Supporting Information

SI Materials and Methods

Mice and Treatments. C57BL/6J mice and *ROSA26*-Cre^{ERT2} mice were purchased from the Jackson Laboratory, and *Alk1*$^{floxed/floxed}$ mice (1) were transferred to KAIST. To knock down *Alk1* in a tamoxifen-dependent manner, *Alk1*$^{2fl/2fl}$ mice were intercrossed with *ROSA26*-Cre^{ERT2} mice. Tamoxifen (0.2 mg; Sigma-Aldrich) dissolved in corn oil (Sigma-Aldrich) was injected into the peritoneal cavity of mouse pups on postnatal day 4 (P4) and P6. All animals were bred in a specific pathogen-free animal facility, and were fed a standard diet (PMI Lab Diet) *ad libitum* with free access to water. *Bmp9* KO mice were generated as previously reported (2). All experimental protocols were performed in accordance with the policies of the Animal Ethics Committee of the University of Tokyo and KAIST.

Model of Chronic Aseptic Peritonitis. We used 5-week-old Balb/c mice obtained from Sankyo Laboratories. The model of chronic aseptic peritonitis has been described previously (3-5). To induce peritonitis, we intraperitoneally administered 2 ml of 3% thioglycollate medium (BBL thioglycollate medium, BD Biosciences) to Balb/c mice every 2 days for 2 weeks. The adenovirus encoding *lacZ* or *BMP9* was also intraperitoneally administered twice per week during the same period. Mice were then sacrificed, and their diaphragms were excised and prepared for immunostaining as described previously (3). Fluorescent signals were visualized, and digital images were obtained using a Zeiss LSM 510 confocal microscope equipped with argon and helium-neon lasers (Carl Zeiss). LYVE-1-positive lymphatic vessels were observed using a 20× objective lens and analyzed using LSM Image Browser (Carl Zeiss) and ImageJ software.

Balb/c Nude Mouse Model of Mouse Breast Cancer. Balb/c nude male mice aged 5-6 weeks were obtained from CLEA Japan and the Sankyo Laboratory. A total of 4×10^6 4T1 tumor cells in 100 μl PBS were injected subcutaneously into the left flank of each mouse ($n \geq 5$ mice per group) and allowed to grow for 5 weeks, when the major axis of each tumor was approximately 10 mm.

Gene Expression Profiling Analysis. HDLECs were serum starved for 6 h and treated with or without BMP-9 (2 ng/ml) for 4 or 24 h, or were transfected with siRNAs for 48 h. Gene expression profiling was performed using a GeneChip® Human Gene 1.0 ST Array (Affymetrix). Enrichment of GO terms for genes with a greater than 2-fold expression change relative to the sham treatment were determined using the Database for Annotation, Visualization, and Integrated Discovery (DAVID; http://david.abcc.ncifcrf.gov) (6). Enriched GO terms were further integrated into similar annotation categories by functional annotation clustering in DAVID. For gene set enrichment analysis (GSEA), log-transformed data were analyzed with GSEA software (http://www.broadinstitute.org/gsea/) (7) using the LEC- or BEC-specific gene signatures reported previously (8). Parameters were set by default settings, except that the Metric for ranking genes and the Permutation type were changed to Diff_of_Classes and gene_set, respectively.

Cell Culture. HDLECs and HMVEC-LLy were originated from adult dermal and lung tissues, respectively, and prepared by FACS sorting for CD31/podoplanin (>95% according to Lonza datasheet). These cells were maintained from passage 3 to passage 10 in endothelial basal medium (EBM-2MV) containing 5% (vol/vol) fetal bovine serum (FBS), supplemented with endothelial cell growth supplement, and were harvested for the analyses when the control cells were sub-confluent. Expression of markers for lymphatic endothelial cells in HDLECs and HMVEC-LLy was confirmed by quantitative RT-PCR analysis (Fig. S15). HDBEC and HUVEC were maintained from passage 3 to passage 10 in EBM-2MV and EBM-2 containing 5% (vol/vol) FBS and 2% (vol/vol), respectively, supplemented with endothelial cell growth supplement. Pulmonary artery smooth muscle cells (PASMC) were maintained from passage 3 to passage 10 in smooth muscle growth media (SmGM-2) containing 5% (vol/vol) FBS, supplemented with smooth muscle cell growth supplement. 293FT cells were maintained in Dulbecco's modified Eagle's medium (DMEM; Invitrogen) containing 10% (vol/vol) FBS, 100 units/ml penicillin, and 100 μg/ml streptomycin. BMP-9 (1-2 ng/ml), control-Fc (100 ng/ml), and ALK-1-Fc (100 ng/ml) were purchased from R&D Systems. The 4T1 cells were grown in DMEM supplemented with 10% (vol/vol) FBS. The growth rate of HDLEC and HMVEC-LLy was measured using a Coulter Counter (Beckman Coulter) or by measuring OD_{450} using SF cell count reagent (WST-8;

NacalaiTesque).

Histological and Morphometric Analysis. On P8, the mice were anesthetized by intramuscular injection of ketamine (80 mg/kg) and xylazine (12 mg/kg). The indicated tissues were collected without any cardiac perfusion and fixed with 1% (weight/vol) paraformaldehyde (PFA) in PBS. Whole-mounted tissues were blocked with 5% (vol/vol) goat serum (Jackson ImmunoResearch Laboratories) in 0.3% (vol/vol) Triton X-100 in PBS (PBST) and incubated for 6 h at room temperature (RT) with the following primary antibodies: for blood vessels, hamster anti-PECAM-1 antibody (clone 2H8, Millipore); for lymphatic vessels, rabbit anti-lymphatic vessel endothelial hyaluronan receptor (LYVE)-1 polyclonal antibody (AngioBio). After several washes in PBST, the samples were incubated with the following secondary antibodies for immunofluorescent staining: Cy3-conjugated anti-hamster IgG, and FITC-conjugated anti-rabbit IgG (both from Jackson ImmunoResearch). For 3,3'-diaminobenzidine (DAB) immunostaining, samples were incubated with horseradish peroxidase-conjugated anti-rabbit IgG antibody (sc-2030, Santa Cruz) and developed using the DAB substrate kit (Vector Laboratories) according to the manufacturer's instructions. DAB and fluorescent signals were visualized, and digital images were obtained using a Zeiss stereo microscope, or a Zeiss LSM 510 confocal microscope equipped with argon and helium-neon lasers (Carl Zeiss). Morphometric analyses of the lymphatic vessels were performed using ImageJ software (http://rsb.info.nih.gob/ij) or LSM Image Browser (Carl Zeiss). Area densities (percentage of total tissue area) of LYVE-1-positive lymphatic vessels were made at five regions in the cornea and intestine (each region was 1.5 mm^2 in area), and at three regions of the pleural side of the diaphragm (each region was 35 mm^2 in area). Vessel diameters were averaged among 10 consecutive LYVE-1-positive lymphatic vessels. Lymphatic filopodia visible at a screen magnification of 1000× were counted in five regions per cornea, each measuring 0.008 mm^2 in area.

RNA Interference. We purchased siRNAs for human *ALK-1* (Stealth RNAi™ Oligo IDs HSS100151 and HSS100152), human *ALK-2* (Stealth RNAi™ Oligo IDs VHS41050 and VHS41053), human *CCNE2* (Stealth RNAi™ Oligo IDs HSS113521 and HSS113522), and negative control (Stealth RNAi™ Negative Control Low GC or

Med GC) from Invitrogen. siRNAs for human *PROX1* were synthesized and purchased from QIAGEN, and the sequences of these siRNAs have been reported previously (9, 10). All siRNAs were introduced into cells using Lipofectamine RNAi Max reagent (Invitrogen) according to the manufacturer's instructions.

RNA Isolation and RT-PCR Analysis. Total RNAs were extracted using the RNeasy Mini Kit (QIAGEN). Reverse transcription and quantitative RT-PCR analysis was performed as previously reported (11, 12). All expression data were normalized to data for β-actin or GAPDH. Primer sequences are available online, as indicated in Table S7.

TUNEL Assay. In terminal deoxynucleotidyltransferase-mediated dUTP nick end labeling (TUNEL) assays, cells were fixed in 4% (weight/vol) PFA. After permeabilization in PBS containing 0.2% (vol/vol) Triton X-100, the *In Situ* Cell Death Detection Kit TMR red (Roche Diagnostics) was used (13). Nuclei were counterstained with TOTO-3 (Invitrogen). Fluorescence was examined using a BIO-REVO BZ-9000 20× objective lens (Keyence). The rate of apoptosis was determined by calculating the number of TUNEL-positive dots divided by that of TOTO-3-positive nuclei in the defined field.

Adenovirus Production. Adenoviruses encoding *lacZ* (β-galactosidase), *BMP9,* and ca*ALK-1* were generated as reported previously (14). We measured the titer of prepared adenoviruses using the Adeno-X titer kit (TaKaRa Bio).

Lentivirus Production and Infection. A lentiviral expression system was used to establish *BMP9*-expressing 4T1 cells (15). cDNA encoding human *BMP9* was cloned from the liver cDNA of Multiple Tissue cDNA Panels (Clontech) using the following primers; forward: 5’- TTCCTTCAGAGCAAACAGCA -3’, and reverse: 5’-GTTGTGCTCAAATCCCCATT-3’. *BMP9* cDNA was subcloned into the pENTR vector, and subsequently transferred into the pCS-EF-RfA lentiviral expression vector through the LR recombination reaction (Invitrogen). For the production of lentiviral vectors, 293FT cells (Invitrogen) were transfected using Lipofectamine 2000 (Invitrogen) with three plasmids: the vector construct, the VSV-G and Rev expressing construct (pCMV-VSV-G-RSV-Rev), and the packaging construct (pCAG-HIVgp).

Culture supernatants were collected, and viral particles were concentrated by centrifugation. For lentiviral infection, 1×10^5 4T1 cells were infected with lentiviral vectors in suspension and plated in six-well culture plates.

Balb/c Nude Mouse Model of Mouse Breast Cancer. Balb/c nude male mice aged 5-6 weeks were obtained from CLEA Japan and the Sankyo Laboratory. A total of 4×10^6 4T1 tumor cells in 100 μl PBS were injected subcutaneously into the left flank of each mouse ($n \geq 5$ mice per group) and allowed to grow for 5 weeks, when the major axis of each tumor was approximately 10 mm.

Immunohistochemistry and Immunoblot Analysis. Staining of cultured cells was performed as previously described (16-18). Excised mouse tissue samples from Balb/c mouse grafted with 4T1 cells were snap-frozen in a dry ice/acetone bath for immunohistochemistry. Frozen samples were sectioned at a thickness of 10 μm in a cryostat and subsequently incubated with primary and secondary antibodies. Anti-LYVE-1 antibodies (Abcam) were used for immunohistochemistry. Stained specimens were examined using a BIO-REVO BZ-9000 (Keyence). All images were imported into Adobe Photoshop as JPEGs or TIFFs for figure assembly. Images were processed using ImageJ (NIH) to quantify LYVE-1-positive areas. Immunoblot analysis was performed as described (19-21). Antibodies raised against HA and α-tubulin were obtained from Sigma for immunoblot analysis and immunohistochemistry. Antibodies raised against Prox1 were obtained from Merck-Millipore or R&D, and antibodies raised against phosphorylated Smad1/5 and Smad1 were obtained from Cell Signaling Technology. Bound antibody was detected using a chemiluminescent substrate (ECL; Amersham) and LAS-4000 Luminescent image analyzer (Fuji Photo Film Co., Ltd.).

Immunocytochemistry. HDLECs were fixed with 4% (weight/vol) PFA and treated with PBS containing 0.2% (vol/vol) Triton X-100, followed by immunostaining with an anti-MIB-1 antibody (Dako-Cytomation). MIB-1-positive fluorescent signals were visualized; digital images were obtained using a Zeiss LSM 510 confocal microscope with a 20× objective lens and analyzed using an LSM Image Browser (Carl Zeiss).

Immunostaining of Embryo Back Skins. Whole murine embryos harvested at

embryonic day 15.5 were well-immersed in 4% PFA for 20-30 min, and the back skins were peeled off and incubated in 4% PFA at 4˚C overnight. After washing with PBS-Triton X-100 (0.2%), samples were blocked with 1% (weight/vol) BSA, followed by immunostaining with anti-VEGFR3 antibody (R&D)(22).

Statistical Analysis. Values are presented as mean ± standard deviation (SD). Significant differences between means were determined using an unpaired Student's *t*-test or analysis of variance with one-way ANOVA followed by the Student-Newman-Keuls test or GraphPad Prism 6 (GraphPad Software). Statistical significance was set at *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

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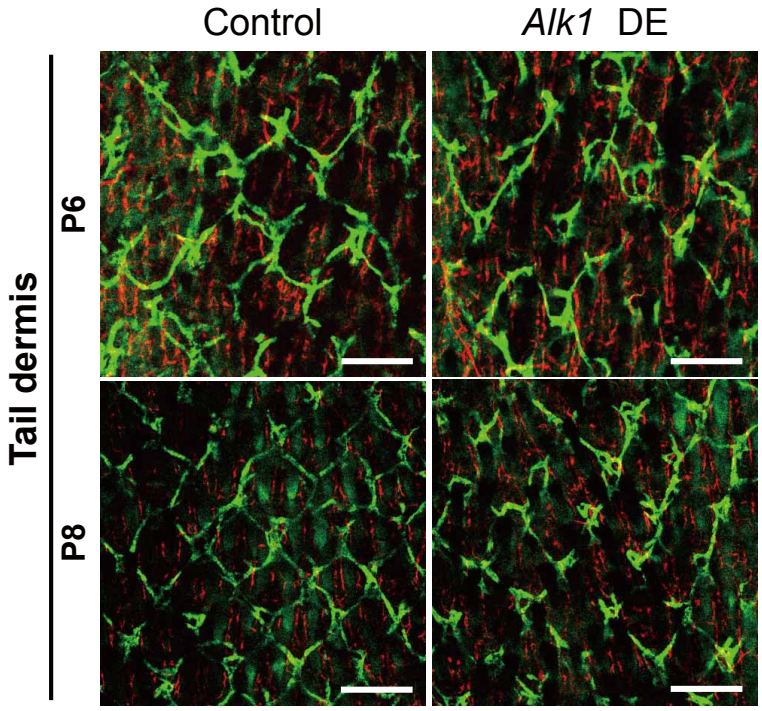


Fig. S1. Analysis of lymphatic vessels in the tail dermis of *Alk1*-depleted mice.
Lymphatic vessels and blood vessels were visualized using anti-LYVE-1 (green) and anti-PECAM-1 (red) antibodies, respectively, at P6 and P8 in control and *Alk1*-depleted mice. Scale bars, 200 μm

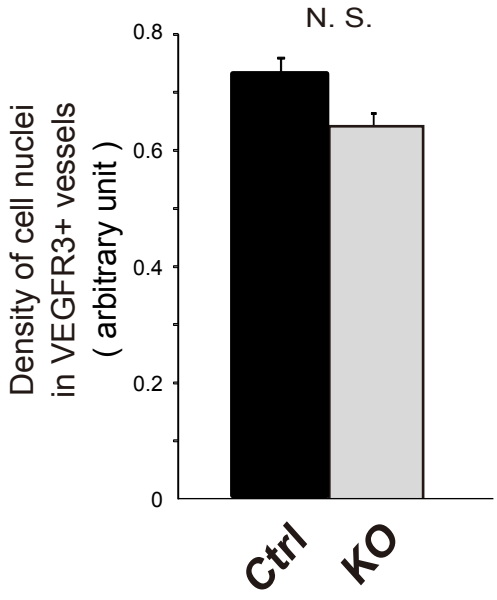


Fig. S2. Density of cell nuclei in lymphatic vessels of *Bmp9*-deficient embryos.

Density of cell nuclei in VEGFR3-positive vessels in *Bmp9* homozygous (KO) and heterozygous (Ctrl) embryos was shown by calculating the number of Prox1-positive nuclei divided by the number of pixels in areas of VEGFR3-positive vessels. The embryos analyzed for this graph were different from those shown in Fig. 1M and 1N.

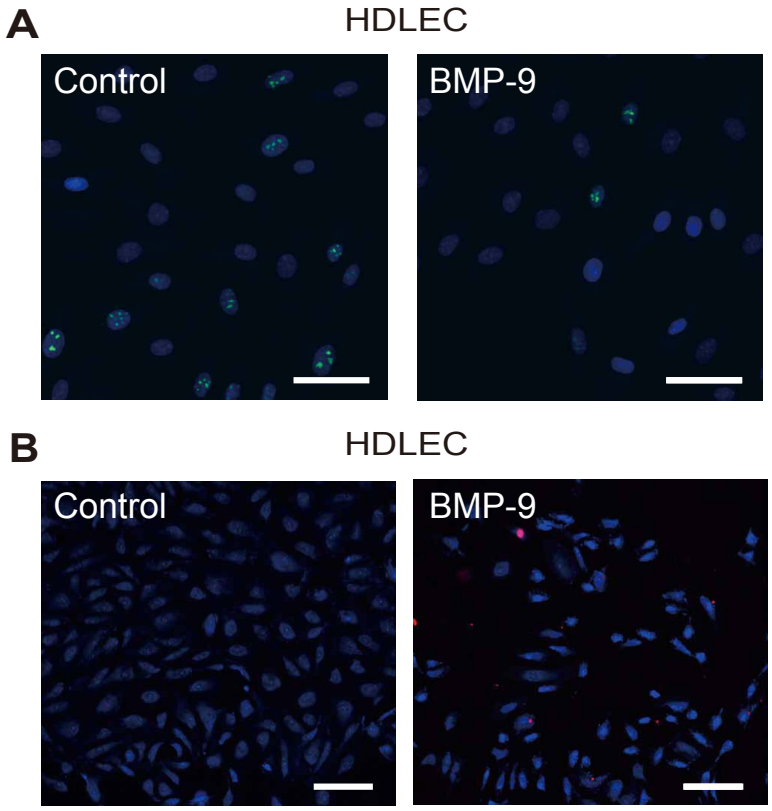


Fig. S3. Effect of BMP-9 on the proliferation and apoptosis of HDLECs.

(A) MIB-1+ proliferating HDLECs treated with BMP-9 versus control. Scale bars, 50 μm.
(B) TUNEL+ apoptotic HDLECs treated with BMP-9 versus control. Scale bars, 100 μm.

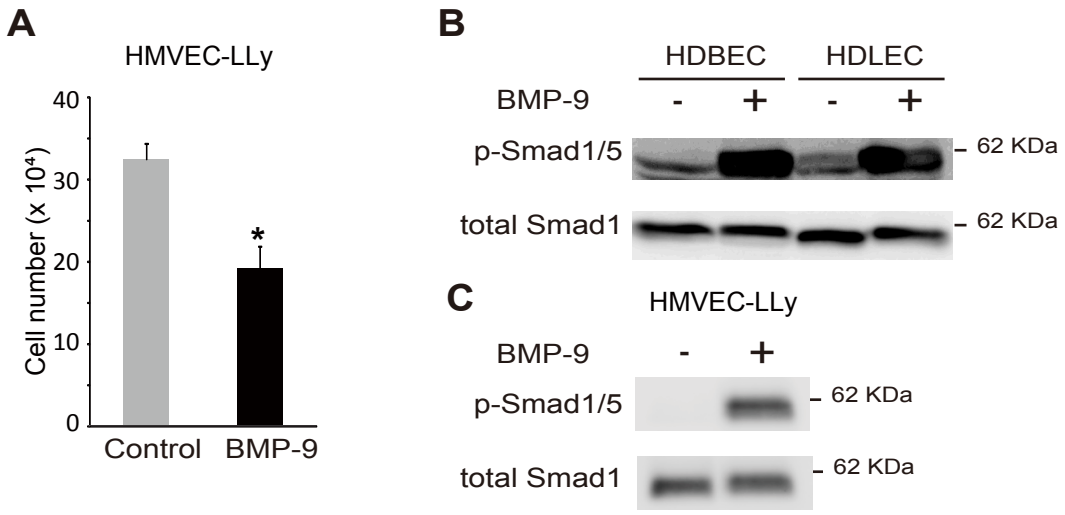


Fig. S4. Effect of BMP-9 on other type of LECs and its downstream Smad signaling.

(A) Effect of BMP-9 on the proliferation of HMVEC-LLy. The cells were treated with or without BMP-9 for 48 h. (B) Smad1/5 phosphorylation was detected after BMP-9 treatment for 45 minutes both in HDBECs and in HDLECs to the same extent. (C) Smad1/5 phosphorylation was also detected in HMVEC-LLy after BMP-9 treatment for 45 minutes.

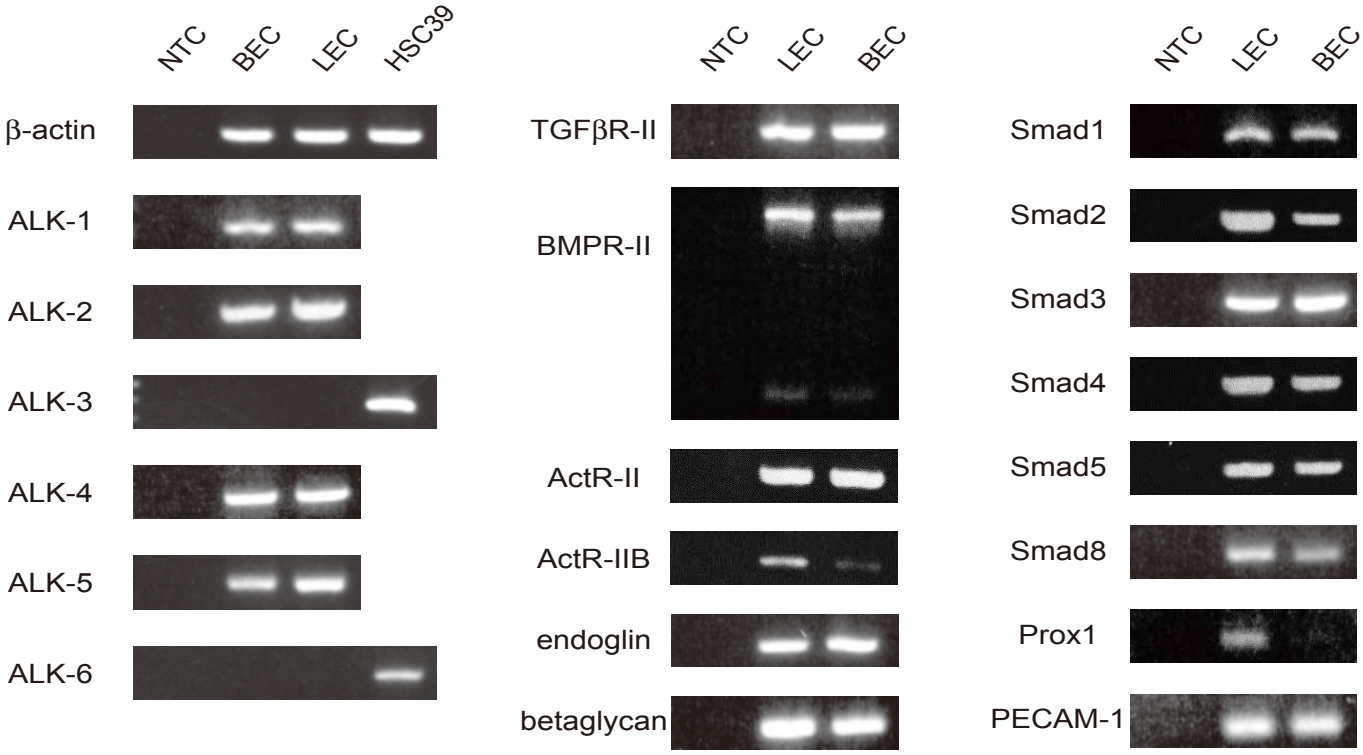


Fig. S5. Expression of TGF-β /BMP family signaling components in LECs and BECs.

