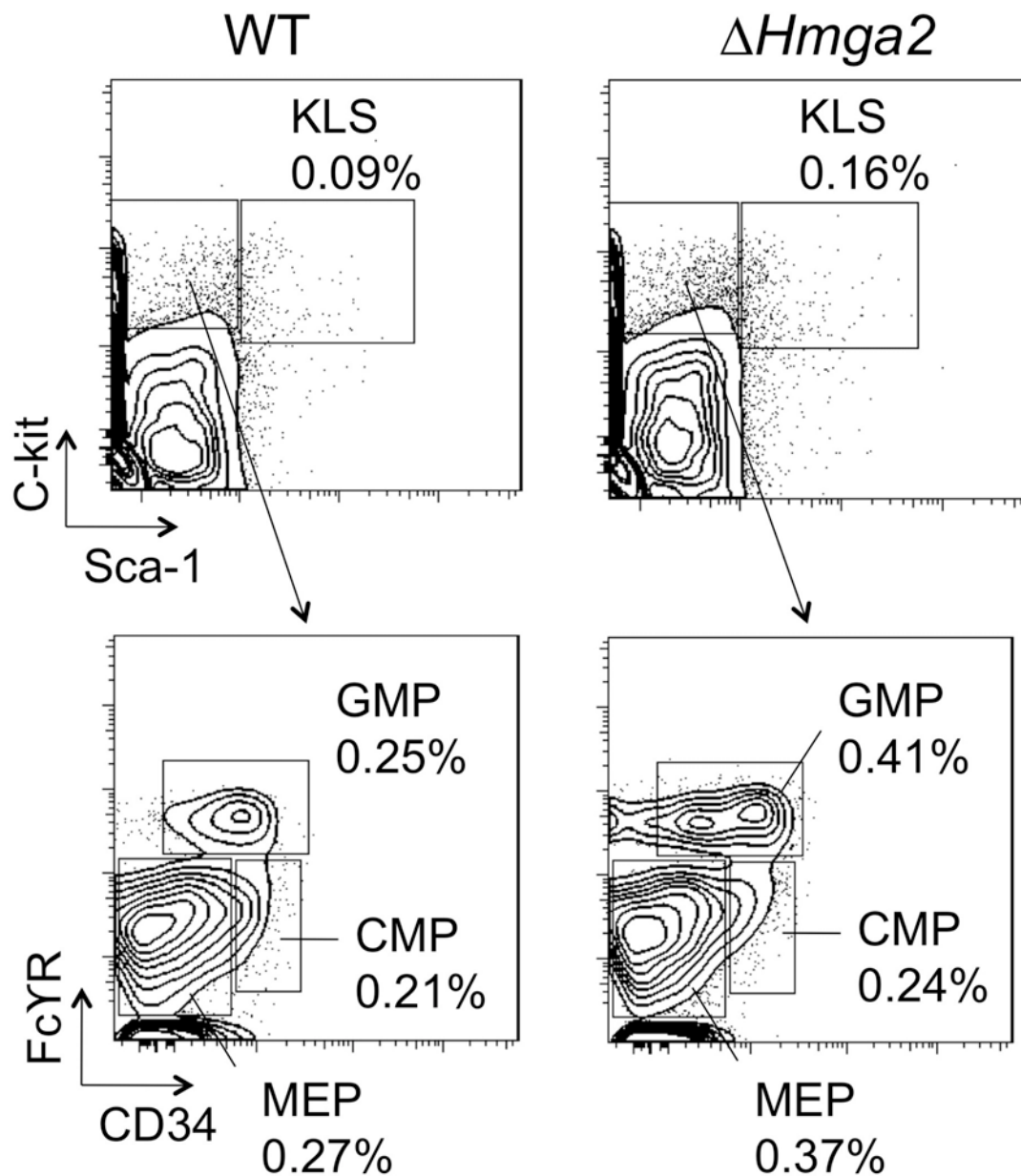


Figure S1. Flow cytometry of HSC-enriched KLS cells and committed progenitor cells in BM. In a gate of lineage⁻ cells, c-kit⁺sca-1⁺ HSC-enriched cells (KLS cells) and c-kit⁺sca-1⁻ progenitor cells were gated (upper plots). In a c-kit⁺sca-1⁻ cell fraction, common myeloid progenitor (CMP), granulocyte-monocyte progenitor (GMP), and megakaryocyte-erythrocyte progenitor (MEP) cells were separated (lower plots). KLS cells and MEP cells were sorted and used for the cDNA microarray analysis. Shown percentages are proportions of indicated cells in total BM cells.

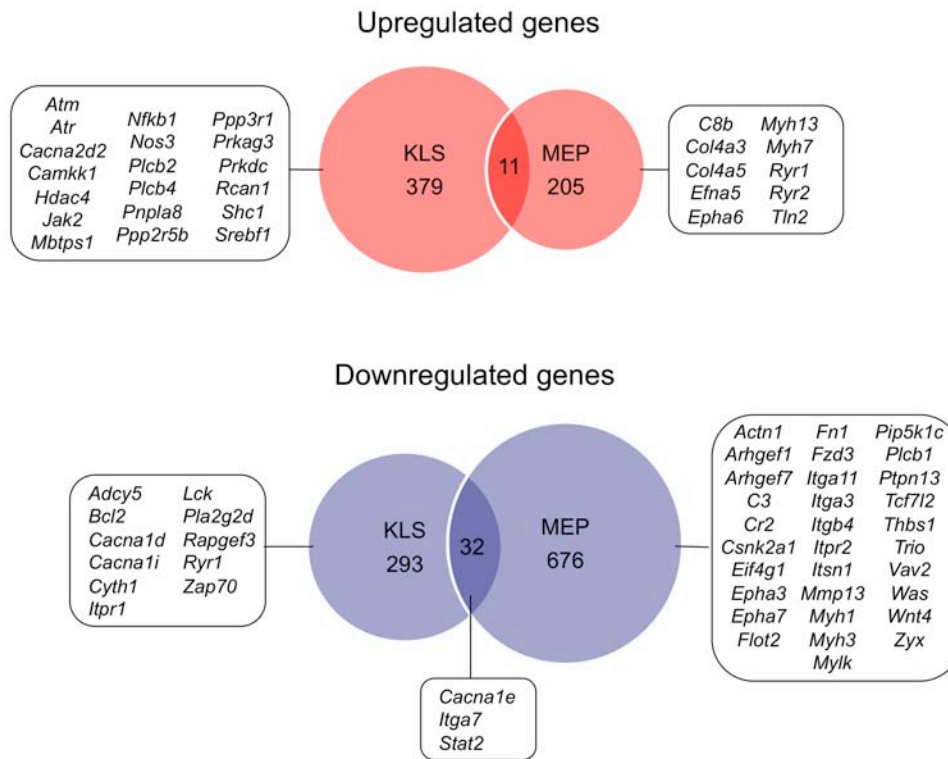


Figure S2. Differentially expressed (>2 fold, $p < 0.01$) genes in KLS cells and MEP cells from $\Delta Hmga2$ mice compared to WT mice in microarray analysis. Numbers of differentially expressed genes are shown in Venn diagrams. Symbols of differentially expressed genes involving in the 10 most significant pathways in KLS cells and MEP cells, which were determined by gene ontology analysis using the MetaCore software (GeneGo), are also shown.