Antibodies
The following monoclonal antibodies were used for fluorescence activated cell sorting For immunoprecipitation and western blotting experiments, anti–β3 integrin (N-20 and C-20, Santa Cruz Biotechnology, Santa Cruz, CA), anti–c-Src^{PY418} (100F9, Cell Signaling Technology, Danvers, MA), Syk (N-19, Santa Cruz Biotechnology), anti-pTyr (PY99, Santa Cruz Biotechnology) and anti-β3^{PY747} (Biosource International, Camarillo, CA) antibodies were used. Peroxidase-conjugated secondary antibody (GE healthcare science, Arlington Heights, IL) was used for western blotting.

Induction of outside-in signaling via integrin β3 by anti-mouse β3 integrin antibody, 2C9.G2, in platelets
Washed platelets were prepared from C57/BL6 mice as described previously.[1] Platelets were incubated with 2C9.G2 or hamster IgG in Tyrode-Hepes buffer (137 mM NaCl, 12.1 mM $NaHCO_3$, 2.7 mM KCl, 5 mM HEPES, BSA 0.1%, D-glucose 0.1%, 0.5 mM $CaCl_2$, 1 mM $MgCl_2$, pH7.4) for 15 min at room temperature. After incubation, the platelets lysed in lysis buffer (50 mM Tris-HCl (pH7.4), 150 mM NaCl, 1% Nonidet P-40, 0.5 mM EDTA, 0.1 mM PMSF, 10 μg/ml Leupeptin and 10 μg/ml aprotinin), and the lysates were subjected to immunoprecipitation with specific antibody and protein A or G Sepharose (Amersham Biosciences, Arlington Heights, IL) for 3 h at 4°C. Immunoprecipitated proteins were used for western blotting as described previously.[1]

Whole transcriptome analysis using a SOLiD system
After sorting 1,000–1,500 $CD34^{-}KSL$ cells, total RNA was extracted as previously described,[2] and first strand cDNA were synthesized using a SMARTer Pico cDNA amplification kit (Clonetech, Mountain View, CA). Double-stranded cDNA was then amplified by 20 cycles of PCR. The amplified cDNA was sheared into small fragments (80–130 bp) using a Covaris S2 system (Covaris, Inc., Woburn MA), which was followed by the repair and subsequent ligation of SOLiD P1 and P2 adaptors to the ends of target DNAs. To amplify a pool of cDNA fragments, the ligated fractions were subjected to limited rounds of PCR using primers complementary to the P1 and P2 adaptor sequences. After purification of the cDNA fragments, emulsion PCR was run using 1-μm–diameter beads with P1 primers covalently attached to their surfaces. We then sequenced ~120,000,000 beads on a SOLiD sequencer (Applied Biosystems). All of these procedures were carried out according to the manufacturer's instructions. After SOLiD sequencing, we analyzed the raw data using Applied Biosystems' whole transcriptome software (http://www.solidsoftwaretools.com/). In addition, the expression signals were normalized by dividing the tag number of each gene by the total tag number. The whole transcriptomes obtained through SOLiD sequencing were analyzed using GeneSpring (Agilent Technologies). Following filtration based on $p<0.05$ and >2-fold change, the selected genes were subjected to hierarchical cluster analysis. In addition, whole transcriptomes were subjected to gene set enrichment analysis using GSEA v2.06 software available from the Broad Institute (http://www.broad.mit.edu/gsea). Changed gene sets were selected based on a threshold set at a p-value <0.05 and FDR (q-value) <0.25.

DNA microarray analysis

After $CD34^{-}KSL$ cells were cultured with 2C9.G2 or control IgG for 5 days in S-Clone SF-03 medium supplemented with 50 ng/ml SCF and/or 50 ng/ml TPO, total RNA was extracted as described previously[2] from 5,000 sorted $CD48^{-}KSL$ cells, a population containing putative HSCs after culture.[3] Using the extracted total RNA, fluorescently-labeled cRNA was prepared with a ULS aRNA Fluorescent Labeling Kit (Kreatech, Amsterdam, The Netherlands), after which the cRNA was amplified using an OvationTM Aminoallyl System (NuGEN Technologies, San Carlos, CA). The prepared cRNA was then hybridized into Whole Mouse Genome (4 × 44K) arrays (Agilent Technologies, Santa Clara, CA). After washing with a Gene Expression Wash Pack (Agilent Technologies), the microarrays were scanned using an Agilent MicroArray Scanner (Agilent Technologies). All of these procedures were carried out according to the manufacturer's instructions. The distribution of remaining average intensities for each chip was normalized to the quantile value for all chips, and the signal values for genes were normalized to the median value for all genes. The expression value (signal) and detection call (Present or Absent) for each probe set were calculated using Feature Extraction Ver.9.5.3 (Agilent Technologies). All experiments were performed in duplicate or triplicate using sorted cells that were independently prepared in separate experiments. To analyze the data, we first removed the probe sets that were used for quality control and consistently yielded high negative values, resulting in extraction of 35,791 genes. Additionally, all values less than 1 were set to 1 when addressing fold changes. To identify differentially expressed genes, we selected probe sets that showed more than a 1.4-fold upregulation or downregulation upon addition of 2C9.G2 to HSCs in the presence of TPO (Fig. S2). Genes from 2C9.G2-treated HSCs that showed more than a 1.0-fold upregulation or downregulation only in the presence of SCF were filtered out of the selected probe sets so as to clearly identify the effects of the combination of TPO and outside-in signaling from β3 integrin (Fig. S2). Gene ontology analysis was performed using Onto-Express on the Onto-tools website (http://vortex.cs.wayne.edu/projects.htm).

Single cell culture

Single $CD34^{-}KSL$ cells were clonally sorted into the wells of 96-well U bottom plates (BD falcon, Franklin Lakes, NJ) and cultured with 2C9.G2 or hamster IgG for 5 days in the indicated medium. After 5 days, the total cell number was counted in the individual wells using a phase-contrast microscope.

BrdU uptake assay

To determine cell cycle rates *in vivo*, BrdU (100 mg/kg; BD Biosciences) was intraperitoneally injected into Wt and Y747A mice. Two hours after administration, the % $BrdU^{+}$ cells were determined in individual mice using a BrdU Flow Kit (BD Biosciences). Following the manufacturer's instructions, whole BMCs were stained with antibodies to detect $CD34^{-}KSL$ or $CD34^{+}KSL$ cells, and were examined individually. The cells were treated with DNase I for 1 h at 37°C, stained with anti-BrdU antibody (BD Biosciences) and assayed using flow cytometry.

REFERENCES

1. Takizawa H, Nishimura S, Takayama N, et al. Lnk regulates integrin alphaIIbbeta3 outside-in signaling in mouse platelets, leading to stabilization of thrombus development *in vivo*. *J Clin Invest*. 2010;120(1):179–190. Prepublished on 2009/12/30 as DOI 39503 [pii] 10.1172/JCI39503.
2. Umemoto T, Yamato M, Nishida K, Yang J, Tano Y, Okano T. Limbal epithelial side-population cells have stem cell-like properties, including quiescent state. *Stem Cells*. 2006;24(1):86–94. Prepublished on 2005/09/10 as DOI 2005-0064 [pii] 10.1634/stemcells.2005-0064.
3. Noda S, Horiguchi K, Ichikawa H, Miyoshi H. Repopulating activity of *ex vivo*-expanded murine hematopoietic stem cells resides in the CD48–c-Kit+Sca-1+lineage marker− cell population. *Stem Cells*. 2008;26(3):646–655. Prepublished on 2007/12/15 as DOI 2007-0623 [pii] 10.1634/stemcells.2007-0623.

Table S1. Gene sets upregulated in Wt CD34¯KSL cells, as compared to Y747A cells

The whole transcriptomes of wild-type and Y747A HSCs were subjected to gene set enrichment analysis (GSEA), and the threshold was set at p-value <0.05 and FDR (q value) <0.25. The normalized enrichment score (NES) reflects the degree to which a gene set is overrepresented at the top or bottom of a ranked list of genes. Bold indicates the gene sets in which p<0.01 and q<0.1.

Signal pathway
Cytokine response
Transcription factor-reguated gene set
CMV infection
UV treatment
Cell proliferation & Cell cycle

NAME	DESTRIBUTION	NES	NOM p-val	FDR q-val
DORSAM_HOXA9_UP	**Genes upregulated by HOXA9**	**3.780879**	**<0.001**	**0.089415**
CMV_HCMV_TIMECOURSE_4HRS_DN	**Down-regulated in fibroblasts following infection with human cytomegalovirus with maximum change at 4 hours**	**3.622293**	**<0.001**	**0.081843**
DER_IFNG_UP	**Genes up-regulated by interferon-gamma in HT1080 (fibrosarcoma)**	**3.5233**	**<0.001**	**0.071108**
UVC_XPCS_4HR_DN	**Down-regulated at 4 hours following treatment of XPB/CS fibroblasts with 3 J/m^2 UVC**	**3.428252**	**<0.001**	**0.090449**
CALCINEURIN_NF_AT_SIGNALING	**Mouse genes associated with signal transduction through calcium, calcineurin, and NF-AT.**	**3.340477**	**<0.001**	**0.088111**
IFN_ANY_UP	**Upregulated 2-fold in HT1080 cells 6 hours following treatment with any of interferons alpha, beta and gamma**	**3.280988**	**<0.001**	**0.08798**
DER_IFNB_UP	**Genes up-regulated by interferon-beta in HT1080 (fibrosarcoma)**	**3.220002**	**<0.001**	**0.097217**
IFN_GAMMA_UP	Upregulated 2-fold in HT1080 cells 6 hours following treatment with interferon gamma	3.146951	<0.001	0.113284
LEI_MYB_REGULATED_GENES	Myb-regulated genes	3.063134	<0.001	0.106041
UV-CMV_UNIQUE_HCMV_6HRS_UP	Up-regulated in fibroblasts at 6 hours following infection with UV-inactivated CMV, but not untreated CMV	2.937503	<0.001	0.113874
CMV-UV_HCMV_6HRS_UP	Up-regulated in fibroblasts at 6 hours following infection with UV-inactivated human cytomegalovirus	2.936515	<0.001	0.105794
IFN_ALPHA_UP	Upregulated 2-fold in HT1080 cells 6 hours following treatment with interferon alpha	2.93507	<0.001	0.099061
UVB_NHEK1_C1	Upregulated by UV-B light in normal human epidermal keratinocytes, cluster 1	2.918387	<0.001	0.097381
CMV_HCMV_TIMECOURSE_ALL_UP	Up-regulated in fibroblasts following infection with human cytomegalovirus.	2.849963	<0.001	0.105456
IL6PATHWAY	IL-6 binding to its receptor activates JAK kinases and a variety of transcription factors, with effects in neuronal differentiation, bone loss, and inflammation.	2.764113	<0.001	0.129641
FCER1PATHWAY	In mast cells, Fc epsilon receptor 1 activates BTK, PKC, and the MAP kinase pathway to promote degranulation and arachnidonic acid release	2.759928	<0.001	0.123101
PENG_LEUCINE_UP	Genes upregulated in response to leucine starvation	2.756302	<0.001	0.119043
CMV_8HRS_UP	Upregulated at 8hrs following infection of primary human foreskin fibroblasts with CMV	2.710537	0.037209	0.125483
IFN_BETA_UP	Upregulated 2-fold in HT1080 cells 6 hours following treatment with interferon beta	2.67786	<0.001	0.130361
SMOOTH_MUSCLE_CONTRACTION		2.657845	<0.001	0.132751
PRMT5_KD_DN	Down-regulated by stable RNAi knock-down of PRMT5 in NIH 3T3 cells	2.642075	<0.001	0.135555
P53GENES_ALL	p53 transcriptional targets	2.640601	<0.001	0.132046
IFN_ALL_UP	Upregulated 2-fold in HT1080 cells 6 hours following treatment with interferons alpha, beta and gamma	2.61445	<0.001	0.141137
ST_FAS_SIGNALING_PATHWAY	The Fas receptor induces apoptosis and NF-kB activation when bound to Fas ligand.	2.602091	<0.001	0.13878
CMV_HCMV_TIMECOURSE_12HRS_UP	Up-regulated in fibroblasts following infection with human cytomegalovirus (at least 3-fold, with Affymetrix change call, in at least two consectutive timepoints), with maximum change at 12 hours	2.589036	<0.001	0.142917
HSA04620_TOLL_LIKE_RECEPTOR_SIGNA	Genes involved in Toll-like receptor signaling pathway	2.588033	<0.001	0.138382
CMV_ALL_UP	Upregulated at any timepoint following infection of primary human foreskin fibroblasts with CMV	2.582003	<0.001	0.135179
SHEPARD_CELL_PROLIFERATION	Cell proliferation genes determined in zebra fish	2.566925	<0.001	0.135996
CELL_PROLIFERATION	The multiplication or reproduction of cells, resulting in the rapid expansion of a cell population.	2.566925	<0.001	0.140853
HSA05030_AMYOTROPHIC_LATERAL_SCL	Genes involved in amyotrophic lateral sclerosis (ALS)	2.559734	<0.001	0.135745
BRG1_SW13_UP	Up-regulated by transient expression of BRG1 at 24 hours in human, BRG1-lacking SW-13 cells	2.552981	<0.001	0.135817
DER_IFNA_UP	Genes up-regulated by interferon-alpha in HT1080 (fibrosarcoma)	2.552463	<0.001	0.132354
EPOPATHWAY	Erythropoietin, which activates the MAPK pathway, stimulates erythrocyte production and is an effective treatment for anemia.	2.528966	<0.001	0.136674
BREAST_CANCER_ESTROGEN_SIGNALIN	Genes preferentially expressed in breast cancers, especially those involved in estrogen-receptor-dependent signal transduction.	2.517045	<0.001	0.137332
SHEPARD_POS_REG_OF_CELL_PROLIFE	Positive regulators of cell proliferation in zebra fish	2.484177	0.037209	0.143191
IDX_TSA_UP_CLUSTER1	Strongly up-regulated at 2 hours during differentiation of 3T3-L1 fibroblasts into adipocytes with IDX (insulin, dexamethasone and isobutylxanthine), vs. fibroblasts treated with IDX + TSA to prevent differentiation (cluster 1)	2.482752	<0.001	0.139908
ET743_HELA_UP	Upregulated by Et-743 in HeLa cells	2.428896	<0.001	0.156943
UVC_XPCS_ALL_DN	Down-regulated at any timepoint following treatment of XPB/CS fibroblasts with 3 J/m^2 UVC	2.402065	0.029805	0.164906
UVB_NHEK4_24HRS_DN	Downregulated at 24 hours by UV-B light in normal human epidermal keratinocytes	2.379913	<0.001	0.174079
TAKEDA_NUP8_HOXA9_8D_UP	Effect of NUP98-HOXA9 on gene transcription at 8 d after transduction UP	2.374687	0.033708	0.17208
LEE_MYC_E2F1_DN	Genes down-regulated in hepatoma tissue of Myc+E2f1 transgenic mice	2.372752	<0.001	0.169055