The amounts of the indicated mRNAs were examined using semi-quantitative RT-PCR. HDBECs and HDLECs were prepared from the same donor. Prox1 was used as a LEC marker. PECAM-1 was used as an endothelial marker. β-actin was used as an internal control.

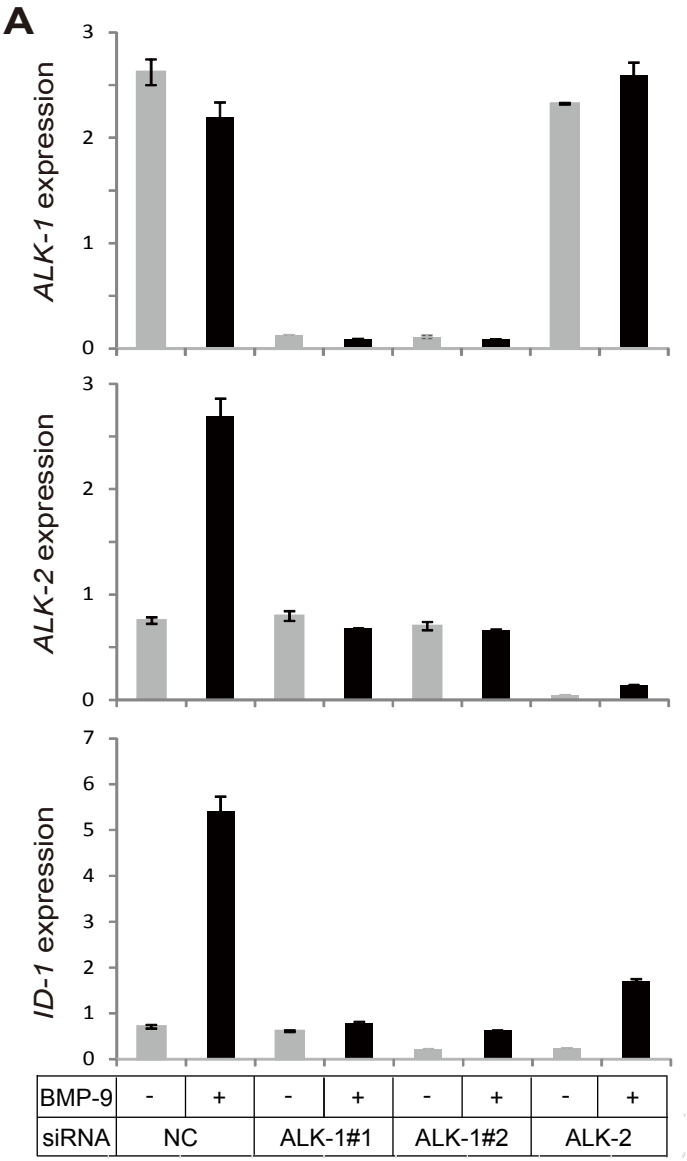
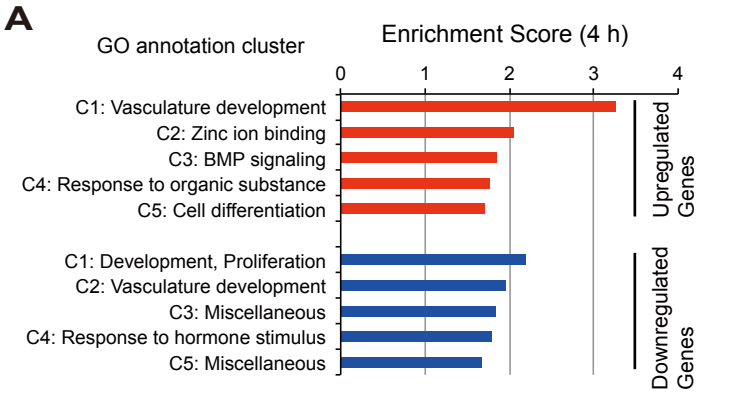
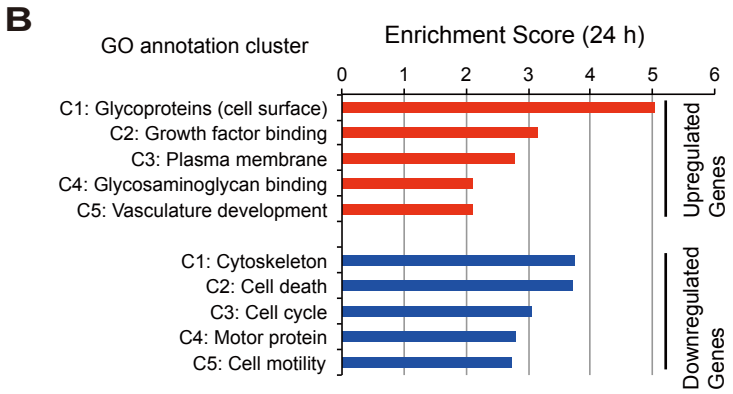


Fig. S6. Effects of ALK-1 on expression of BMP-9 target genes

(A) HDLECs were treated with siRNA for *ALK-1*, *ALK-2* or the control siRNA for 48 h in the presence or absence of BMP-9. Expression of *ID-1* (bottom) was decreased when the expression of *ALK-1* (top) or *ALK-2* (middle) was knocked down by siRNA specific for *ALK-1* or *ALK-2*, respectively. (B) Western blot depicting the expression of HA-tagged, constitutively active *ALK-1* (ca*ALK-1*) or control (*LacZ*) by the adenovirus in HDLECs.





C

Gene Symbol	4 h (FC)	24 h (FC)
BMP4	0.280	0.876
ADM	0.299	0.280
TNFSF18	0.299	0.082
LOC441179	0.304	0.276
SDPR	0.306	0.348
RAPGEF5	0.317	0.212
PROX1	0.321	0.628
NR5A2	0.333	0.375
TGFBR3	0.339	0.522
GIMAP6	0.339	0.864

Fig. S7. Prox1 is idetified as a putative BMP-9 target gene.

(A, B) Gene ontology analysis of gene clusters enriched for gene expression changes in HDLECs treated with BMP-9 for 4 h (A) and 24 h (B). (C) The list of the genes whose downregulated expression was significant in HDLECs treated with BMP-9 for 4 h. All values are shown as fold change (FC).

Yoshimatsu Y et al. Fig. S8, related to Fig. 4

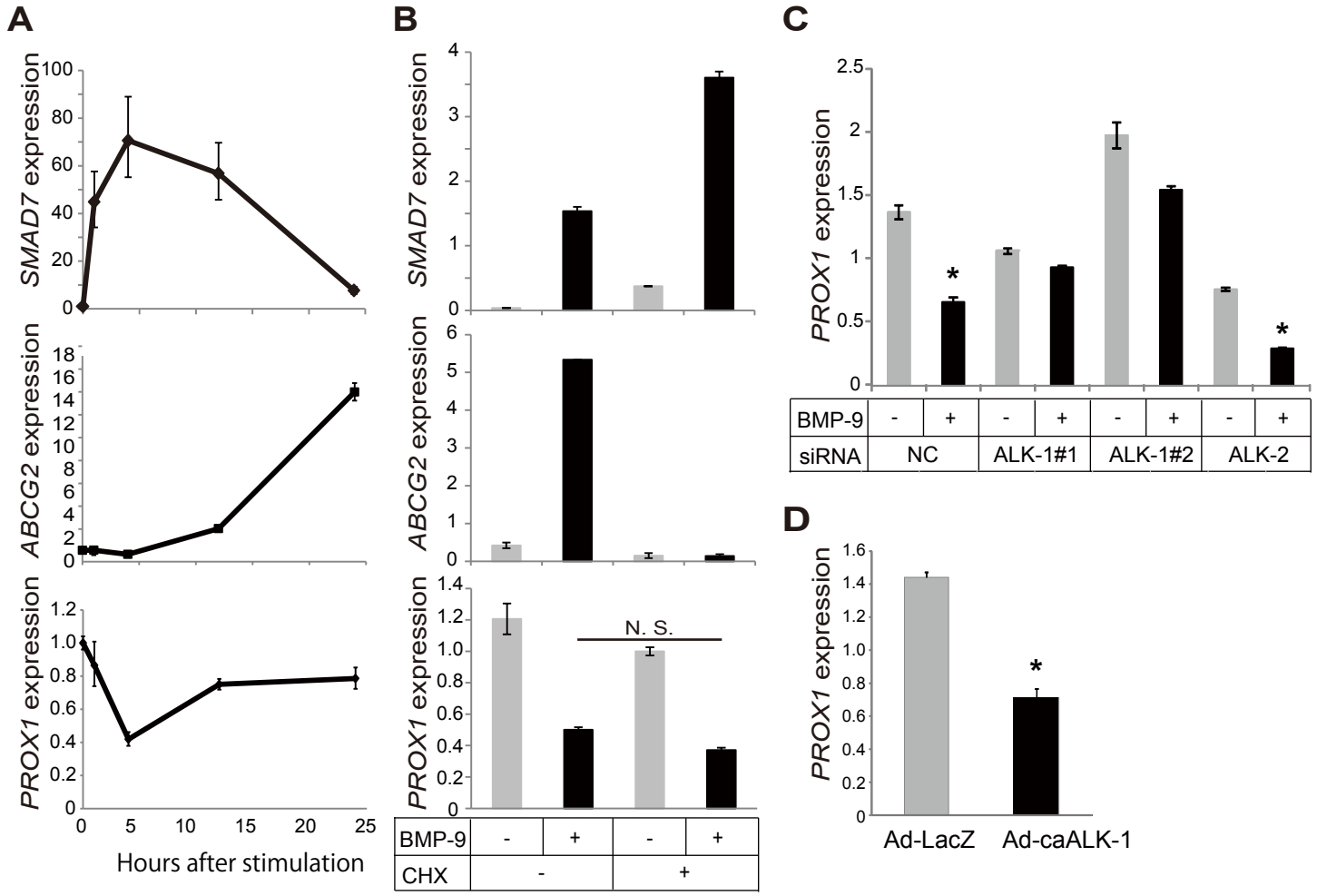


Fig. S8. Direct regulation of Prox1 expression by BMP-9/ALK-1 signals.

(*A*) Fold expression of *SMAD7* (top), *ABCG2* (middle), and *PROX1* (bottom) mRNA at the indicated times. (*B*) The mRNA expression of *SMAD7* (at 4 h, top), *ABCG2* (at 24 h, middle), and *PROX1* (at 4 h, bottom) in HDLECs treated with or without BMP-9 in the presence or absence of cycloheximide (CHX), an inhibitor of protein synthesis. The expression of *SMAD7,* a direct target of BMP/Smad signals, was induced within 1 hour of treatment with BMP-9. In contrast, BMP-9 induced the expression of *BCRP1/ABCG2,* a transporter protein, more than 4 hours after BMP-9 treatment, suggesting that *ABCG2* is not a direct target of BMP-9. Furthermore, BMP-9-induced expression of *SMAD7* was not inhibited by CHX. In comparison, BMP-9-induced *ABCG2* expression was completely abrogated by CHX, further confirming that *SMAD7* and *ABCG2* are direct and indirect targets of BMP-9 signals, respectively. Because the decrease in *PROX1* expression caused by BMP-9 was observed within 1 hour of treatment and was not altered by the addition of CHX, Prox1 appeared to be directly regulated by BMP-9 without *de novo* protein synthesis. (*C*) The expression of *PROX1* in HDLECs when treated with siRNA for *ALK1*, *ALK2* or the conrol siRNA for 48 hours in the presence or absence of BMP-9. When the expression of *ALK1*, but not of *ALK2*, was knocked down by specific siRNAs, BMP-9 failed to decrease *PROX1* expression. (*D*) The mRNA expression of *PROX1* in HDLECs when adenovirally infected with ca*ALK-1*. The expression of caALK-1 in HDLECs by the adenovirus decreased *PROX1* expression. N. S., not significant. All values are mean ± S.D. *p < 0.05; Student's t-test.

Yoshimatsu Y et al. Fig. S9, related to Fig. 4

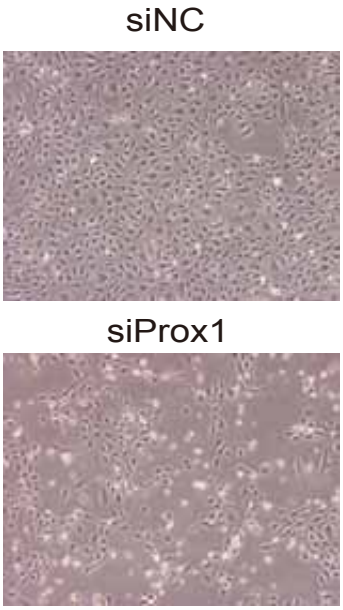


Fig. S9. The morphological appearance of HDLECs after sham siRNA knockdown (siNC, top) and Prox1 siRNA knockdown (siProx1, bottom).

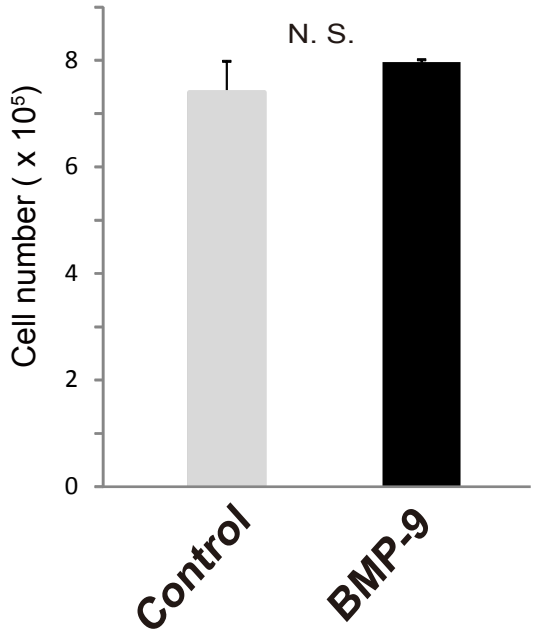


Fig. S10. Effect of BMP-9 on the proliferation of 4T1 cells

The cell number was counted 24 hours after 4T1 cells were treated with or without BMP-9 (50 ng/mL).

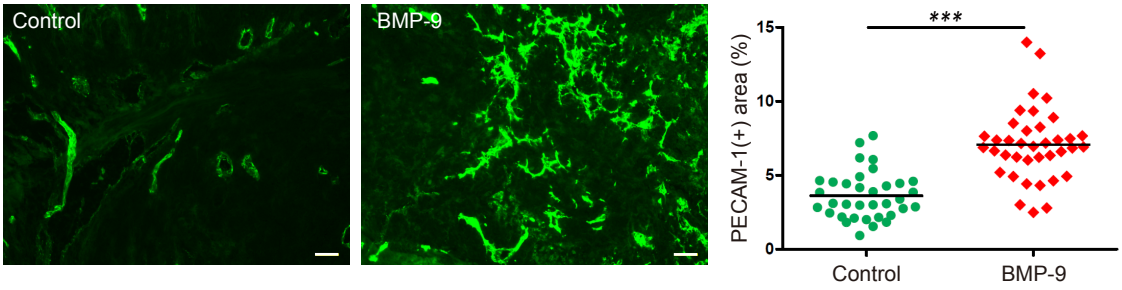


Fig. S11. Tumor angiogenesis in 4T1 allograft tumor model

(left) Images of the formation of blood vessels in tumors derived from allografted murine breast carcinomas expressiong *GFP* (Control) or *BMP9*. (right) Quantification of the relative area of PECAM-1-positive blood vessels in these tumors. Scale bars, 100 μm.

Yoshimatsu Y et al. Fig. S12, related to Discussion

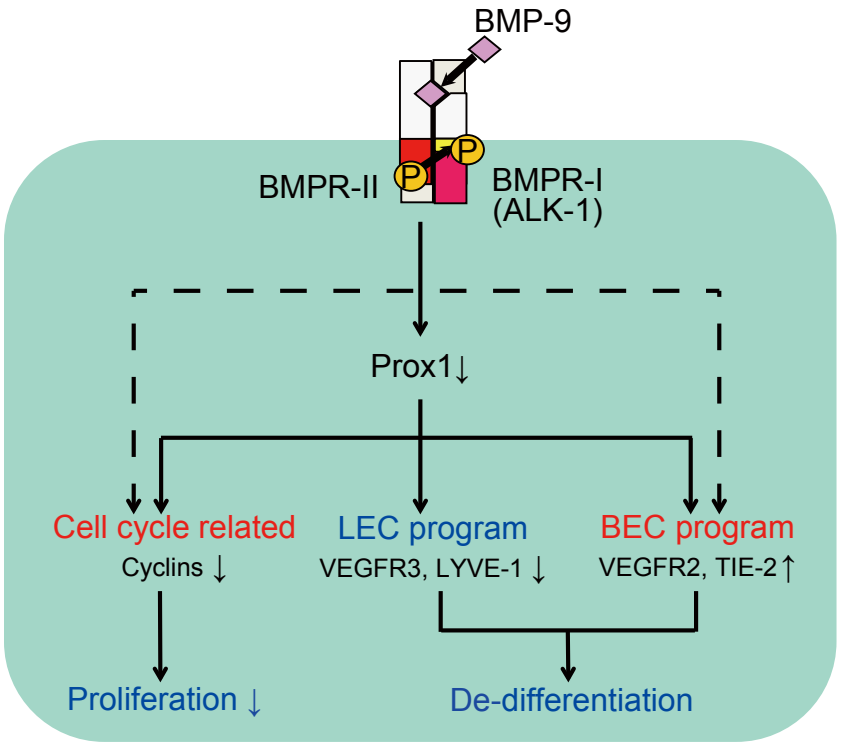


Fig. S12. Schematic model for the roles of BMP-9/ALK-1 signals in the regulation of the proliferation of BECs and LECs.

This model indicates roles of BMP-9/ALK-1 signals in regulating the proliferation of BECs and LECs. While BMP-9/ALK-1 signals activated the BEC program by inducing the expression of VEGFR2 and TIE-2, both of which enhance the proliferation of BECs, they also suppressed Prox1 expression, leading to the down-regulation of cell cycle-related factors including cyclin family members. Furthermore, the decrease in Prox1 expression down-regulated the expression of various LEC markers, which resulted in the de-differentiation of LEC to BEC.

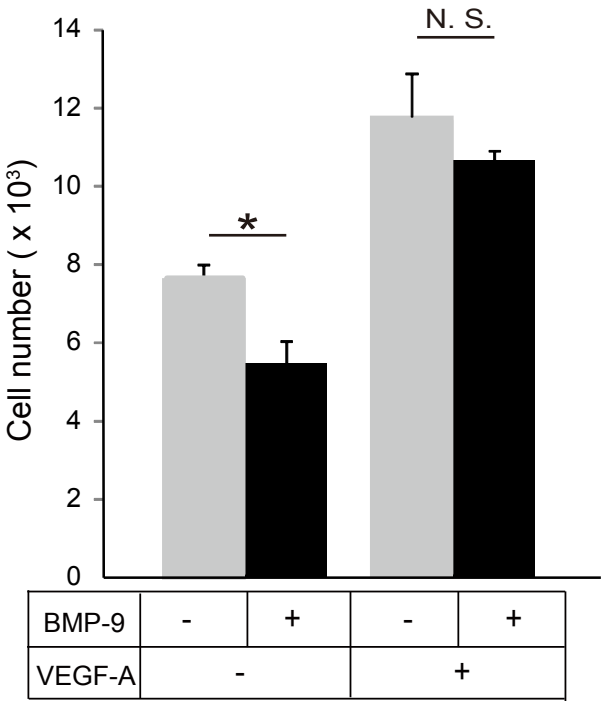


Fig. S13. Effect of VEGF-A on the BMP-9-induced inhibition of HDLEC proliferation

The cell number was counted 43 hours after HDLECs were treated with or without BMP-9 (1 ng/mL) in combination with VEGF-A (50 ng/mL).

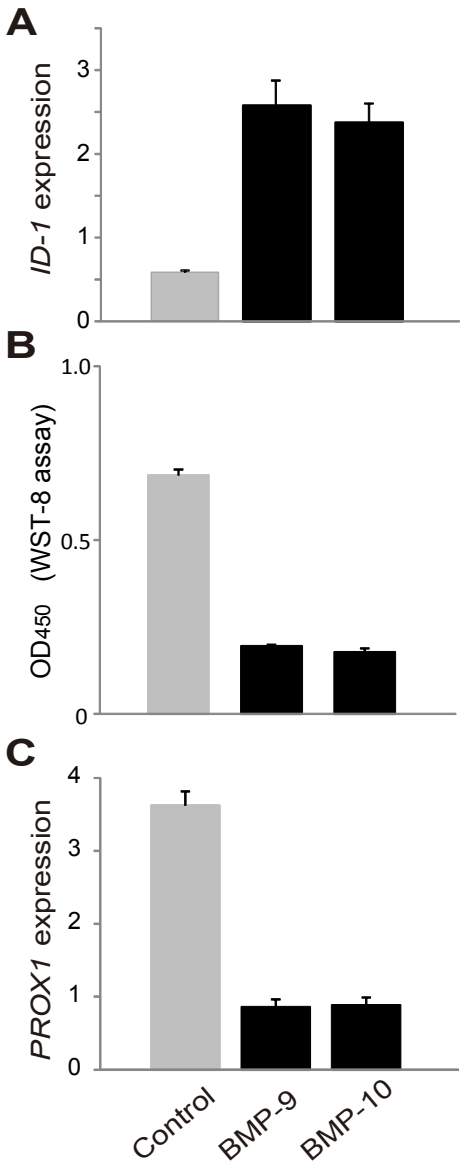


Fig. S14. Effects of BMP-10 on HDLECs

(A) HDLECs were cultured for 4 h in the presence or absence of BMP-10 or BMP-9. The increased expression of *ID-1* by BMP-10 was equivalent to that by BMP-9. (B) The proliferation assay was performed when HDLECs were cultured for 48 h in the presence or absence of BMP-10 or BMP-9. The effect of BMP-10 on the proliferation of HDLECs was equivalent to that of BMP-9. (C) The expression levels of *PROX1* mRNAs were examined using the same cDNAs as in A. The decreased expression of *PROX1* by BMP-10 was equivalent to that by BMP-9.

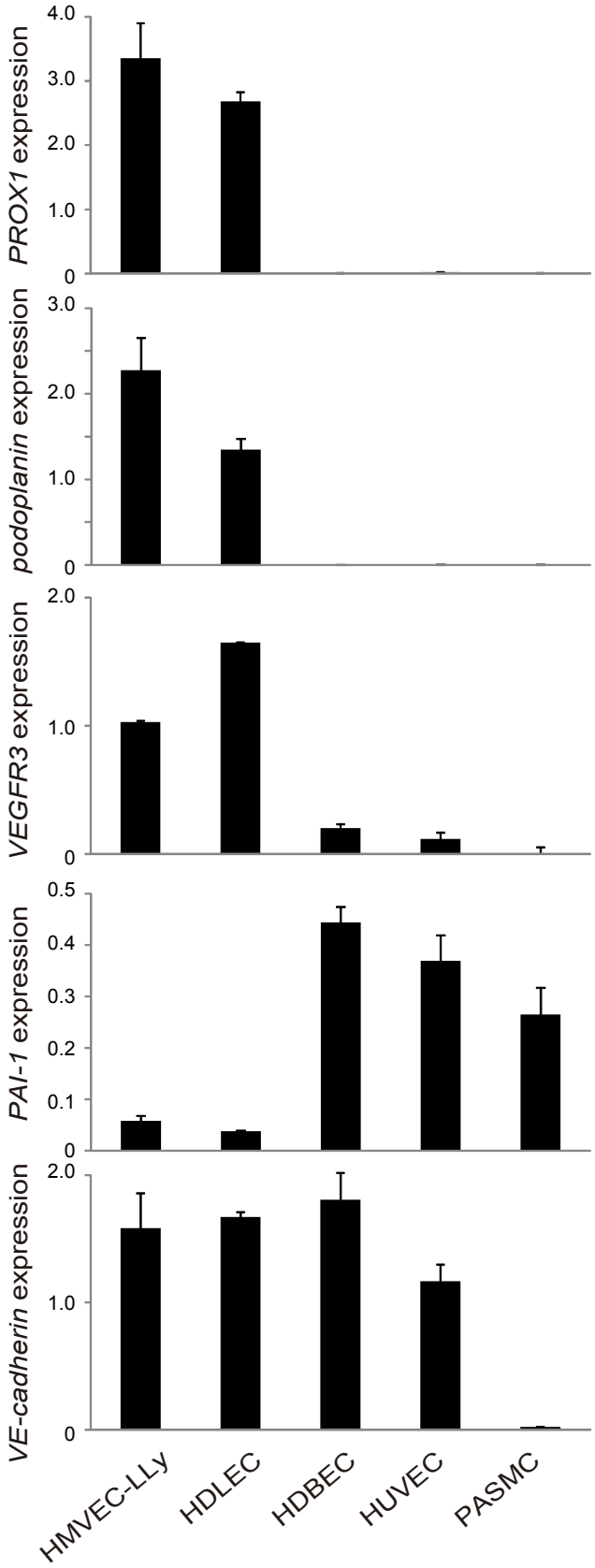


Fig. S15. Characterization of HDLEC and HMVEC-LLy

Analysis of the expression of *PROX1*, *podoplanin*, *VEGFR3*, *PAI-1* and *VE-cadherin* in HMVEC-LLy, HDLEC, HDBEC, HUVEC (human umbilical vein endothelial cell) and PASMC (pulmonary artery smooth muscle cell). Note that both HDLEC and HMVEC-LLy preferentially express *PROX1*, *podoplanin* and *VEGFR3*, markers for lymphatic endothelial cells.

Table S1. List of genes whose expression levels were downregulated or upregulated more than 2 fold at 4 h after BMP-9 treatment, related to Figures 4 and 5.

Downregulated genes

Probe ID	Gene Symbol	Fold Change (BMP-9/Control)	Gene Description
7987066		0.236	
7979241	BMP4	0.280	bone morphogenetic protein 4
8012906		0.298	
7938390	ADM	0.299	adrenomedullin
7922337	TNFSF18	0.299	tumor necrosis factor (ligand) superfamily, member 18
8123405	LOC441179	0.304	chromosome 6 open reading frame 123 | hypothetical LOC441179
8057797	SDPR	0.306	serum deprivation response | serum deprivation response (phosphatidylserine binding protein)
8138504	RAPGEF5	0.317	Rap guanine nucleotide exchange factor (GEF) 5
7909681	PROX1	0.321	prospero homeobox 1
7908597	NR5A2	0.333	nuclear receptor subfamily 5, group A, member 2
7917649	TGFBR3	0.339	transforming growth factor, beta receptor III
8143781	GIMAP6	0.339	GTPase, IMAP family member 6
7933204	C10orf10	0.344	chromosome 10 open reading frame 10
8084951	LRRC33	0.346	leucine rich repeat containing 33 | phosphatidylinositol glycan anchor biosynthesis, class X
7959251	P2RX7	0.355	purinergic receptor P2X, ligand-gated ion channel, 7
8138799	TRIL	0.359	TLR4 interactor with leucine rich repeats
8058201		0.367	
8020806	RNF125	0.370	ring finger protein 125
8051573	CDC42EP3	0.371	CDC42 effector protein (Rho GTPase binding) 3
8131666	ITGB8	0.374	integrin, beta 8
8004255	BCL6B	0.374	B-cell CLL/lymphoma 6, member B | B-cell CLL/lymphoma 6, member B (zinc finger protein)
8164252	SH2D3C	0.379	SH2 domain containing 3C
7962212	PKP2	0.386	plakophilin 2
8137257	GIMAP5	0.387	GTPase, IMAP family member 5
8003298	SLC7A5	0.388	solute carrier family 7 (cationic amino acid transporter, y+ system), member 5

8051814	ZFP36L2	0.392	zinc finger protein 36, C3H type-like 2
8118863	ANKS1A	0.392	ankyrin repeat and sterile alpha motif domain containing 1A
8148317	MYC	0.393	v-myc myelocytomatosis viral oncogene homolog (avian)
8069448		0.404	
7908125	RGL1	0.405	ral guanine nucleotide dissociation stimulator-like 1
7965040	PHLDA1	0.405	pleckstrin homology-like domain, family A, member 1
7926484		0.408	
8154233	CD274	0.410	
7923034	B3GALT2	0.410	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypeptide 2
8106170	TMEM171	0.413	transmembrane protein 171
8060344	TRIB3	0.414	tribbles homolog 3 (Drosophila)
8083594	PTX3	0.415	pentraxin 3, long | pentraxin-related gene, rapidly induced by IL-1 beta
8017843	SLC16A6	0.416	solute carrier family 16, member 6 (monocarboxylic acid transporter 7)
8112202	PLK2	0.416	polo-like kinase 2 (Drosophila)
7980828	CCDC88C	0.421	coiled-coil domain containing 88C
8012953	TRIM16	0.422	tripartite motif-containing 16
8065569	BCL2L1	0.425	BCL2-like 1
8172266		0.426	microRNA 221
8138353	MEOX2	0.428	mesenchyme homeobox 2
8122222	PDE7B	0.433	phosphodiesterase 7B
8060850	BMP2	0.440	bone morphogenetic protein 2
7926443		0.442	
8068593	ETS2	0.444	v-ets erythroblastosis virus E26 oncogene homolog 2 (avian)
7974316	FRMD6	0.448	FERM domain containing 6
8096116	AGPAT9	0.450	1-acylglycerol-3-phosphate O-acyltransferase 9
7979813	ZFP36L1	0.450	zinc finger protein 36, C3H type-like 1
7977854	JUB	0.457	jub, ajuba homolog (Xenopus laevis)
7940160	DTX4	0.459	deltex homolog 4 (Drosophila)
8078380	ZNF860	0.460	zinc finger protein 860
7980537	STON2	0.462	stonin 2
7982854	DLL4	0.468	delta-like 4 (Drosophila)

8178435	IER3	0.468	immediate early response 3
7912706	EPHA2	0.468	EPH receptor A2
8124848	IER3	0.469	immediate early response 3
8179704	IER3	0.469	immediate early response 3
8040419	MYCN	0.471	v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian)
7922343	TNFSF4	0.475	tumor necrosis factor (ligand) superfamily, member 4
8123606	MGC39372	0.478	
8099240		0.479	
8107857		0.479	
8155930	GCNT1	0.482	glucosaminyl (N-acetyl) transferase 1, core 2 | glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1,6-N-acetylglucosaminyltransferase)
8005475	TRIM16L	0.483	tripartite motif-containing 16-like | tripartite motif-containing 16
8137252	GIMAP1	0.483	GTPase, IMAP family member 1
8131881	C7orf46	0.484	chromosome 7 open reading frame 46
8067955	CXADR	0.485	coxsackie virus and adenovirus receptor
7977270	LOC388022	0.486	hypothetical gene supported by AK131040
8092134	PLD1	0.486	phospholipase D1, phosphatidylcholine-specific
8012949	CDRT1	0.488	CMT1A duplicated region transcript 1 | F-box and WD repeat domain containing 10 | tripartite motif-containing 16
8138289	ETV1	0.490	ets variant 1
8125123		0.495	
8137232	GIMAP8	0.497	GTPase, IMAP family member 8
7923753	NUAK2	0.498	NUAK family, SNF1-like kinase, 2

Upregulated genes

Probe ID	Gene Symbol	Fold Change (BMP-9/Control)	Gene Description
7922976	PTGS2	12.833	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
7984353	SMAD6	9.845	SMAD family member 6
8151457	HEY1	9.129	hairy/enhancer-of-split related with YRPW motif 1

8023220	SMAD7	8.402	SMAD family member 7
8008627	NOG	8.305	noggin
8040103	ID2	6.862	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein
7899939	GJA4	6.596	gap junction protein, alpha 4, 37kDa
8078397	CMTM8	6.224	CKLF-like MARVEL transmembrane domain containing 8
8142765	LRRC4	5.947	leucine rich repeat containing 4
7922229	SELE	5.727	selectin E
8146115	C8orf4	5.277	chromosome 8 open reading frame 4
8112615	ENC1	4.623	ectodermal-neural cortex 1 (with BTB-like domain) | ectodermal-neural cortex (with BTB-like
8063382	SNAI1	3.935	snail homolog 1 (Drosophila)
7976698	EML1	3.845	echinoderm microtubule associated protein like 1
8043995	IL1R1	3.836	interleukin 1 receptor, type I
8108447	CXXC5	3.678	CXXC finger 5
7951662	CRYAB	3.614	crystallin, alpha B
8143341	JHDM1D	3.610	jumonji C domain containing histone demethylase 1 homolog D (S. cerevisiae)
8016832	MMD	3.531	monocyte to macrophage differentiation-associated
8130674	PDE10A	3.342	phosphodiesterase 10A
8129804	MAP3K5	3.250	mitogen-activated protein kinase kinase kinase 5
8141843	RASA4P	3.077	RAS p21 protein activator 4 | similar to HSPC047 protein
8047248	PLCL1	3.050	phospholipase C-like 1
7926875	BAMBI	3.022	BMP and activin membrane-bound inhibitor homolog (Xenopus laevis)
8088550	PRICKLE2	3.011	prickle homolog 2 (Drosophila)
7971015	SMAD9	2.990	SMAD family member 9
8143441	KIAA1147	2.985	
8087907	SEMA3G	2.962	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G
7928189	UNC5B	2.940	unc-5 homolog B (C. elegans)
7924058	IRF6	2.920	interferon regulatory factor 6
8080964	GLT8D4	2.885	glucoside xylosyltransferase 2 | glycosyltransferase 8 domain containing 4
7898693	ALPL	2.858	alkaline phosphatase, liver/bone/kidney
7966690	TBX3	2.816	T-box 3
7915682	ZSWIM5	2.767	zinc finger, SWIM-type containing 5

7933194	CXCL12	2.743	chemokine (C-X-C motif) ligand 12 | chemokine (C-X-C motif) ligand 12 (stromal cell-derived
8128565	POPDC3	2.738	popeye domain containing 3
8147132	CA2	2.700	carbonic anhydrase II
8103822	VEGFC	2.593	vascular endothelial growth factor C
8107850	CHSY3	2.592	chondroitin sulfate synthase 3
7962375	PRICKLE1	2.579	prickle homolog 1 (Drosophila)
7909225	DYRK3	2.562	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 3
8095299		2.540	
8139796	LOC441233	2.517	
8078014	SLC6A6	2.515	solute carrier family 6 (neurotransmitter transporter, taurine), member 6
7932495	C10orf114	2.493	chromosome 10 open reading frame 114
8043244	ATOH8	2.480	atonal homolog 8 (Drosophila)
8104901	IL7R	2.479	interleukin 7 receptor
8155547	LOC442421	2.472	hypothetical LOC442421 | similar to hCG2039164
8128553	BVES	2.466	blood vessel epicardial substance
7993588	TMC7	2.464	transmembrane channel-like 7
8059376	SERPINE2	2.450	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 2
8160712	SUGT1P	2.445	suppressor of G2 allele of SKP1 pseudogene 1 (S. cerevisiae)
8027604	KIAA0355	2.430	
8095744	AREG	2.429	amphiregulin
8141803	RASA4	2.414	RAS p21 protein activator 4 | RAS p21 protein activator 4 pseudogene | RAS p21 protein activator 4B | polymerase (RNA) II (DNA directed) polypeptide J4, pseudogene | similar to calcium-promoted Ras inactivator | similar to HSPC047 protein
7954717	BICD1	2.408	bicaudal D homolog 1 (Drosophila)
8030002	ZNF114	2.388	zinc finger protein 114
8093518	FGFR3	2.387	fibroblast growth factor receptor 3
7950743	RAB30	2.385	
7932598	ENKUR	2.368	enkurin, TRPC channel interacting protein
8013319	GRAP	2.361	GRB2-related adaptor protein
8129677	SGK1	2.346	serum/glucocorticoid regulated kinase 1
8095736	AREG	2.342	amphiregulin

7918902	CD58	2.332	
7986092	FURIN	2.326	furin (paired basic amino acid cleaving enzyme)
7979351		2.318	chromosome 14 open reading frame 33
8090823	SLCO2A1	2.318	solute carrier organic anion transporter family, member 2A1
8056005	ACVR1	2.309	activin A receptor, type I
8168161		2.295	
7940987		2.291	
7929256		2.291	
8005549	GRAPL	2.288	GRB2-related adaptor protein-like | GRB2-related adaptor protein
8152280	LRP12	2.237	low density lipoprotein receptor-related protein 12 | low density lipoprotein-related protein 12
7937039	EBF3	2.233	early B-cell factor 3
8105506	ZSWIM6	2.212	zinc finger, SWIM-type containing 6
8085716	SATB1	2.200	SATB homeobox 1
8035793		2.198	zinc finger protein 737
8008885	MIR21	2.163	microRNA 21
7943424	BIRC2	2.149	baculoviral IAP repeat-containing 2
8161373	LOC441426	2.147	
8161554	LOC441426	2.147	
7904907	BCL9	2.144	B-cell CLL/lymphoma 9
8031293	KIR2DL3	2.142	killer cell immunoglobulin-like receptor, two domains, long cytoplasmic tail, 3 | killer cell immunoglobulin-like receptor, two domains, long cytoplasmic tail, 1 | killer cell immunoglobulin-like receptor, two domains, long cytoplasmic tail, 2 | killer cell immunoglobulin-like receptor, two
8081069	ZNF654	2.132	zinc finger protein 654
8043283	KDM3A	2.129	lysine (K)-specific demethylase 3A
7972175		2.123	
7976556	C14orf132	2.122	chromosome 14 open reading frame 132
8157610	DAB2IP	2.109	DAB2 interacting protein
7942674	TSKU	2.108	tsukushi small leucine rich proteoglycan homolog (Xenopus laevis) | tsukushin
7995681	MMP2	2.100	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
7965226	RASSF9	2.099	Ras association (RalGDS/AF-6) domain family (N-terminal) member 9
8114814	NR3C1	2.097	nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)

7926105	GATA3	2.090	GATA binding protein 3
8141768	RASA4	2.089	RAS p21 protein activator 4 | RAS p21 protein activator 4 pseudogene | RAS p21 protein activator 4B | polymerase (RNA) II (DNA directed) polypeptide J4, pseudogene | similar to calcium-promoted Ras inactivator
7897737	C1orf187	2.089	chromosome 1 open reading frame 187
8021169	LIPG	2.087	lipase, endothelial
8111101	ANKH	2.079	ankylosis, progressive homolog (mouse)
8020495	CABLES1	2.072	Cdk5 and Abl enzyme substrate 1
7985493	TM6SF1	2.071	transmembrane 6 superfamily member 1
8156848	NR4A3	2.062	nuclear receptor subfamily 4, group A, member 3 | Ewing sarcoma breakpoint region 1
8101429	PLAC8	2.060	placenta-specific 8
8170704	ABCD1	2.055	ATP-binding cassette, sub-family D (ALD), member 1
8151496	ZNF704	2.047	zinc finger protein 704
8050719	ITSN2	2.039	intersectin 2
7934993	NUDT9P1	2.039	nudix (nucleoside diphosphate linked moiety X)-type motif 9 pseudogene 1
8146579	CHD7	2.038	chromodomain helicase DNA binding protein 7
7928291	CHST3	2.034	carbohydrate (chondroitin 6) sulfotransferase 3
8130185	ZBTB2	2.016	zinc finger and BTB domain containing 2
7972713	EFNB2	2.011	ephrin-B2

Table S2. List of genes whose expression levels were downregulated or upregulated more than 2 fold at 24 h after BMP-9 treatment, related to Figures 4 and 5.

Downregulated genes

Probe ID	Gene Symbol	Fold Change (BMP-	Gene Description
7922337	TNFSF18	0.082	tumor necrosis factor (ligand) superfamily, member 18
7946579	LYVE1	0.102	lymphatic vessel endothelial hyaluronan receptor 1
7928126	KIAA1274	0.123	
8006433	CCL2	0.133	chemokine (C-C motif) ligand 2
7984704	NEO1	0.177	neogenin homolog 1 (chicken)
8129953	HIVEP2	0.210	human immunodeficiency virus type I enhancer binding protein 2
8138504	RAPGEF5	0.212	Rap guanine nucleotide exchange factor (GEF) 5
8130556	SOD2	0.221	superoxide dismutase 2, mitochondrial
8138353	MEOX2	0.224	mesenchyme homeobox 2
8172254	CXorf36	0.239	chromosome X open reading frame 36
8093858	STK32B	0.239	serine/threonine kinase 32B
7997491	HSD17B2	0.240	hydroxysteroid (17-beta) dehydrogenase 2
7951271	MMP1	0.243	matrix metallopeptidase 1 (interstitial collagenase)
8113709	LOX	0.245	lysyl oxidase
7954293	PDE3A	0.255	phosphodiesterase 3A, cGMP-inhibited
8129363	HDDC2	0.258	HD domain containing 2
8047763		0.262	
8149825	STC1	0.273	stanniocalcin 1
8123405	LOC441179	0.276	chromosome 6 open reading frame 123 | hypothetical LOC441179
7994074	SCNN1B	0.276	sodium channel, nonvoltage-gated 1, beta
7936494	GFRA1	0.277	GDNF family receptor alpha 1
7938390	ADM	0.280	adrenomedullin
8155414	ANKRD20B	0.282	ankyrin repeat domain 20B | coiled-coil domain containing 29 | hypothetical LOC644249 | similar to coiled-coil domain containing 29
8161384	ANKRD20B	0.282	coiled-coil domain containing 29 | hypothetical LOC644249 | similar to coiled-coil domain

8112202	PLK2	0.284	polo-like kinase 2 (Drosophila)
8138799	TRIL	0.286	TLR4 interactor with leucine rich repeats
8144503		0.287	family with sequence similarity 86, member A pseudogene
8025601	ICAM1	0.289	intercellular adhesion molecule 1
8166157	BMX	0.290	
8120967	NT5E	0.291	5'-nucleotidase, ecto (CD73)
8155591	ANKRD20B	0.295	ankyrin repeat domain 20B | hypothetical LOC644249 | coiled-coil domain containing 29
8161415	ANKRD20B	0.300	coiled-coil domain containing 29 | hypothetical LOC644249 | similar to hCG1744891
8106820	POLR3G	0.305	polymerase (RNA) III (DNA directed) polypeptide G (32kD)
7938329	SNORA23	0.306	small nucleolar RNA, H/ACA box 23
7903854	SLC6A17	0.308	solute carrier family 6, member 17
7970954	DCLK1	0.315	doublecortin-like kinase 1
8175016	APLN	0.315	apelin
8130811	C6orf123	0.316	chromosome 6 open reading frame 123 | hypothetical LOC441179
8130982	C6orf123	0.316	chromosome 6 open reading frame 123 | hypothetical LOC441179
7991602	PCSK6	0.316	proprotein convertase subtilisin/kexin type 6
7959267	P2RX4	0.319	purinergic receptor P2X, ligand-gated ion channel, 4
8007323	CNTNAP1	0.324	contactin associated protein 1
8126093		0.324	
8097335	HSPA4L	0.326	heat shock 70kDa protein 4-like
7959251	P2RX7	0.330	purinergic receptor P2X, ligand-gated ion channel, 7
8003859		0.332	
8126086	TMEM217	0.337	transmembrane protein 217
8140478	PION	0.339	pigeon homolog (Drosophila)
8053737	ANKRD20B	0.339	ankyrin repeat domain 20B | coiled-coil domain containing 29 | hypothetical LOC644249 | similar to coiled-coil domain containing 29
8156043	PSAT1	0.341	phosphoserine aminotransferase 1
7995797	MT1E	0.341	metallothionein 1E
7998784	ABCA3	0.343	ATP-binding cassette, sub-family A (ABC1), member 3
7901272	CYP4X1	0.347	cytochrome P450, family 4, subfamily X, polypeptide 1
8115851	STC2	0.348	stanniocalcin 2

8057797	SDPR	0.348	serum deprivation response | serum deprivation response (phosphatidylserine binding protein)
7948229	SLC43A3	0.352	solute carrier family 43, member 3
8104022	PDLIM3	0.355	PDZ and LIM domain 3
8055465	CXCR4	0.357	chemokine (C-X-C motif) receptor 4
7995783	MT2A	0.361	metallothionein 2A
8121277	AIM1	0.365	absent in melanoma 1
8097282	SPRY1	0.365	sprouty homolog 1, antagonist of FGF signaling (Drosophila)
7968351	C13orf33	0.368	chromosome 13 open reading frame 33
8113504	C5orf13	0.370	chromosome 5 open reading frame 13
8001197	NETO2	0.371	neuropilin (NRP) and tolloid (TLL)-like 2
8105302	FST	0.372	follistatin
7908597	NR5A2	0.375	nuclear receptor subfamily 5, group A, member 2
7965094	E2F7	0.379	E2F transcription factor 7
8035566	HOMER3	0.380	homer homolog 3 (Drosophila)
7926127	CUGBP2	0.380	CUGBP, Elav-like family member 2 | CUG triplet repeat, RNA binding protein 2
8109086	ADRB2	0.380	adrenergic, beta-2-, receptor, surface
8075635		0.387	TIMP metallopeptidase inhibitor 3
8092970	APOD	0.388	apolipoprotein D
8140468	PION	0.389	pigeon homolog (Drosophila)
8085984	OSBPL10	0.389	oxysterol binding protein-like 10
8114920	DPYSL3	0.392	dihydropyrimidinase-like 3
7974341	GNG2	0.397	guanine nucleotide binding protein (G protein), gamma 2
8013015	CENPV	0.398	centromere protein V
8148448	KHDRBS3	0.399	KH domain containing, RNA binding, signal transduction associated 3
8138489	CDCA7L	0.401	cell division cycle associated 7-like
8145685		0.404	
7974316	FRMD6	0.404	FERM domain containing 6
7988444	MYEF2	0.405	myelin expression factor 2 | solute carrier family 24, member 5
7952350	SCN3B	0.407	sodium channel, voltage-gated, type III, beta
8107706	LMNB1	0.408	lamin B1
8056963	LOC10012945	0.409	