KERATINOCYTEPATHWAY	Keratinocyte differentiation, which models the differentiation of epidermal cells, requires the four main MAP kinase pathways.	2.368144	<0.001	0.166451
TENEDINI_MEGAKARYOCYTIC_GENES	Genes essential to the development of megakaryocytes, as expressed in normal cells and essential thrombocythemic cells (ET).	2.360362	<0.001	0.167838
HYPOXIA_REVIEW	Genes known to be induced by hypoxia	2.33619	0.025532	0.171136
RETT_UP	Upregulated by expression of mutant MeCP2 (Rett syndrome) vs. wt MeCP2 in fibroblasts	2.331012	<0.001	0.170931
RADIATION_SENSITIVITY	Genes related to radiation sensitivity	2.325312	<0.001	0.16485
UVB_SCC_UP	Upregulated by UV-B light in squamous cell carcinoma cells	2.322484	0.029021	0.163126
CROONQUIST_RAS_STROMA_DN	Genes downregulated in multiple myeloma cells with N-ras-activating mutations versus those co-cultured with bone marrow stromal cells.	2.282837	<0.001	0.171753
HDACI_COLON_BUT48HRS_UP	Upregulated by butyrate at 48 hrs in SW260 colon carcinoma cells	2.259198	<0.001	0.17668
PENG_RAPAMYCIN_UP	Genes upregulated in response to rapamycin starvation	2.255989	<0.001	0.175487
ZUCCHI_EPITHELIAL_DN	The 50 most downregulated genes in primary invasive breast dutcal carcinoma or metastatic breast carcinoma isolated from lymph nodes, as compared to normal mammary epithelium.	2.254453	<0.001	0.1727
AD12_ANY_DN	Down-regulated 2-fold in HeLa cells by Adenovirus type 12 (Ad12) at any timepoint to 48 hrs hours post-infection	2.229415	<0.001	0.18221
PASSERINI_PROLIFERATION	Genes associated with cellular adhesion that are differentially expressed in endothelial cells of pig aortas from regions of disturbed flow (inner aortic arch) versus regions of undisturbed laminar flow (descending thoracic aorta).	2.226453	0.046065	0.180443
CHESLER_HIGHEST_FOLD_RANGE_GENE	50 neurologically relevant transcripts with highest abundance fold range among strains	2.215944	<0.001	0.18084
LINDSTEDT_DEND_8H_VS_48H_UP	Genes up-regulated in DC stimulated for 8 h as compared to DC stimulated for 48 h	2.21318	<0.001	0.176045
GPCRDB_OTHER		2.210764	<0.001	0.174622
TAKEDA_NUP8_HOXA9_10D_DN	Effect of NUP98-HOXA9 on gene transcription at 10 d after transduction Down	2.210015	<0.001	0.173292
AS3_FIBRO_C4	Downregulated early by sodium arsenite in fibroblasts (Cluster 4)	2.185448	<0.001	0.179709
CALRES_MOUSE_NEOCORTEX_DN	Downregulated in the neocortex of aged (30-month) mice subjected to caloric restriction since young adulthood vs. age-matched controls	2.184738	0.045614	0.177814
AD12_24HRS_DN	Down-regulated 2-fold in HeLa cells by Adenovirus type 12 (Ad12) at 24 hours post-infection	2.181267	<0.001	0.17647
HSA04630_JAK_STAT_SIGNALING_PATHV	Genes involved in Jak-STAT signaling pathway	2.175542	0.039735	0.173542
ADIP_HUMAN_UP	Up-regulated in primary human adipocytes, versus preadipocytes	2.171569	<0.001	0.173222
STRESS_GENOTOXIC_SPECIFIC_UP	Genes up-regulated 4 hours following genotoxic stress that discriminate genotoxic from non-genotoxic stress	2.142541	<0.001	0.178715
VERHAAK_AML_NPM1_MUT_VS_WT_UP	Genes that are upregulated in AML NPM1 mutant versus AML NPM1 wild type	2.135005	0.029	0.178908
HSA04662_B_CELL_RECEPTOR_SIGNALIN	Genes involved in B cell receptor signaling pathway	2.132378	<0.001	0.177542
HOGERKORP_ANTI_CD44_UP	Genes differentially expressed in human B cells cultured in vitro in the presence or absence of CD44 ligation, together with anti-immunoglobulin and anti-CD40 antibodies	2.091393	<0.001	0.196495
HDACI_COLON_BUT_UP	Upregulated by butyrate at any timepoint up to 48 hrs in SW260 colon carcinoma cells	2.066219	0.029666	0.200895
DRUG_RESISTANCE_AND_METABOLISM	Genes implicated in drug resistamce and metabolism	2.028933	<0.001	0.202889
ETSPATHWAY	The Ets transcription factors are activated by Ras and promote macrophage differentiation.	2.015379	<0.001	0.199783
UVB_NHEK4_6HRS_DN	Downregulated at 6 hours by UV-B light in normal human epidermal keratinocytes	2.012101	<0.001	0.201071
CALRES_RHESUS_DN	Downregulated in the vastus lateralis muscle of middle-aged rhesus monkeys subjected to caloric restriction since young adulthood vs. age-matched controls	2.009319	0.034	0.198104
HSA05212_PANCREATIC_CANCER	Genes involved in pancreatic cancer	1.976935	<0.001	0.20815
BRCA1_MES_UP	Genes with reduced expression in mouse embryonic stem cells with a targeted deletion of BRCA1, whose expression was rescued by ectopic expression of a BRCA1 transgene	1.976375	<0.001	0.206069
TIDPATHWAY	On ligand binding, interferon gamma receptors stimulate JAK2 kinase to phosphorylate STAT transcription factors, which promote expression of interferon responsive genes.	1.966672	<0.001	0.206645
ST_ADRENERGIC	Adrenergic receptors respond to epinephrine and norepinephrine signaling.	1.938831	<0.001	0.213494
AT1RPATHWAY	Binding of angiotensin II to AT1-R activates Ca2+ signaling and the JNK pathway.	1.934715	<0.001	0.213267
EGFPATHWAY	The epidermal growth factor (EGF) peptide stimulates the EGF receptor to promote cell proliferation via the MAP kinase and Ras pathways.	1.930149	<0.001	0.217076
BAF57_BT549_DN	Down-regulated following stable re-expression of BAF57 in Bt549 breast cancer cells that lack functional BAF57	1.926494	0.032694	0.217489
AGED_RHESUS_DN	Downregulated in the vastus lateralis muscle of aged vs. young adult rhesus monkeys	1.924703	<0.001	0.216343
SHEPARD_NEG_REG_OF_CELL_PROLIFE	Negative regulators of cell proliferation in zebra fish	1.902596	<0.001	0.224367
CMV_HCMV_TIMECOURSE_48HRS_DN	Down-regulated in fibroblasts following infection with human cytomegalovirus (at least 3-fold, with Affymetrix change call, in at least two consectutive timepoints), with maximum change at 48 hours	1.89314	<0.001	0.227611
BCRPATHWAY	B cell antigen receptors (BCRs) activate tyrosine kinases and transiently increase tyrosine phosphorylation on binding to antigen.	1.889467	<0.001	0.229058
CHANG_SERUM_RESPONSE_UP	CSR (Serum Response) signature for activated genes (Stanford)	1.879769	0.024641	0.234862
GH_EXOGENOUS_ANY_DN	Down-regulated at any time point (1-24 hours) following treatment of mammary carcinoma cells (MCF-7) with exogenous human growth hormone	1.876963	<0.001	0.234946
GH_EXOGENOUS_LATE_DN	Down-regulated at late time points (12-24 hours) following treatment of mammary carcinoma cells (MCF-7) with exogenous human growth hormone	1.872325	0.024845	0.237313
PASSERINI_SIGNAL	Genes associated with cellular adhesion that are differentially expressed in endothelial cells of pig aortas from regions of disturbed flow (inner aortic arch) versus regions of undisturbed laminar flow (descending thoracic aorta).	1.866323	<0.001	0.239453
GPCRPATHWAY	G-protein coupled receptors activate adenylyl cyclase, which converts ATP to cAMP, to activate second messenger pathways.	1.864519	<0.001	0.236562
HSA04640_HEMATOPOIETIC_CELL_LINEA	Genes involved in hematopoietic cell lineage	1.862582	<0.001	0.235519
INNEREAR_UP	Genes prefentially expressed in human inner ear tissue (cochlea and vestibule), at least 10-fold higher from a mixture of 29 other tissues	1.859108	<0.001	0.233708
ZHAN_MMPC_PC	Microarray-derived expression levels of genes differentially expressed during PC development	1.854972	<0.001	0.233645
MCALPAINPATHWAY	In integrin-mediated cell migration, calpains digest links between the actin cytoskeleton and focal adhesion proteins.	1.853146	0.048485	0.232181
RUIZ_TENASCIN_TARGETS	Tenascin-C target genes	1.84324	0.045455	0.236185
IL2PATHWAY	IL-2 promotes proliferation via JAK and MAP kinase and has surface receptors on activated B cells, LPS-treated monocytes, and many T cells.	1.837445	0.033	0.233956
CROONQUIST_IL6_STROMA_UP	Genes upregulated in multiple myeloma cells exposed to the pro-proliferative cytokine IL-6 versus those co-cultured with bone marrow stromal cells.	1.837135	<0.001	0.230678
IL1RPATHWAY	The cytokine IL-1 stimulates its primary receptor, IL-1R1, which induces transcription of inflammation-related genes such as interferons.	1.835865	<0.001	0.229229
SIG_BCR_SIGNALING_PATHWAY	Members of the BCR signaling pathway	1.832386	<0.001	0.229483
CREB_BRAIN_2WKS_UP	Up-regulated in the nucleus accumbens of mice after 2 weeks of induction of transgenic CREB	1.813879	<0.001	0.235339
PARK_MSCS_DIFF	List of differentially expressed genes between RhloLin2/loSca-11c-kit1 and RhhiLin2/loSca-11c-kit1 HSCs	1.807054	<0.001	0.237005
CELL_CYCLE_KEGG		1.795203	0.024	0.24449
CMV_HCMV_TIMECOURSE_18HRS_DN	Down-regulated in fibroblasts following infection with human cytomegalovirus (at least 3-fold, with Affymetrix change call, in at least two consectutive timepoints), with maximum change at 18 hours	1.791109	<0.001	0.244867
NEMETH_TNF_DN	Genes down-regulated after 3 h in LPS-stimulated RAW 2647 macrophages	1.786664	<0.001	0.245376
CARIES_PULP_UP	Up-regulated in pulpal tissue from extracted carious teeth (cavities), compared to tissue from extracted healthy teeth	1.775764	0.029835	0.248961

		Culture for 5 days with SCF + TPO	
	Fresh	IgG	2C9.G2
Total cell number	40	4498 ± 1254	4360 ± 1169
HSC frequency	1 in 3.5	1 in 43.2	1 in 90.2
No. of HSCs	11.4	104.2	48.2
RU	1.115 ± 0.489	3.652 ± 1.433	5.732 ± 2.330

Table S2. Integrin β3-mediated signaling contributes to successful *ex vivo* expansion of HSCs without loss of LTR activity per single HSC

The results obtained with single-cell transplantation were used to determine HSC frequency among fresh $CD34^{-}$KSL cells (Fig. 5D). HSC numbers were calculated from the total cell number and HSC frequency. Repopulation unit (RU) values reflect that ability in HSCs (see Materials and Methods).

Table S3. Genes upregulated in 2C9.G2-treated HSCs cultured in the presence of TPO

The values are the fold changes in 2C9.G2-treated vs. IgG-treated cells under the indicated conditions. A and P represent the detection calls “Absence” and “Presence,” respectively.

ProbeName	Description	GenbankAccession	GeneSymbol	Fold change		
				SCF + TPO	TPO	SCF
A_51_P406401	Mus musculus 4 days neonate male adipose cDNA, RIKEN full-length enriched library, clone:B430311O07 product:unclassifiable, full insert sequence. [AK046685]	AK046685	Pan3	8.753	5.542	-1.190
A_52_P366385	Mus musculus ring finger protein 123 (Rnf123), mRNA [NM_032543]	NM_032543	Rnf123	5.212	2.837	-6.250
A_52_P235108	Mus musculus vacuolar protein sorting 35 (Vps35), mRNA [NM_022997]	NM_022997	Vps35	4.443	1.587	-2.263
A_51_P169401	Mus musculus low density lipoprotein receptor-related protein 6 (Lrp6), mRNA [NM_008514]	NM_008514	Lrp6	4.005	2.997	-2.224
A_52_P1083868	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130020M21 product:unclassifiable, full insert sequence. [AK037475]	AK037475	AK037475	3.733	2.467	-1.093
A_51_P498388	Mus musculus SH3-binding kinase 1 (Sbk1), mRNA [NM_145587]	NM_145587	Sbk1	3.679	3.412	-1.014
A_51_P121325	Mus musculus mitochondrial ribosomal protein S25 (Mrps25), mRNA [NM_025578]	NM_025578	Mrps25	3.677	4.170	-1.111
A_52_P138267			TC1711987	3.649	1.866	-3.230
A_52_P183345	Mus musculus adult male corpora quadrigemina cDNA, RIKEN full-length enriched library, clone:B230337F23 product:nucleobindin, full insert sequence. [AK080831]	AK080831	Nucb1	3.385	4.726	-1.109
A_52_P52311	AF052147 cul-3 {Homo sapiens} (exp=-1; wgp=0; cg=0), partial (27%) [TC1620610]		TC1620610	3.374	2.441	-1.168
A_52_P563123	Mus musculus troponin I, cardiac (Tnni3), mRNA [NM_009406]	NM_009406	Tnni3	3.350	3.177	-1.083
A_52_P131972	PREDICTED: Mus musculus membrane associated DNA binding protein, transcript variant 5 (Mnab), mRNA [XM_901554]	XM_901554	Rc3h2	3.339	1.575	-1.693
A_52_P598930	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130095P21 product:CYTOSOLIC IMP-GMP SPECIFIC 5'-NUCLEOTIDASE homolog [Bos taurus], full insert sequence. [AK038326]	AK038326	Nt5c2	3.317	4.011	-1.182
A_51_P248304	Mus musculus vacuolar protein sorting 26 homolog B (yeast) (Vps26b), mRNA [NM_178027]	NM_178027	Vps26b	3.295	1.429	-1.700
A_52_P213561	Mus musculus inositol polyphosphate-5-phosphatase F (Inpp5f), mRNA [NM_178641]	NM_178641	Inpp5f	3.245	3.444	-1.087
A_52_P907652	Mus musculus 2 days pregnant adult female oviduct cDNA, RIKEN full-length enriched library, clone:E230012B12 product:unclassifiable, full insert sequence. [AK087575]	AK087575	AK087575	3.232	2.406	-2.448
A_52_P472583	Mus musculus ribosome binding protein 1 (Rrbp1), transcript variant 2, mRNA [NM_133626]	NM_133626	Rrbp1	3.115	2.046	-1.223
A_51_P273378	Mus musculus 16 days neonate cerebellum cDNA, RIKEN full-length enriched library, clone:9630001N18 product:unclassifiable, full insert sequence [AK137301]	AK137301	Apc	3.033	1.884	-1.086
A_52_P318683	Mus musculus UPF2 regulator of nonsense transcripts homolog (yeast) (Upf2), mRNA [NM_001081132]	NM_001081132	Upf2	3.015	3.062	-1.249
A_52_P6328	Mus musculus pre-B-cell colony-enhancing factor 1 (Pbef1), mRNA [NM_021524]	NM_021524	Pbef1	2.957	3.641	-1.783
A_52_P246716	Mus musculus adult male corpora quadrigemina cDNA, RIKEN full-length enriched library, clone:B230325K18 product:hypothetical protein, full insert sequence [AK080825]	AK080825	B230325K18Ri	2.862	4.100	-1.522
A_52_P81101	Mus musculus inositol polyphosphate multikinase (Ipmk), mRNA [NM_027184]	NM_027184	Ipmk	2.841	1.590	A/P
A_52_P147044	Mus musculus SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4 (Smarca4), mRNA [NM_011417]	NM_011417	Smarca4	2.759	2.542	-2.154
A_51_P233267	DnaJ (Hsp40) homolog, subfamily B, member 14 [Source:MarkerSymbol;Acc:MGI:1917854] [ENSMUST00000090178]		Dnajb14	2.632	2.310	-1.161
A_52_P157101			NAP053724-1	2.543	2.853	-1.172
A_52_P262275	Mus musculus ataxin 2 (Atxn2), mRNA [NM_009125]	NM_009125	Atxn2	2.513	1.634	-1.019
A_52_P18317	Mus musculus translocase of outer mitochondrial membrane 40 homolog (yeast), mRNA (cDNA clone MGC:48245 IMAGE:3326417), complete cds. [BC038887]	BC038887	Tomm40	2.502	1.425	-1.660
A_52_P568651	Mus musculus Alstrom syndrome 1 homolog (human) (Alms1), mRNA [NM_145223]	NM_145223	Alms1	2.494	2.559	-1.126
A_52_P676744	Mus musculus ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 6 (St6galnac6), transcript variant 1, mRNA [NM_016973]	NM_016973	St6galnac6	2.477	1.475	-2.494
A_51_P274633	Mus musculus RIKEN cDNA E030041M21 gene (E030041M21Rik), mRNA [NM_029166]	NM_029166	E030041M21R	2.411	4.874	-1.342
A_51_P501550	Mus musculus UDP-glucuronate decarboxylase 1 (Uxs1), mRNA [NM_026430]	NM_026430	Uxs1	2.410	3.875	-2.193
A_52_P239850	Mus musculus CREB binding protein (Crebbp), mRNA [NM_001025432]	NM_001025432	Crebbp	2.408	2.273	-1.001
A_52_P211759	Mus musculus pleckstrin homology domain containing, family A member 7 (Plekha7), mRNA [NM_172743]	NM_172743	Plekha7	2.386	2.537	-2.742
A_52_P488488	Mus musculus 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430103D13 product:unclassifiable, full insert sequence. [AK020759]	AK020759	A430103D13R	2.353	2.074	-1.384
A_52_P118958	Mus musculus peroxisome biogenesis factor 19 (Pex19), mRNA [NM_023041]	NM_023041	Pex19	2.353	1.866	-1.965
A_52_P237871	Mus musculus enhancer of zeste homolog 1 (Drosophila) (Ezh1), mRNA [NM_007970]	NM_007970	Ezh1	2.351	3.252	-3.746
A_52_P1140541	Mus musculus 11 days embryo gonad cDNA, RIKEN full-length enriched library, clone:7030408E13 product:unclassifiable, full insert sequence [AK078575]	AK078575	Uxs1	2.341	1.846	-1.236
A_52_P95471			NAP055900-1	2.339	1.796	-1.585
A_52_P444785	Mus musculus cDNA sequence BC037393 (BC037393), mRNA [NM_201369]	NM_201369	BC037393	2.328	1.726	-1.181
A_51_P155714	Mus musculus 13 days embryo whole body cDNA, RIKEN full-length enriched library, clone:3930402D05 product:similar to MIP-T3 [Homo sapiens], full insert sequence [AK014457]	AK014457	Traf3ip1	2.301	2.476	-1.759
A_51_P160293	Mus musculus 0 day neonate lung cDNA, RIKEN full-length enriched library, clone:E030004A15 product:unclassifiable, full insert sequence. [AK053116]	AK053116	AK053116	2.301	2.285	-1.757
A_52_P584302	Mus musculus mitogen-activated protein kinase kinase kinase kinase 4 (Map4k4), mRNA [NM_008696]	NM_008696	Map4k4	2.300	2.064	-1.091
A_52_P237522			NAP049780-1	2.299	1.444	-1.092
A_51_P492456	Mus musculus hyaluronan synthase1 (Has1), mRNA [NM_008215]	NM_008215	Has1	2.277	2.135	-1.435
A_52_P222096	Mus musculus RIKEN cDNA 4931428F04 gene (4931428F04Rik), mRNA [NM_028888]	NM_028888	4931428F04Ri	2.266	4.433	-1.527
A_52_P290221	Mus musculus adult male medulla oblongata cDNA, RIKEN full-length enriched library, clone:6330583I20 product:finger protein kox14 (fragment) homolog [Homo sapiens], full insert sequence [AK032094]	AK032094	Zfp182	2.238	1.488	-2.749
A_52_P497085	Mus musculus vacuolar protein sorting 52 (yeast) (Vps52), mRNA [NM_172620]	NM_172620	Vps52	2.220	1.698	-1.405
A_51_P205170	Mus musculus zinc finger protein 282 (Zfp282), mRNA [NM_146175]	NM_146175	Zfp282	2.202	1.730	-1.174
A_52_P491273	Mus musculus 4 days neonate male adipose cDNA, RIKEN full-length enriched library, clone:B430001J04 product:hypothetical protein, full insert sequence. [AK046543]	AK046543	B430006D22R	2.197	1.986	-1.463
A_52_P199019	Mus musculus tripartite motif protein 6 (Trim6), mRNA [NM_001013616]	NM_001013616	Trim6	2.177	1.411	-1.315
A_52_P128612			NAP123204-1	2.166	1.643	-3.274
A_52_P185639	Mus musculus valyl-tRNA synthetase 2, mitochondrial (putative) (Vars2), mRNA [NM_175137]	NM_175137	Vars2	2.149	2.107	-1.121
A_52_P141628	Mus musculus solute carrier family 23 (nucleobase transporters), member 1 (Slc23a1), mRNA [NM_011397]	NM_011397	Slc23a1	2.124	4.382	-1.753
A_51_P299393	PREDICTED: Mus musculus RIKEN cDNA 6720475J19 gene (6720475J19Rik), mRNA [XM_983620]	XM_983620	6720475J19Rik	2.120	1.563	-2.520
A_52_P674418	Mus musculus RIKEN cDNA 4930430F08 gene (4930430F08Rik), mRNA [NM_175128]	NM_175128	4930430F08Ri	2.117	2.761	-3.013
A_52_P502828	Mus musculus phosphodiesterase 2A, cGMP-stimulated (Pde2a), mRNA [NM_001008548]	NM_001008548	Pde2a	2.112	1.646	-1.122
A_52_P240020	Mus musculus JTV1 gene (Jtv1), mRNA [NM_146165]	NM_146165	Jtv1	2.071	2.222	-1.270
A_52_P429749	Mus musculus transmembrane protein 115 (Tmem115), mRNA [NM_019704]	NM_019704	Tmem115	2.062	1.757	-1.570
A_52_P490343	Mus musculus polybromo 1 (Pbrm1), mRNA [NM_001081251]	NM_001081251	Pbrm1	2.061	4.526	-1.126
A_51_P350752	Mus musculus CD37 antigen (Cd37), mRNA [NM_007645]	NM_007645	Cd37	2.057	2.505	-1.034
A_51_P326015	Mus musculus AXIN1 up-regulated 1 (Axud1), mRNA [NM_153287]	NM_153287	Axud1	2.055	1.979	-2.260
A_52_P368262	Mus musculus 0 day neonate cerebellum cDNA, RIKEN full-length enriched library, clone:C230096E12 product:B-cell CLL [AK049064]	AK049064	Bcl7c	2.052	2.857	-1.085
A_52_P4937	Mus musculus ligase III, DNA, ATP-dependent (Lig3), mRNA [NM_010716]	NM_010716	Lig3	2.052	10.447	-1.128
A_52_P118138	Mus musculus spindle assembly 6 homolog (C. elegans) (Sass6), mRNA [NM_028349]	NM_028349	Sass6	2.046	1.595	-1.021
A_52_P538515	Mus musculus R3H domain 1 (binds single-stranded nucleic acids), mRNA (cDNA clone IMAGE:6314270), complete cds. [BC049181]	BC049181	R3hdm1	2.039	2.378	-1.592
A_52_P408237	Mus musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930010O20 product:unclassifiable, full insert sequence [AK044401]	AK044401	Sestd1	2.034	1.473	-3.081
A_51_P339344	Mus musculus transmembrane protein 81 (Tmem81), mRNA [NM_029025]	NM_029025	Tmem81	2.033	4.973	-3.694
A_52_P561377	Mus musculus expressed sequence AI450540 (AI450540), mRNA [NM_145505]	NM_145505	AI450540	2.022	2.796	-1.138
A_51_P176797	Mus musculus LIM domain containing 2 (Limd2), mRNA [NM_172397]	NM_172397	Limd2	2.022	1.574	-3.150
A_52_P259250	Mus musculus ecotropic viral integration site 5 (Evi5), mRNA [NM_007964]	NM_007964	Evi5	2.013	2.216	A/P
A_51_P319141	Mus musculus StAR-related lipid transfer (START) domain containing 5 (Stard5), mRNA [NM_023377]	NM_023377	Stard5	2.005	1.769	-1.153
A_52_P534355	Mus musculus 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A630042F09 product:annexin A7, full insert sequence. [AK041855]	AK041855	AK041855	2.001	1.522	-1.132
A_51_P464769	Mus musculus asp (abnormal spindle)-like, microcephaly associated (Drosophila) (Aspm), mRNA [NM_009791]	NM_009791	Aspm	1.989	1.531	-1.925
A_51_P477779	Mus musculus RAR-related orphan receptor alpha (Rora), mRNA [NM_013646]	NM_013646	Rora	1.978	1.957	-1.102
A_52_P660142	PREDICTED: Mus musculus SFT2 domain containing 3 (Sft2d3), mRNA [XM_484715]	XM_484715	Sft2d3	1.976	1.424	-1.145