8045009	GYPC	0.409	glycophorin C (Gerbich blood group)
7957338	SYT1	0.413	synaptotagmin I
8141094	PDK4	0.413	pyruvate dehydrogenase kinase, isozyme 4
8102950	INPP4B	0.416	inositol polyphosphate-4-phosphatase, type II, 105kDa
8162531	MT1G	0.417	
8060675	CDC25B	0.417	cell division cycle 25 homolog B (S. pombe)
7980828	CCDC88C	0.418	coiled-coil domain containing 88C
8004255	BCL6B	0.418	B-cell CLL/lymphoma 6, member B | B-cell CLL/lymphoma 6, member B (zinc finger protein)
8012906		0.418	
7924450	DUSP10	0.419	dual specificity phosphatase 10
8017547	ICAM2	0.422	intercellular adhesion molecule 2
7905789	IL6R	0.422	interleukin 6 receptor
8081546		0.424	
7909789	TGFB2	0.427	transforming growth factor, beta 2
8047738	NRP2	0.428	neuropilin 2
8104234	TRIP13	0.428	thyroid hormone receptor interactor 13 | bromodomain containing 9
8151447	IL7	0.428	interleukin 7
7994058	SCNN1G	0.429	sodium channel, nonvoltage-gated 1, gamma
7897801	RNU5E	0.430	RNA, U5E small nuclear
8156199	DAPK1	0.430	death-associated protein kinase 1
7902957	EPHX4	0.430	epoxide hydrolase 4
8144036	XRCC2	0.431	X-ray repair complementing defective repair in Chinese hamster cells 2
8130578	SNORA20	0.432	small nucleolar RNA, H/ACA box 20
8020806	RNF125	0.434	ring finger protein 125
7922343	TNFSF4	0.436	tumor necrosis factor (ligand) superfamily, member 4
8139500	TNS3	0.437	tensin 3
8160260	BNC2	0.437	basonuclin 2
7985873	C15orf42	0.438	chromosome 15 open reading frame 42
8096116	AGPAT9	0.440	1-acylglycerol-3-phosphate O-acyltransferase 9
8100362	LNX1	0.440	ligand of numb-protein X 1 | FIP1 like 1 (S. cerevisiae)
7951363	CASP12	0.440	caspase 12 (gene/pseudogene)

8020349	ANKRD20B	0.441	coiled-coil domain containing 29 | hypothetical LOC644249
8095986	ANXA3	0.441	annexin A3
8098549	STOX2	0.442	storkhead box 2
7909708	CENPF	0.442	centromere protein F, 350/400ka (mitosin)
8012403	AURKB	0.443	aurora kinase B
7918157	VAV3	0.443	vav 3 guanine nucleotide exchange factor
8146544	UBXN2B	0.444	UBX domain protein 2B
7898809	EPHB2	0.444	EPH receptor B2
8079237	KIF15	0.445	kinesin family member 15
8023757	CD226	0.447	
7932826	KIAA1462	0.447	
7984540	KIF23	0.449	kinesin family member 23
8056877	CHRNA1	0.449	cholinergic receptor, nicotinic, alpha 1 (muscle)
8113666	SEMA6A	0.449	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6A
8130408	IPCEF1	0.450	interaction protein for cytohesin exchange factors 1
8172266		0.451	microRNA 221
8048864	CCL20	0.451	chemokine (C-C motif) ligand 20
8046536	HOXD10	0.451	homeobox D10
7909877	MOSC1	0.452	MOCO sulphurase C-terminal domain containing 1
8058869	TNS1	0.452	tensin 1
8153959	DOCK8	0.453	dedicator of cytokinesis 8
8008517	NME1	0.454	non-metastatic cells 1, protein (NM23A) expressed in | NME1-NME2 readthrough | non-metastatic cells 2, protein (NM23B) expressed in
8124537	HIST1H3J	0.454	histone cluster 1, H3j
7994265		0.454	
8153258	SLC45A4	0.454	solute carrier family 45, member 4
8095110	KIT	0.454	v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
8088803	EIF4E3	0.455	eukaryotic translation initiation factor 4E family member 3
8109120	AFAP1L1	0.457	actin filament associated protein 1-like 1
8019709	RNU2-1	0.457	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
7969330	PCDH17	0.457	protocadherin 17

7915612		0.458	patched homolog 2 (Drosophila)
8060850	BMP2	0.462	bone morphogenetic protein 2
7969533	SLAIN1	0.463	SLAIN motif family, member 1
8052882	ADD2	0.464	adducin 2 (beta)
7955063	TMEM106C	0.464	transmembrane protein 106C
8110430	N4BP3	0.464	Nedd4 binding protein 3
8046518		0.466	
8003171	COTL1	0.466	coactosin-like 1 (Dictyostelium)
8085754	SGOL1	0.467	shugoshin-like 1 (S. pombe)
7940147	FAM111B	0.467	family with sequence similarity 111, member B
7896759	LOC643837	0.467	
7937518	TSPAN4	0.468	tetraspanin 4
8019631	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019633	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019635	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019637	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019639	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019641	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019703	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019705	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8019707	RNU2-1	0.469	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8120838	TTK	0.469	
7938485	MICAL2	0.469	microtubule associated monoxygenase, calponin and LIM domain containing 2
8058390	RAPH1	0.469	Ras association (RalGDS/AF-6) and pleckstrin homology domains 1
8047127	MYO1B	0.470	myosin IB
8053741	ANKRD20B	0.471	ankyrin repeat domain 20B | ankyrin repeat domain 20 family, member A3 | ankyrin repeat domain 20 family, member A2 | ankyrin repeat domain 20 family, member A1 | ankyrin repeat domain 20 family, member A4
8145122	SLC39A14	0.471	solute carrier family 39 (zinc transporter), member 14
8002941	ADAMTS18	0.472	ADAM metallopeptidase with thrombospondin type 1 motif, 18
8056968	LOC375295	0.472	

8062119	MT1P3	0.472	metallothionein 1 pseudogene 3
7937020	MKI67	0.473	antigen identified by monoclonal antibody Ki-67
7917798	ABCA4	0.473	ATP-binding cassette, sub-family A (ABC1), member 4
8019802	RNU2-1	0.473	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
7957298	NAV3	0.473	neuron navigator 3
7948420	FABP5	0.474	fatty acid binding protein 5 (psoriasis-associated) | fatty acid binding protein 5-like 3 (pseudogene)
7975268	ARG2	0.474	arginase, type II | vesicle transport through interaction with t-SNAREs homolog 1B (yeast)
8067040	NFATC2	0.474	nuclear factor of activated T-cells, cytoplasmic, calcineurin-dependent 2
7995793	MT1L	0.475	metallothionein 1L (gene/pseudogene)
8138527	MGC87042	0.476	
7910146	PSEN2	0.476	presenilin 2 (Alzheimer disease 4)
8116445	FLT4	0.477	fms-related tyrosine kinase 4
8097356	PLK4	0.478	polo-like kinase 4 (Drosophila)
8147049	FABP5	0.478	fatty acid binding protein 5 (psoriasis-associated) | fatty acid binding protein 5-like 3 (pseudogene)
7922889	IVNS1ABP	0.478	influenza virus NS1A binding protein
7975889	VASH1	0.478	vasohibin 1
8037251	PSG7	0.479	pregnancy specific beta-1-glycoprotein 7 (gene/pseudogene) | pregnancy specific beta-1-glycoprotein 4 | pregnancy specific beta-1-glycoprotein 8 | pregnancy specific beta-1-glycoprotein 3 | pregnancy specific beta-1-glycoprotein 1 | pregnancy specific beta-1-glycoprotein 9 | pregnancy specific beta-1-glycoprotein 5
7906930	NUF2	0.480	
7929078	KIF20B	0.480	kinesin family member 20B
7967127	CAMKK2	0.480	calcium/calmodulin-dependent protein kinase kinase 2, beta
8061471	GINS1	0.481	GINS complex subunit 1 (Psf1 homolog)
8117018		0.482	
8075924	MFNG	0.483	
7899392	SCARNA1	0.483	small Cajal body-specific RNA 1
7923189	KIF14	0.484	kinesin family member 14
8026875	SNORA68	0.485	small nucleolar RNA, H/ACA box 68
7938777	LDHA	0.485	lactate dehydrogenase A
7943413	BIRC3	0.485	baculoviral IAP repeat-containing 3

7982294	LOC390561	0.486	OTU domain containing 7A | hypothetical LOC440261
8049317	DGKD	0.487	diacylglycerol kinase, delta 130kDa
8131867		0.487	
8042830	MTHFD2	0.487	methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2, methenyltetrahydrofolate cyclohydrolase
8046488	CDCA7	0.487	cell division cycle associated 7
8172425	SLC38A5	0.487	solute carrier family 38, member 5
7948894	WDR74	0.488	RNA, U2 small nuclear 1 | RNA, U2 small nuclear 2 | WD repeat domain 74
8155602	ANKRD20A2	0.489	ankyrin repeat domain 20 family, member A2 | ankyrin repeat domain 20 family, member A3 | ankyrin repeat domain 20 family, member A4 | ankyrin repeat domain 20 family, member A1 | coiled-coil domain containing 29 | hypothetical LOC644249 | similar to coiled-coil domain containing 29 | ankyrin repeat domain 20B | similar to hCG1744891
8109912	KCNIP1	0.489	Kv channel interacting protein 1
7955637	KRT18	0.490	keratin 18
8016147	KIF18B	0.490	kinesin family member 18B
8126653	MRPL14	0.491	mitochondrial ribosomal protein L14
8166509	FAM48B2	0.491	family with sequence similarity 48, member B2 | family with sequence similarity 48, member B1
8171844	FAM48B2	0.491	family with sequence similarity 48, member B2 | family with sequence similarity 48, member B1
8014974	TOP2A	0.493	topoisomerase (DNA) II alpha 170kDa
7979307	DLGAP5	0.494	discs, large (Drosophila) homolog-associated protein 5
7982792	RAD51	0.496	
8117435	BTN3A2	0.497	butyrophilin, subfamily 3, member A2
8095362	MT2A	0.498	metallothionein 2A
7947248	KIF18A	0.498	kinesin family member 18A
7919560		0.498	
8122807	AKAP12	0.499	A kinase (PRKA) anchor protein 12
8072678	HMOX1	0.499	heme oxygenase (decycling) 1

Upregulated genes

Probe ID	Gene Symbol	Fold Change (BMP-	Gene Description
7898693	ALPL	51.235	alkaline phosphatase, liver/bone/kidney
7951662	CRYAB	37.151	crystallin, alpha B
7980891	TC2N	15.607	tandem C2 domains, nuclear
8106418	CRHBP	14.860	corticotropin releasing hormone binding protein
8102986	FREM3	13.592	FRAS1 related extracellular matrix 3
7984353	SMAD6	12.092	SMAD family member 6
8141843	RASA4P	10.717	RAS p21 protein activator 4 | similar to HSPC047 protein
7957126	KCNMB4	10.544	potassium large conductance calcium-activated channel, subfamily M, beta member 4
7971077	POSTN	8.861	periostin, osteoblast specific factor
8023220	SMAD7	7.663	SMAD family member 7
8060940	C20orf103	7.509	chromosome 20 open reading frame 103
8151457	HEY1	7.328	hairy/enhancer-of-split related with YRPW motif 1
7975076	HSPA2	6.955	heat shock 70kDa protein 2
8142765	LRRC4	6.804	leucine rich repeat containing 4
8081710	SIDT1	6.468	SID1 transmembrane family, member 1
8101429	PLAC8	6.156	placenta-specific 8
7902565	LPHN2	5.770	latrophilin 2
7914075	FCN3	5.724	ficolin (collagen/fibrinogen domain containing) 3 (Hakata antigen)
8141803	RASA4	5.701	RAS p21 protein activator 4 | RAS p21 protein activator 4 pseudogene | RAS p21 protein activator 4B | polymerase (RNA) II (DNA directed) polypeptide J4, pseudogene | similar to calcium-promoted Ras inactivator | similar to HSPC047 protein
7943803	DIXDC1	5.618	DIX domain containing 1
7924058	IRF6	5.572	interferon regulatory factor 6
8100026	ATP8A1	5.569	ATPase, aminophospholipid transporter (APLT), class I, type 8A, member 1
7976698	EML1	5.544	echinoderm microtubule associated protein like 1
8078397	CMTM8	5.461	CKLF-like MARVEL transmembrane domain containing 8
7899939	GJA4	5.369	gap junction protein, alpha 4, 37kDa
8085797	THRB	5.368	thyroid hormone receptor, beta (erythroblastic leukemia viral (v-erb-a) oncogene homolog 2, avian)
8059376	SERPINE2	5.349	serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 2

7915682	ZSWIM5	5.288	zinc finger, SWIM-type containing 5
8008627	NOG	5.286	noggin
7972297	ABCC4	5.265	ATP-binding cassette, sub-family C (CFTR/MRP), member 4
8141768	RASA4	5.226	RAS p21 protein activator 4 | RAS p21 protein activator 4 pseudogene | RAS p21 protein activator 4B | polymerase (RNA) II (DNA directed) polypeptide J4, pseudogene | similar to calcium-promoted Ras inactivator
8139270	RASA4P	5.153	RAS p21 protein activator 4 | RAS p21 protein activator 4 pseudogene | RAS p21 protein activator 4B | similar to calcium-promoted Ras inactivator
7922976	PTGS2	5.114	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
8087907	SEMA3G	5.103	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G
8166511	PDK3	5.068	pyruvate dehydrogenase kinase, isozyme 3
7964834	CPM	4.856	carboxypeptidase M
8156783	COL15A1	4.729	collagen, type XV, alpha 1
8080964	GLT8D4	4.658	glucoside xylosyltransferase 2 | glycosyltransferase 8 domain containing 4
8088550	PRICKLE2	4.574	prickle homolog 2 (Drosophila)
8121601	FAM26E	4.536	family with sequence similarity 26, member E
8078014	SLC6A6	4.476	solute carrier family 6 (neurotransmitter transporter, taurine), member 6
8129677	SGK1	4.465	serum/glucocorticoid regulated kinase 1
8146115	C8orf4	4.458	chromosome 8 open reading frame 4
8101675	ABCG2	4.399	ATP-binding cassette, sub-family G (WHITE), member 2
8157105	ZNF462	4.399	zinc finger protein 462
8130674	PDE10A	4.358	phosphodiesterase 10A
8091972	MECOM	4.306	MDS1 and EVI1 complex locus
7916112	RAB3B	4.277	
7933194	CXCL12	4.258	chemokine (C-X-C motif) ligand 12 | chemokine (C-X-C motif) ligand 12 (stromal cell-derived
7995681	MMP2	4.229	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
8099326	SLC2A9	4.204	solute carrier family 2 (facilitated glucose transporter), member 9
7931832	AKR1C2	4.148	aldo-keto reductase family 1, member C2 (dihydrodiol dehydrogenase 2; bile acid binding protein; 3-alpha hydroxysteroid dehydrogenase, type III)
8104901	IL7R	4.144	interleukin 7 receptor
8040103	ID2	4.047	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein

8016832	MMD	3.992	monocyte to macrophage differentiation-associated
7908351	PLA2G4A	3.945	phospholipase A2, group IVA (cytosolic, calcium-dependent)
8112615	ENC1	3.916	ectodermal-neural cortex 1 (with BTB-like domain) | ectodermal-neural cortex (with BTB-like
8118149	LST1	3.888	leukocyte specific transcript 1
8177988	LST1	3.888	leukocyte specific transcript 1
8179268	LST1	3.888	leukocyte specific transcript 1
8140579	CACNA2D1	3.772	calcium channel, voltage-dependent, alpha 2/delta subunit 1
7933750	SLC16A9	3.688	solute carrier family 16, member 9 (monocarboxylic acid transporter 9)
7983704	GLDN	3.678	gliomedin
7962559	SLC38A4	3.658	solute carrier family 38, member 4
7971015	SMAD9	3.639	SMAD family member 9
8110932	SEMA5A	3.635	sema domain, seven thrombospondin repeats (type 1 and type 1-like), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 5A
8155547	LOC442421	3.631	hypothetical LOC442421 | similar to hCG2039164
8100015	BEND4	3.631	BEN domain containing 4
7952046	MPZL2	3.596	myelin protein zero-like 2
8063382	SNAI1	3.583	snail homolog 1 (Drosophila)
8135734	C7orf58	3.575	chromosome 7 open reading frame 58
8151768	RUNX1T1	3.575	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)
8022803	FAM59A	3.575	family with sequence similarity 59, member A
7962375	PRICKLE1	3.562	prickle homolog 1 (Drosophila)
8126035	CPNE5	3.415	copine V
8160712	SUGT1P	3.305	suppressor of G2 allele of SKP1 pseudogene 1 (S. cerevisiae)
8047248	PLCL1	3.303	phospholipase C-like 1
8160521	MOBKL2B	3.286	MOB1, Mps One Binder kinase activator-like 2B (yeast)
7942957	PRSS23	3.183	protease, serine, 23
7902495	NEXN	3.176	nexilin (F actin binding protein)
7954645	TSPAN11	3.165	tetraspanin 11
8085122	C3orf32	3.161	chromosome 3 open reading frame 32
8142270	NRCAM	3.156	neuronal cell adhesion molecule
8085716	SATB1	3.140	SATB homeobox 1

8009277	RGS9	3.120	regulator of G-protein signaling 9
7926105	GATA3	3.094	GATA binding protein 3
8129804	MAP3K5	3.050	mitogen-activated protein kinase kinase kinase 5
7939341	CD44	3.018	
8143441	KIAA1147	2.986	
7993588	TMC7	2.982	transmembrane channel-like 7
8139207	INHBA	2.928	inhibin, beta A
7944722	UBASH3B	2.921	ubiquitin associated and SH3 domain containing B | ubiquitin associated and SH3 domain
8092849	ATP13A3	2.876	ATPase type 13A3
8055624	ZEB2	2.876	zinc finger E-box binding homeobox 2
7925062	SIPA1L2	2.861	signal-induced proliferation-associated 1 like 2
7908459	CFH	2.836	complement factor H
7921916	RGS5	2.834	regulator of G-protein signaling 5
8046428	RAPGEF4	2.792	Rap guanine nucleotide exchange factor (GEF) 4
8057677	SLC40A1	2.762	solute carrier family 40 (iron-regulated transporter), member 1
7933733	FAM13C	2.762	family with sequence similarity 13, member C | phytanoyl-CoA 2-hydroxylase interacting protein-
7978407	PRKD1	2.761	protein kinase D1
7965226	RASSF9	2.750	Ras association (RalGDS/AF-6) domain family (N-terminal) member 9
7967870	RP11-484H12.(	2.729	
7934215	SPOCK2	2.712	sparc/osteonectin, cwcv and kazal-like domains proteoglycan (testican) 2
8086538	LOC644714	2.709	
7901073	UROD	2.707	uroporphyrinogen decarboxylase
8056343	COBLL1	2.699	COBL-like 1
8028872	LTBP4	2.678	latent transforming growth factor beta binding protein 4
8144917	LPL	2.665	lipoprotein lipase
7963590	CSAD	2.661	cysteine sulfinic acid decarboxylase
7918902	CD58	2.660	
8007537	CD300LG	2.648	CD300 molecule-like family member g
7901993	CACHD1	2.620	cache domain containing 1
7897877	TNFRSF1B	2.618	tumor necrosis factor receptor superfamily, member 1B
8115543	EBF1	2.608	early B-cell factor 1

7961900	ITPR2	2.597	inositol 1,4,5-triphosphate receptor, type 2
8103822	VEGFC	2.597	vascular endothelial growth factor C
8118116	MICB	2.569	MHC class I polypeptide-related sequence B
7954653		2.554	tetraspanin 11
8044462	TTL	2.533	tubulin tyrosine ligase
8007363	WNK4	2.527	WNK lysine deficient protein kinase 4
7975416	PCNX	2.497	pecanex homolog (Drosophila)
8170704	ABCD1	2.481	ATP-binding cassette, sub-family D (ALD), member 1
8117045	RBM24	2.481	RNA binding motif protein 24
7904761	ITGA10	2.480	integrin, alpha 10
7961418		2.467	
8121794	SMPDL3A	2.466	sphingomyelin phosphodiesterase, acid-like 3A
7950644	NDUFC2	2.464	NADH dehydrogenase (ubiquinone) 1, subcomplex unknown, 2, 14.5kDa
7902023	RAVER2	2.462	ribonucleoprotein, PTB-binding 2
7909225	DYRK3	2.458	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 3
7905801	TDRD10	2.443	tudor domain containing 10
7989073	PRTG	2.441	protogenin homolog (Gallus gallus)
8102214	PAPSS1	2.437	3'-phosphoadenosine 5'-phosphosulfate synthase 1
8028084	APLP1	2.423	amyloid beta (A4) precursor-like protein 1
7995697	LPCAT2	2.422	lysophosphatidylcholine acyltransferase 2
8101757	GPRIN3	2.417	GPRIN family member 3
8083569	TIPARP	2.414	TCDD-inducible poly(ADP-ribose) polymerase
8114797	SPRY4	2.406	sprouty homolog 4 (Drosophila)
7901460	GPX7	2.404	glutathione peroxidase 7
8169580	IL13RA1	2.400	interleukin 13 receptor, alpha 1
8122336	C6orf115	2.394	chromosome 6 open reading frame 115
7951447	CWF19L2	2.394	CWF19-like 2, cell cycle control (S. pombe)
8177955	MICB	2.387	MHC class I polypeptide-related sequence B
8133860	GNAI1	2.381	guanine nucleotide binding protein (G protein), alpha inhibiting activity polypeptide 1
7943562	ELMOD1	2.375	ELMO/CED-12 domain containing 1
8112940	SSBP2	2.367	single-stranded DNA binding protein 2