A_51_P314895	Mus musculus cerebral cavernous malformation 2 homolog (human) (Ccm2), mRNA [NM_146014]	NM_146014	Ccm2	1.969	4.050	-1.742
A_52_P424000	Mus musculus mitogen activated protein kinase binding protein 1 (Mapkbp1), mRNA [NM_011941]	NM_011941	Mapkbp1	1.965	1.571	-1.879
A_51_P135491	Mus musculus CASP8 and FADD-like apoptosis regulator (Cflar), transcript variant 2, mRNA [NM_009805]	NM_009805	Cflar	1.950	2.351	-1.011
A_51_P331409	Mus musculus transforming, acidic coiled-coil containing protein 1 (Tacc1), transcript variant 1, mRNA [NM_177089]	NM_177089	Tacc1	1.948	3.280	-1.148
A_52_P639424	Mus musculus golgi associated, gamma adaptin ear containing, ARF binding protein 3 (Gga3), mRNA [NM_173048]	NM_173048	Gga3	1.946	1.906	-4.542
A_52_P199554	Mus musculus tRNA phosphotransferase 1 (Trpt1), mRNA [NM_153597]	NM_153597	Trpt1	1.943	1.755	-1.184
A_52_P272945	Mus musculus cyclin H (Ccnh), mRNA [NM_023243]	NM_023243	Ccnh	1.936	1.454	-1.046
A_51_P488092	Mus musculus phosphodiesterase 6D, cGMP-specific, rod, delta (Pde6d), mRNA [NM_008801]	NM_008801	Pde6d	1.928	1.991	-1.052
A_52_P429364	Mus musculus coiled-coil domain containing 69 (Ccdc69), mRNA [NM_177471]	NM_177471	Ccdc69	1.925	2.495	-4.692
A_51_P394984	Mus musculus Lpin1 (Kiaa0188) mRNA, complete cds [AF180471]	AF180471	Lpin1	1.913	2.971	-1.623
A_52_P875110	Mus musculus adult male spinal cord cDNA, RIKEN full-length enriched library, clone:A330105O20 product:unclassifiable, full insert sequence. [AK020736]	AK020736	A330105O20Rik	1.902	1.992	-1.044
A_51_P158073	Mus musculus RIKEN cDNA A230050P20 gene (A230050P20Rik), mRNA [NM_175687]	NM_175687	A230050P20Rik	1.899	1.415	-1.083
A_51_P311905	Mus musculus transmembrane protein 103 (Tmem103), mRNA [NM_001081381]	NM_001081381	Tmem103	1.896	2.245	-1.607
A_52_P367774	Mus musculus RIKEN cDNA 4930566A11 gene (4930566A11Rik), mRNA [NM_029468]	NM_029468	4930566A11Rik	1.884	6.961	-1.484
A_52_P288733	Mus musculus zinc finger, CCHC domain containing 7 (Zcchc7), mRNA [NM_177027]	NM_177027	Zcchc7	1.873	2.471	-1.225
A_51_P128336	Mus musculus serine incorporator 5 (Serinc5), mRNA [NM_172588]	NM_172588	Serinc5	1.866	1.604	-1.109
A_52_P674386	Mus musculus 0 day neonate lung cDNA, RIKEN full-length enriched library, clone:E030038D23 product:hypothetical protein, full insert sequence [AK087243]	AK087243	Tmcc1	1.852	1.515	-2.493
A_52_P563765	Mus musculus 12 days embryo embryonic body between diaphragm region and neck cDNA, RIKEN full-length enriched library, clone:9430038B09 product:sine element, full insert sequence. [AK020459]	AK020459	Wtap	1.850	3.206	-4.002
A_51_P445765	Mus musculus low density lipoprotein receptor-related protein 8, apolipoprotein e receptor (Lrp8), transcript variant 1, mRNA [NM_053073]	NM_053073	Lrp8	1.850	1.449	-1.456
A_52_P416385	Mus musculus adult male liver tumor cDNA, RIKEN full-length enriched library, clone:C730013O12 product:unclassifiable, full insert sequence. [AK050084]	AK050084	AK050084	1.847	3.451	-1.236
A_52_P268925	Mus musculus 16 days embryo head cDNA, RIKEN full-length enriched library, clone:C130034A19 product:unclassifiable, full insert sequence. [AK048089]	AK048089	9130206I24Rik	1.845	1.559	-1.298
A_51_P288839	Mus musculus OTU domain containing 5 (Otud5), mRNA [NM_138604]	NM_138604	Otud5	1.844	1.460	-1.502
A_52_P537663	Mus musculus transformation related protein 53 binding protein 2 (Trp53bp2), mRNA [NM_173378]	NM_173378	Trp53bp2	1.843	2.847	-1.109
A_52_P411192	Mus musculus 0 day neonate lung cDNA, RIKEN full-length enriched library, clone:E030027N17 product:hypothetical protein, full insert sequence. [AK053185]	AK053185	Ccdc66	1.839	1.516	-1.048
A_52_P123252	Mus musculus KH-type splicing regulatory protein (Khsrp), mRNA [NM_010613]	NM_010613	Khsrp	1.837	2.214	-2.222
A_52_P83888	Mus musculus 0 day neonate eyeball cDNA, RIKEN full-length enriched library, clone:E130111C10 product:unclassifiable, full insert sequence. [AK053567]	AK053567	Cflar	1.827	2.506	-1.026
A_52_P329105	Mus musculus 0 day neonate cerebellum cDNA, RIKEN full-length enriched library, clone:C230097K14 product:CTCL TUMOR ANTIGEN SE70-2 (CUTANEOUS T-CELL LYMPHOMA TUMOR ANTIGEN SE70-2) homolog [Homo sapiens], full insert sequence. [AK049083]	AK049083	Rbm26	1.822	2.035	-1.464
A_52_P412796			NAP043943-1	1.819	2.696	-1.592
A_52_P476602	Mus musculus Abelson helper integration site (Ahi1), mRNA [NM_026203]	NM_026203	Ahi1	1.817	1.886	-1.174
A_51_P166365	Mus musculus adult male urinary bladder cDNA, RIKEN full-length enriched library, clone:9530081E14 product:unclassifiable, full insert sequence [AK035649]	AK035649	1700047A11Rik	1.813	1.582	-1.974
A_52_P292251			NAP106897-1	1.811	1.404	-1.079
A_52_P395324	Mus musculus adult male corpus striatum cDNA, RIKEN full-length enriched library, clone:C030033G23 product:unclassifiable, full insert sequence. [AK081258]	AK081258	AK081258	1.805	1.608	-1.386
A_51_P354077	Mus musculus supervillin (Svil), transcript variant 1, mRNA [NM_153153]	NM_153153	Svil	1.805	1.683	-1.032
A_52_P141587	Mus musculus RIKEN cDNA 2210418O10 gene, mRNA (cDNA clone MGC:116027 IMAGE:30629286), complete cds. [BC090643]	BC090643	2210418O10Rik	1.797	2.486	-1.086
A_51_P172054	Mus musculus growth arrest specific 6 (Gas6), mRNA [NM_019521]	NM_019521	Gas6	1.796	1.649	-1.846
A_51_P465409	Mus musculus myeloid/lymphoid or mixed-lineage leukemia 1 (Mll1), mRNA [NM_001081049]	NM_001081049	Mll1	1.792	1.419	-1.541
A_51_P321086	Mus musculus EST X83328 (X83328), mRNA [NM_025275]	NM_025275	X83328	1.790	1.667	-1.021
A_52_P393396	Mus musculus poly A binding protein, cytoplasmic 4 (Pabpc4), transcript variant 2, mRNA [NM_148917]	NM_148917	Pabpc4	1.782	1.637	-1.322
A_52_P352131	Mus musculus activin A receptor, type 1 (Acvr1), mRNA [NM_007394]	NM_007394	Acvr1	1.774	1.439	-1.700
A_51_P372826	Mus musculus spermine oxidase (Smox), mRNA [NM_145533]	NM_145533	Smox	1.767	1.521	-1.330
A_51_P221495	Mus musculus NOL1/NOP2/Sun domain family, member 5 (Nsun5), mRNA [NM_145414]	NM_145414	Nsun5	1.763	2.072	-1.369
A_52_P92514	Mus musculus DNA segment, Chr 3, ERATO Doi 300, expressed, mRNA (cDNA clone MGC:64649 IMAGE:6400922), complete cds. [BC052702]	BC052702	D3Ertd300e	1.756	1.603	-1.237
A_51_P344770	Mus musculus 12 days embryo eyeball cDNA, RIKEN full-length enriched library, clone:D230019K20 product:hypothetical Proline-rich region containing protein, full insert sequence. [AK051922]	AK051922	Tnrc6b	1.753	3.565	A/P
A_51_P231958	Mus musculus Zwilch, kinetochore associated, homolog (Drosophila) (Zwilch), mRNA [NM_026507]	NM_026507	Zwilch	1.749	3.221	-1.114
A_51_P366290	Mus musculus RIKEN cDNA 6430526N21 gene (6430526N21Rik), mRNA [NM_001033383]	NM_001033383	6430526N21Rik	1.744	2.013	-1.481
A_51_P458130	Mus musculus tryptophan hydroxylase 1 (Tph1), mRNA [NM_009414]	NM_009414	Tph1	1.744	1.610	-1.006
A_52_P339791	Mus musculus hepatoma-derived growth factor (Hdgf), mRNA [NM_008231]	NM_008231	Hdgf	1.738	1.495	-2.013
A_52_P657240	Mus musculus adult male lung cDNA, RIKEN full-length enriched library, clone:1200003H23 product:PRE-MRNA SPLICING FACTOR PRP17 (HPRP17) (EH-BINDING PROTEIN 3) (EHB3) homolog [Homo sapiens], full insert sequence. [AK004569]	AK004569	Cdc40	1.737	3.877	-1.026
A_51_P165984	Mus musculus ancient ubiquitous protein (Aup1), mRNA [NM_007517]	NM_007517	Aup1	1.732	2.125	-2.366
A_51_P453502	Mus musculus survival motor neuron 1 (Smn1), mRNA [NM_011420]	NM_011420	Smn1	1.730	1.760	-1.045
A_52_P495699	Mus musculus cDNA sequence BC050092 (BC050092), mRNA [NM_181419]	NM_181419	BC050092	1.730	1.553	-1.627
A_51_P264922	Mus musculus Mouse mammary tumor virus clone 66A env precursor (env) and vSAG protein (vSAG) mRNA, complete cds [AF043688]	AF043688	Igkv14-111	1.716	1.443	-1.920
A_51_P394585	Mus musculus sorting nexin 22 (Snx22), mRNA [NM_001025612]	NM_001025612	Snx22	1.707	1.917	-1.044
A_51_P224468	Mus musculus RIKEN cDNA 9430016H08 gene (9430016H08Rik), mRNA [NM_001081181]	NM_001081181	9430016H08Rik	1.705	1.668	-1.443
A_52_P302422	Mus musculus mitogen activated protein kinase kinase kinase 12 (Map3k12), mRNA [NM_009582]	NM_009582	Map3k12	1.701	3.681	-1.211
A_51_P193093	Mus musculus phosphatidylethanolamine N-methyltransferase (Pemt), mRNA [NM_008819]	NM_008819	Pemt	1.698	2.264	-1.275
A_52_P655167	Mus musculus 16 days neonate cerebellum cDNA, RIKEN full-length enriched library, clone:9630005N12 product:unclassifiable, full insert sequence [AK035805]	AK035805	A630026N12Rik	1.692	2.194	-1.059
A_51_P456980	Mus musculus bodenin gene. [AJ001373]	AJ001373	Itgb1bp1	1.687	2.407	-1.026
A_52_P346438	Mus musculus adult male medulla oblongata cDNA, RIKEN full-length enriched library, clone:6330547J17 product:unclassifiable, full insert sequence [AK032020]	AK032020	Atpaf1	1.682	1.513	-1.465
A_52_P206492	Mus musculus processing of precursor 4, ribonuclease P/MRP family, (S. cerevisiae) (Pop4), mRNA [NM_025390]	NM_025390	Pop4	1.675	1.612	-1.289
A_52_P996429	Mus musculus 15 days embryo head cDNA, RIKEN full-length enriched library, clone:D930043N17 product:unclassifiable, full insert sequence [AK086649]	AK086649	D930043N17Rik	1.672	1.924	-1.791
A_52_P448205	Mus musculus calsyntenin 1, mRNA (cDNA clone MGC:54504 IMAGE:6315355), complete cds. [BC053843]	BC053843	Clstn1	1.666	1.525	-1.100
A_51_P328926	Mus musculus thymopoietin (Tmpo), transcript variant 1, mRNA [NM_011605]	NM_011605	Tmpo	1.659	1.435	-1.037
A_52_P316712	Mus musculus tetratricopeptide repeat domain 19 (Ttc19), transcript variant 2, mRNA [NM_029704]	NM_029704	Ttc19	1.655	9.663	-1.810
A_52_P1004616	Mus musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930001J16 product:unclassifiable, full insert sequence. [AK080694]	AK080694	AK080694	1.653	1.805	-1.192
A_51_P483373	Mus musculus thioredoxin domain containing 5 (Txndc5), mRNA [NM_145367]	NM_145367	Txndc5	1.648	2.647	-3.851
A_52_P49797	O89814_9GAMR (O89814) Glycosylated gag protein, partial (12%) [TC1677196]		TC1677196	1.648	1.744	-1.572
A_52_P459750	Mus musculus ubiquitin protein ligase E3 component n-recognin 2 (Ubr2), mRNA [NM_146078]	NM_146078	Ubr2	1.648	1.771	-1.960
A_51_P509518	Mus musculus ral guanine nucleotide dissociation stimulator (Ralgds), mRNA [NM_009058]	NM_009058	Ralgds	1.645	1.611	-2.308
A_52_P433137	Mus musculus DNA segment, Chr 12, ERATO Doi 551, expressed (D12Ertd551e), mRNA [NM_028731]	NM_028731	D12Ertd551e	1.642	2.776	-1.889
A_52_P382565	PREDICTED: Mus musculus similar to putative retrovirus-related gag protein (LOC669759), mRNA [XM_976961]	XM_976961	LOC669759	1.640	1.480	-1.803
A_52_P198767	Mus musculus 13 days embryo forelimb cDNA, RIKEN full-length enriched library, clone:5930412E23 product:unclassifiable, full insert sequence. [AK020029]	AK020029	Ints7	1.627	1.802	-2.135
A_52_P14321	PREDICTED: Mus musculus Wolf-Hirschhorn syndrome candidate 1 (human), transcript variant 9 (Whsc1), mRNA [XM_898331]	XM_898331	Whsc1	1.627	1.513	-1.061
A_52_P322141	Mus musculus coiled-coil domain containing 88 (Ccdc88), mRNA [NM_001081291]	NM_001081291	Ccdc88	1.626	3.228	-1.046
A_51_P248328	Mus musculus basic, immunoglobulin-like variable motif containing (Bivm), mRNA [NM_144558]	NM_144558	Bivm	1.626	P/A	-1.429
A_52_P626232	Mus musculus ubiquitin-conjugating enzyme E2G 1 (UBC7 homolog, C. elegans) (Ube2g1), mRNA [NM_025985]	NM_025985	Ube2g1	1.615	2.223	-1.170
A_52_P149391	Mus musculus ubiquitin specific peptidase 40 (Usp40), mRNA [NM_001033291]	NM_001033291	Usp40	1.612	2.422	A/P
A_51_P212107	Mus musculus catenin, beta like 1 (Ctnnbl1), mRNA [NM_025680]	NM_025680	Ctnnbl1	1.611	1.443	-1.149
A_52_P611754	Mus musculus DNA segment, Chr 11, Wayne State University 99, expressed (D11Wsu99e), mRNA [NM_138598]	NM_138598	D11Wsu99e	1.608	4.470	-1.470
A_52_P318667	Mus musculus prenatal alcohol-1 mRNA, complete cds. [AY223547]	AY223547	AY223547	1.608	2.599	-1.257
A_51_P377856	Mus musculus glutathione S-transferase, theta 3 (Gstt3), mRNA [NM_133994]	NM_133994	Gstt3	1.607	3.143	-3.022
A_52_P521658	Mus musculus 10 days neonate skin cDNA, RIKEN full-length enriched library, clone:4732465J09 product:MYOSIN-IXA homolog [Homo sapiens], full insert sequence. [AK028873]	AK028873	Myo9a	1.605	4.149	-1.342
A_51_P437737	Mus musculus dihydroorotate dehydrogenase (Dhodh), mRNA [NM_020046]	NM_020046	Dhodh	1.601	1.693	A/P
A_52_P439932	Mus musculus coiled-coil domain containing 130 (Ccdc130), mRNA [NM_026350]	NM_026350	Ccdc130	1.601	3.475	A/P
A_52_P302463	Mus musculus ADP-ribosylation factor-like 5A (Arl5a), mRNA [NM_182994]	NM_182994	Arl5a	1.600	1.741	-1.152
A_51_P363564	Mus musculus transformation related protein 53 binding protein 2 (Trp53bp2), mRNA [NM_173378]	NM_173378	Trp53bp2	1.600	2.553	-1.192
A_51_P132849	Mus musculus calcium/calmodulin-dependent protein kinase II gamma (Camk2g), transcript variant 1, mRNA [NM_178597]	NM_178597	Camk2g	1.598	2.101	-1.009
A_51_P218805	Mus musculus growth factor, erv1 (S. cerevisiae)-like (augmenter of liver regeneration) (Gfer), mRNA [NM_023040]	NM_023040	Gfer	1.596	1.803	-1.052
A_52_P532841	Mus musculus expressed sequence C87436 (C87436), mRNA [NM_146170]	NM_146170	C87436	1.592	1.401	-1.655
A_52_P326399	Mus musculus FK506 binding protein 11 (Fkbp11), mRNA [NM_024169]	NM_024169	Fkbp11	1.587	3.505	-3.994
A_52_P674847	Mus musculus 5-azacytidine induced gene 2 (Azi2), transcript variant 1, mRNA [NM_013727]	NM_013727	Azi2	1.585	1.649	-1.404
A_52_P15616	Mus musculus cDNA clone IMAGE:5368191, **** WARNING: chimeric clone ****. [BC028949]	BC028949	EG668383	1.579	1.918	-1.860
A_52_P641758	Mus musculus RIKEN cDNA A030007L17 gene (A030007L17Rik), mRNA [NM_026637]	NM_026637	A030007L17Rik	1.579	1.723	-1.956
A_51_P234263	Mus musculus RAB5B, member RAS oncogene family (Rab5b), mRNA [NM_011229]	NM_011229	Rab5b	1.578	1.571	-2.008

A_52_P555913	Mus musculus neurofibromatosis 2 (Nf2), mRNA [NM_010898]	NM_010898	Nf2	1.576	2.133	-1.180
A_52_P24722	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130073N12 product:unclassifiable, full insert sequence [AK038044]	AK038044	AK038044	1.572	1.540	-1.161
A_52_P331382	Mus musculus premature mRNA for mKIAA1167 protein [AK173119]	AK173119	Gripap1	1.566	1.419	-1.266
A_52_P419873	Mus musculus retinoblastoma 1 (Rb1), mRNA [NM_009029]	NM_009029	Rb1	1.566	1.547	-1.909
A_51_P405280	Mus musculus Kruppel-like factor 7 (ubiquitous) (Klf7), mRNA [NM_033563]	NM_033563	Klf7	1.562	1.687	-1.347
A_52_P625683	Mus musculus peroxisomal membrane protein 4 (Pxmp4), mRNA [NM_021534]	NM_021534	Pxmp4	1.560	2.372	-1.061
A_51_P125771	Mus musculus solute carrier family 25, member 27 (Slc25a27), mRNA [NM_028711]	NM_028711	Slc25a27	1.551	1.642	-2.561
A_51_P138830	Mus musculus cDNA sequence BC023055 (BC023055), mRNA [NM_198108]	NM_198108	BC023055	1.544	2.145	-1.393
A_51_P251245	Mus musculus plakophilin 4 (Pkp4), mRNA [NM_026361]	NM_026361	Pkp4	1.541	1.744	-1.285
A_51_P477018	Mus musculus adult male testis cDNA, RIKEN full-length enriched library, clone:4930532K22 product:hypothetical Ribonuclease Rh-like structure containing protein, full insert sequence. [AK015947]	AK015947	Rnaset2a	1.539	1.605	-1.526
A_51_P272046	Mus musculus catenin (cadherin associated protein), beta 1 (Ctnnb1), mRNA [NM_007614]	NM_007614	Ctnnb1	1.537	1.555	-1.113
A_52_P188593	Mus musculus gene model 447, (NCBI) (Gm447), mRNA [NM_001007590]	NM_001007590	Gm447	1.534	1.617	-2.945
A_52_P80021	Mus musculus CKLF-like MARVEL transmembrane domain containing 7, mRNA (cDNA clone IMAGE:3982549), complete cds. [BC026773]	BC026773	Cmtm7	1.530	1.544	-1.271
A_51_P457113	Mus musculus retinoblastoma-like 2 (Rbl2), mRNA [NM_011250]	NM_011250	Rbl2	1.527	1.653	-1.716
A_52_P427394	Mus musculus adult male aorta and vein cDNA, RIKEN full-length enriched library, clone:A530076C18 product:unclassifiable, full insert sequence. [AK080173]	AK080173	E130112N10Ri	1.525	3.222	-5.526
A_51_P253527	Mus musculus ring finger and FYVE like domain containing protein (Rffl), transcript variant 2, mRNA [NM_026097]	NM_026097	Rffl	1.524	2.568	-1.440
A_51_P198410	Mus musculus mRNA for Grb3-3, isoform of Grb2, complete cds. [D85748]	D85748	Grb2	1.522	1.912	-1.225
A_52_P1152469	Mus musculus 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A630010G17 product:unclassifiable, full insert sequence. [AK153595]	AK153595	AK153595	1.520	1.558	-1.274
A_52_P569759	Mus musculus 12 days embryo female mullerian duct includes surrounding region cDNA, RIKEN full-length enriched library, clone:6820426C07 product:BETA-CENTRACTIN (ACTIN-RELATED PROTEIN 1B) (ARP1B) homolog [Homo sapiens], full insert sequence [AK078508]	AK078508	Actr1b	1.519	1.774	-1.185
A_51_P401527	Mus musculus RNA methyltransferase like 1 (Rnmtl1), mRNA [NM_183263]	NM_183263	Rnmtl1	1.515	1.621	-1.088
A_52_P373480	Mus musculus adult male corpora quadrigemina cDNA, RIKEN full-length enriched library, clone:B230345H22 product:unclassifiable, full insert sequence. [AK046154]	AK046154	AK046154	1.514	3.111	-1.151
A_51_P316129	Mus musculus autophagy-related 4A (yeast) (Atg4a), mRNA [NM_174875]	NM_174875	Atg4a	1.508	1.642	-1.167
A_52_P91359	Mus musculus zinc finger protein 655 (Zfp655), transcript variant 2, mRNA [NM_001083958]	NM_001083958	Zfp655	1.505	1.725	-1.913
A_51_P310254	Mus musculus RIKEN cDNA 3110048E14 gene (3110048E14Rik), transcript variant 1, mRNA [NM_133750]	NM_133750	3110048E14Ri	1.504	1.897	-1.090
A_51_P462546	Mus musculus GDP-mannose pyrophosphorylase A (Gmppa), mRNA [NM_133708]	NM_133708	Gmppa	1.500	2.429	-1.885
A_52_P599038	Mus musculus bifunctional apoptosis regulator (Bfar), mRNA [NM_025976]	NM_025976	Bfar	1.496	2.145	-1.565
A_51_P313467	Mus musculus CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) phosphatase, subunit 1 (Ctdp1), mRNA [NM_026295]	NM_026295	Ctdp1	1.495	1.806	-2.600
A_52_P5945	Mus musculus adult male olfactory brain cDNA, RIKEN full-length enriched library, clone:6430402E12 product:hypothetical protein, full insert sequence. [AK032149]	AK032149	Ppargc1a	1.492	1.518	-1.366
A_51_P199624	Mus musculus splicing factor, arginine/serine-rich 8 (Sfrs8), mRNA [NM_172276]	NM_172276	Sfrs8	1.491	5.538	-1.711
A_52_P867713	Mus musculus 9 days embryo whole body cDNA, RIKEN full-length enriched library, clone:D030052H06 product:unclassifiable, full insert sequence. [AK050998]	AK050998	AK050998	1.488	1.553	-2.110
A_52_P674464	Mus musculus RIKEN cDNA 2810055G22 gene (2810055G22Rik), mRNA [NM_080561]	NM_080561	2810055G22Ri	1.487	3.228	-1.463
A_51_P314264	Mus musculus signal sequence receptor, beta (Ssr2), mRNA [NM_025448]	NM_025448	Ssr2	1.487	1.950	-2.163
A_52_P595006	Mus musculus vacuolar protein sorting 72 (yeast) (Vps72), mRNA [NM_009336]	NM_009336	Vps72	1.485	2.535	-1.361
A_52_P636394	Mus musculus membrane-associated ring finger (C3HC4) 6 (March6), mRNA [NM_172606]	NM_172606	March6	1.485	1.446	-1.224
A_52_P51936	Mus musculus 13 days embryo lung cDNA, RIKEN full-length enriched library, clone:D430022A14 product:unclassifiable, full insert sequence [AK084992]	AK084992	D430022A14Ri	1.482	2.167	-1.598
A_52_P597800	Mus musculus ets variant gene 6 (TEL oncogene) (Etv6), mRNA [NM_007961]	NM_007961	Etv6	1.480	1.731	-1.977
A_52_P755439	Mus musculus 7 days neonate cerebellum cDNA, RIKEN full-length enriched library, clone:A730094G16 product:unspliced dna for: PROLIFERATION RELATED ACIDIC LEUCINE RICH PROTEIN PAL31 (SIMILAR TO ACIDIC PROTEIN RICH IN LEUCINES) homolog [Mus musculus], ...	AK043419	Anp32b	1.479	2.375	-1.236
A_52_P256279	Mus musculus zinc finger and BTB domain containing 11, mRNA (cDNA clone IMAGE:6485438) [BC055403]	BC055403	Zbtb11	1.479	1.858	-1.390
A_52_P569524	Mus musculus 7 days embryo whole body cDNA, RIKEN full-length enriched library, clone:C430019H13 product:RIKEN cDNA 4930421J07 gene, full insert sequence. [AK049524]	AK049524	AK049524	1.477	1.629	-1.664
A_52_P499577	Mus musculus 9 days embryo whole body cDNA, RIKEN full-length enriched library, clone:D030036P13 product:unclassifiable, full insert sequence [AK083507]	AK083507	D030036P13Ri	1.475	1.442	-1.050
A_52_P430369	Mus musculus ATG9 autophagy related 9 homolog B (S. cerevisiae) (Atg9b), mRNA [NM_001002897]	NM_001002897	Atg9b	1.469	1.514	-1.553
A_51_P371152	PREDICTED: Mus musculus Son of sevenless homolog 2 (Drosophila) (Sos2), mRNA [XM_127051]	XM_127051	Sos2	1.467	1.848	-1.276
A_51_P314929	Mus musculus 0 day neonate head cDNA, RIKEN full-length enriched library, clone:4832425N18 product:DIACYLGLYCEROL KINASE, DELTA (EC 2.7.1.107) (DIGLYCERIDE KINASE) (DGK-DELTA) (DAG KINASE DELTA) (130 KDA DIACYLGLYCEROL KINASE) (FRAGMENT) homolog [Homo...	AK076439	Dgkd	1.467	2.081	-1.400
A_51_P185701	Mus musculus dynamin 1-like (Dnm1l), transcript variant 1, mRNA [NM_152816]	NM_152816	Dnm1l	1.465	1.435	-1.370
A_52_P394561	Mus musculus adult male small intestine cDNA, RIKEN full-length enriched library, clone:2010001F03 product:ADULT MALE SMALL INTESTINE CDNA, RIKEN FULL-LENGTH ENRICHED LIBRARY, CLONE:2010001F03, FULL INSERT SEQUENCE, full insert sequence. [AK008004]	AK008004	Txnrd2	1.461	2.034	-1.074
A_51_P101858	Mus musculus discs, large homolog 1 (Drosophila) (Dlg1), mRNA [NM_007862]	NM_007862	Dlg1	1.460	1.481	-1.339
A_51_P463270	Mus musculus adult male hippocampus cDNA, RIKEN full-length enriched library, clone:C630012M08 product:SNRNA ACTIVATING PROTEIN COMPLEX 50 KDA SUBUNIT (SNAPC 50 KDA SUBUNIT) (PROXIMAL SEQUENCE ELEMENT-BINDING TRANSCRIPTION FACTOR BETA SUBUNIT) (PSE-B...	AK049933	Snapc3	1.460	1.983	-1.042
A_51_P491835	Mus musculus adult male hippocampus cDNA, RIKEN full-length enriched library, clone:2900009J20 product:inferred: RIKEN cDNA 2900009J20 gene, full insert sequence. [AK013507]	AK013507	2900009J20Rik	1.453	1.528	-1.623
A_51_P411874	Mus musculus 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A630074J11 product:unclassifiable, full insert sequence. [AK042243]	AK042243	Ankhd1	1.452	4.256	-1.146
A_52_P24593	Mus musculus zinc finger, DHHC domain containing 20 (Zdhhc20), mRNA [NM_029492]	NM_029492	Zdhhc20	1.452	2.193	-1.472
A_51_P284233	Mus musculus proline-rich Gla (G-carboxyglutamic acid) polypeptide 2 (Prrg2), mRNA [NM_022999]	NM_022999	Prrg2	1.451	2.053	-1.355
A_51_P335729	Mus musculus adult male spinal cord cDNA, RIKEN full-length enriched library, clone:A330033H09 product:nuclear receptor subfamily 2, group C, member 2, full insert sequence. [AK039370]	AK039370	AK039370	1.450	1.806	-1.191
A_51_P142896	Mus musculus CD59a antigen (Cd59a), mRNA [NM_007652]	NM_007652	Cd59a	1.446	4.622	-1.321
A_52_P202358	Mus musculus mRNA for PEBP2aB protein, complete cds. [D13802]	D13802	Runx1	1.444	2.224	-1.886
A_52_P137145	Mus musculus 13 days embryo male testis cDNA, RIKEN full-length enriched library, clone:6030423J02 product:weakly similar to CDNA FLJ14936 FIS, CLONE PLACE1010194, WEAKLY SIMILAR TO SPLICING FACTOR, ARGININE/SERINE-RICH 2 [Homo sapiens], full insert...	AK031401	Prpf38a	1.443	2.878	-5.650
A_51_P203710	Mus musculus taube nuss (Tbn), mRNA [NM_022015]	NM_022015	Tbn	1.441	1.704	-1.291
A_51_P465988	Mus musculus glucosidase, alpha; neutral C (Ganc), mRNA [NM_172672]	NM_172672	Ganc	1.439	1.880	-2.121
A_51_P257684	Mus musculus staufen (RNA binding protein) homolog 1 (Drosophila) (Stau1), mRNA [NM_011490]	NM_011490	Stau1	1.433	2.528	-2.159
A_52_P497193	Mus musculus nucleolar complex associated 2 homolog (S. cerevisiae) (Noc2l), mRNA [NM_021303]	NM_021303	Noc2l	1.433	1.482	-1.206
A_51_P359983	Mus musculus Rho GTPase activating protein 17 (Arhgap17), mRNA [NM_144529]	NM_144529	Arhgap17	1.431	1.478	-1.170
A_52_P303595	Mus musculus RIKEN cDNA 1700020O03 gene (1700020O03Rik), mRNA [NM_027405]	NM_027405	1700020O03Ri	1.430	1.527	-1.553
A_51_P139165	Mus musculus arginine/serine-rich coiled-coil 1 (Rsrc1), mRNA [NM_025822]	NM_025822	Rsrc1	1.428	2.381	-1.409
A_52_P529049	Mus musculus STE20-like kinase (yeast) (Slk), mRNA [NM_009289]	NM_009289	Slk	1.425	1.519	-1.218
A_51_P329332	Mus musculus solute carrier family 19 (thiamine transporter), member 2 (Slc19a2), mRNA [NM_054087]	NM_054087	Slc19a2	1.425	1.894	-1.004
A_51_P331318	Mus musculus Bcl2-like 2 (Bcl2l2), mRNA [NM_007537]	NM_007537	Bcl2l2	1.425	2.604	-1.161
A_51_P130824	Mus musculus component of oligomeric golgi complex 8 (Cog8), mRNA [NM_139229]	NM_139229	Cog8	1.420	2.536	-1.561
A_51_P250433	Mus musculus additional sex combs like 2 (Drosophila) (Asxl2), mRNA [NM_172421]	NM_172421	Asxl2	1.418	1.581	-1.076
A_52_P135155	Mus musculus two pore segment channel 2 (Tpcn2), mRNA [NM_146206]	NM_146206	Tpcn2	1.411	2.298	-2.821
A_51_P300717	Mus musculus syntaxin binding protein 1 (Stxbp1), mRNA [NM_009295]	NM_009295	Stxbp1	1.410	2.816	-1.272
A_51_P422369	Mus musculus RIKEN cDNA 2010001J22 gene (2010001J22Rik), mRNA [NM_001013022]	NM_001013022	2010001J22Rik	1.409	3.152	-1.396
A_52_P137361	Mus musculus transmembrane channel-like gene family 4 (Tmc4), mRNA [NM_181820]	NM_181820	Tmc4	1.408	1.874	-1.904
A_51_P207940	Mus musculus transmembrane protein 117 (Tmem117), mRNA [NM_178789]	NM_178789	Tmem117	1.406	1.435	-1.450
A_52_P684057	Mus musculus snurportin 1 (Snupn), mRNA [NM_178374]	NM_178374	Snupn	1.404	2.414	-1.209
A_51_P220040	Mus musculus 16 days embryo head cDNA, RIKEN full-length enriched library, clone:C130039I05 product:unclassifiable, full insert sequence. [AK048190]	AK048190	AK048190	1.403	2.517	-1.052

Table S4. Genes downregulated in 2C9.G2-treated HSCs cultured in the presence of TPO

The values are fold changes in 2C9.G2-treated vs. IgG-treated cells under the indicated conditions. A and P represent detection the calls “Absence” and “Presence,” respectively.