8138067	CYTH3	2.367	cytohesin 3
7977615	RNASE1	2.364	ribonuclease, RNase A family, 1 (pancreatic)
8131069	GPER	2.342	G protein-coupled estrogen receptor 1
8030002	ZNF114	2.334	zinc finger protein 114
8050160	MBOAT2	2.325	membrane bound O-acyltransferase domain containing 2
7926875	BAMBI	2.308	BMP and activin membrane-bound inhibitor homolog (Xenopus laevis)
8106354	IQGAP2	2.308	IQ motif containing GTPase activating protein 2
8008885	MIR21	2.293	microRNA 21
8115099	PDGFRB	2.291	platelet-derived growth factor receptor, beta polypeptide
8179238	MICA	2.283	MHC class I polypeptide-related sequence A
7945262	JAM3	2.278	junctional adhesion molecule 3
7896929	VWA1	2.268	von Willebrand factor A domain containing 1
7966690	TBX3	2.264	T-box 3
7970763	FLT1	2.251	fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor
8171539	RAI2	2.249	retinoic acid induced 2
7989094	NEDD4	2.237	neural precursor cell expressed, developmentally down-regulated 4
8066848	PREX1	2.235	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1
8057887	STK17B	2.235	serine/threonine kinase 17b
8001932	B3GNT9	2.233	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 9 | chromosome 16 open reading frame 70
8027604	KIAA0355	2.231	
8166469	SAT1	2.224	spermidine/spermine N1-acetyltransferase 1
8131600	TSPAN13	2.210	tetraspanin 13
7987454	BMF	2.206	Bcl2 modifying factor
8138602	DFNA5	2.206	deafness, autosomal dominant 5
8117106	RNF144B	2.204	ring finger protein 144B
8093518	FGFR3	2.202	fibroblast growth factor receptor 3
8169365	TMEM164	2.202	transmembrane protein 164
8133876	CD36	2.200	
8121605	FAM26D	2.194	family with sequence similarity 26, member D
8085033	LMLN	2.193	leishmanolysin-like (metallopeptidase M8 family)

7932985	NRP1	2.189	neuropilin 1
8107307	CAMK4	2.178	calcium/calmodulin-dependent protein kinase IV
8051028		2.178	
7969339		2.173	
7962151	DENND5B	2.167	DENN/MADD domain containing 5B
8138231	THSD7A	2.161	thrombospondin, type I, domain containing 7A
8122279	KIAA1244	2.159	KIAA1244 | hypothetical protein LOC202451
7907370	DNM3	2.157	dynamin 3
7912157	ERRFI1	2.156	ERBB receptor feedback inhibitor 1
8117079	LOC644714	2.155	
7924107	LPGAT1	2.145	lysophosphatidylglycerol acyltransferase 1
8176193	F8	2.145	coagulation factor VIII, procoagulant component
8159086	ADAMTSL2	2.144	ADAMTS-like 2
7980744	RPS6KA5	2.136	ribosomal protein S6 kinase, 90kDa, polypeptide 5
7905606	NPR1	2.135	natriuretic peptide receptor A/guanylate cyclase A (atrionatriuretic peptide receptor A)
8150537	SLC20A2	2.134	solute carrier family 20 (phosphate transporter), member 2
8146462	SOX17	2.132	SRY (sex determining region Y)-box 17
7949412	LTBP3	2.126	latent transforming growth factor beta binding protein 3
7915787	PIK3R3	2.125	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
8009755	ARMC7	2.124	armadillo repeat containing 7
8077490	LMCD1	2.123	LIM and cysteine-rich domains 1
8095299		2.123	
8164269	ENG	2.110	endoglin
8102789	TERF1	2.105	telomeric repeat binding factor (NIMA-interacting) 1 | similar to telomeric repeat binding factor (NIMA-interacting) 1
8146914	TERF1	2.105	telomeric repeat binding factor (NIMA-interacting) 1
7953765	RIMKLB	2.102	ribosomal modification protein rimK-like family member B
8142997	PLXNA4	2.101	plexin A4
7947462	ABTB2	2.096	ankyrin repeat and BTB (POZ) domain containing 2
8111101	ANKH	2.094	ankylosis, progressive homolog (mouse)
7897737	C1orf187	2.091	chromosome 1 open reading frame 187

8091260	SLC9A9	2.088	solute carrier family 9 (sodium/hydrogen exchanger), member 9
8164006		2.088	
8121784	FABP7	2.083	fatty acid binding protein 7, brain
8045674	LYPD6	2.078	LY6/PLAUR domain containing 6
7981538	JAG2	2.073	jagged 2
8072360	TCN2	2.071	transcobalamin II | transcobalamin II; macrocytic anemia
7930454	PDCD4	2.062	programmed cell death 4 (neoplastic transformation inhibitor)
8046646	OSBPL6	2.061	oxysterol binding protein-like 6
7997453	PLCG2	2.057	phospholipase C, gamma 2 (phosphatidylinositol-specific)
8055688	RND3	2.056	Rho family GTPase 3
8118100	MICA	2.055	MHC class I polypeptide-related sequence A
8040742	MAPRE3	2.050	microtubule-associated protein, RP/EB family, member 3
8144758	ZDHHC2	2.050	zinc finger, DHHC-type containing 2
8130422	CNKSR3	2.040	CNKSR family member 3
7990033	TLE3	2.035	transducin-like enhancer of split 3 (E(sp1) homolog, Drosophila)
8170648	BGN	2.033	biglycan
7918533	ADORA3	2.032	adenosine A3 receptor
7950743	RAB30	2.032	
7982564	SPRED1	2.021	sprouty-related, EVH1 domain containing 1
8155930	GCNT1	2.018	glucosaminyl (N-acetyl) transferase 1, core 2 | glucosaminyl (N-acetyl) transferase 1, core 2 (beta-1,6-N-acetylglucosaminyltransferase)
7972713	EFNB2	2.013	ephrin-B2
7919637	HIST2H2BE	2.013	histone cluster 2, H2be
7938100	SMPD1	2.009	sphingomyelin phosphodiesterase 1, acid lysosomal
8043995	IL1R1	2.007	interleukin 1 receptor, type I
8124166	MBOAT1	2.003	membrane bound O-acyltransferase domain containing 1

Table S3. Top 5 annotation clusters of enriched GO terms for the genes in Table S1, related to Figure 4.

(1) Upregulated genes by BMP-9 treatment (4hr)

Cluster	Enrichment Score	Terms	Fold Enrichment
Annotation Cluster 1	3.264	GO:0001944~vasculature development	7.699
(Vasculature development)		GO:0001568~blood vessel development	7.099
		GO:0048514~blood vessel morphogenesis	4.580
		GO:0007507~heart development	4.494
Annotation Cluster 2	2.047	metal-binding	1.991
(Zinc ion binding)		zinc	2.028
		GO:0008270~zinc ion binding	1.766
		zinc-finger	1.969
		GO:0046914~transition metal ion binding	1.598
		GO:0046872~metal ion binding	1.389
		GO:0043169~cation binding	1.376
		GO:0043167~ion binding	1.356
Annotation Cluster 3	1.849	IPR017855:SMAD domain-like	52.886
(BMP signaling)		GO:0030509~BMP signaling pathway	21.961
		GO:0007178~transmembrane receptor protein serine/threonine kinase signaling pathway	11.258
		PIRSF037286:Smad protein	129.000
		hsa04350:TGF-beta signaling pathway	10.314
		GO:0007167~enzyme linked receptor protein signaling pathway	5.086
		domain:MH2	78.762
		domain:MH1	78.762
		IPR013019:MAD homology, MH1	74.371
		IPR013790:Dwarfin	74.371
		IPR001132:SMAD domain, Dwarfin-type	74.371
		SM00524:DWB	54.042
		GO:0005072~transforming growth factor beta receptor, cytoplasmic mediator activity	50.583

		IPR003619:MAD homology 1, Dwarfin-type	49.580
		SM00523:DWA	36.028
		GO:0007179~transforming growth factor beta receptor signaling pathway	12.884
		GO:0030514~negative regulation of BMP signaling pathway	27.608
		GO:0030510~regulation of BMP signaling pathway	19.326
		GO:0046332~SMAD binding	12.096
		GO:0051100~negative regulation of binding	9.827
		GO:0010648~negative regulation of cell communication	3.896
		GO:0007389~pattern specification process	3.619
		h_alkPathway:ALK in cardiac myocytes	7.044
		GO:0007166~cell surface receptor linked signal transduction	1.562
		GO:0009968~negative regulation of signal transduction	3.498
		GO:0051098~regulation of binding	3.789
		GO:0044092~negative regulation of molecular function	2.314
		GO:0005667~transcription factor complex	3.043
		GO:0042802~identical protein binding	1.739
		GO:0042803~protein homodimerization activity	2.221
		GO:0046983~protein dimerization activity	1.369
		GO:0043233~organelle lumen	1.053
		GO:0031974~membrane-enclosed lumen	1.033
		GO:0031981~nuclear lumen	1.028
		GO:0070013~intracellular organelle lumen	0.958
		GO:0044451~nucleoplasm part	1.152
		GO:0005730~nucleolus	0.916
		GO:0005654~nucleoplasm	0.725
Annotation Cluster 4	1.768	GO:0010033~response to organic substance	3.216
(Response to organic substance)		GO:0009719~response to endogenous stimulus	3.817
		GO:0009725~response to hormone stimulus	3.686
		GO:0043627~response to estrogen stimulus	7.362
		GO:0048545~response to steroid hormone stimulus	5.033
		metalloprotein	5.114

		GO:0010035~response to inorganic substance	2.828
Annotation Cluster 5	1.710	GO:0045597~positive regulation of cell differentiation	5.064
(Cell differentiation)		GO:0051094~positive regulation of developmental process	4.171
		hsa04060:Cytokine-cytokine receptor interaction	2.854

(2) Downregulated genes by BMP-9 treatment (4hr)

Cluster	Enrichment Score	Terms	Fold Enrichment
Annotation Cluster 1	2.199	GO:0051050~positive regulation of transport	8.493
(Development, proliferation)		GO:0051240~positive regulation of multicellular organismal process	7.762
		GO:0051094~positive regulation of developmental process	6.813
		GO:0009991~response to extracellular stimulus	7.379
		GO:0051222~positive regulation of protein transport	16.153
		GO:0001817~regulation of cytokine production	7.474
		GO:0008283~cell proliferation	4.344
		GO:0050707~regulation of cytokine secretion	27.056
		GO:0051223~regulation of protein transport	9.493
		GO:0070201~regulation of establishment of protein localization	8.944
		GO:0050714~positive regulation of protein secretion	19.797
		GO:0032880~regulation of protein localization	7.842
		GO:0050708~regulation of protein secretion	13.994
		GO:0009967~positive regulation of signal transduction	4.586
		GO:0010647~positive regulation of cell communication	4.112
		GO:0051047~positive regulation of secretion	7.447
		GO:0060341~regulation of cellular localization	4.364
		GO:0051046~regulation of secretion	4.018
Annotation Cluster 2	1.957	GO:0007507~heart development	8.809
(Vasculature development)		GO:0008285~negative regulation of cell proliferation	5.246
		GO:0001568~blood vessel development	6.626
		GO:0001944~vasculature development	6.468
		GO:0048514~blood vessel morphogenesis	6.411
		GO:0014706~striated muscle tissue development	9.094

		GO:0060537~muscle tissue development	8.658
		GO:0048738~cardiac muscle tissue development	14.240
		GO:0048729~tissue morphogenesis	6.012
		GO:0043009~chordate embryonic development	4.087
		GO:0009792~embryonic development ending in birth or egg hatching	4.050
		GO:0060284~regulation of cell development	5.279
		GO:0007517~muscle organ development	5.129
		GO:0001525~angiogenesis	5.484
		developmental protein	2.390
Annotation Cluster 3 (Miscellaneous)	1.834	GO:0007005~mitochondrion organization	11.763
		GO:0051050~positive regulation of transport	8.493
		GO:0051240~positive regulation of multicellular organismal process	7.762
		GO:0048872~homeostasis of number of cells	13.528
		GO:0051094~positive regulation of developmental process	6.813
		GO:0046902~regulation of mitochondrial membrane permeability	73.789
		GO:0043066~negative regulation of apoptosis	5.350
		GO:0043069~negative regulation of programmed cell death	5.276
		GO:0060548~negative regulation of cell death	5.261
		GO:0010941~regulation of cell death	3.320
		GO:0010524~positive regulation of calcium ion transport into cytosol	40.584
		GO:0001912~positive regulation of leukocyte mediated cytotoxicity	38.651
		GO:0043029~T cell homeostasis	38.651
		GO:0051241~negative regulation of multicellular organismal process	8.249
		GO:0031343~positive regulation of cell killing	33.820
		GO:0001910~regulation of leukocyte mediated cytotoxicity	32.467
		GO:0001817~regulation of cytokine production	7.474
		GO:0001819~positive regulation of cytokine production	12.025
		GO:0045428~regulation of nitric oxide biosynthetic process	30.062
		GO:0031341~regulation of cell killing	28.989
		GO:0002260~lymphocyte homeostasis	28.989
		GO:0030099~myeloid cell differentiation	11.637

GO:0010522~regulation of calcium ion transport into cytosol	27.989
GO:0042592~homeostatic process	3.242
GO:0002824~positive regulation of adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	27.056
GO:0002821~positive regulation of adaptive immune response	26.183
GO:0002697~regulation of immune effector process	10.715
GO:0007006~mitochondrial membrane organization	25.365
GO:0051928~positive regulation of calcium ion transport	24.596
GO:0002705~positive regulation of leukocyte mediated immunity	23.873
GO:0002708~positive regulation of lymphocyte mediated immunity	23.873
GO:0001776~leukocyte homeostasis	22.547
GO:0042981~regulation of apoptosis	3.029
GO:0032844~regulation of homeostatic process	9.493
GO:0043067~regulation of programmed cell death	2.999
GO:0032846~positive regulation of homeostatic process	20.292
GO:0045597~positive regulation of cell differentiation	5.907
GO:0002700~regulation of production of molecular mediator of immune response	19.797
GO:0048878~chemical homeostasis	3.699
GO:0043270~positive regulation of ion transport	19.326
GO:0009628~response to abiotic stimulus	4.411
GO:0042110~T cell activation	8.589
GO:0002699~positive regulation of immune effector process	18.447
GO:0006873~cellular ion homeostasis	4.341
GO:0055082~cellular chemical homeostasis	4.272
GO:0016044~membrane organization	4.261
GO:0042391~regulation of membrane potential	8.076
GO:0010033~response to organic substance	3.002
GO:0050801~ion homeostasis	3.969
GO:0002706~regulation of lymphocyte mediated immunity	15.031

GO:0002822~regulation of adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	14.758
GO:0002819~regulation of adaptive immune response	14.494
GO:0002703~regulation of leukocyte mediated immunity	13.306
GO:0006839~mitochondrial transport	11.763
GO:0051924~regulation of calcium ion transport	11.763
GO:0019725~cellular homeostasis	3.484
GO:0010959~regulation of metal ion transport	10.021
GO:0046649~lymphocyte activation	5.438
GO:0048871~multicellular organismal homeostasis	9.549
GO:0006916~anti-apoptosis	5.254
GO:0051172~negative regulation of nitrogen compound metabolic process	3.128
GO:0008219~cell death	2.634
GO:0016265~death	2.616
GO:0043269~regulation of ion transport	8.199
GO:0031327~negative regulation of cellular biosynthetic process	2.894
GO:0030097~hemopoiesis	4.586
GO:0009890~negative regulation of biosynthetic process	2.833
GO:0045321~leukocyte activation	4.472
GO:0006915~apoptosis	2.697
GO:0048534~hemopoietic or lymphoid organ development	4.162
GO:0012501~programmed cell death	2.657
GO:0010942~positive regulation of cell death	3.110
GO:0002520~immune system development	3.921
GO:0001775~cell activation	3.771
GO:0050778~positive regulation of immune response	5.598
GO:0030005~cellular di-, tri-valent inorganic cation homeostasis	3.576
GO:0043065~positive regulation of apoptosis	2.517
GO:0043068~positive regulation of programmed cell death	2.499
GO:0048584~positive regulation of response to stimulus	3.439

		GO:0002684~positive regulation of immune system process	3.410
		GO:0055066~di-, tri-valent inorganic cation homeostasis	3.396
		GO:0030003~cellular cation homeostasis	3.196
		GO:0055080~cation homeostasis	2.838
		GO:0046907~intracellular transport	1.647
		GO:0031090~organelle membrane	1.388
		GO:0031967~organelle envelope	1.473
		GO:0031975~envelope	1.468
Annotation Cluster 4	1.787	GO:0009725~response to hormone stimulus	4.423
(Response to hormone stimulus)		GO:0010033~response to organic substance	3.002
		GO:0009719~response to endogenous stimulus	4.008
		GO:0043434~response to peptide hormone stimulus	7.028
		GO:0040007~growth	5.914
Annotation Cluster 5	1.670	GO:0042127~regulation of cell proliferation	4.125
(Miscellaneous)		GO:0007507~heart development	8.809
		GO:0051240~positive regulation of multicellular organismal process	7.762
		GO:0051094~positive regulation of developmental process	6.813
		GO:0009612~response to mechanical stimulus	19.326
		GO:0009991~response to extracellular stimulus	7.379
		compositionally biased region:Poly-Gln	10.208
		GO:0032583~regulation of gene-specific transcription	10.096
		GO:0008285~negative regulation of cell proliferation	5.246
		GO:0008284~positive regulation of cell proliferation	4.575
		GO:0051252~regulation of RNA metabolic process	2.238
		GO:0030528~transcription regulator activity	2.375
		GO:0031667~response to nutrient levels	6.867
		GO:0032526~response to retinoic acid	24.596
		GO:0045893~positive regulation of transcription, DNA-dependent	3.970
		GO:0051254~positive regulation of RNA metabolic process	3.937
		GO:0051173~positive regulation of nitrogen compound metabolic process	3.361
		GO:0010629~negative regulation of gene expression	3.758

GO:0045597~positive regulation of cell differentiation	5.907
GO:0033189~response to vitamin A	19.326
GO:0031328~positive regulation of cellular biosynthetic process	3.160
GO:0009891~positive regulation of biosynthetic process	3.114
GO:0045941~positive regulation of transcription	3.358
GO:0010628~positive regulation of gene expression	3.260
GO:0003700~transcription factor activity	2.550
GO:0009967~positive regulation of signal transduction	4.586
GO:0006355~regulation of transcription, DNA-dependent	1.984
GO:0033273~response to vitamin	12.298
GO:0045935~positive regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolic process	3.035
GO:0048729~tissue morphogenesis	6.012
GO:0001501~skeletal system development	4.241
GO:0010557~positive regulation of macromolecule biosynthetic process	2.896
GO:0010647~positive regulation of cell communication	4.112
GO:0010604~positive regulation of macromolecule metabolic process	2.526
Proto-oncogene	5.396
GO:0060284~regulation of cell development	5.279
GO:0043193~positive regulation of gene-specific transcription	9.330
hsa04350:TGF-beta signaling pathway	8.350
GO:0035295~tube development	4.919
GO:0006357~regulation of transcription from RNA polymerase II promoter	2.605
GO:0001822~kidney development	8.455
GO:0010605~negative regulation of macromolecule metabolic process	2.580
GO:0030324~lung development	8.199
GO:0002009~morphogenesis of an epithelium	8.036
GO:0030323~respiratory tube development	7.958
GO:0060541~respiratory system development	7.516
GO:0001655~urogenital system development	7.379
GO:0043565~sequence-specific DNA binding	2.730

GO:0007267~cell-cell signaling	2.706
dna-binding	1.827
GO:0045449~regulation of transcription	1.560
GO:0045165~cell fate commitment	5.839
GO:0007584~response to nutrient	5.798
developmental protein	2.390
GO:0051726~regulation of cell cycle	3.270
GO:0045944~positive regulation of transcription from RNA polymerase II promoter	2.917
GO:0003677~DNA binding	1.422
GO:0060429~epithelium development	3.576
GO:0007423~sensory organ development	3.544
nucleus	1.231
GO:0048598~embryonic morphogenesis	2.644
transcription regulation	1.072
Transcription	0.899
GO:0006350~transcription	0.773

Table S4. Top 5 annotation clusters of enriched GO terms for the genes in Table S2, related to Figure 4.

(1) Upregulated genes by BMP-9 treatment (24hr)

Cluster	Enrichment Score	Terms	Fold Enrichment
Annotation Cluster 1	5.035	glycosylation site:N-linked (GlcNAc...)	1.852
(Glycoproteins (cell surface))		glycoprotein	1.803
		signal	1.860
		signal peptide	1.848
		disulfide bond	1.754
		GO:0044421~extracellular region part	2.405
		disulfide bond	1.711
		GO:0005615~extracellular space	2.167
		GO:0005576~extracellular region	1.559
		Secreted	1.681
Annotation Cluster 2	3.140	GO:0019838~growth factor binding	6.465
(Growth factor binding)		GO:0019955~cytokine binding	6.228
		GO:0050431~transforming growth factor beta binding	25.457
Annotation Cluster 3	2.782	GO:0005886~plasma membrane	1.528
(Plasma membrane)		membrane	1.362
		topological domain:Extracellular	1.640
		GO:0005887~integral to plasma membrane	1.944
		GO:0044459~plasma membrane part	1.610
		GO:0031226~intrinsic to plasma membrane	1.900
		transmembrane	1.381
		transmembrane region	1.371
		topological domain:Cytoplasmic	1.430
		transmembrane protein	2.140
		GO:0016021~integral to membrane	1.214
		GO:0031224~intrinsic to membrane	1.203
Annotation Cluster 4	2.108	GO:0005539~glycosaminoglycan binding	4.849
(Glycosaminoglycan binding)		GO:0030247~polysaccharide binding	4.408

		GO:0001871~pattern binding	4.408
		GO:0030246~carbohydrate binding	2.637
		heparin-binding	5.637
		GO:0008201~heparin binding	3.295
Annotation Cluster 5	2.101	GO:0001944~vasculature development	5.656
(Vasculature development)		GO:0001568~blood vessel development	5.453
		GO:0048514~blood vessel morphogenesis	4.749
		GO:0001569~patterning of blood vessels	19.882
		GO:0048754~branching morphogenesis of a tube	8.993
		GO:0001763~morphogenesis of a branching structure	7.899
		GO:0035239~tube morphogenesis	5.260
		GO:0001525~angiogenesis	4.514
		GO:0035295~tube development	3.416
		GO:0007389~pattern specification process	2.815
		GO:0016477~cell migration	2.723
		GO:0006928~cell motion	2.110
		GO:0051674~localization of cell	2.448
		GO:0048870~cell motility	2.448
		GO:0031175~neuron projection development	2.610
		hsa04360:Axon guidance	2.994
		GO:0000902~cell morphogenesis	2.111
		GO:0030030~cell projection organization	2.042
		GO:0030182~neuron differentiation	1.907
		GO:0032989~cellular component morphogenesis	1.893
		GO:0048666~neuron development	1.971
		GO:0007411~axon guidance	3.122
		GO:0000904~cell morphogenesis involved in differentiation	2.053
		GO:0007409~axonogenesis	2.163
		GO:0048667~cell morphogenesis involved in neuron differentiation	1.998
		GO:0048812~neuron projection morphogenesis	1.960
		GO:0048858~cell projection morphogenesis	1.704

		GO:0032990~cell part morphogenesis	1.631

(2) Downregulated genes by BMP-9 treatment (24hr)

Cluster	Enrichment Score	Terms	Fold Enrichment
Annotation Cluster 1	3.737	GO:0005856~cytoskeleton	2.297
(Cytoskeleton)		cytoskeleton	3.265
		GO:0043228~non-membrane-bounded organelle	1.703
		GO:0043232~intracellular non-membrane-bounded organelle	1.703
		GO:0044430~cytoskeletal part	2.221
		cytoplasm	1.410
Annotation Cluster 2	3.711	GO:0043067~regulation of programmed cell death	2.675
(Cell death)		GO:0010941~regulation of cell death	2.665
		GO:0043069~negative regulation of programmed cell death	3.851
		GO:0060548~negative regulation of cell death	3.840
		GO:0042981~regulation of apoptosis	2.579
		GO:0043066~negative regulation of apoptosis	3.626
		GO:0006916~anti-apoptosis	3.355
Annotation Cluster 3	3.046	GO:0000279~M phase	4.802
(Cell cycle)		GO:0022403~cell cycle phase	3.816
		cytoskeleton	3.265
		GO:0005819~spindle	6.538
		GO:0022402~cell cycle process	3.146
		GO:0000280~nuclear division	4.937
		GO:0007067~mitosis	4.937
		GO:0000087~M phase of mitotic cell cycle	4.849
		GO:0007049~cell cycle	2.672
		GO:0048285~organelle fission	4.743
		GO:0015630~microtubule cytoskeleton	2.976
		GO:0000278~mitotic cell cycle	3.469
		GO:0005813~centrosome	4.290
		GO:0044430~cytoskeletal part	2.221

		GO:0051301~cell division	3.682
		cell cycle	3.082
		GO:0005815~microtubule organizing center	3.799
		GO:0007059~chromosome segregation	7.314
		mitosis	4.778
		GO:0000793~condensed chromosome	5.215
		cell division	3.726
		GO:0000779~condensed chromosome, centromeric region	7.281
		GO:0000775~chromosome, centromeric region	4.650
		kinetochore	6.939
		GO:0005694~chromosome	1.880
		GO:0000777~condensed chromosome kinetochore	4.971
		GO:0008022~protein C-terminus binding	2.769
		GO:0000776~kinetochore	3.744
		GO:0044427~chromosomal part	1.743
Annotation Cluster 4	2.788	GO:0005819~spindle	6.538
(Motor protein)		domain:Kinesin-motor	15.153
		GO:0015630~microtubule cytoskeleton	2.976
		IPR001752:Kinesin, motor region	12.795
		IPR019821:Kinesin, motor region, conserved site	12.795
		SM00129:KISc	11.143
		GO:0003777~microtubule motor activity	7.606
		motor protein	5.796
		GO:0003774~motor activity	4.812
		GO:0007018~microtubule-based movement	5.243
		GO:0007017~microtubule-based process	2.732
		microtubule	2.839
		GO:0005874~microtubule	2.104
Annotation Cluster 5	2.731	GO:0016477~cell migration	4.651
(Cell motility)		GO:0051674~localization of cell	4.181
		GO:0048870~cell motility	4.181

GO:0006928~cell motion	3.326
GO:0007610~behavior	2.316
GO:0007626~locomotory behavior	2.883
GO:0042330~taxis	3.703
GO:0006935~chemotaxis	3.703
hsa04062:Chemokine signaling pathway	2.266

Table S5. List of genes whose expression levels were downregulated or upregulated by Prox1 knockdown, related to Figures 4 and 5.