ProbeName	Description	GenbankAccession	GeneSymbol	Fold change		
				SCF + TPO	TPO	SCF
A_51_P270741	Mus musculus synaptogyrin 1 (Syngr1), transcript variant 1b, mRNA [NM_009303]	NM_009303	Syngr1	-5.636	-1.854	4.022
A_51_P476728	Mus musculus neogenin (Neo1), transcript variant 1, mRNA [NM_008684]	NM_008684	Neo1	-5.480	-1.606	1.046
A_51_P442458	Mus musculus 14 days embryo liver cDNA, RIKEN full-length enriched library, clone:4432404P07 product:hypothetical protein, full insert sequence. [AK014475]	AK014475	Brd8	-5.356	-1.466	1.464
A_51_P519696	Mus musculus muscle and microspikes RAS (Mras), mRNA [NM_008624]	NM_008624	Mras	-4.508	-1.893	1.013
A_51_P433843	Mus musculus RIKEN cDNA 3110004L20 gene (3110004L20Rik), mRNA [NM_001033167]	NM_001033167	3110004L20Rik	-4.452	-1.869	1.493
A_51_P243545	Mus musculus kinesin family member 16B (Kif16b), mRNA [NM_001081133]	NM_001081133	Kif16b	-4.433	-1.658	1.299
A_51_P242767	Mus musculus CKLF-like MARVEL transmembrane domain containing 4 (Cmtm4), mRNA [NM_153582]	NM_153582	Cmtm4	-4.240	-1.728	5.087
A_51_P339356	Mus musculus ring finger protein 24 (Rnf24), mRNA [NM_178607]	NM_178607	Rnf24	-4.091	-3.753	2.885
A_51_P119544	Mus musculus aspartylglucosaminidase (Aga), mRNA [NM_001005847]	NM_001005847	Aga	-3.970	-2.575	1.908
A_51_P253537	Mus musculus cAMP responsive element binding protein-like 1 (Crebl1), mRNA [NM_017406]	NM_017406	Crebl1	-3.953	-1.766	1.348
A_52_P337550	Mus musculus UBX domain containing 8 (Ubxd8), mRNA [NM_178397]	NM_178397	Ubxd8	-3.902	-1.526	1.317
A_52_P282091	Mus musculus 7 days neonate cerebellum cDNA, RIKEN full-length enriched library, clone:A730083G01 product:Kruppel associated box (KRAB) zinc finger 1, full insert sequence. [AK043310]	AK043310	Zfp386	-3.782	-1.909	1.399
A_51_P370561	Mus musculus dephospho-CoA kinase domain containing (Dcakd), mRNA [NM_026551]	NM_026551	Dcakd	-3.765	-2.971	1.034
A_52_P566786	Mus musculus 2 days pregnant adult female oviduct cDNA, RIKEN full-length enriched library, clone:E230014G11 product:hypothetical protein, full insert sequence. [AK054043]	AK054043	AK054043	-3.745	-1.617	2.531
A_52_P72487	Mus musculus cDNA sequence AJ237917 (AJ237917), mRNA [NM_011936]	NM_011936	AJ237917	-3.706	-2.554	1.938
A_52_P572456	Mus musculus interferon stimulated exonuclease gene 20-like 2 (Isg20l2), mRNA [NM_177663]	NM_177663	Isg20l2	-3.621	-2.409	2.849
A_51_P444401	Mus musculus 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430017P04 product:unclassifiable, full insert sequence [AK039840]	AK039840	2900010J23Rik	-3.428	-1.615	1.344
A_52_P471947			NAP094000-00	-3.356	-1.534	2.108
A_52_P276666	Mus musculus chromodomain protein, Y chromosome-like (Cdyl), mRNA [NM_009881]	NM_009881	Cdyl	-3.262	-1.550	1.478
A_51_P514712	Mus musculus poly (ADP-ribose) polymerase family, member 14 (Parp14), mRNA [NM_001039530]	NM_001039530	Parp14	-3.232	-1.606	1.683
A_52_P421096	Mus musculus Bri3 binding protein (Bri3bp), mRNA [NM_029752]	NM_029752	Bri3bp	-3.218	-3.393	1.007
A_51_P179604	Mus musculus geranylgeranyl diphosphate synthase 1 (Ggps1), mRNA [NM_010282]	NM_010282	Ggps1	-3.186	-1.626	1.247
A_52_P15076	Mus musculus talin 1 (Tln1), mRNA [NM_011602]	NM_011602	Tln1	-3.119	-1.894	1.232
A_52_P460095	Mus musculus polymerase (DNA directed), kappa (Polk), mRNA [NM_012048]	NM_012048	Polk	-3.096	-5.172	1.055
A_51_P111562	Mus musculus Ras and Rab interactor 3 (Rin3), mRNA [NM_177620]	NM_177620	Rin3	-3.072	-2.290	1.930
A_52_P238816	Mus musculus palmitoyl-protein thioesterase 2 (Ppt2), mRNA [NM_019441]	NM_019441	Ppt2	-3.004	-1.421	1.057
A_51_P284565	Mus musculus transmembrane protein 97 (Tmem97), mRNA [NM_133706]	NM_133706	Tmem97	-2.963	-2.099	2.241
A_52_P580895	Mus musculus synovial apoptosis inhibitor 1, synoviolin (Syvn1), mRNA [NM_028769]	NM_028769	Syvn1	-2.962	-3.888	1.559
A_52_P523503	Mus musculus transmembrane protein 154 (Tmem154), mRNA [NM_177260]	NM_177260	Tmem154	-2.924	-2.703	7.625
A_52_P260994	Mus musculus FYVE, RhoGEF and PH domain containing 2 (Fgd2), mRNA [NM_013710]	NM_013710	Fgd2	-2.924	-1.583	1.230
A_51_P325124	Mus musculus anterior pharynx defective 1b homolog (C. elegans) (Aph1b), mRNA [NM_177583]	NM_177583	Aph1b	-2.904	-1.421	2.111
A_52_P452494	Mus musculus zinc finger protein 263 (Zfp263), mRNA [NM_148924]	NM_148924	Zfp263	-2.894	-1.405	1.616
A_51_P139597	Mus musculus F-box and leucine-rich repeat protein 10 (Fbxl10), transcript variant 1, mRNA [NM_001003953]	NM_001003953	Fbxl10	-2.866	-2.565	1.348
A_51_P491437	Mus musculus BTB (POZ) domain containing 9 (Btbd9), mRNA [NM_172618]	NM_172618	Btbd9	-2.832	-1.409	1.268
A_51_P124550	Mus musculus receptor accessory protein 6 (Reep6), mRNA [NM_139292]	NM_139292	Reep6	-2.824	-1.493	2.436
A_52_P200599	Mus musculus RIKEN cDNA 3110001I20 gene (3110001I20Rik), mRNA [NM_177608]	NM_177608	3110001I20Rik	-2.813	-2.110	1.741
A_51_P442097	Mus musculus solute carrier family 41, member 3 (Slc41a3), transcript variant 1, mRNA [NM_027868]	NM_027868	Slc41a3	-2.806	-3.266	1.092
A_51_P195129	Mus musculus shroom family member 3 (Shroom3), transcript variant 1, mRNA [NM_015756]	NM_015756	Shroom3	-2.799	-7.043	1.024
A_51_P335849	Mus musculus catenin beta interacting protein 1 (Ctnnbip1), mRNA [NM_023465]	NM_023465	Ctnnbip1	-2.775	-4.060	2.038
A_51_P279197	Mus musculus ataxin 1 (Atxn1), mRNA [NM_009124]	NM_009124	Atxn1	-2.685	-1.473	1.020
A_52_P193533	Mus musculus osteoclast-like cell cDNA, RIKEN full-length enriched library, clone:I420029E17 product:similar to Brain mitochondrial carrier protein-1 (BMCP-1) (Mitochondrial uncoupling protein 5) (UCP 5) (Solute carrier family 25, member 14) (UNQ791...	AK159732	Slc25a30	-2.668	-1.456	1.721
A_51_P222280	Mus musculus inhibitor of kappaB kinase epsilon (Ikbke), mRNA [NM_019777]	NM_019777	Ikbke	-2.636	-7.757	2.209
A_52_P361664	Mus musculus vesicle transport through interaction with t-SNAREs homolog 1A (yeast) (Vti1a), mRNA [NM_016862]	NM_016862	Vti1a	-2.632	-1.552	1.213
A_51_P132549	Mus musculus thyroid hormone receptor interactor 10 (Trip10), mRNA [NM_134125]	NM_134125	Trip10	-2.628	-2.034	1.353
A_52_P245059	Mus musculus RUN and TBC1 domain containing 1 (Rutbc1), mRNA [NM_197943]	NM_197943	Rutbc1	-2.611	-4.067	1.243
A_51_P122085	Mus musculus ubiquitin specific peptidase 20 (Usp20), mRNA [NM_028846]	NM_028846	Usp20	-2.590	-2.751	1.151
A_52_P280443			NAP045186-1	-2.579	-5.199	3.046
A_51_P396364	Mus musculus CDK5 regulatory subunit associated protein 2 (Cdk5rap2), mRNA [NM_145990]	NM_145990	Cdk5rap2	-2.577	-2.147	2.727
A_51_P339232	Mus musculus syntrophin, acidic 1 (Snta1), mRNA [NM_009228]	NM_009228	Snta1	-2.564	-1.736	2.023
A_51_P411909	Mus musculus sirtuin 5 (silent mating type information regulation 2 homolog) 5 (S. cerevisiae) (Sirt5), mRNA [NM_178848]	NM_178848	Sirt5	-2.546	-1.493	1.507
A_51_P234833	Mus musculus striatin, calmodulin binding protein 4 (Strn4), transcript variant 1, mRNA [NM_133789]	NM_133789	Strn4	-2.537	-3.315	2.279
A_52_P643415	Mus musculus SCY1-like 2 (S. cerevisiae) (Scyl2), mRNA [NM_198021]	NM_198021	Scyl2	-2.513	-1.484	4.935
A_51_P373696	Mus musculus mRNA for mKIAA1819 protein. [AK129448]	AK129448	Maml2	-2.495	A/P	1.331
A_52_P673304	Mus musculus MYC-associated zinc finger protein (purine-binding transcription factor) (Maz), mRNA [NM_010772]	NM_010772	Maz	-2.495	-1.779	1.287
A_51_P440807	Mus musculus carnitine acetyltransferase (Crat), mRNA [NM_007760]	NM_007760	Crat	-2.460	-1.400	1.196
A_51_P390181	Mus musculus 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430061O12 product:unclassifiable, full insert sequence [AK040105]	AK040105	A430061O12Rik	-2.435	-1.560	1.279
A_52_P190506	Mus musculus NOD-derived CD11c +ve dendritic cells cDNA, RIKEN full-length enriched library, clone:F630108O13 product:mitochondrial ribosomal protein L15, full insert sequence. [AK154840]	AK154840	AK154840	-2.427	-1.564	1.219
A_52_P315942	mei1hcph (mev)=viable motheaten/hematopoietic cell protein-tyrosine phosphatase [insertion] [mice, mRNA Partial Mutant, 120 nt]. [S63763]	S63763	Ptpn6	-2.426	-1.769	1.188
A_52_P315631	Mus musculus ubiquitin carboxyl-terminal esterase L4 (Uchl4), mRNA [NM_033607]	NM_033607	Uchl4	-2.420	-1.786	1.451
A_52_P537050	Mus musculus ubiquitin carboxyl-terminal esterase L3 (ubiquitin thiolesterase) (Uchl3), mRNA [NM_016723]	NM_016723	Uchl3	-2.418	-1.896	1.874
A_51_P280597	Mus musculus annexin A11 (Anxa11), mRNA [NM_013469]	NM_013469	Anxa11	-2.391	-1.542	2.363
A_52_P198727	Mus musculus RIKEN cDNA 1810043G02 gene (1810043G02Rik), mRNA [NM_026431]	NM_026431	1810043G02Rik	-2.382	-1.687	1.493
A_51_P409101	Mus musculus adult male testis cDNA, RIKEN full-length enriched library, clone:1700021K14 product:hypothetical Cadherin structure containing protein, full insert sequence. [AK006216]	AK006216	1700021K14Rik	-2.373	-1.878	1.836
A_51_P486289	Mus musculus DNA segment, Chr 5, ERATO Doi 579, expressed (D5Ertd579e), mRNA [NM_001081232]	NM_001081232	D5Ertd579e	-2.366	A/P	1.548
A_52_P1164289	Mus musculus 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A630061F11 product:unclassifiable, full insert sequence. [AK042129]	AK042129	AK042129	-2.353	-7.082	1.062
A_51_P433562	Mus musculus non-metastatic cells 7, protein expressed in (Nme7), transcript variant 1, mRNA [NM_138314]	NM_138314	Nme7	-2.343	-2.043	1.570
A_51_P365440	Mus musculus sema domain, immunoglobulin domain (Ig), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4B (Sema4b), mRNA [NM_013659]	NM_013659	Sema4b	-2.326	-4.308	1.591
A_52_P506529	Mus musculus RAB GTPase activating protein 1-like (Rabgap1l), transcript variant 2, mRNA [NM_001038621]	NM_001038621	Rabgap1l	-2.325	-4.163	1.102
A_52_P279759	Mus musculus 9 days embryo whole body cDNA, RIKEN full-length enriched library, clone:D030018I01 product:selectin, endothelial cell, ligand, full insert sequence. [AK050772]	AK050772	Gig1	-2.323	-2.002	1.098
A_52_P598912	Mus musculus ELKS/RAB6-interacting/CAST family member 1 (Erc1), transcript variant 2, mRNA [NM_178085]	NM_178085	Erc1	-2.305	-3.739	2.086
A_52_P438084	Mus musculus protein kinase C, zeta (Prkcz), transcript variant 1, mRNA [NM_008860]	NM_008860	Prkcz	-2.300	-3.429	2.215
A_52_P771106	Mus musculus 13 days embryo heart cDNA, RIKEN full-length enriched library, clone:D330030C01 product:unclassifiable, full insert sequence. [AK052335]	AK052335	AK052335	-2.299	-3.150	1.053
A_51_P451588	Mus musculus pleckstrin homology domain containing, family B (evectins) member 1 (Plekhb1), mRNA [NM_013746]	NM_013746	Plekhb1	-2.287	A/P	1.187
A_52_P427332	Mus musculus eyes absent 3 homolog (Drosophila) (Eya3), transcript variant 2, mRNA [NM_010166]	NM_010166	Eya3	-2.272	-1.490	1.643
A_52_P500711			TC1667915	-2.265	-2.885	1.266

A_52_P258291	Mus musculus E26 avian leukemia oncogene 1, 5' domain (Ets1), transcript variant 1, mRNA [NM_011808]	NM_011808	Ets1	-2.261	-1.405	1.980
A_51_P275496	Mus musculus cDNA clone IMAGE:5065404 [BC029971]	BC029971	BC026762	-2.254	-1.552	1.201
A_52_P989397			TC1685454	-2.246	-2.225	1.082
A_52_P564132	Mus musculus heparan sulfate 2-O-sulfotransferase 1 (Hs2st1), mRNA [NM_011828]	NM_011828	Hs2st1	-2.229	-1.429	1.265
A_52_P410449	Mus musculus interleukin 4 induced 1 (Il4i1), mRNA [NM_010215]	NM_010215	Il4i1	-2.224	A/P	1.182
A_51_P271828	Mus musculus RIKEN cDNA 2210009G21 gene (2210009G21Rik), transcript variant 1, mRNA [NM_028834]	NM_028834	2210009G21Ri	-2.212	-1.954	1.196
A_51_P263407	Mus musculus 10 days neonate skin cDNA, RIKEN full-length enriched library, clone:4732469J09 product:hypothetical protein, full insert sequence [AK028913]	AK028913	1700041B20Ri	-2.211	-2.124	1.704
A_52_P684050	Mus musculus RIKEN cDNA 5430432M24 gene (5430432M24Rik), transcript variant 1, mRNA [NM_028666]	NM_028666	5430432M24Ri	-2.209	-2.427	4.972
A_52_P505584	Mus musculus expressed sequence AI314976 (AI314976), mRNA [NM_207219]	NM_207219	AI314976	-2.205	-5.144	1.439
A_52_P373846	Mus musculus polycomb group ring finger 3 (Pcgf3), mRNA [NM_172716]	NM_172716	Pcgf3	-2.205	-2.679	4.040
A_52_P390227	Mus musculus Rho guanine nucleotide exchange factor (GEF) 12 (Arhgef12), mRNA [NM_027144]	NM_027144	Arhgef12	-2.198	-1.629	2.029
A_52_P97680	Mus musculus poly (ADP-ribose) polymerase family, member 14 (Parp14), mRNA [NM_001039530]	NM_001039530	Parp14	-2.181	-1.491	3.476
A_52_P120612	Mus musculus GRB2-related adaptor protein 2 (Grap2), mRNA [NM_010815]	NM_010815	Grap2	-2.173	A/P	1.517
A_52_P123238	Mus musculus additional sex combs like 1 (Drosophila) (Asxl1), mRNA [NM_001039939]	NM_001039939	Asxl1	-2.169	-10.717	2.011
A_51_P125629	Mus musculus regulator of G-protein signaling 12 (Rgs12), mRNA [NM_173402]	NM_173402	Rgs12	-2.169	-2.309	2.448
A_52_P402394	Mus musculus transmembrane protein 121 (Tmem121), mRNA [NM_153776]	NM_153776	Tmem121	-2.145	-2.160	2.205
A_52_P327971	Mus musculus checkpoint with forkhead and ring finger domains (Chfr), mRNA [NM_172717]	NM_172717	Chfr	-2.145	-2.065	4.746
A_52_P413947	Mus musculus 5,10-methylenetetrahydrofolate reductase (Mthfr), mRNA [NM_010840]	NM_010840	Mthfr	-2.145	-1.574	1.387
A_52_P284658	Mus musculus DNA segment, Chr 11, ERATO Doi 497, expressed (D11Ertd497e), mRNA [NM_029976]	NM_029976	D11Ertd497e	-2.135	-1.975	2.307
A_52_P6994	Mus musculus helicase (DNA) B (Helb), mRNA [NM_080446]	NM_080446	Helb	-2.130	-1.439	1.619
A_52_P81928	Mus musculus Smg-5 homolog, nonsense mediated mRNA decay factor (C. elegans) (Smg5), mRNA [NM_178246]	NM_178246	Smg5	-2.125	-7.673	1.160
A_52_P470316	Mus musculus lysosomal-associated protein transmembrane 4B (Laptm4b), mRNA [NM_033521]	NM_033521	Laptm4b	-2.124	-1.452	1.180
A_51_P140690	Mus musculus stathmin-like 3 (Stmn3), mRNA [NM_009133]	NM_009133	Stmn3	-2.122	A/P	1.254
A_52_P6119	Mus musculus myeloid-associated differentiation marker (Myadm), mRNA [NM_016969]	NM_016969	Myadm	-2.108	-2.261	1.356
A_52_P683441	Mus musculus calpain 5 (Capn5), mRNA [NM_007602]	NM_007602	Capn5	-2.107	-2.163	1.129
A_51_P437289	Mus musculus cDNA sequence BC017612 (BC017612), mRNA [NM_133214]	NM_133214	BC017612	-2.102	-1.511	1.207
A_52_P508506	Mus musculus RIKEN cDNA A930025D01 gene (A930025D01Rik), mRNA [NM_178762]	NM_178762	A930025D01Ri	-2.082	-2.062	2.252
A_51_P170641	Mus musculus WD repeat domain 21 (Wdr21), mRNA [NM_030246]	NM_030246	Wdr21	-2.080	-1.714	2.465
A_52_P660693	Mus musculus dermatan sulfate epimerase-like (Dsel), mRNA [NM_001081316]	NM_001081316	Dsel	-2.074	-1.495	1.050
A_51_P254302	Mus musculus ring finger protein 157, mRNA (cDNA clone IMAGE:6401088) [BC053070]	BC053070	Rnf157	-2.065	-2.011	1.535
A_52_P657817	Mus musculus 16 days embryo head cDNA, RIKEN full-length enriched library, clone:C130070A06 product:mitogen activated protein kinase 8, full insert sequence [AK163829]	AK163829	Mapk8	-2.050	-3.507	2.130
A_51_P215530	Mus musculus bone marrow macrophage cDNA, RIKEN full-length enriched library, clone:I830028M19 product:hypothetical Zn-finger, RING/Zinc finger RING-type profile containing protein, full insert sequence. [AK151379]	AK151379	Rnf180	-2.050	-5.529	1.439
A_51_P278103	Mus musculus Stam binding protein (Stambp), mRNA [NM_024239]	NM_024239	Stambp	-2.045	-1.571	1.834
A_51_P111259	Mus musculus CDK2-associated protein 2 (Cdk2ap2), mRNA [NM_026373]	NM_026373	Cdk2ap2	-2.040	-2.057	1.663
A_52_P244908	Mus musculus adult male thymus cDNA, RIKEN full-length enriched library, clone:5830488H16 product:unclassifiable, full insert sequence [AK031010]	AK031010	AK031010	-2.035	-3.283	2.405
A_52_P110689	Mus musculus origin recognition complex, subunit 3-like (S. cerevisiae) (Orc3l), mRNA [NM_015824]	NM_015824	Orc3l	-2.030	-1.843	2.382
A_51_P480046	Mus musculus ectonucleoside triphosphate diphosphohydrolase 5 (Entpd5), transcript variant 1, mRNA [NM_007647]	NM_007647	Entpd5	-2.026	-1.418	2.937
A_52_P651371	Mus musculus asparagine-linked glycosylation 8 homolog (yeast, alpha-1,3-glucosyltransferase) (Alg8), mRNA [NM_199035]	NM_199035	Alg8	-2.025	-1.426	3.218
A_51_P367772	Mus musculus PAP associated domain containing 1 (Papd1), mRNA [NM_026157]	NM_026157	Papd1	-2.023	-3.038	1.221
A_52_P358138	MMANB01 Mus musculus lysosomal alpha-mannosidase (Man2b) gene, exon 1 [AF044174]	AF044174	AF044174	-2.022	-1.456	3.122
A_51_P111018	Mus musculus HEAT repeat containing 5B (Heatr5b), mRNA [NM_001081179]	NM_001081179	Heatr5b	-2.020	-2.524	3.408
A_51_P501312	Mus musculus gene trap locus F3b (Gtlf3b), mRNA [NM_025294]	NM_025294	Gtlf3b	-2.000	-3.893	1.217
A_51_P342535	Mus musculus ring finger protein 166 (Rnf166), mRNA [NM_001033142]	NM_001033142	Rnf166	-2.000	-1.837	1.448
A_51_P266847	Mus musculus ring finger protein 126 (Rnf126), mRNA [NM_144528]	NM_144528	Rnf126	-2.000	-6.187	2.548
A_52_P602771	Mus musculus serine/arginine-rich protein specific kinase 2 (Srpk2), mRNA [NM_009274]	NM_009274	Srpk2	-1.996	-3.925	1.524
A_52_P265945	Mus musculus 12 days embryo eyeball cDNA, RIKEN full-length enriched library, clone:D230026F01 product:unclassifiable, full insert sequence. [AK142083]	AK142083	C330050A14Ri	-1.985	-1.780	1.085
A_51_P380527	Mus musculus RIKEN cDNA 4631427C17 gene (4631427C17Rik), mRNA [NM_021414]	NM_021414	4631427C17Ri	-1.978	-1.420	1.660
A_52_P505827	Mus musculus cytochrome b5 reductase 4 (Cyb5r4), mRNA [NM_024195]	NM_024195	Cyb5r4	-1.969	-1.626	1.505
A_52_P50623	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130026F16 product:IL2-inducible T-cell kinase, full insert sequence. [AK037554]	AK037554	Itk	-1.969	-1.947	2.014
A_52_P151211	Mus musculus homer homolog 1 (Drosophila) (Homer1), transcript variant d, mRNA [NM_152134]	NM_152134	Homer1	-1.966	-2.374	2.563
A_51_P486308	Mus musculus RIKEN cDNA 4930473A06 gene (4930473A06Rik), mRNA [NM_001081012]	NM_001081012	4930473A06Ri	-1.961	-1.826	1.036
A_52_P239381	Mus musculus 12 days embryo embryonic body between diaphragm region and neck cDNA, RIKEN full-length enriched library, clone:9430032H24 product:unclassifiable, full insert sequence. [AK034763]	AK034763	E330009E22Ri	-1.954	-1.667	1.458
A_51_P362973	Mus musculus ADP-ribosylation factor GTPase activating protein 3 (Arfgap3), mRNA [NM_025445]	NM_025445	Arfgap3	-1.937	-1.725	1.272
A_51_P200083	Mus musculus glutamate receptor, ionotropic, N-methyl D-asparate-associated protein 1 (glutamate binding) (Grina), mRNA [NM_023168]	NM_023168	Grina	-1.935	-1.869	1.141
A_51_P266546	Mus musculus RIKEN cDNA 3110050N22 gene (3110050N22Rik), mRNA [NM_173181]	NM_173181	3110050N22Ri	-1.931	-2.051	1.013
A_52_P394175			NAP123168-1	-1.930	-3.059	1.867
A_52_P405177	Mus musculus C1q and tumor necrosis factor related protein 6 (C1qtnf6), mRNA [NM_028331]	NM_028331	C1qtnf6	-1.918	-2.229	1.164
A_51_P110257	Mus musculus RIKEN cDNA 1500041N16 gene (1500041N16Rik), mRNA [NM_026399]	NM_026399	1500041N16Ri	-1.917	-1.518	1.397
A_51_P199552	Mus musculus RIKEN cDNA 1600014C10 gene (1600014C10Rik), transcript variant 2, mRNA [NM_028166]	NM_028166	1600014C10Ri	-1.905	-2.116	1.332
A_51_P153982	Mus musculus sperm antigen with calponin homology and coiled-coil domains 1 (Specc1), mRNA [NM_001029936]	NM_001029936	Specc1	-1.898	-1.484	2.360
A_52_P15166			NAP108265-1	-1.891	A/P	4.004
A_52_P126158	Mus musculus immunity-related GTPase family, M (Irgm), mRNA [NM_008326]	NM_008326	Irgm	-1.889	-1.400	1.277
A_51_P183940	Mus musculus serine/threonine kinase 39, STE20/SPS1 homolog (yeast) (Stk39), mRNA [NM_016866]	NM_016866	Stk39	-1.886	-2.537	1.622
A_51_P230799	Mus musculus ATPase, Ca++ transporting, plasma membrane 1 (Atp2b1), mRNA [NM_026482]	NM_026482	Atp2b1	-1.885	-1.586	2.285
A_52_P522754	Mus musculus EBNA1 binding protein 2 (Ebna1bp2), mRNA [NM_026932]	NM_026932	Ebna1bp2	-1.885	-2.341	1.088
A_51_P211903	Mus musculus golgi autoantigen, golgin subfamily a, 5 (Golga5), mRNA [NM_013747]	NM_013747	Golga5	-1.881	-1.437	1.292
A_51_P284730	Mus musculus adult male colon cDNA, RIKEN full-length enriched library, clone:9030418K01 product:unclassifiable, full insert sequence [AK018518]	AK018518	9030418K01Ri	-1.880	-1.401	1.223
A_52_P640484	Mus musculus tripartite motif protein 21 (Trim21), transcript variant 1, mRNA [NM_009277]	NM_009277	Trim21	-1.869	-2.210	1.027
A_52_P632191	Mus musculus nuclear transcription factor, X-box binding 1 (Nfx1), mRNA [NM_023739]	NM_023739	Nfx1	-1.866	-1.571	2.105
A_51_P472901	Mus musculus solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2 (Slc3a2), mRNA [NM_008577]	NM_008577	Slc3a2	-1.859	-1.597	1.173
A_52_P349298	Mus musculus RIKEN cDNA 2610304G08 gene (2610304G08Rik), mRNA [NM_027434]	NM_027434	2610304G08Ri	-1.857	-2.990	3.305
A_51_P273639	Mus musculus solute carrier family 7 (cationic amino acid transporter, y+ system), member 5 (Slc7a5), mRNA [NM_011404]	NM_011404	Slc7a5	-1.854	-2.747	1.447
A_51_P260356	Mus musculus phospholipase C, beta 2 (Plcb2), mRNA [NM_177568]	NM_177568	Plcb2	-1.836	-2.424	1.004
A_51_P270146	Mus musculus cyclin H (Ccnh), mRNA [NM_023243]	NM_023243	Ccnh	-1.833	-3.706	2.471
A_52_P341373	Mus musculus SLAIN motif family, member 1 (Slain1), mRNA [NM_198014]	NM_198014	Slain1	-1.833	-2.706	2.929
A_51_P421876	Mus musculus interferon regulatory factor 7 (Irf7), mRNA [NM_016850]	NM_016850	Irf7	-1.828	-2.002	1.041
A_51_P413461	Mus musculus poly (ADP-ribose) glycohydrolase (Parg), mRNA [NM_011960]	NM_011960	Parg	-1.827	-1.746	1.354
A_51_P370050	Mus musculus N-acetylglucosamine-1-phosphodiester alpha-N-acetylglucosaminidase (Nagpa), mRNA [NM_013796]	NM_013796	Nagpa	-1.827	-1.571	1.050
A_51_P289796	Mus musculus ADP-ribosylation factor-like 4C (Arl4c), mRNA [NM_177305]	NM_177305	Arl4c	-1.826	-3.119	2.334
A_51_P496804	Mus musculus deaminase domain containing 1 (Deadc1), mRNA [NM_025748]	NM_025748	Deadc1	-1.813	-1.613	1.533
A_52_P1140260	Mus musculus 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A630028B08 product:unclassifiable, full insert sequence. [AK041653]	AK041653	Stil	-1.810	-3.047	1.160
A_52_P1083688	Mus musculus adult male diencephalon cDNA, RIKEN full-length enriched library, clone:9330184N06 product:unclassifiable, full insert sequence. [AK034379]	AK034379	AK034379	-1.809	-1.775	6.558
A_52_P328249	Mus musculus 12 days embryo spinal cord cDNA, RIKEN full-length enriched library, clone:C530045D03 product:pyruvate kinase 3, full insert sequence. [AK083076]	AK083076	Pkm2	-1.802	-1.839	1.052
A_51_P130028	Mus musculus enolase 2, gamma neuronal (Eno2), mRNA [NM_013509]	NM_013509	Eno2	-1.798	-1.664	1.278
A_51_P336827	Mus musculus cytochrome b5 type B (Cyb5b), mRNA [NM_025558]	NM_025558	Cyb5b	-1.796	-2.006	1.022
A_51_P218612	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130029B16 product:5-methyltetrahydrofolate-homocysteine methyltransferase, full insert sequence. [AK037599]	AK037599	Mtr	-1.795	-1.601	1.038
A_52_P9392			NAP037484-1	-1.792	-1.439	2.935
A_52_P590474	Mus musculus cyclin L1 (Ccnl1), mRNA [NM_019937]	NM_019937	Ccnl1	-1.789	A/P	1.276
A_51_P450573	Mus musculus transforming growth factor, beta receptor II (Tgfbr2), transcript variant 1, mRNA [NM_009371]	NM_009371	Tgfbr2	-1.786	-2.206	1.671
A_52_P87229	Q6UX67_HUMAN (Q6UX67) ALRH2998, partial (47%) [TC1619366]		TC1619366	-1.781	-5.249	5.279
A_52_P395397	Mus musculus alanyl-tRNA synthetase (Aars), mRNA [NM_146217]	NM_146217	Aars	-1.781	-2.416	1.963
A_52_P8766	Mus musculus phosphatidic acid phosphatase type 2 domain containing 2 (Ppapdc2), mRNA [NM_028922]	NM_028922	Ppapdc2	-1.779	-1.871	1.555
A_51_P118024	Mus musculus tripartite motif-containing 65 (Trim65), mRNA [NM_178802]	NM_178802	Trim65	-1.779	-2.040	1.389
A_52_P407022	Mus musculus RAB5B, member RAS oncogene family (Rab5b), mRNA [NM_177411]	NM_177411	Rab5b	-1.771	-1.801	1.222