Downregulated genes

Probe ID	Gene Symbol	Fold Change (siProx1/siContro	Gene Description
8097957	GUCY1A3	0.069	guanylate cyclase 1, soluble, alpha 3
8105302	FST	0.079	follistatin
8112045	ESM1	0.104	endothelial cell-specific molecule 1
8046536	HOXD10	0.104	homeobox D10
7971077	POSTN	0.107	periostin, osteoblast specific factor
7946579	LYVE1	0.113	lymphatic vessel endothelial hyaluronan receptor 1
8105121	GHR	0.114	growth hormone receptor
8161755	ALDH1A1	0.127	aldehyde dehydrogenase 1 family, member A1
7909877	MOSC1	0.135	MOCO sulphurase C-terminal domain containing 1
8046695	ITGA4	0.135	integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor) | ceramide kinase-like
7899939	GJA4	0.138	gap junction protein, alpha 4, 37kDa
8141016	TFPI2	0.141	tissue factor pathway inhibitor 2
7917798	ABCA4	0.142	ATP-binding cassette, sub-family A (ABC1), member 4
8097973	GUCY1B3	0.145	guanylate cyclase 1, soluble, beta 3
7950933	NOX4	0.147	NADPH oxidase 4
8058552	IDH1	0.148	isocitrate dehydrogenase 1 (NADP+), soluble
8044225	SULT1C4	0.154	sulfotransferase family, cytosolic, 1C, member 4
8140686	SEMA3D	0.157	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3D
7961514	MGP	0.160	matrix Gla protein
7908543	NEK7	0.168	NIMA (never in mitosis gene a)-related kinase 7
8131666	ITGB8	0.173	integrin, beta 8
7961507	ART4	0.177	ADP-ribosyltransferase 4 (Dombrock blood group)
7983650	SLC27A2	0.178	solute carrier family 27 (fatty acid transporter), member 2
8060988	BTBD3	0.178	BTB (POZ) domain containing 3
7912537	DHRS3	0.179	dehydrogenase/reductase (SDR family) member 3
8069668	CYYR1	0.184	cysteine/tyrosine-rich 1

7902074	LEPR	0.186	leptin receptor | leptin receptor overlapping transcript
7965573	NTN4	0.190	netrin 4
8152703	FBXO32	0.198	F-box protein 32
8113358	ST8SIA4	0.201	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 4
8131600	TSPAN13	0.203	tetraspanin 13
8104234	TRIP13	0.204	thyroid hormone receptor interactor 13 | bromodomain containing 9
7972713	EFNB2	0.208	ephrin-B2
7968637	CCNA1	0.211	cyclin A1
8094789	LIMCH1	0.212	LIM and calponin homology domains 1
7968789	C13orf15	0.213	chromosome 13 open reading frame 15
8112033	ARL15	0.215	ADP-ribosylation factor-like 15
7994074	SCNN1B	0.216	sodium channel, nonvoltage-gated 1, beta
7906930	NUF2	0.216	
8129666	SLC2A12	0.224	solute carrier family 2 (facilitated glucose transporter), member 12
8141094	PDK4	0.226	pyruvate dehydrogenase kinase, isozyme 4
8106354	IQGAP2	0.226	IQ motif containing GTPase activating protein 2
8089544	CCDC80	0.226	coiled-coil domain containing 80
8103932	MLF1IP	0.226	MLF1 interacting protein
7930454	PDCD4	0.232	programmed cell death 4 (neoplastic transformation inhibitor)
8046542	HOXD9	0.236	homeobox D9
8061564	ID1	0.239	inhibitor of DNA binding 1, dominant negative helix-loop-helix protein
7988467	FBN1	0.241	fibrillin 1
7909681	PROX1	0.246	prospero homeobox 1
8102587	C4orf31	0.246	chromosome 4 open reading frame 31
7919715	ANP32E	0.248	acidic (leucine-rich) nuclear phosphoprotein 32 family, member E
8094719	N4BP2	0.249	NEDD4 binding protein 2
7922889	IVNS1ABP	0.249	influenza virus NS1A binding protein
8023757	CD226	0.250	
8133818	PHTF2	0.252	putative homeodomain transcription factor 2
7927710	CDC2	0.255	cyclin-dependent kinase 1 | cell division cycle 2, G1 to S and G2 to M
8107706	LMNB1	0.255	lamin B1

7902452	AK5	0.258	adenylate kinase 5
7929132	PCGF5	0.259	polycomb group ring finger 5
8105229	PELO	0.260	pelota homolog (Drosophila) | integrin, alpha 1
7968351	C13orf33	0.260	chromosome 13 open reading frame 33
8102076	CENPE	0.261	centromere protein E, 312kDa
8150103	GTF2E2	0.263	general transcription factor IIE, polypeptide 2, beta 34kDa
7991406	PRC1	0.264	protein regulator of cytokinesis 1
8081288	TMEM45A	0.264	transmembrane protein 45A
8047606	NBEAL1	0.264	neurobeachin-like 1
7979158	TXNDC16	0.265	thioredoxin domain containing 16
7923189	KIF14	0.266	kinesin family member 14
8133876	CD36	0.267	
7982792	RAD51	0.267	
8151871	CCNE2	0.268	cyclin E2
8140955	CDK6	0.269	cyclin-dependent kinase 6
7909708	CENPF	0.269	centromere protein F, 350/400ka (mitosin)
8142524	TSPAN12	0.269	tetraspanin 12
7905329	MLLT11	0.269	myeloid/lymphoid or mixed-lineage leukemia (trithorax homolog, Drosophila); translocated to, 11
8079237	KIF15	0.270	kinesin family member 15
8155540	CNTNAP3B	0.270	contactin associated protein-like 3 | contactin associated protein-like 3B
8161460	CNTNAP3B	0.270	contactin associated protein-like 3 | contactin associated protein-like 3B
8122701		0.270	
8047596		0.270	neurobeachin-like 1
7909890	HLX	0.271	H2.0-like homeobox
8153262	SLC45A4	0.271	solute carrier family 45, member 4
8111892	OXCT1	0.271	3-oxoacid CoA transferase 1
8088247	ARHGEF3	0.272	Rho guanine nucleotide exchange factor (GEF) 3
8113073	ARRDC3	0.272	arrestin domain containing 3
8040223	RRM2	0.274	ribonucleotide reductase M2
8124527	HIST1H1B	0.274	histone cluster 1, H1b
8103728	HMGB2	0.278	high-mobility group box 2

7922976	PTGS2	0.279	prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)
8053551	REEP1	0.280	receptor accessory protein 1
7974404	CDKN3	0.281	cyclin-dependent kinase inhibitor 3
7923086	ASPM	0.281	asp (abnormal spindle) homolog, microcephaly associated (Drosophila)
8124650	UBD	0.281	ubiquitin D | gamma-aminobutyric acid (GABA) B receptor, 1
7916898	DEPDC1	0.282	DEP domain containing 1
7990054	UACA	0.285	uveal autoantigen with coiled-coil domains and ankyrin repeats
8113491	STARD4	0.285	StAR-related lipid transfer (START) domain containing 4
8057599	TFPI	0.291	tissue factor pathway inhibitor (lipoprotein-associated coagulation inhibitor)
7979307	DLGAP5	0.292	discs, large (Drosophila) homolog-associated protein 5
8019857	NDC80	0.292	
8178295	UBD	0.293	ubiquitin D | gamma-aminobutyric acid (GABA) B receptor, 1
7951077	SESN3	0.294	sestrin 3
7969438	LMO7	0.295	LIM domain 7
7984704	NEO1	0.296	neogenin homolog 1 (chicken)
8120838	TTK	0.297	
7954293	PDE3A	0.298	phosphodiesterase 3A, cGMP-inhibited
7983350	EIF3J	0.298	eukaryotic translation initiation factor 3, subunit J
8042270	UGP2	0.300	UDP-glucose pyrophosphorylase 2
8155359	CNTNAP3B	0.301	contactin associated protein-like 3 | contactin associated protein-like 3B
8013671	SPAG5	0.301	sperm associated antigen 5 | uncharacterized serine/threonine-protein kinase SgK494
8077731	FANCD2	0.302	Fanconi anemia, complementation group D2
8137240	GIMAP7	0.302	GTPase, IMAP family member 7
8061772	MAPRE1	0.303	microtubule-associated protein, RP/EB family, member 1
8050160	MBOAT2	0.303	membrane bound O-acyltransferase domain containing 2
8137526	INSIG1	0.304	insulin induced gene 1
8149955	PBK	0.304	PDZ binding kinase
7947248	KIF18A	0.305	kinesin family member 18A
8056572	SPC25	0.305	
8141950	RELN	0.306	reelin
7983969	CCNB2	0.306	cyclin B2

8123800		0.306	
7985829	FANCI	0.306	Fanconi anemia, complementation group I | polymerase (DNA directed), gamma
7929334	CEP55	0.307	centrosomal protein 55kDa
8144036	XRCC2	0.307	X-ray repair complementing defective repair in Chinese hamster cells 2
8092169	TNFSF10	0.307	tumor necrosis factor (ligand) superfamily, member 10
8054580	BUB1	0.308	budding uninhibited by benzimidazoles 1 homolog (yeast)
8112260	DEPDC1B	0.308	DEP domain containing 1B
8109712	HMMR	0.309	hyaluronan-mediated motility receptor (RHAMM)
8166784	TSPAN7	0.309	tetraspanin 7
7934026	DNA2	0.313	DNA replication helicase 2 homolog (yeast)
8108301	KIF20A	0.313	kinesin family member 20A | cell division cycle 23 homolog (S. cerevisiae)
7933733	FAM13C	0.313	family with sequence similarity 13, member C | phytanoyl-CoA 2-hydroxylase interacting protein-
8134339	PEG10	0.315	paternally expressed 10
8151496	ZNF704	0.315	zinc finger protein 704
8049317	DGKD	0.315	diacylglycerol kinase, delta 130kDa
8168622	KLHL4	0.316	kelch-like 4 (Drosophila)
8007931	ITGB3	0.316	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
7997491	HSD17B2	0.316	hydroxysteroid (17-beta) dehydrogenase 2
8127109	ICK	0.317	intestinal cell (MAK-like) kinase
8020806	RNF125	0.317	ring finger protein 125
8102560	MAD2L1	0.318	MAD2 mitotic arrest deficient-like 1 (yeast)
7971866	DIAPH3	0.318	diaphanous homolog 3 (Drosophila)
8091078	RBP1	0.319	retinol binding protein 1, cellular
8105348	GPX8	0.319	glutathione peroxidase 8 (putative)
8113709	LOX	0.319	lysyl oxidase
7979241	BMP4	0.321	bone morphogenetic protein 4
8098006	GLRB	0.321	glycine receptor, beta
7940147	FAM111B	0.321	family with sequence similarity 111, member B
8111915	SEPP1	0.322	selenoprotein P, plasma, 1
8046546	HOXD8	0.322	homeobox D8
7909568	DTL	0.323	denticleless homolog (Drosophila)

7974920	SYNE2	0.324	spectrin repeat containing, nuclear envelope 2
7972157	EDNRB	0.324	endothelin receptor type B
8055465	CXCR4	0.324	chemokine (C-X-C motif) receptor 4
7990391	CYP1A1	0.324	cytochrome P450, family 1, subfamily A, polypeptide 1
8157381	ZNF618	0.325	zinc finger protein 618
7979743	RDH11	0.325	retinol dehydrogenase 11 (all-trans/9-cis/11-cis)
8077899	PPARG	0.326	peroxisome proliferator-activated receptor gamma
8091715	LXN	0.328	latexin
8151768	RUNX1T1	0.328	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)
7951363	CASP12	0.328	caspase 12 (gene/pseudogene)
8117018		0.329	
7944375	TRAPPC4	0.329	trafficking protein particle complex 4
7901010	KIF2C	0.329	kinesin family member 2C
7929438	HELLS	0.329	helicase, lymphoid-specific
8041273	YIPF4	0.330	Yip1 domain family, member 4
7929078	KIF20B	0.331	kinesin family member 20B
7975268	ARG2	0.331	arginase, type II | vesicle transport through interaction with t-SNAREs homolog 1B (yeast)
7969626	GPR180	0.331	G protein-coupled receptor 180
8132318	ANLN	0.331	anillin, actin binding protein
7928944	PAPSS2	0.332	3'-phosphoadenosine 5'-phosphosulfate synthase 2
7995681	MMP2	0.332	matrix metallopeptidase 2 (gelatinase A, 72kDa gelatinase, 72kDa type IV collagenase)
8151572	SNX16	0.333	sorting nexin 16
7960947	A2M	0.333	alpha-2-macroglobulin
8137244	GIMAP4	0.334	GTPase, IMAP family member 4
7932911	KIF5B	0.335	kinesin family member 5B
8058570	C2orf67	0.335	chromosome 2 open reading frame 67
7910387	RHOU	0.335	ras homolog gene family, member U
8040090	RNF144A	0.335	ring finger protein 144A
8144226		0.337	
8095422	STATH	0.337	statherin
8152668	ATAD2	0.337	ATPase family, AAA domain containing 2

8151457	HEY1	0.338	hairy/enhancer-of-split related with YRPW motif 1
8001133	SHCBP1	0.338	SHC SH2-domain binding protein 1
8081657	CD200	0.339	
7982889	NUSAP1	0.340	nucleolar and spindle associated protein 1
8021187	SKA1	0.340	spindle and kinetochore associated complex subunit 1
8161839	C9orf95	0.342	chromosome 9 open reading frame 95
8171418	PIGA	0.342	phosphatidylinositol glycan anchor biosynthesis, class A
8135734	C7orf58	0.342	chromosome 7 open reading frame 58
8161249	MCART1	0.342	mitochondrial carrier triple repeat 1
8112342	ADAMTS6	0.344	ADAM metallopeptidase with thrombospondin type 1 motif, 6
8008784	PRR11	0.344	proline rich 11
8008629	DGKE	0.345	diacylglycerol kinase, epsilon 64kDa
8155460	CNTNAP3	0.345	contactin associated protein-like 3 | contactin associated protein-like 3B
7953218	RAD51AP1	0.346	RAD51 associated protein 1
8056963	LOC100129455	0.346	
8171352	TRAPPC2	0.347	trafficking protein particle complex 2
8008598	PCTP	0.348	phosphatidylcholine transfer protein
8161288	CNTNAP3	0.349	contactin associated protein-like 3 | similar to cell recognition molecule CASPR3
8138337	TMEM195	0.349	transmembrane protein 195
8167006	RP2	0.349	retinitis pigmentosa 2 (X-linked recessive)
8097857	MND1	0.350	meiotic nuclear divisions 1 homolog (S. cerevisiae)
8096415	MMRN1	0.350	multimerin 1
8057394	SESTD1	0.350	SEC14 and spectrin domains 1
8081667	SLC35A5	0.350	solute carrier family 35, member A5
8121749	GJA1	0.350	gap junction protein, alpha 1, 43kDa
7938592	FAR1	0.351	fatty acyl CoA reductase 1
8166925	MAOA	0.352	monoamine oxidase A
8124394	HIST1H2BB	0.352	histone cluster 1, H2bb
8145570	ESCO2	0.352	establishment of cohesion 1 homolog 2 (S. cerevisiae)
8131709	SP4	0.352	Sp4 transcription factor
8068612	WRB	0.354	tryptophan rich basic protein

8017262	BRIP1	0.354	BRCA1 interacting protein C-terminal helicase 1
7918323	SORT1	0.354	sortilin 1
8144153	NCAPG2	0.355	non-SMC condensin II complex, subunit G2
7971820	VPS36	0.355	vacuolar protein sorting 36 homolog (S. cerevisiae)
7910997	EXO1	0.355	exonuclease 1
8046086	LASS6	0.356	LAG1 homolog, ceramide synthase 6
7957850	GAS2L3	0.356	growth arrest-specific 2 like 3
7980547	SEL1L	0.357	sel-1 suppressor of lin-12-like (C. elegans)
8143433	MRPS33	0.357	mitochondrial ribosomal protein S33
7971620	KPNA3	0.357	karyopherin alpha 3 (importin alpha 4)
8022488	ABHD3	0.358	abhydrolase domain containing 3
7982287	ARHGAP11B	0.359	Rho GTPase activating protein 11B
8054702	CKAP2L	0.359	cytoskeleton associated protein 2-like
7907104	DCAF6	0.359	DDB1 and CUL4 associated factor 6
7924712	LIN9	0.360	lin-9 homolog (C. elegans)
7923426	UBE2T	0.360	ubiquitin-conjugating enzyme E2T (putative)
8057929		0.361	
7928395	FUT11	0.361	fucosyltransferase 11 (alpha (1,3) fucosyltransferase) | FLJ44715 gene product
7990253	NPTN	0.361	neuroplastin
8138353	MEOX2	0.362	mesenchyme homeobox 2
8023165	HDHD2	0.363	haloacid dehalogenase-like hydrolase domain containing 2
7940372	TMEM109	0.364	transmembrane protein 109
8083839	GPR160	0.364	G protein-coupled receptor 160
7982757	CASC5	0.364	cancer susceptibility candidate 5
8025303	CLEC4M	0.364	C-type lectin domain family 4, member M
8145136	PPP3CC	0.365	protein phosphatase 3, catalytic subunit, gamma isozyme | protein phosphatase 3 (formerly 2B), catalytic subunit, gamma isoform
7917088	PIGK	0.365	phosphatidylinositol glycan anchor biosynthesis, class K
8148448	KHDRBS3	0.365	KH domain containing, RNA binding, signal transduction associated 3
8088550	PRICKLE2	0.365	prickle homolog 2 (Drosophila)
8103951	ACSL1	0.365	acyl-CoA synthetase long-chain family member 1

7898328	C1orf144	0.365	chromosome 1 open reading frame 144
7902104	PDE4B	0.365	phosphodiesterase 4B, cAMP-specific (phosphodiesterase E4 dunce homolog, Drosophila)
7999884		0.366	
8062557	PPP1R16B	0.366	protein phosphatase 1, regulatory (inhibitor) subunit 16B
7914878		0.368	arsenic transactivated protein 1
7982358	ARHGAP11A	0.369	Rho GTPase activating protein 11A
7962499	SFRS2IP	0.369	splicing factor, arginine/serine-rich 2, interacting protein
8014974	TOP2A	0.369	topoisomerase (DNA) II alpha 170kDa
8097586	GAB1	0.370	GRB2-associated binding protein 1
8172035	DYNLT3	0.370	dynein, light chain, Tctex-type 3
8085754	SGOL1	0.370	shugoshin-like 1 (S. pombe)
8152053	ANKRD46	0.370	ankyrin repeat domain 46
8145636	HMBOX1	0.370	homeobox containing 1
7937020	MKI67	0.370	antigen identified by monoclonal antibody Ki-67
8016088	CCDC43	0.371	coiled-coil domain containing 43
8112596	ANKRA2	0.371	ankyrin repeat, family A (RFXANK-like), 2
8095299		0.371	
8091009	PIK3CB	0.372	phosphoinositide-3-kinase, catalytic, beta polypeptide
7913655	ID3	0.372	inhibitor of DNA binding 3, dominant negative helix-loop-helix protein
8094278	NCAPG	0.372	non-SMC condensin I complex, subunit G | ligand dependent nuclear receptor corepressor-like
8134180	ANKIB1	0.372	ankyrin repeat and IBR domain containing 1
8105842	CENPH	0.373	centromere protein H
8168873	LOC653354	0.373	armadillo repeat containing, X-linked 6
8131944	NFE2L3	0.374	nuclear factor (erythroid-derived 2)-like 3
8121911	C6orf173	0.374	centromere protein W | chromosome 6 open reading frame 173
7978846	POLE2	0.374	polymerase (DNA directed), epsilon 2 (p59 subunit)
7974372	GPR137C	0.374	G protein-coupled receptor 137C
8151684		0.374	matrix metallopeptidase 16 (membrane-inserted)
8021946	COLEC12	0.374	collectin sub-family member 12
8007071	CDC6	0.374	cell division cycle 6 homolog (S. cerevisiae)
8021286	C18orf54	0.375	chromosome 18 open reading frame 54