A_52_P9260	Mus musculus expressed sequence AA536717 (AA536717), transcript variant 1, mRNA [NM_001024512]	NM_001024512	AA536717	-1.755	-5.633	2.452
A_52_P331212	Mus musculus centrosome and spindle pole associated protein 1 (Cspp1), mRNA [NM_026493]	NM_026493	Cspp1	-1.755	-1.711	1.131
A_52_P603184	Mus musculus suppressor of fused homolog (Drosophila) (Sufu), transcript variant 1, mRNA [NM_015752]	NM_015752	Sufu	-1.751	-2.368	3.342
A_52_P628067	Mus musculus cell division cycle associated 3 (Cdca3), mRNA [NM_013538]	NM_013538	Cdca3	-1.750	-2.534	1.408
A_51_P359259	Mus musculus sperm associated antigen 9 (Spag9), transcript variant 1, mRNA [NM_027569]	NM_027569	Spag9	-1.750	-2.550	1.814
A_51_P382500	Mus musculus adult male brain UNDEFINED_CELL_LINE cDNA, RIKEN full-length enriched library, clone:M5C1079K13 product:Hypothetical AMP-dependent synthetase and ligase containing protein homolog [Mus musculus], full insert sequence. [AK147562]	AK147562	Dip2b	-1.740	-2.680	1.960
A_52_P214126	Mus musculus arachidonate 5-lipoxygenase (Alox5), mRNA [NM_009662]	NM_009662	Alox5	-1.736	-3.503	1.153
A_51_P127279	Mus musculus RIKEN cDNA 4930504E06 gene (4930504E06Rik), mRNA [NM_133858]	NM_133858	4930504E06Rik	-1.736	-1.936	1.320
A_51_P391825	Mus musculus exosome component 10 (Exosc10), mRNA [NM_016699]	NM_016699	Exosc10	-1.725	-1.468	1.204
A_52_P605122	Ras and Rab interactor 2 [Source:MarkerSymbol;Acc:MGI:1921280] [ENSMUST00000071473]		Rin2	-1.723	-3.404	1.117
A_52_P181468	Mus musculus SET domain containing (lysine methyltransferase) 8 (Setd8), mRNA [NM_030241]	NM_030241	Setd8	-1.719	-1.445	1.419
A_52_P366980	Mus musculus tetraspanin 17 (Tspan17), mRNA [NM_028841]	NM_028841	Tspan17	-1.718	-2.162	1.495
A_52_P568781	Mus musculus cDNA clone IMAGE:6413001, containing frame-shift errors [BC059816]	BC059816	Sec63	-1.712	-1.776	1.370
A_52_P210933	Mus musculus FAST kinase domains 5 (Fastkd5), mRNA [NM_198176]	NM_198176	Fastkd5	-1.711	-2.299	1.303
A_51_P485800	Mus musculus DiGeorge syndrome critical region gene 2 (Dgcr2), mRNA [NM_010048]	NM_010048	Dgcr2	-1.710	-2.777	4.362
A_51_P450123	Mus musculus mitochondrial ribosomal protein L36 (Mrpl36), mRNA [NM_053163]	NM_053163	Mrpl36	-1.709	-1.676	1.334
A_52_P287492	Mus musculus zinc finger, DHHC domain containing 13 (Zdhhc13), mRNA [NM_028031]	NM_028031	Zdhhc13	-1.708	-2.138	1.521
A_52_P69756	Mus musculus MTERF domain containing 2 (Mterfd2), mRNA [NM_178051]	NM_178051	Mterfd2	-1.703	-1.925	1.256
A_51_P170050	Mus musculus zinc finger protein 248 (Zfp248), mRNA [NM_028335]	NM_028335	Zfp248	-1.702	-1.646	1.350
A_52_P154005	Mus musculus zinc finger and BTB domain containing 11, mRNA (cDNA clone IMAGE:6485438) [BC055403]	BC055403	Zbtb11	-1.701	-3.922	1.684
A_52_P214624	Mus musculus adult male colon cDNA, RIKEN full-length enriched library, clone:9030207G08 product:inferred: RIKEN cDNA 4432404J10 gene, full insert sequence [AK033450]	AK033450	Gapvd1	-1.700	-1.564	2.015
A_51_P387123	Mus musculus 2'-5' oligoadenylate synthetase-like 2 (Oasl2), mRNA [NM_011854]	NM_011854	Oasl2	-1.694	-1.846	1.724
A_52_P31125	Mus musculus 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2, mRNA (cDNA clone MGC:25723 IMAGE:3979400), complete cds. [BC018418]	BC018418	Pfkfb2	-1.692	-1.624	1.017
A_51_P332602	Mus musculus surfeit gene 1 (Surf1), mRNA [NM_013677]	NM_013677	Surf1	-1.690	-1.909	2.370
A_51_P517157	Mus musculus transmembrane protein 43 (Tmem43), mRNA [NM_028766]	NM_028766	Tmem43	-1.690	-2.518	1.344
A_52_P681659	Mus musculus microtubule-associated protein 9 (Mtap9), mRNA [NM_001081230]	NM_001081230	Mtap9	-1.687	-1.479	1.153
A_52_P269942	Mus musculus carnitine palmitoyltransferase 1c (Cpt1c), mRNA [NM_153679]	NM_153679	Cpt1c	-1.683	-4.631	1.013
A_52_P376290	Mus musculus early endosome antigen 1 (Eea1), mRNA [NM_001001932]	NM_001001932	Eea1	-1.679	-1.431	1.413
A_52_P299832	Mus musculus plexin C1 (Plxnc1), mRNA [NM_018797]	NM_018797	Plxnc1	-1.679	-1.963	1.209
A_51_P521216	Mus musculus CCAAT/enhancer binding protein (C/EBP), gamma (Cebpg), mRNA [NM_009884]	NM_009884	Cebpg	-1.676	-2.120	1.184
A_52_P473644	Mus musculus septin 6, mRNA (cDNA clone MGC:19033 IMAGE:4168214), complete cds. [BC010489]	BC010489	Sept6	-1.673	-1.535	1.357
A_51_P267861	Mus musculus potassium channel, subfamily K, member 5 (Kcnk5), mRNA [NM_021542]	NM_021542	Kcnk5	-1.672	-2.351	1.907
A_52_P681488	Mus musculus syntaxin 17 (Stx17), mRNA [NM_026343]	NM_026343	Stx17	-1.670	-1.945	1.777
A_51_P271208	Mus musculus angiotensin II, type I receptor-associated protein (Agtrap), mRNA [NM_009642]	NM_009642	Agtrap	-1.661	-2.991	3.452
A_51_P300726	Mus musculus opioid receptor, sigma 1 (Oprs1), mRNA [NM_011014]	NM_011014	Oprs1	-1.660	-2.042	1.405
A_51_P424959	Mus musculus B-cell CLL/lymphoma 6, member B (Bcl6b), mRNA [NM_007528]	NM_007528	Bcl6b	-1.657	-3.070	1.568
A_52_P251425	Mus musculus RIKEN cDNA D030074E01 gene (D030074E01Rik), mRNA [NM_029491]	NM_029491	D030074E01Rik	-1.654	-1.582	2.289
A_51_P397003	Mus musculus abhydrolase domain containing 13 (Abhd13), mRNA [NM_001081119]	NM_001081119	Abhd13	-1.651	-1.932	3.617
A_52_P507305	Mus musculus isoamyl acetate-hydrolyzing esterase 1 homolog (S. cerevisiae) (Iah1), mRNA [NM_026347]	NM_026347	Iah1	-1.645	-1.789	1.581
A_51_P292073	Mus musculus hydroxyacylglutathione hydrolase-like (Haghl), mRNA [NM_026897]	NM_026897	Haghl	-1.643	-1.678	1.091
A_51_P152892	Mus musculus 12 days embryo eyeball cDNA, RIKEN full-length enriched library, clone:D230005F18 product:CD3 antigen, zeta polypeptide, full insert sequence. [AK051825]	AK051825	AK051825	-1.639	-1.913	1.266
A_52_P496608	Mus musculus pleckstrin and Sec7 domain containing 3 (Psd3), transcript variant 1, mRNA [NM_030263]	NM_030263	Psd3	-1.637	-2.028	1.087
A_52_P590701	Mus musculus mRNA for mKIAA0675 protein [AK122344]	AK122344	2310047C04Rik	-1.631	-1.447	1.008
A_52_P27864	Mus musculus sarcoglycan, epsilon (Sgce), mRNA [NM_011360]	NM_011360	Sgce	-1.629	-1.459	1.222
A_51_P430014	Mus musculus platelet-activating factor receptor (Ptafr), mRNA [NM_001081211]	NM_001081211	Ptafr	-1.627	-2.236	1.953
A_51_P432449	Mus musculus blocked early in transport 1 homolog (S. cerevisiae) (Bet1), mRNA [NM_009748]	NM_009748	Bet1	-1.626	-1.523	2.721
A_52_P510877	Mus musculus Bcl2-like 1 (Bcl2l1), mRNA [NM_009743]	NM_009743	Bcl2l1	-1.624	-1.585	1.777
A_52_P747190	Mus musculus 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430091K09 product:unclassifiable, full insert sequence. [AK040400]	AK040400	AK040400	-1.622	-1.778	12.101
A_52_P228107	Mus musculus CWF19-like 1, cell cycle control (S. pombe) (Cwf19l1), mRNA [NM_001081077]	NM_001081077	Cwf19l1	-1.616	-1.522	1.464
A_51_P461219	Mus musculus coenzyme Q4 homolog (yeast) (Coq4), mRNA [NM_178693]	NM_178693	Coq4	-1.614	-1.563	6.395
A_52_P254174	Mus musculus nuclear receptor subfamily 3, group C, member 1 (Nr3c1), mRNA [NM_008173]	NM_008173	Nr3c1	-1.611	-1.958	1.292
A_52_P569240	Mus musculus NACHT and WD repeat domain containing 1 (Nwd1), mRNA [NM_176940]	NM_176940	Nwd1	-1.611	-1.732	1.008
A_52_P291428	Mus musculus RIKEN cDNA 1700001E04 gene (1700001E04Rik), mRNA [NM_029288]	NM_029288	1700001E04Rik	-1.611	-1.522	1.507
A_52_P514352	Mus musculus potassium channel, subfamily K, member 5 (Kcnk5), mRNA [NM_021542]	NM_021542	Kcnk5	-1.611	-1.585	1.035
A_52_P302629	M.musculus partial cochlear mRNA (clone 49F5) [Z78155]	Z78155	Z78155	-1.610	-2.583	1.354
A_51_P217369	Mus musculus TEL2, telomere maintenance 2, homolog (S. cerevisiae) (Telo2), mRNA [NM_027880]	NM_027880	Telo2	-1.609	-2.144	1.134
A_52_P423021	Mus musculus zinc finger protein 654 (Zfp654), mRNA [NM_028059]	NM_028059	Zfp654	-1.608	-2.313	1.611
A_51_P301052	Mus musculus RIKEN cDNA 1810008A18 gene (1810008A18Rik), mRNA [NM_133998]	NM_133998	1810008A18Rik	-1.608	-2.786	2.000
A_52_P314571	Mus musculus chitinase domain containing 1 (Chid1), mRNA [NM_026522]	NM_026522	Chid1	-1.607	-1.791	1.470
A_51_P126835	Mus musculus RIKEN cDNA 2700007P21 gene (2700007P21Rik), transcript variant 2, mRNA [NM_173750]	NM_173750	2700007P21Rik	-1.606	-1.638	1.248
A_52_P365948	Mus musculus adult male thymus cDNA, RIKEN full-length enriched library, clone:5830460G10 product:hypothetical protein, full insert sequence [AK134157]	AK134157	5033406O09Rik	-1.606	A/P	1.735
A_52_P467438	Mus musculus 2 days pregnant adult female ovary cDNA, RIKEN full-length enriched library, clone:E330019I03 product:MIC2 (monoclonal Imperial Cancer Research Fund 2)-like 1, full insert sequence. [AK054364]	AK054364	Cd99l2	-1.601	-1.513	6.654
A_52_P507368	Mus musculus glutathione S-transferase, C-terminal domain containing (Gstcd), mRNA [NM_026231]	NM_026231	Gstcd	-1.599	-1.635	1.388
A_52_P512877	Mus musculus adult male bone cDNA, RIKEN full-length enriched library, clone:9830005E11 product:unclassifiable, full insert sequence. [AK036397]	AK036397	AK036397	-1.598	-4.798	2.272
A_51_P372874	Mus musculus D4, zinc and double PHD fingers family 2 (Dpf2), mRNA [NM_011262]	NM_011262	Dpf2	-1.589	-2.539	1.115
A_52_P771228	Mus musculus 2 days pregnant adult female ovary cDNA, RIKEN full-length enriched library, clone:E330010G20 product:unclassifiable, full insert sequence. [AK054284]	AK054284	AK054284	-1.587	-1.795	1.771
A_51_P362877	Mus musculus interleukin 21 receptor (Il21r), mRNA [NM_021887]	NM_021887	Il21r	-1.583	-1.527	1.246
A_52_P263870	Mus musculus CDC23 (cell division cycle 23, yeast, homolog) (Cdc23), mRNA [NM_178347]	NM_178347	Cdc23	-1.577	-1.946	1.611
A_51_P468531	Mus musculus ATP-binding cassette, sub-family F (GCN20), member 3 (Abcf3), mRNA [NM_013852]	NM_013852	Abcf3	-1.573	-1.584	2.120
A_52_P588262	PREDICTED: Mus musculus RIKEN cDNA C730024G19 gene, transcript variant 1 (C730024G19Rik), mRNA [XM_132975]		C730024G19R	-1.572	-1.466	1.465
A_51_P442838	Mus musculus RIKEN cDNA 2810422O20 gene (2810422O20Rik), mRNA [NM_027279]	NM_027279	2810422O20R	-1.572	-1.609	1.207
A_51_P325889	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130019C19 product:unclassifiable, full insert sequence [AK037440]	AK037440	4933407L21Rik	-1.571	-1.724	1.028
A_51_P413097	Mus musculus integrator complex subunit 2 (Ints2), mRNA [NM_027421]	NM_027421	Ints2	-1.571	-1.423	1.104
A_52_P682456	Mus musculus 0 day neonate cerebellum cDNA, RIKEN full-length enriched library, clone:C230036A21 product:hypothetical protein, full insert sequence. [AK082305]	AK082305	Pex1	-1.571	-1.490	1.210
A_52_P438280	Mus musculus 13 days embryo male testis cDNA, RIKEN full-length enriched library, clone:6030439K11 product:B-cell leukemia/lymphoma 2, full insert sequence. [AK077913]	AK077913	Bcl2	-1.570	-2.100	1.038
A_51_P347728	Mus musculus NFU1 iron-sulfur cluster scaffold homolog (S. cerevisiae) (Nfu1), mRNA [NM_020045]	NM_020045	Nfu1	-1.570	-1.894	1.230
A_52_P178904	Mus musculus SEH1-like (S. cerevisiae (Seh1l), transcript variant 2, mRNA [NM_028112]	NM_028112	Seh1l	-1.569	-1.475	1.033
A_51_P457171	Mus musculus RIKEN cDNA 2610207I05 gene (2610207I05Rik), mRNA [NM_001031814]	NM_001031814	2610207I05Rik	-1.568	-1.532	1.989
A_51_P242027	Mus musculus tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide (Ywhab), mRNA [NM_018753]	NM_018753	Ywhab	-1.568	-1.523	1.537
A_52_P299228	Mus musculus 10 days embryo whole body cDNA, RIKEN full-length enriched library, clone:3426403L07 product:RIKEN cDNA 5730466H23 gene, full insert sequence. [AK160833]	AK160833	Etaa1	-1.568	-3.180	1.832
A_51_P160344	Mus musculus 13 days embryo head cDNA, RIKEN full-length enriched library, clone:3110013H01 product:hypothetical protein, full insert sequence. [AK014046]	AK014046	Prr6	-1.567	-2.500	1.765
A_51_P432504	Mus musculus phosphate cytidylyltransferase 2, ethanolamine (Pcyt2), mRNA [NM_024229]	NM_024229	Pcyt2	-1.565	-1.441	1.200
A_52_P300730	Mus musculus high mobility group AT-hook 2 (Hmga2), mRNA [NM_010441]	NM_010441	Hmga2	-1.564	-2.410	1.635
A_52_P1026507			ENSMUST000	-1.564	-1.491	1.986
A_51_P202954	Mus musculus death effector domain-containing DNA binding protein 2 (Dedd2), mRNA [NM_207677]	NM_207677	Dedd2	-1.563	-1.417	1.048
A_52_P546228	Mus musculus methyltransferase-like 3 (Mettl3), mRNA [NM_019721]	NM_019721	Mettl3	-1.562	-2.630	1.665
A_52_P306217	Mus musculus vacuolar protein sorting 13A (yeast) (Vps13a), mRNA [NM_173028]	NM_173028	Vps13a	-1.562	-1.488	4.341
A_52_P967353	Mus musculus amyotrophic lateral sclerosis 2 (juvenile) chromosome region, candidate 13 (human) (Als2cr13), transcript variant 2, mRNA [NM_001003946]	NM_001003946	Als2cr13	-1.562	-2.119	1.954
A_51_P228974	Mus musculus 2-oxoglutarate and iron-dependent oxygenase domain containing 2 (Ogfod2), mRNA [NM_025671]	NM_025671	Ogfod2	-1.557	-1.976	2.594
A_52_P533779	Mus musculus ankyrin repeat domain 40 (Ankrd40), transcript variant 1, mRNA [NM_027799]	NM_027799	Ankrd40	-1.557	-2.454	1.502
A_51_P115334	Mus musculus surfeit gene 4 (Surf4), mRNA [NM_011512]	NM_011512	Surf4	-1.556	-1.492	1.122
A_52_P635898	Mus musculus myosin Va (Myo5a), mRNA [NM_010864]	NM_010864	Myo5a	-1.556	-1.593	1.359
A_51_P469595	Mus musculus 16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130020J07 product:unclassifiable, full insert sequence. [AK037470]	AK037470	AK037470	-1.553	-1.528	1.067
A_51_P463120	Mus musculus protein tyrosine phosphatase-like A domain containing 2 (Ptplad2), mRNA [NM_025760]	NM_025760	Ptplad2	-1.549	-2.101	1.282