8168794	CENPI	0.375	centromere protein I
7952830	NCAPD3	0.376	non-SMC condensin II complex, subunit D3
8056877	CHRNA1	0.376	cholinergic receptor, nicotinic, alpha 1 (muscle)
8150186	RNF122	0.376	ring finger protein 122
8031573	RFPL4A	0.376	ret finger protein-like 4A
7923034	B3GALT2	0.377	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypeptide 2
8101624	KLHL8	0.377	kelch-like 8 (Drosophila)
8124166	MBOAT1	0.378	membrane bound O-acyltransferase domain containing 1
7980080	ENTPD5	0.379	ectonucleoside triphosphate diphosphohydrolase 5
7962085	IPO8	0.379	importin 8
8122013	L3MBTL3	0.379	l(3)mbt-like 3 (Drosophila)
7901788	NFIA	0.380	nuclear factor I/A
7985522	ADAMTSL3	0.381	ADAMTS-like 3
8038202	BCAT2	0.381	branched chain amino-acid transaminase 2, mitochondrial | branched chain aminotransferase 2, mitochondrial
7915787	PIK3R3	0.381	phosphoinositide-3-kinase, regulatory subunit 3 (gamma)
7903092	FNBP1L	0.381	formin binding protein 1-like
7971653	DLEU2	0.381	deleted in lymphocytic leukemia 2 (non-protein coding)
7962559	SLC38A4	0.382	solute carrier family 38, member 4
8168146	KIF4A	0.383	kinesin family member 4A
8018558	ACOX1	0.383	acyl-CoA oxidase 1, palmitoyl | acyl-Coenzyme A oxidase 1, palmitoyl
8040712	CENPA	0.384	centromere protein A
8097356	PLK4	0.384	polo-like kinase 4 (Drosophila)
8140709	KIAA1324L	0.384	KIAA1324-like
8107234	MAN2A1	0.385	mannosidase, alpha, class 2A, member 1
8166289	CDKL5	0.386	cyclin-dependent kinase-like 5
8146130	GINS4	0.387	GINS complex subunit 4 (Sld5 homolog)
8078252	UBE2E2	0.388	ubiquitin-conjugating enzyme E2E 2 (UBC4/5 homolog, yeast)
8027348	ZNF730	0.388	zinc finger protein 730
7957746	SLC25A3	0.388	solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 3
8089203	SENP7	0.388	SUMO1/sentrin specific peptidase 7

8117640	ZSCAN16	0.389	zinc finger and SCAN domain containing 16
7966829	WSB2	0.389	WD repeat and SOCS box-containing 2
7926259	MCM10	0.389	minichromosome maintenance complex component 10
8062766	MYBL2	0.389	v-myb myeloblastosis viral oncogene homolog (avian)-like 2
8122327	CCDC28A	0.390	coiled-coil domain containing 28A
8132501		0.390	
8111960	C5orf34	0.392	chromosome 5 open reading frame 34
8004691	TMEM88	0.392	transmembrane protein 88
7980744	RPS6KA5	0.392	ribosomal protein S6 kinase, 90kDa, polypeptide 5
8147461	SDC2	0.393	syndecan 2
8125850	C6orf106	0.393	chromosome 6 open reading frame 106
7918026	EXTL2	0.394	exostoses (multiple)-like 2
7974387	STYX	0.394	serine/threonine/tyrosine interacting protein
8161192	RNF38	0.394	ring finger protein 38
8023598	RNF152	0.395	ring finger protein 152
8067167	AURKA	0.395	aurora kinase A
7958031	C12orf48	0.395	chromosome 12 open reading frame 48
8161224	ZBTB5	0.395	zinc finger and BTB domain containing 5
7979281	WDHD1	0.396	WD repeat and HMG-box DNA binding protein 1
8161701	TMEM2	0.396	transmembrane protein 2
8134351	PPP1R9A	0.396	protein phosphatase 1, regulatory (inhibitor) subunit 9A
8104066	SORBS2	0.397	sorbin and SH3 domain containing 2
8112570	MRPS27	0.398	mitochondrial ribosomal protein S27
8002969	MAF	0.398	v-maf musculoaponeurotic fibrosarcoma oncogene homolog (avian)
8043602	NCAPH	0.399	non-SMC condensin I complex, subunit H
7906061	SYT11	0.399	synaptotagmin XI
7987869	TMEM87A	0.399	transmembrane protein 87A
8135480	DNAJB9	0.399	DnaJ (Hsp40) homolog, subfamily B, member 9
8100798	SULT1B1	0.399	sulfotransferase family, cytosolic, 1B, member 1
7984259	RNU5B-1	0.400	RNA, U5B small nuclear 1
7938880	HTATIP2	0.400	HIV-1 Tat interactive protein 2, 30kDa

8142110	SYPL1	0.400	synaptophysin-like 1
7980940	ATXN3	0.400	ataxin 3
7948987	PLA2G16	0.400	phospholipase A2, group XVI
7985873	C15orf42	0.401	chromosome 15 open reading frame 42
8087907	SEMA3G	0.401	sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3G
7943398	YAP1	0.401	Yes-associated protein 1 | Yes-associated protein 1, 65kDa
8103399	PDGFC	0.401	platelet derived growth factor C
8156575	ATMIN	0.402	ATM interactor
8102643	CCNA2	0.402	cyclin A2
7950743	RAB30	0.402	
8031570	RFPL4A	0.402	ret finger protein-like 4A
8020149	NAPG	0.403	N-ethylmaleimide-sensitive factor attachment protein, gamma
8094625	KLHL5	0.403	kelch-like 5 (Drosophila)
7939197	HIPK3	0.403	homeodomain interacting protein kinase 3
7930380	ADD3	0.404	adducin 3 (gamma)
8092348	LAMP3	0.404	lysosomal-associated membrane protein 3
7970513	SKA3	0.405	spindle and kinetochore associated complex subunit 3 | mitochondrial ribosomal protein 63
8107673	GRAMD3	0.405	GRAM domain containing 3
8173506	ERCC6L	0.405	excision repair cross-complementing rodent repair deficiency, complementation group 6-like
7929258	KIF11	0.406	kinesin family member 11
8098423	NEIL3	0.406	nei endonuclease VIII-like 3 (E. coli)
7924172	NSL1	0.406	
7935776		0.406	stearoyl-CoA desaturase (delta-9-desaturase)
7986068	BLM	0.406	Bloom syndrome, RecQ helicase-like
8112107	PPAP2A	0.406	phosphatidic acid phosphatase type 2A | superkiller viralicidic activity 2-like 2 (S. cerevisiae)
8023735	TMX3	0.407	thioredoxin-related transmembrane protein 3
8153935	ZNF252	0.407	zinc finger protein 252
7914851	CLSPN	0.407	claspin homolog (Xenopus laevis)
8124537	HIST1H3J	0.408	histone cluster 1, H3j
8102371		0.408	chromosome 4 open reading frame 21
8107307	CAMK4	0.408	calcium/calmodulin-dependent protein kinase IV

7926679	KIAA1217	0.409	
7908204	HMCN1	0.409	hemicentin 1
8097628	HHIP	0.409	hedgehog interacting protein
8092177	NCEH1	0.410	neutral cholesterol ester hydrolase 1
8083333	EIF2A	0.410	eukaryotic translation initiation factor 2A, 65kDa
7909332	CD55	0.410	
8123405	LOC441179	0.410	chromosome 6 open reading frame 123 | hypothetical LOC441179
8114991	SH3TC2	0.411	SH3 domain and tetratricopeptide repeats 2
8136388	TMEM140	0.411	transmembrane protein 140
7926821	MASTL	0.411	microtubule associated serine/threonine kinase-like
8111533	LMBRD2	0.411	LMBR1 domain containing 2
8057700	ORMDL1	0.411	ORM1-like 1 (S. cerevisiae) | PMS1 postmeiotic segregation increased 1 (S. cerevisiae)
8099395	RAB28	0.412	
8103706	AADAT	0.412	aminoadipate aminotransferase
8151686	MMP16	0.413	matrix metallopeptidase 16 (membrane-inserted)
8101648	HSD17B11	0.414	hydroxysteroid (17-beta) dehydrogenase 11
8088348	FAM116A	0.414	family with sequence similarity 116, member A
8123825	SLC35B3	0.414	solute carrier family 35, member B3
8138799	TRIL	0.414	TLR4 interactor with leucine rich repeats
8057959	PGAP1	0.415	post-GPI attachment to proteins 1
8145652	LEPROTL1	0.415	leptin receptor overlapping transcript-like 1
8113602	CCDC112	0.415	coiled-coil domain containing 112
7951351	PDGFD	0.415	platelet derived growth factor D
8105828	CCNB1	0.415	cyclin B1
8166632	GK	0.415	glycerol kinase
7984540	KIF23	0.415	kinesin family member 23
8157362	ZNF618	0.416	zinc finger protein 618
8047784	ZDBF2	0.416	zinc finger, DBF-type containing 2
7925229	B3GALNT2	0.416	beta-1,3-N-acetylgalactosaminyltransferase 2
7962185	AMN1	0.416	antagonist of mitotic exit network 1 homolog (S. cerevisiae) | chromosome 12 open reading frame
7907183	C1orf112	0.416	SCY1-like 3 (S. cerevisiae) | chromosome 1 open reading frame 112

8151436	PXMP3	0.416	peroxisomal biogenesis factor 2 | peroxisomal membrane protein 3, 35kDa
7924603	LBR	0.416	lamin B receptor
8174610	LRCH2	0.417	leucine-rich repeats and calponin homology (CH) domain containing 2
7948997	ATL3	0.417	atlastin GTPase 3
8047288	SGOL2	0.418	shugoshin-like 2 (S. pombe)
8156905	TMEFF1	0.418	transmembrane protein with EGF-like and two follistatin-like domains 1
8146921	RDH10	0.418	retinol dehydrogenase 10 (all-trans)
8145685		0.418	
8163383	SUSD1	0.419	sushi domain containing 1
8112159	ANKRD55	0.419	ankyrin repeat domain 55
8097288	FAT4	0.419	FAT tumor suppressor homolog 4 (Drosophila)
7971780	NEK3	0.419	NIMA (never in mitosis gene a)-related kinase 3
7957551	SOCS2	0.419	suppressor of cytokine signaling 2
7946245	DCHS1	0.419	dachsous 1 (Drosophila)
8103415	FAM198B	0.420	family with sequence similarity 198, member B | chromosome 4 open reading frame 18
8097521	SCOC	0.420	short coiled-coil protein
7928736	NRG3	0.420	neuregulin 3
7963263		0.420	
7917850	ARHGAP29	0.420	Rho GTPase activating protein 29
7901993	CACHD1	0.421	cache domain containing 1
8102751	SCLT1	0.421	sodium channel and clathrin linker 1
8017619		0.421	
8013906	TWF1	0.421	twinfilin, actin-binding protein, homolog 1 (Drosophila)
8076403	NAGA	0.421	N-acetylgalactosaminidase, alpha-
7944006	RBM7	0.422	RNA binding motif protein 7
8120165	CENPQ	0.422	centromere protein Q
8079346	SACM1L	0.422	SAC1 suppressor of actin mutations 1-like (yeast)
8017283	INTS2	0.422	integrator complex subunit 2
7989516	HERC1	0.422	hect (homologous to the E6-AP (UBE3A) carboxyl terminus) domain and RCC1 (CHC1)-like domain (RLD) 1
7989323	BNIP2	0.423	BCL2/adenovirus E1B 19kDa interacting protein 2

8015769	BRCA1	0.423	breast cancer 1, early onset
8047926	MAP2	0.423	microtubule-associated protein 2
7925342	ERO1LB	0.423	ERO1-like beta (S. cerevisiae)
7993588	TMC7	0.424	transmembrane channel-like 7
8041967	ERLEC1	0.424	endoplasmic reticulum lectin 1
8057677	SLC40A1	0.425	solute carrier family 40 (iron-regulated transporter), member 1
8038981	ZNF611	0.425	zinc finger protein 611
7912196		0.425	
8006187	ATAD5	0.425	ATPase family, AAA domain containing 5
8013243	SHMT1	0.426	serine hydroxymethyltransferase 1 (soluble)
8136614	AGK	0.426	acylglycerol kinase
7982854	DLL4	0.426	delta-like 4 (Drosophila)
8017582	TEX2	0.426	testis expressed 2
8138489	CDCA7L	0.426	cell division cycle associated 7-like
8129418	PTPRK	0.427	protein tyrosine phosphatase, receptor type, K
7978449	HECTD1	0.427	HECT domain containing 1
8054308	TBC1D8	0.427	TBC1 domain family, member 8 (with GRAM domain)
8168691	DIAPH2	0.427	diaphanous homolog 2 (Drosophila)
7961546	EPS8	0.428	epidermal growth factor receptor pathway substrate 8
7967386	MPHOSPH9	0.428	M-phase phosphoprotein 9
8146637	YTHDF3	0.428	YTH domain family, member 3
8095566	MOBKL1A	0.428	MOB1, Mps One Binder kinase activator-like 1A (yeast)
7989647	KIAA0101	0.428	KIAA0101 | casein kinase 1, gamma 1
8148124	MTBP	0.429	Mdm2, transformed 3T3 cell double minute 2, p53 binding protein (mouse) binding protein,
8145418	CDCA2	0.429	cell division cycle associated 2
7982294	LOC390561	0.429	OTU domain containing 7A | hypothetical LOC440261
7919825	ARNT	0.429	aryl hydrocarbon receptor nuclear translocator
8151066	ARMC1	0.429	armadillo repeat containing 1
8102311	CASP6	0.430	caspase 6, apoptosis-related cysteine peptidase
8102342	ELOVL6	0.430	ELOVL family member 6, elongation of long chain fatty acids (FEN1/Elo2, SUR4/Elo3-like,
8040103	ID2	0.430	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein

8043900	hCG_1790474	0.430	
7902308	FPGT	0.431	fucose-1-phosphate guanylyltransferase | TNNI3 interacting kinase
8120961	MRAP2	0.431	melanocortin 2 receptor accessory protein 2
8047403	CASP10	0.431	caspase 10, apoptosis-related cysteine peptidase
7919642	HIST2H2AB	0.431	histone cluster 2, H2ab
8138789	JAZF1	0.431	JAZF zinc finger 1
8127346	RAB23	0.431	
7979811		0.432	
8045768	ARL6IP6	0.432	ADP-ribosylation-like factor 6 interacting protein 6
8067955	CXADR	0.433	coxsackie virus and adenovirus receptor
7938448	USP47	0.433	ubiquitin specific peptidase 47
7943162	C11orf54	0.433	chromosome 11 open reading frame 54
8013305	ZNF286A	0.435	zinc finger protein 286B | zinc finger protein 286A | TBC1 domain family, member 26
7908421	TROVE2	0.436	TROVE domain family, member 2
8112388	TRIM23	0.437	tripartite motif-containing 23
8175393	ARHGEF6	0.437	Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6
8106660	RASGRF2	0.437	Ras protein-specific guanine nucleotide-releasing factor 2
8142554	AASS	0.437	aminoadipate-semialdehyde synthase
8004167	FAM64A	0.437	family with sequence similarity 64, member A
8043310	RMND5A	0.438	required for meiotic nuclear division 5 homolog A (S. cerevisiae)
8112139	IL6ST	0.438	interleukin 6 signal transducer (gp130, oncostatin M receptor)
8023727	DSEL	0.438	dermatan sulfate epimerase-like
8136473	TRIM24	0.438	tripartite motif-containing 24
8149825	STC1	0.438	stanniocalcin 1
8110803	CLPTM1L	0.439	CLPTM1-like
7933105	ZNF25	0.439	zinc finger protein 25
8148158	WDR67	0.439	WD repeat domain 67
7972055	KCTD12	0.439	potassium channel tetramerisation domain containing 12
7918634	PHTF1	0.439	putative homeodomain transcription factor 1
8101143	NUP54	0.439	nucleoporin 54kDa
7938544	TEAD1	0.439	TEA domain family member 1 (SV40 transcriptional enhancer factor)

8079662	ARIH2	0.439	ariadne homolog 2 (Drosophila)
8078650	CTDSPL	0.439	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A) small phosphatase-like
8066074	DSN1	0.440	
8020814	RNF138	0.440	ring finger protein 138
8137232	GIMAP8	0.440	GTPase, IMAP family member 8
8152222	AZIN1	0.440	antizyme inhibitor 1
8113039	MEF2C	0.441	myocyte enhancer factor 2C
8034772	ASF1B	0.441	ASF1 anti-silencing function 1 homolog B (S. cerevisiae)
8172043	SRPX	0.441	sushi-repeat-containing protein, X-linked
8044278	CCDC138	0.442	coiled-coil domain containing 138
7960340	FOXM1	0.442	forkhead box M1
7966425		0.442	
8012475	MYH10	0.442	myosin, heavy chain 10, non-muscle
8155214	MELK	0.442	maternal embryonic leucine zipper kinase
8146794	PREX2	0.442	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 2
8174103	GK	0.442	glycerol kinase | glycerol kinase 3 pseudogene
8130374	FBXO5	0.443	F-box protein 5
8114425	CDC25C	0.443	cell division cycle 25 homolog C (S. pombe) | family with sequence similarity 53, member C
8045423	SNORA40	0.444	small nucleolar RNA, H/ACA box 40 | TATA box binding protein (TBP)-associated factor, RNA polymerase I, D, 41kDa
8090577	MBD4	0.444	methyl-CpG binding domain protein 4
8108744	PCDHB14	0.444	protocadherin beta 14
7902023	RAVER2	0.445	ribonucleoprotein, PTB-binding 2
7994109	PLK1	0.445	polo-like kinase 1 (Drosophila)
7900699	CDC20	0.446	cell division cycle 20 homolog (S. cerevisiae)
8107408	KCNN2	0.446	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 2
8081362	CEP97	0.447	centrosomal protein 97kDa
8174092	ARMCX2	0.447	armadillo repeat containing, X-linked 2
7896759	LOC643837	0.447	
8034122	SPC24	0.447	
8084100	USP13	0.448	ubiquitin specific peptidase 13 (isopeptidase T-3)

7934122	SAR1A	0.448	SAR1 homolog A (S. cerevisiae)
8143663	EZH2	0.448	enhancer of zeste homolog 2 (Drosophila)
7908351	PLA2G4A	0.449	phospholipase A2, group IVA (cytosolic, calcium-dependent)
8147891	PKHD1L1	0.449	polycystic kidney and hepatic disease 1 (autosomal recessive)-like 1
7950374	P4HA3	0.451	prolyl 4-hydroxylase, alpha polypeptide III
8060736		0.451	
8021147	IER3IP1	0.451	immediate early response 3 interacting protein 1
8001658	C16orf80	0.452	chromosome 16 open reading frame 80
7931832	AKR1C2	0.452	aldo-keto reductase family 1, member C2 (dihydrodiol dehydrogenase 2; bile acid binding protein; 3-alpha hydroxysteroid dehydrogenase, type III)
8138108	KDELR2	0.452	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 2 | diacylglycerol lipase, beta
8151824	RAD54B	0.452	RAD54 homolog B (S. cerevisiae)
8171381	FANCB	0.452	Fanconi anemia, complementation group B
7962441	TWF1	0.452	twinfilin, actin-binding protein, homolog 1 (Drosophila)
8052845	TIA1	0.453	
8100085	GNPDA2	0.453	glucosamine-6-phosphate deaminase 2
8055913	PRPF40A	0.453	PRP40 pre-mRNA processing factor 40 homolog A (S. cerevisiae)
8128329	C6orf167	0.454	chromosome 6 open reading frame 167
8113666	SEMA6A	0.454	sema domain, transmembrane domain (TM), and cytoplasmic domain, (semaphorin) 6A
8106280	HMGCR	0.455	3-hydroxy-3-methylglutaryl-CoA reductase | 3-hydroxy-3-methylglutaryl-Coenzyme A reductase
8140620	PCLO	0.455	piccolo (presynaptic cytomatrix protein)
7985662	PDE8A	0.455	phosphodiesterase 8A
8068761	ABCG1	0.455	ATP-binding cassette, sub-family G (WHITE), member 1
7934920	LIPA	0.456	lipase A, lysosomal acid, cholesterol esterase
7979260	GMFB	0.456	glia maturation factor, beta
8104022	PDLIM3	0.456	PDZ and LIM domain 3
7968484	BRCA2	0.457	breast cancer 2, early onset
7991777	LOC10012947[illegible]	0.457	chromosome 4 open reading frame 46
8133030	GABPA	0.457	GA binding protein transcription factor, alpha subunit 60kDa
7926677	OTUD1	0.457	OTU domain containing 1

8055952	NR4A2	0.458	nuclear receptor subfamily 4, group A, member 2
8103695	MFAP3L	0.458	microfibrillar-associated protein 3-like
7983379		0.458	
7928318	CCDC109A	0.459	coiled-coil domain containing 109A
7916167	ORC1L	0.459	origin recognition complex, subunit 1-like (yeast)
7980983	MOAP1	0.459	modulator of apoptosis 1
8017964	ABCA6	0.460	ATP-binding cassette, sub-family A (ABC1), member 6
8071212	CDC45L	0.460	cell division cycle 45 homolog (S. cerevisiae) | CDC45 cell division cycle 45-like (S. cerevisiae)
7942964	TMEM135	0.460	transmembrane protein 135
7915682	ZSWIM5	0.461	zinc finger, SWIM-type containing 5
8013860	MYO18A	0.461	myosin XVIIIA | TGFB1-induced anti-apoptotic factor 1
8081758	GRAMD1C	0.461	GRAM domain containing 1C
7995354	ORC6L	0.461	origin recognition complex, subunit 6 like (yeast)
8083876	SKIL	0.461	SKI-like oncogene
7937915	RRM1	0.461	ribonucleotide reductase M1
8124388	HIST1H3B	0.461	histone cluster 1, H3b
8129763	FAM54A	0.461	family with sequence similarity 54, member A
8107375	YTHDC2	0.461	YTH domain containing 2
8090898	STAG1	0.461	stromal antigen 1
8052626	VPS54	0.462	vacuolar protein sorting 54 homolog (S. cerevisiae)
7968835	AKAP11	0.462	A kinase (PRKA) anchor protein 11
8146717	SGK3	0.462	serum/glucocorticoid regulated kinase family, member 3 | chromosome 8 open reading frame 44
8046555	HOXD4	0.463	homeobox D4
7987642	NDUFAF1	0.463	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, assembly factor 1
7955441	METTL7A	0.463	methyltransferase like 7A
8041383	LTBP1	0.463	latent transforming growth factor beta binding protein 1
8044766	INSIG2	0.463	insulin induced gene 2
7974166	FANCM	0.464	Fanconi anemia, complementation group M
8109912	KCNIP1	0.464	Kv channel interacting protein 1
7953943	GABARAPL1	0.464	GABA(A) receptor-associated protein like 1
8098512	C4orf41	0.464	chromosome 4 open reading frame 41