A_52_P508812	Mus musculus RIKEN cDNA 4932438A13 gene, mRNA (cDNA clone IMAGE:30536256), complete cds. [BC079623]	BC079623	4932438A13Rik	-1.548	-1.481	1.276
A_51_P170346	Mus musculus cDNA, RIKEN full-length enriched library, clone:M5C1081D17 product:weakly similar to YY1 associated protein [Homo sapiens], full insert sequence. [AK147575]	AK147575	5830417I10Rik	-1.546	-1.507	2.527
A_52_P201984	Mus musculus adult male urinary bladder cDNA, RIKEN full-length enriched library, clone:9530001D23 product:weakly similar to MHC CLASS I T7 ANTIGEN (FRAGMENT) [Mus musculus], full insert sequence [AK035206]	AK035206	E330021A06Rik	-1.544	A/P	2.019
A_51_P319425	PREDICTED: Mus musculus UTP20, small subunit (SSU) processome component, homolog (yeast), transcript variant 1 (Utp20), mRNA [XM_125867]	XM_125867	Utp20	-1.542	-1.487	1.597
A_52_P168047	Mus musculus pyruvate dehydrogenase complex, component X (Pdhx), mRNA [NM_175094]	NM_175094	Pdhx	-1.542	-1.680	1.376
A_52_P582424	Mus musculus RIKEN cDNA 9130221H12 gene (9130221H12Rik), mRNA [NM_178400]	NM_178400	9130221H12Rik	-1.541	-1.581	6.604
A_52_P252256	Mus musculus mitogen-activated protein kinase 12 (Mapk12), mRNA [NM_013871]	NM_013871	Mapk12	-1.541	-2.214	1.828
A_52_P191468	Mus musculus ubiquitin family domain containing 1 (Ubfd1), mRNA [NM_138589]	NM_138589	Ubfd1	-1.540	-1.760	1.425
A_52_P537566	Mus musculus centromere protein T (Cenpt), mRNA [NM_177150]	NM_177150	Cenpt	-1.538	-1.909	1.674
A_52_P347248	Mus musculus cDNA sequence BC039093 (BC039093), mRNA [NM_001081098]	NM_001081098	BC039093	-1.538	-3.181	6.912
A_51_P280043	Mus musculus DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 26B, mRNA (cDNA clone MGC:56742 IMAGE:6466142), complete cds. [BC051161]	BC051161	Ddx26b	-1.538	-2.383	2.464
A_51_P210143	Mus musculus synaptic nuclear envelope 2 (Syne2), mRNA [NM_001005510]	NM_001005510	Syne2	-1.537	-1.648	1.249
A_52_P177663	Mus musculus DnaJ (Hsp40) homolog, subfamily B, member 1 (Dnajb1), mRNA [NM_018808]	NM_018808	Dnajb1	-1.533	-2.363	1.475
A_51_P467798	Mus musculus niban protein (Niban), mRNA [NM_022018]	NM_022018	Niban	-1.530	-3.110	1.178
A_51_P489285	Mus musculus cancer susceptibility candidate 5 (Casc5), mRNA [NM_029617]	NM_029617	Casc5	-1.527	-1.837	1.209
A_51_P356822	Mus musculus 0 day neonate cerebellum cDNA, RIKEN full-length enriched library, clone:C230055H22 product:hypothetical Lysine-rich region containing protein, full insert sequence. [AK048766]	AK048766	Vps13c	-1.526	-3.740	1.187
A_52_P389478	Mus musculus RAB11B, member RAS oncogene family (Rab11b), mRNA [NM_008997]	NM_008997	Rab11b	-1.525	-1.725	1.271
A_52_P352967	Mus musculus SEH1-like (S. cerevisiae, mRNA (cDNA clone MGC:27929 IMAGE:3584697), complete cds. [BC027244]	BC027244	Seh1l	-1.521	-2.866	1.479
A_51_P108891	Mus musculus nuclear fragile X mental retardation protein interacting protein 1 (Nufip1), mRNA [NM_013745]	NM_013745	Nufip1	-1.521	-1.500	1.494
A_52_P346458	Mus musculus toll interacting protein (Tollip), mRNA [NM_023764]	NM_023764	Tollip	-1.517	-1.450	1.030
A_52_P171993	Mus musculus 11 days embryo whole body cDNA, RIKEN full-length enriched library, clone:2700060P05 product:proteasome (prosome, macropain) 26S subunit, non-ATPase, 7, full insert sequence. [AK012463]	AK012463	Psmd7	-1.516	-1.564	2.897
A_51_P378967	Mus musculus ciliary neurotrophic factor (Cntf), transcript variant 2, mRNA [NM_053007]	NM_053007	Cntf	-1.514	-2.402	1.654
A_52_P379531	Mus musculus timeless homolog (Drosophila) (Timeless), mRNA [NM_011589]	NM_011589	Timeless	-1.513	-1.427	1.021
A_51_P353095	Mus musculus zinc finger, FYVE domain containing 27 (Zfyve27), mRNA [NM_177319]	NM_177319	Zfyve27	-1.512	-1.520	1.127
A_51_P173197	Mus musculus golgi reassembly stacking protein 2 (Gorasp2), mRNA [NM_027352]	NM_027352	Gorasp2	-1.511	-1.821	1.734
A_51_P383822	Mus musculus ecotropic viral integration site 2b (Evi2b), transcript variant 2, mRNA [NM_146023]	NM_146023	Evi2b	-1.508	-1.427	1.187
A_51_P361359	Mus musculus asparagine-linked glycosylation 11 homolog (yeast, alpha-1,2-mannosyltransferase) (Alg11), mRNA [NM_183142]	NM_183142	Alg11	-1.508	-1.635	1.128
A_52_P676510	Mus musculus T-cell specific GTPase (Tgtp), mRNA [NM_011579]	NM_011579	Tgtp	-1.508	-1.413	1.299
A_51_P338515	Mus musculus tumor necrosis factor superfamily, member 5-induced protein 1 (Tnfsf5ip1), mRNA [NM_134138]	NM_134138	Tnfsf5ip1	-1.506	-1.583	1.210
A_52_P434820	Mus musculus glucosamine-6-phosphate deaminase 2 (Gnpda2), mRNA [NM_001038015]	NM_001038015	Gnpda2	-1.504	-1.665	1.473
A_51_P443618	Mus musculus RIKEN cDNA 0610011F06 gene (0610011F06Rik), mRNA [NM_026686]	NM_026686	0610011F06Rik	-1.501	-2.000	1.231
A_51_P371120	Mus musculus SEC23B (S. cerevisiae) (Sec23b), mRNA [NM_019787]	NM_019787	Sec23b	-1.497	-2.797	1.217
A_51_P348456	Mus musculus RE1-silencing transcription factor (Rest), mRNA [NM_011263]	NM_011263	Rest	-1.495	-1.668	1.545
A_51_P485542	Mus musculus cytidine 5'-triphosphate synthase 2 (Ctps2), mRNA [NM_018737]	NM_018737	Ctps2	-1.495	-1.464	1.020
A_52_P283835	Mus musculus cyclin K (Ccnk), mRNA [NM_009832]	NM_009832	Ccnk	-1.495	-1.940	2.044
A_52_P551496	Mus musculus nuclear factor I/C (Nfic), transcript variant 1, mRNA [NM_008688]	NM_008688	Nfic	-1.491	-3.435	1.028
A_51_P101006	RIKEN cDNA 1190002A17 gene [Source:MarkerSymbol;Acc:MGI:1916120] [ENSMUST00000074156]		1190002A17Rik	-1.486	-1.911	1.122
A_51_P249414	Mus musculus expressed sequence 2 embryonic lethal (Es2el), transcript variant 1, mRNA [NM_022408]	NM_022408	Es2el	-1.484	-5.096	1.362
A_51_P221132	Mus musculus L-2-hydroxyglutarate dehydrogenase (L2hgdh), mRNA [NM_145443]	NM_145443	L2hgdh	-1.484	-1.820	1.022
A_51_P305027	Mus musculus formin binding protein 1 (Fnbp1), transcript variant 2, mRNA [NM_019406]	NM_019406	Fnbp1	-1.484	-1.955	1.592
A_52_P331762	Mus musculus LIM domain only 1 (Lmo1), mRNA [NM_057173]	NM_057173	Lmo1	-1.482	-1.522	1.176
A_52_P265877	Mus musculus aldehyde dehydrogenase 9, subfamily A1 (Aldh9a1), mRNA [NM_019993]	NM_019993	Aldh9a1	-1.482	-2.011	1.236
A_51_P102652	Mus musculus RIKEN cDNA 1810034K20 gene (1810034K20Rik), mRNA [NM_023397]	NM_023397	1810034K20Rik	-1.477	-1.701	2.217
A_51_P160202	Mus musculus N-ethylmaleimide sensitive fusion protein (Nsf), mRNA [NM_008740]	NM_008740	Nsf	-1.476	-1.557	2.474
A_51_P185465	Mus musculus solute carrier family 29 (nucleoside transporters), member 3 (Slc29a3), mRNA [NM_023596]	NM_023596	Slc29a3	-1.476	-2.145	2.681
A_51_P200838	Mus musculus amyloid beta precursor protein binding protein 1 (Appbp1), mRNA [NM_144931]	NM_144931	Appbp1	-1.474	-1.457	1.999
A_51_P176522	Mus musculus mazr mRNA for transcription factor MAZR, complete cds. [AB029397]	AB029397	Patz1	-1.467	-3.082	2.830
A_52_P401783	Mus musculus 13 days embryo male testis cDNA, RIKEN full-length enriched library, clone:6030470M02 product:unclassifiable, full insert sequence. [AK031650]	AK031650	Stxbp4	-1.462	-1.588	2.987
A_52_P119997	Mus musculus rhomboid domain containing 1 (Rhbdd1), mRNA [NM_029777]	NM_029777	Rhbdd1	-1.462	-1.685	2.007
A_51_P233578	Mus musculus RanBP-type and C3HC4-type zinc finger containing 1 (Rbck1), transcript variant 2, mRNA [NM_019705]	NM_019705	Rbck1	-1.459	-2.121	1.233
A_52_P574527	Mus musculus zinc finger protein 295 (Zfp295), transcript variant 1, mRNA [NM_175428]	NM_175428	Zfp295	-1.459	-1.884	1.129
A_51_P174773	Mus musculus RIKEN cDNA 2900010M23 gene (2900010M23Rik), mRNA [NM_026063]	NM_026063	2900010M23Rik	-1.457	-1.470	2.008
A_52_P43869	Mus musculus transmembrane protein 41B (Tmem41b), mRNA [NM_153525]	NM_153525	Tmem41b	-1.456	-1.462	2.251
A_52_P540434	Mus musculus protein phosphatase 1, catalytic subunit, gamma isoform (Ppp1cc), mRNA [NM_013636]	NM_013636	Ppp1cc	-1.455	-1.569	1.005
A_51_P225592	Mus musculus tropomyosin 4 (Tpm4), mRNA [NM_001001491]	NM_001001491	Tpm4	-1.455	-1.420	1.155
A_52_P464268	Mus musculus fractured callus expressed transcript 1 (Fxc1), mRNA [NM_019502]	NM_019502	Fxc1	-1.454	-1.793	1.441
A_51_P281384	Mus musculus RIKEN cDNA 2410187C16 gene (2410187C16Rik), mRNA [NM_029734]	NM_029734	2410187C16Rik	-1.453	-1.692	1.414
A_51_P125260	Mus musculus acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-Coenzyme A thiolase) (Acaa2), mRNA [NM_177470]	NM_177470	Acaa2	-1.453	-2.240	1.185
A_52_P568200	Mus musculus, clone IMAGE:3983821, mRNA, partial cds. [BC021831]	BC021831	BC021831	-1.451	-2.182	1.945
A_51_P257196	Mus musculus RIKEN cDNA 2600009E05 gene (2600009E05Rik), mRNA [NM_029832]	NM_029832	2600009E05Rik	-1.451	-1.743	1.557
A_51_P382708	Mus musculus procollagen, type IV, alpha 4 (Col4a4), mRNA [NM_007735]	NM_007735	Col4a4	-1.447	A/P	1.249
A_51_P446012	Mus musculus PHD finger protein 13 (Phf13), mRNA [NM_172705]	NM_172705	Phf13	-1.446	-1.502	1.101
A_52_P69867	Mus musculus protein phosphatase methylesterase 1 (Ppme1), mRNA [NM_028292]	NM_028292	Ppme1	-1.445	-1.949	1.934
A_52_P373938	Mus musculus adult male aorta and vein cDNA, RIKEN full-length enriched library, clone:A530087K12 product:unclassifiable, full insert sequence [AK080240]	AK080240	Gpd2	-1.437	-1.647	1.104
A_51_P400166	Mus musculus three prime repair exonuclease 1 (Trex1), transcript variant 1, mRNA [NM_011637]	NM_011637	Trex1	-1.437	-1.715	1.109
A_51_P509609	Mus musculus tetraspanin 4 (Tspan4), mRNA [NM_053082]	NM_053082	Tspan4	-1.437	-1.796	1.808
A_52_P181038	Mus musculus adult male brain UNDEFINED_CELL_LINE cDNA, RIKEN full-length enriched library, clone:M5C1011O16 product:platelet-activating factor acetylhydrolase, isoform 1b, beta1 subunit, full insert sequence. [AK147309]	AK147309	Pafah1b1	-1.436	-1.426	2.338
A_52_P54516	Mus musculus Bri3 binding protein (Bri3bp), mRNA [NM_029752]	NM_029752	Bri3bp	-1.434	-2.453	1.107
A_51_P455416	Mus musculus mitogen-activated protein kinase 12 (Mapk12), mRNA [NM_013871]	NM_013871	Mapk12	-1.434	-2.564	1.788
A_52_P556134	PREDICTED: Mus musculus isoleucine-tRNA synthetase 2, mitochondrial (Iars2), mRNA [XM_908122]	XM_908122	Iars2	-1.433	-1.793	2.214
A_51_P473940	solute carrier family 22 (organic anion/cation transporter), member 15 [Source:MarkerSymbol;Acc:MGI:3607704] [ENSMUST00000036296]		ENSMUST0000	-1.433	-1.833	2.730
A_51_P180994	Mus musculus RIKEN cDNA 3110073H01 gene, mRNA (cDNA clone IMAGE:5043259), with apparent retained intron [BC025200]	BC025200	3110073H01Rik	-1.432	-1.413	1.266
A_52_P118970	Mus musculus adult male cecum cDNA, RIKEN full-length enriched library, clone:9130206I24 product:unclassifiable, full insert sequence. [AK078937]	AK078937	9130206I24Rik	-1.432	-1.713	2.460
A_52_P386468	Mus musculus conserved helix-loop-helix ubiquitous kinase (Chuk), mRNA [NM_007700]	NM_007700	Chuk	-1.432	-1.418	1.997
A_51_P141953	Mus musculus RIKEN cDNA 1110008L16 gene, mRNA (cDNA clone MGC:41292 IMAGE:1512335), complete cds. [BC034876]	BC034876	1110008L16Rik	-1.432	-1.536	3.616
A_52_P25878	Mus musculus vacuolar protein sorting 4b (yeast) (Vps4b), mRNA [NM_009190]	NM_009190	Vps4b	-1.430	-2.006	1.038
A_51_P270939	Mus musculus golgi SNAP receptor complex member 2 (Gosr2), mRNA [NM_019650]	NM_019650	Gosr2	-1.425	-1.939	3.228
A_52_P501447	PREDICTED: Mus musculus similar to reduced expression 2, transcript variant 19 (LOC631624), mRNA [XM_919663]	XM_919663	EG631624	-1.422	-1.405	1.196
A_51_P151086	Mus musculus ubiquitin specific peptidase 47 (Usp47), mRNA [NM_133758]	NM_133758	Usp47	-1.421	-3.515	2.507
A_52_P603976	Mus musculus jumping translocation breakpoint (Jtb), mRNA [NM_206924]	NM_206924	Jtb	-1.417	-1.892	1.223
A_52_P558411	Mus musculus moesin (Msn), mRNA [NM_010833]	NM_010833	Msn	-1.416	-1.417	1.078
A_52_P476029	Mus musculus RIKEN cDNA 8430427H17 gene (8430427H17Rik), mRNA [NM_001001986]	NM_001001986	8430427H17Rik	-1.414	-2.128	1.931
A_52_P646602	Mus musculus RIKEN cDNA 9030624J02 gene (9030624J02Rik), mRNA [NM_027815]	NM_027815	9030624J02Rik	-1.411	-2.785	2.519
A_51_P514139	Mus musculus PR domain containing 16 (Prdm16), mRNA [NM_027504]	NM_027504	Prdm16	-1.410	-2.919	1.834
A_52_P142191	Mus musculus anterior pharynx defective 1b homolog (C. elegans) (Aph1b), mRNA [NM_177583]	NM_177583	Aph1b	-1.408	-1.825	1.410
A_51_P502043	Mus musculus adult male testis cDNA, RIKEN full-length enriched library, clone:4933427G23 product:HYPOTHETICAL 21.8 KDA PROTEIN (BRMS2) (SIMILAR TO MITOCHONDRIAL RIBOSOMAL PROTEIN S4) homolog [Homo sapiens], full insert sequence [AK030236]	AK030236	4933427G23Rik	-1.408	-1.532	1.008
A_51_P506250	Mus musculus mitochondrial ribosomal protein L55 (Mrpl55), mRNA [NM_026035]	NM_026035	Mrpl55	-1.408	-3.052	1.442
A_51_P480779	Mus musculus 18-day embryo whole body cDNA, RIKEN full-length enriched library, clone:1110033B07 product:hypothetical protein, full insert sequence. [AK027953]	AK027953	Snx4	-1.407	-2.339	1.481
A_51_P246471	Mus musculus pre B-cell leukemia transcription factor 2 (Pbx2), mRNA [NM_017463]	NM_017463	Pbx2	-1.406	-1.786	1.510
A_51_P125050	Mus musculus WD repeat domain 74 (Wdr74), mRNA [NM_134139]	NM_134139	Wdr74	-1.404	-2.846	1.497
A_51_P431491	Mus musculus RAB11 family interacting protein 3 (class II), mRNA (cDNA clone IMAGE:4973426), complete cds. [BC037132]	BC037132	Rab11fip3	-1.404	-1.792	1.064
A_51_P144868	Mus musculus leukocyte receptor cluster (LRC) member 4 (Leng4), mRNA [NM_029934]	NM_029934	Leng4	-1.404	-1.984	1.777
A_51_P378777	Mus musculus RIKEN cDNA 1200013P24 gene (1200013P24Rik), mRNA [NM_029090]	NM_029090	1200013P24Rik	-1.403	-2.492	1.650
A_52_P396042	Mus musculus tight junction protein 2 (Tjp2), mRNA [NM_011597]	NM_011597	Tjp2	-1.400	-2.077	2.386
A_51_P317122	Mus musculus Yip1 domain family, member 5 (Yipf5), mRNA [NM_023311]	NM_023311	Yipf5	-1.400	-1.521	1.056
A_52_P387818	Mus musculus SEC23B (S. cerevisiae) (Sec23b), mRNA [NM_019787]	NM_019787	Sec23b	-1.400	-3.385	1.329

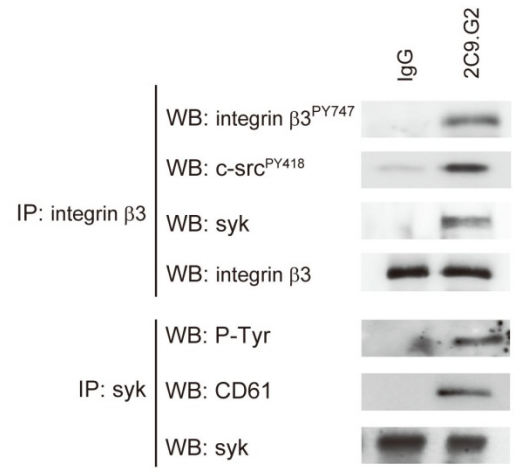

Figure S1. 2C9.G2 induces phosphorylation of Tyr747 (pY747) of β3 integrin in mouse platelets

Washed platelets were incubated for 15 min in the presence of 2C9.G2 or IgG, after which cell lysates were prepared. After immunoprecipitation using anti-β3 integrin or anti-Syk antibodies, western blotting was carried out with the indicated antibodies.

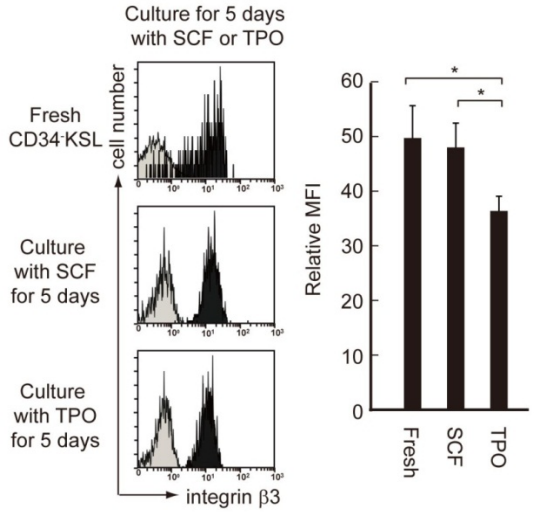

Figure S2. TPO did not enhanced expression of β3 integrin on HSCs
One thousand sorted Wt CD34⁻KSL cells were cultured for 5 days in the presence SCF or TPO. Following the culture, the level of integrin β3 expression was determined by flow cytometry. "Fresh" indicates uncultured CD34⁻KSL cells. The histograms depict expression of integrin β3; the graphs depict the relative mean fluorescence intensity (MFI). Data are means ± S.D (*$p<0.01$).

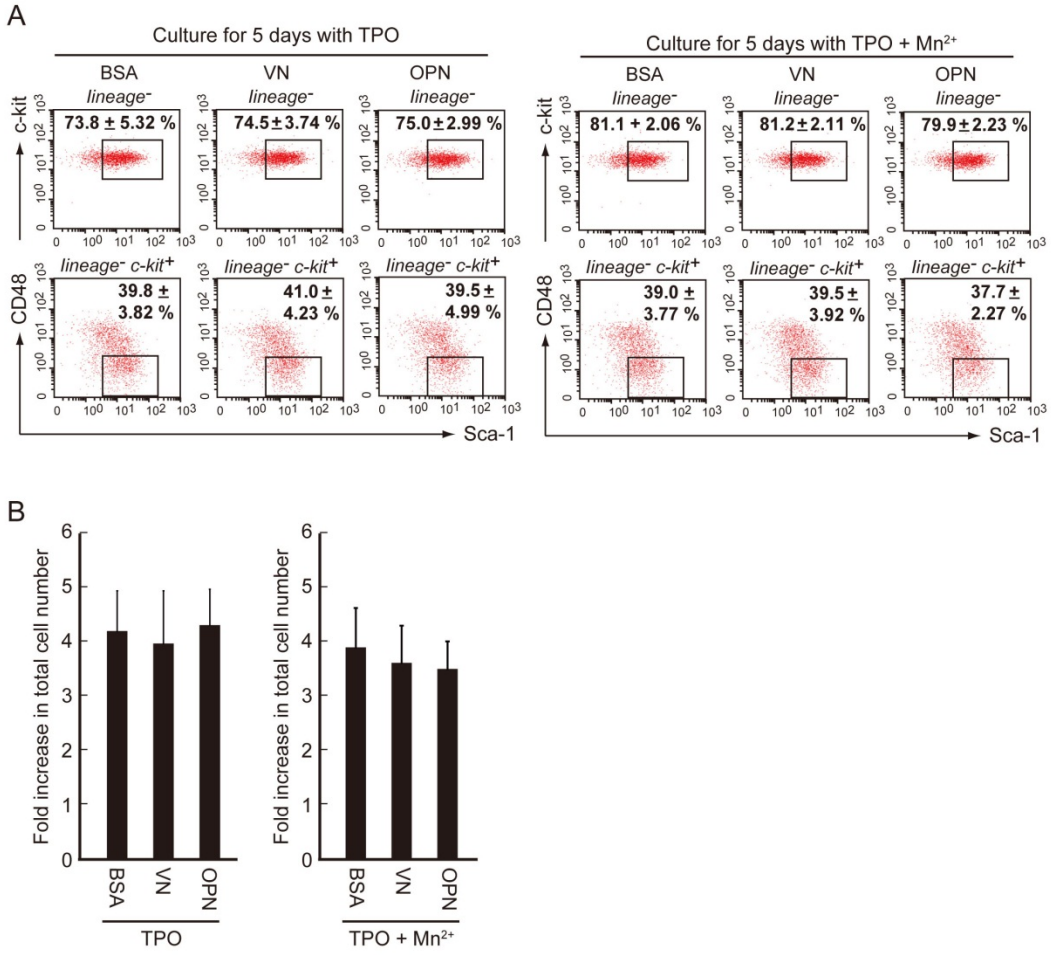

Figure S3. Natural ligands have little effect on HSC expansion

One thousand sorted Wt CD34^{-}KSL cells were cultured for 5 days on plates coated with the indicated ligand, with or without Mn^{2+} in the presence of TPO. (A) The percentages of KSL and CD48^{-}KSL cells were determined by flow cytometry after culture. The values in the dot plots are means ± S.D. (B) After the culture, total cell numbers were also counted. The graphs show the fold-increase of total cell number after 5 days of culture. Data are means ± S.D.

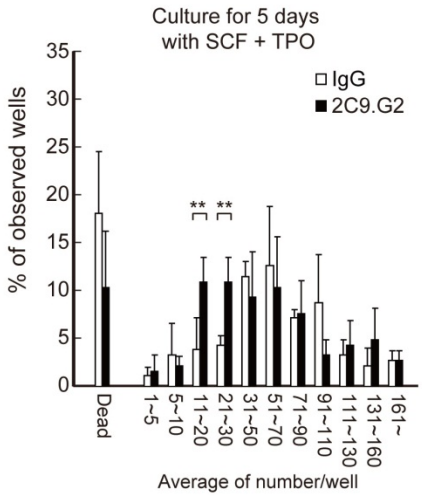

Figure S4. 2C9.G2 suppresses cell division during *ex vivo* expansion of HSC
Single CD34¯KSL cells were cultured with 2C9.G2 or IgG in 96-well plates. The Y-axis shows the % observed wells among the 96 wells in each plate, and the X-axis shows the number of cells derived from the single cells in the individual wells after 5 days of culture. Data are means ± S.D (**$p<0.05$, *$p<0.01$, n=6 of independent experiments).

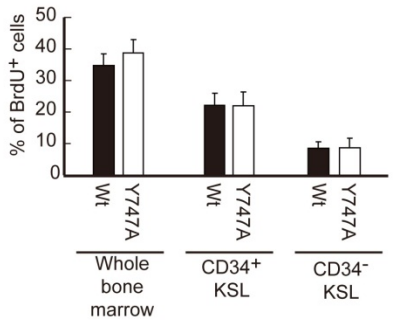

Figure S5. Y747A mutation has little effect on the cell cycle state of HSCs *in vivo*
The frequency of $BrdU^+$ cells among BMCs was examined using flow cytometry 2 h after administration of BrdU. The graphs depict the % $BrdU^+$ cells among the indicated populations. Data are presented as means ± S.D. (*$p<0.01$, $n>3$).