7969243	CKAP2	0.465	cytoskeleton associated protein 2
8014115	MYO1D	0.465	myosin ID
8033362	INSR	0.465	insulin receptor
7933821	RHOBTB1	0.466	Rho-related BTB domain containing 1
8142697	POT1	0.466	
7978748	FBXO33	0.466	F-box protein 33
8144228	FLJ36840	0.466	hypothetical LOC645524
7962358	YAF2	0.466	YY1 associated factor 2
7932326	CUBN	0.466	cubilin (intrinsic factor-cobalamin receptor)
7923516	CYB5R1	0.467	cytochrome b5 reductase 1
7989224	ADAM10	0.467	ADAM metallopeptidase domain 10
8106931	ANKRD32	0.468	ankyrin repeat domain 32
7956856	MSRB3	0.468	methionine sulfoxide reductase B3
8086028	GLB1	0.468	galactosidase, beta 1
8061579	TPX2	0.468	
7902425	ST6GALNAC3	0.468	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 3
8125825	NUDT3	0.468	nudix (nucleoside diphosphate linked moiety X)-type motif 3
8009096	ACE	0.469	angiotensin I converting enzyme (peptidyl-dipeptidase A) 1
8175531	CDR1	0.469	cerebellar degeneration-related protein 1, 34kDa | YTH domain containing 2
8121275		0.469	
8009457	PRKAR1A	0.469	protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1)
8112841	HOMER1	0.470	homer homolog 1 (Drosophila)
8052355	EFEMP1	0.470	EGF-containing fibulin-like extracellular matrix protein 1
8148501	PTP4A3	0.470	protein tyrosine phosphatase type IVA, member 3
8069565	BTG3	0.470	BTG family, member 3
8112807	ARSB	0.470	arylsulfatase B
7978628	PPP2R3C	0.470	protein phosphatase 2 (formerly 2A), regulatory subunit B", gamma
7970507		0.470	
7919591		0.470	family with sequence similarity 72, member D | family with sequence similarity 72, member A | family with sequence similarity 72, member B | family with sequence similarity 72, member C

8089372	KIAA1524	0.470	
8078834	WDR48	0.471	WD repeat domain 48
8130732	BRP44L	0.471	brain protein 44-like
8110589	CNOT6	0.471	CCR4-NOT transcription complex, subunit 6
7904048		0.471	
7915926	STIL	0.472	SCL/TAL1 interrupting locus
8046590	HNRNPA3	0.472	heterogeneous nuclear ribonucleoprotein A3 | heterogeneous nuclear ribonucleoprotein A3
8151890	TP53INP1	0.472	tumor protein p53 inducible nuclear protein 1
7911301	PGBD2	0.472	piggyBac transposable element derived 2
8120833	SH3BGRL2	0.473	SH3 domain binding glutamic acid-rich protein like 2
8083941	ECT2	0.473	epithelial cell transforming sequence 2 oncogene
7962013	ERGIC2	0.473	ERGIC and golgi 2
8048864	CCL20	0.473	chemokine (C-C motif) ligand 20
7904106	MAGI3	0.473	membrane associated guanylate kinase, WW and PDZ domain containing 3
8070010	SYNJ1	0.473	synaptojanin 1
8098103	FNIP2	0.473	folliculin interacting protein 2
7903032	MTF2	0.474	metal response element binding transcription factor 2
8098041	TMEM144	0.474	transmembrane protein 144
7959408	KNTC1	0.474	kinetochore associated 1
8049435	SH3BP4	0.474	SH3-domain binding protein 4
7996219	NDRG4	0.474	NDRG family member 4
8163775	MEGF9	0.474	multiple EGF-like-domains 9
8173206	LOC645251	0.474	
7924096	NEK2	0.475	NIMA (never in mitosis gene a)-related kinase 2
7905731		0.475	
8046680	PLEKHA3	0.475	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 3
8098328	GALNT7	0.475	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 7 (GalNAc-
7974870	SNAPC1	0.475	small nuclear RNA activating complex, polypeptide 1, 43kDa
8010354	GAA	0.475	glucosidase, alpha; acid
7995907	CETP	0.475	cholesteryl ester transfer protein, plasma
8083352	SELT	0.476	selenoprotein T

8174664		0.476	
8106923	NR2F1	0.476	nuclear receptor subfamily 2, group F, member 1
8102389	C4orf21	0.476	chromosome 4 open reading frame 21
7948995	ATL3	0.476	atlastin GTPase 3
7900167	CDCA8	0.476	cell division cycle associated 8
8130811	C6orf123	0.477	chromosome 6 open reading frame 123 | hypothetical LOC441179
8130982	C6orf123	0.477	chromosome 6 open reading frame 123 | hypothetical LOC441179
8026381	LOC10012911[illegible]	0.477	similar to transmembrane protein 167A
7962212	PKP2	0.477	plakophilin 2
7978407	PRKD1	0.477	protein kinase D1
8070341	BRWD1	0.478	bromodomain and WD repeat domain containing 1
8040440	GEN1	0.478	Gen homolog 1, endonuclease (Drosophila)
8121031	SLC35A1	0.478	solute carrier family 35 (CMP-sialic acid transporter), member A1
7927082	HSD17B7P2	0.478	hydroxysteroid (17-beta) dehydrogenase 7 pseudogene 2
7968658	EXOSC8	0.478	exosome component 8
8122222	PDE7B	0.478	phosphodiesterase 7B
7978492	HEATR5A	0.478	HEAT repeat containing 5A
8113083	FAM172A	0.479	family with sequence similarity 172, member A
7977077	MARK3	0.479	MAP/microtubule affinity-regulating kinase 3
8101260	ANTXR2	0.479	anthrax toxin receptor 2
7976621	VRK1	0.479	vaccinia related kinase 1
8117194	MRS2	0.479	
7966878	CIT	0.480	citron (rho-interacting, serine/threonine kinase 21)
8131881	C7orf46	0.480	chromosome 7 open reading frame 46
7903049	CCDC18	0.480	coiled-coil domain containing 18
8134091	CLDN12	0.481	claudin 12
8112327	CKS1B	0.481	CDC28 protein kinase regulatory subunit 1B | CDC28 protein kinase regulatory subunit 1B
8089875	POLQ	0.481	polymerase (DNA directed), theta
8027260	ZNF486	0.482	zinc finger protein 486 | zinc finger protein 93
8056102	CD302	0.482	
8124524	HIST1H2AK	0.482	histone cluster 1, H2ak | histone cluster 1, H2bn

8109938	RANBP17	0.482	RAN binding protein 17
7949412	LTBP3	0.482	latent transforming growth factor beta binding protein 3
8058063	RFTN2	0.483	raftlin family member 2
7967870	RP11-484H12.(	0.483	
8066136	RBL1	0.484	retinoblastoma-like 1 (p107)
8111922	LOC648987	0.484	
8059687		0.484	
8000003	THUMPD1	0.484	THUMP domain containing 1
7936637	SNORA19	0.484	small nucleolar RNA, H/ACA box 19
7988970	KIAA1370	0.484	
7957737	TMPO	0.484	thymopoietin
7979250	CNIH	0.485	cornichon homolog (Drosophila)
8081375	FAM55C	0.485	family with sequence similarity 55, member C
8156199	DAPK1	0.485	death-associated protein kinase 1
8122982	ZDHHC14	0.485	zinc finger, DHHC-type containing 14
8163964	PDCL	0.485	phosducin-like
8141395	MCM7	0.485	minichromosome maintenance complex component 7
7962489	PLEKHA9	0.486	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 9 | pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 8
8058695	BARD1	0.486	BRCA1 associated RING domain 1
7961503	C12orf69	0.486	chromosome 12 open reading frame 69
8109639	PTTG1	0.487	pituitary tumor-transforming 1
7901052	SNORD38B	0.487	small nucleolar RNA, C/D box 38B
7899627	TINAGL1	0.487	tubulointerstitial nephritis antigen-like 1
8083119	RNF7	0.487	ring finger protein 7
8172022	TMEM47	0.487	transmembrane protein 47
8176276	ATRX	0.487	alpha thalassemia/mental retardation syndrome X-linked (RAD54 homolog, S. cerevisiae)
8113433	EFNA5	0.487	ephrin-A5
7932964	C1D	0.488	
8038952	ZNF616	0.488	zinc finger protein 616
7957536	NUDT4	0.488	nudix (nucleoside diphosphate linked moiety X)-type motif 4

7903022	SNORD21	0.488	small nucleolar RNA, C/D box 21
7960730	LPCAT3	0.489	lysophosphatidylcholine acyltransferase 3
8061171	POLR3F	0.489	polymerase (RNA) III (DNA directed) polypeptide F, 39 kDa | chromosome 20 open reading frame
7903227	PALMD	0.489	palmdelphin
8124040	ATXN1	0.489	ataxin 1
7963631	RARG	0.489	retinoic acid receptor, gamma
8086077	CLASP2	0.489	cytoplasmic linker associated protein 2
8032509	GNG7	0.490	guanine nucleotide binding protein (G protein), gamma 7
8078386	GPD1L	0.490	glycerol-3-phosphate dehydrogenase 1-like
8044804	DBI	0.490	diazepam binding inhibitor (GABA receptor modulator, acyl-CoA binding protein) | diazepam binding inhibitor (GABA receptor modulator, acyl-Coenzyme A binding protein)
7995580		0.490	
7993167	ATF7IP2	0.490	activating transcription factor 7 interacting protein 2
8110055	CPEB4	0.490	cytoplasmic polyadenylation element binding protein 4
7965956	NFYB	0.491	nuclear transcription factor Y, beta
7973084	ANG	0.491	angiogenin, ribonuclease, RNase A family, 5 | ribonuclease, RNase A family, 4
7982663	BUB1B	0.491	budding uninhibited by benzimidazoles 1 homolog beta (yeast) | p21 protein (Cdc42/Rac)-activated kinase 6
7931754	IDI1	0.491	isopentenyl-diphosphate delta isomerase 1
8107164	HISPPD1	0.492	diphosphoinositol pentakisphosphate kinase 2 | histidine acid phosphatase domain containing 1
7930614	NHLRC2	0.492	NHL repeat containing 2
8022009	METTL4	0.492	methyltransferase like 4
8112376	CENPK	0.492	centromere protein K
8105579	IPO11	0.493	leucine rich repeat containing 70 | importin 11
7902874	LRRC8C	0.493	leucine rich repeat containing 8 family, member C
7903565	GPSM2	0.493	G-protein signaling modulator 2 (AGS3-like, C. elegans) | chloride channel CLIC-like 1
7997272	GABARAPL2	0.493	GABA(A) receptor-associated protein-like 2
7928189	UNC5B	0.493	unc-5 homolog B (C. elegans)
8112967	TMEM167A	0.493	transmembrane protein 167A
8130176	ULBP3	0.494	UL16 binding protein 3
7932966	ITGB1	0.494	integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)

8098348	KIAA1712	0.495	KIAA1712 | F-box protein 8
8037205	CEACAM1	0.495	carcinoembryonic antigen-related cell adhesion molecule 1 (biliary glycoprotein)
8105647	C5orf44	0.496	chromosome 5 open reading frame 44
8130474	SERAC1	0.496	serine active site containing 1
7924107	LPGAT1	0.496	lysophosphatidylglycerol acyltransferase 1
7969129	PHF11	0.496	PHD finger protein 11
8055426	MCM6	0.496	minichromosome maintenance complex component 6
7969330	PCDH17	0.496	protocadherin 17
7961026	OVOS	0.497	ovostatin | ovostatin 2 | similar to hCG38149
7962327	SLC2A13	0.497	solute carrier family 2 (facilitated glucose transporter), member 13
7980438	SPTLC2	0.497	serine palmitoyltransferase, long chain base subunit 2
7931168	ACADSB	0.497	acyl-CoA dehydrogenase, short/branched chain | acyl-Coenzyme A dehydrogenase, short/branched chain
7953873	OVOS2	0.497	ovostatin | ovostatin 2 | similar to hCG38149
7937039	EBF3	0.498	early B-cell factor 3
7957417	TMTC2	0.498	transmembrane and tetratricopeptide repeat containing 2
8009476	MAP2K6	0.498	mitogen-activated protein kinase kinase 6
8104035	SORBS2	0.498	sorbin and SH3 domain containing 2
7910398	SPHAR	0.498	RAB4A, member RAS oncogene family | S-phase response (cyclin related)
8173208	SPIN4	0.498	spindlin family, member 4
8022251	PPP4R1	0.498	protein phosphatase 4, regulatory subunit 1
8047692	CTLA4	0.498	cytotoxic T-lymphocyte-associated protein 4
8105153	NNT	0.499	nicotinamide nucleotide transhydrogenase
8001178	C16orf87	0.499	chromosome 16 open reading frame 87
7933204	C10orf10	0.499	chromosome 10 open reading frame 10
8152606	SNTB1	0.499	syntrophin, beta 1 (dystrophin-associated protein A1, 59kDa, basic component 1)
8144281	ARHGEF10	0.499	Rho guanine nucleotide exchange factor (GEF) 10
8016463	HOXB6	0.499	homeobox B6
8138977	DPY19L1	0.500	dpy-19-like 1 (C. elegans)

Upregulated genes

Probe ID	Gene Symbol	Fold Change (siProx1/siContro	Gene Description
8100310		8.816	
8151605	REXO1L1	8.204	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151613		8.204	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151617	REXO1L1	8.204	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151621	REXO1L1	8.204	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151625	REXO1L1	8.204	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8072678	HMOX1	8.035	heme oxygenase (decycling) 1
7970392		7.810	
8100308		7.456	
8095005	CWH43	6.660	cell wall biogenesis 43 C-terminal homolog (S. cerevisiae)
8094134	USP17L6P	6.480	ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17
8134429		5.388	
7912802	LOC440570	5.317	hypothetical LOC100132147 | hypothetical LOC440570
8149953		5.279	
8161444		5.109	
7982084	SNRPN	4.885	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-38 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-30 | small nuclear ribonucleoprotein polypeptide N
8116571		4.820	
7970793	SLC46A3	4.626	solute carrier family 46, member 3
7971461	LCP1	4.582	lymphocyte cytosolic protein 1 (L-plastin)
7919580	LOC440570	4.554	

7919596	LOC440570	4.554	
8155493		4.518	
8155519		4.518	
8155567		4.518	
8161429		4.518	
8161440		4.518	
8167560	GAGE13	4.439	G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12G | G antigen 12H | G antigen 12J | G antigen 13 | G antigen 2A | G antigen 2E | G antigen 6 | G antigen 8 | G antigen 12B | G antigen 10 | G antigen 7 | G antigen 12I | G antigen 12F | G antigen 2C
8105989	FLJ40092	4.431	similar to Putative POM121-like protein 1-like
8151609	REXO1L1	4.375	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1 | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene)
7928429	PLAU	4.343	plasminogen activator, urokinase | chromosome 10 open reading frame 55
8105935	FLJ40092	4.321	similar to Putative POM121-like protein 1-like
7938291	SNORA3	4.159	small nucleolar RNA, H/ACA box 3
7982090	SNORD115-1	3.936	small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-30 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box
7982248		3.913	

7982028	SNORD115-1	3.872	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21 | HBII-52-24 snoRNA | small nuclear ribonucleoprotein polypeptide N
7982064	SNORD115-1	3.872	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21 | HBII-52-24 snoRNA | small nuclear ribonucleoprotein polypeptide N

7982078	SNORD115-1	3.872	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-15 | HBII-52-24 snoRNA | small
7982092	SNORD115-1	3.872	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | HBII-52-24 snoRNA | small nuclear ribonucleoprotein polypeptide N
7987135	SNORD115-1	3.864	small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-6 | small nuclear ribonucleoprotein

7982018	SNORD115-1	3.832	small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-30 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-14 | HBII-52-24 snoRNA
7982050	SNRPN	3.787	small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-7 | small nuclear ribonucleoprotein
7982016	SNORD115-1	3.780	small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-25 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21 | HBII-52-24 snoRNA | small nuclear ribonucleoprotein polypeptide N

7982024	SNORD115-1	3.780	small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-25 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA. C/D box 115-15 | small nucleolar RNA. C/D box 115-21 | HBII-52-24 snoRNA | small
7982030	SNORD115-1	3.780	small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-3 | small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-25 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-44 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nucleolar RNA, C/D box 115-6 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA. C/D box 115-15 | small nucleolar RNA. C/D box 115-21 | HBII-52-24 snoRNA | small
7982269		3.707	
7987025		3.707	
8071049	LOC51152	3.702	melanoma antigen
8094130	USP17L6P	3.656	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
7920873	SNORA42	3.643	small nucleolar RNA, H/ACA box 42
7980233	PGF	3.633	placental growth factor

8094122	USP17L6P	3.597	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
7982046	SNRPN	3.591	small nucleolar RNA, C/D box 115-20 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-22 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-17 | small nucleolar RNA, C/D box 115-18 | small nucleolar RNA, C/D box 115-19 | small nucleolar RNA, C/D box 115-25 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-15 | small nucleolar RNA, C/D box 115-21
8094116	CPZ	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094118	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094120	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094124	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094126	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094128	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8094132	USP17L6P	3.585	ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 2 | similar to deubiquitinating enzyme 3
8066619	PLTP	3.558	phospholipid transfer protein
8112476	FLJ40092	3.557	similar to Putative POM121-like protein 1-like
7967702		3.517	
8175016	APLN	3.506	apelin
8071042		3.498	
8102787		3.497	
8120602	OGFRL1	3.457	opioid growth factor receptor-like 1

7976642		3.362	
7990564		3.356	
8054712	IL1A	3.332	interleukin 1, alpha
7951271	MMP1	3.318	matrix metallopeptidase 1 (interstitial collagenase)
8051573	CDC42EP3	3.306	CDC42 effector protein (Rho GTPase binding) 3
7977615	RNASE1	3.250	ribonuclease, RNase A family, 1 (pancreatic)
7938746	MRGPRX4	3.244	MAS-related GPR, member X4
7919155		3.176	
7919405		3.176	
7982008	SNORD115-1	3.142	small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nuclear
7982032	SNORD115-1	3.142	small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-5 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-10 | small nucleolar RNA, C/D box 115-14 | small nucleolar RNA, C/D box 115-21 | small nucleolar RNA, C/D box 115-4 | small nucleolar RNA, C/D box 115-42 | small nuclear ribonucleoprotein polypeptide N
7982038	SNORD115-1	3.142	small nucleolar RNA, C/D box 115-1 | small nucleolar RNA, C/D box 115-13 | small nucleolar RNA, C/D box 115-16 | small nucleolar RNA, C/D box 115-11 | small nucleolar RNA, C/D box 115-12 | small nucleolar RNA, C/D box 115-26 | small nucleolar RNA, C/D box 115-29 | small nucleolar RNA, C/D box 115-36 | small nucleolar RNA, C/D box 115-39 | small nucleolar RNA, C/D box 115-40 | small nucleolar RNA, C/D box 115-41 | small nucleolar RNA, C/D box 115-43 | small nucleolar RNA, C/D box 115-9 | small nucleolar RNA, C/D box 115-21 | small nucleolar RNA, C/D box 115-34 | small nucleolar RNA, C/D box 115-6 | small nuclear ribonucleoprotein
8112519	FLJ40092	3.105	similar to Putative POM121-like protein 1-like
8019804	ROCK1	3.078	Rho-associated, coiled-coil containing protein kinase 1 pseudogene 1
8131803	IL6	3.024	interleukin 6 (interferon, beta 2)

7898375	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | glutathione S-transferase mu 2 (muscle)
7898411	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | glutathione S-transferase mu 2 (muscle)
7912800	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | glutathione S-transferase mu 2 (muscle)
7912850	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | glutathione S-transferase mu 2 (muscle)
7919576	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | glutathione S-transferase mu 2 (muscle)
7973896	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | RNA, U1 small nuclear 9 | glutathione S-transferase mu 2 (muscle)
7978568	RNU1A	2.997	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | RNA, U1 small nuclear 9 | glutathione S-transferase mu 2 (muscle)
7898407	LOC440570	2.984	hypothetical LOC100132147 | hypothetical LOC440570
8165658	ND2	2.972	
8151631	REXO1L2P	2.969	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151627	REXO1L1	2.949	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene)
8095021	SPATA18	2.944	spermatogenesis associated 18 homolog (rat)
8027884		2.930	
7911343	UIMC1	2.898	ubiquitin interaction motif containing 1
8165703	UIMC1	2.898	ubiquitin interaction motif containing 1
8157105	ZNF462	2.890	zinc finger protein 462

8135033		2.888	mucin 12, cell surface associated
8163936	LHX6	2.878	LIM homeobox 6
8151619	REXO1L1	2.876	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151615	REXO1L2P	2.869	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene)
7996081	GPR56	2.844	G protein-coupled receptor 56
8144397	USP17L2	2.842	ubiquitin specific peptidase 17-like 2 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17-like 1 (pseudogene) | ubiquitin specific peptidase 17-like 4 | ubiquitin specific peptidase 17-like 8 | ubiquitin specific peptidase 17-like 3 | ubiquitin specific peptidase 17 | similar to deubiquitinating enzyme 3
8149241	USP17L2	2.842	ubiquitin specific peptidase 17-like 2 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 1 (pseudogene) | ubiquitin specific peptidase 17-like 4 | ubiquitin specific peptidase 17-like 8 | ubiquitin specific peptidase 17-like 3 | similar to deubiquitinating enzyme 3
7920278	S100A3	2.842	S100 calcium binding protein A3
8141726		2.828	
8173444	IL2RG	2.817	interleukin 2 receptor, gamma (severe combined immunodeficiency)
7896748		2.811	
7896744	OR4F16	2.807	olfactory receptor, family 4, subfamily F, member 16 | olfactory receptor, family 4, subfamily F, member 29 | olfactory receptor, family 4, subfamily F, member 3 | olfactory receptor, family 4, subfamily F, member 21
7911345	OR4F16	2.807	olfactory receptor, family 4, subfamily F, member 16 | olfactory receptor, family 4, subfamily F, member 29 | olfactory receptor, family 4, subfamily F, member 3 | olfactory receptor, family 4, subfamily F, member 21
8110672	OR4F16	2.807	olfactory receptor, family 4, subfamily F, member 16 | olfactory receptor, family 4, subfamily F, member 29 | olfactory receptor, family 4, subfamily F, member 3 | olfactory receptor, family 4, subfamily F, member 21
7919269	RNU1A	2.806	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 6 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | RNA, U1 small nuclear 9 | glutathione S-transferase mu 2 (muscle)

7919349	RNU1A	2.806	RNA, U1 small nuclear 1 | RNA, U1 small nuclear 2 | RNA, U1 small nuclear 3 | RNA, U1 small nuclear 4 | RNA, U1 small nuclear 5 | RNA, U1 small nuclear 6 | RNA, U1 small nuclear 7 | RNA, U1 small nuclear 8 | RNA, U1 small nuclear 9 | glutathione S-transferase mu 2 (muscle)
8118734	ITPR3	2.805	inositol 1,4,5-triphosphate receptor, type 3
8074991	GGT5	2.802	gamma-glutamyltransferase 5
8101131	CXCL11	2.800	chemokine (C-X-C motif) ligand 11
8149356	USP17L2	2.794	ubiquitin specific peptidase 17-like 2 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 1 (pseudogene) | ubiquitin specific peptidase 17-like 3 | ubiquitin specific peptidase 17-like 4 | ubiquitin specific peptidase 17-like 8 | similar to deubiquitinating enzyme 3
7986635	OR11K1P	2.777	
8176570	DUX4	2.775	double homeobox, 4-like | FSHD region gene 2 family, member C
8148962	OR4F21	2.766	olfactory receptor, family 4, subfamily F, member 21 | olfactory receptor, family 4, subfamily F, member 16 | olfactory receptor, family 4, subfamily F, member 29 | olfactory receptor, family 4, subfamily F, member 3
8114363		2.753	
8092392	KLHL6	2.743	kelch-like 6 (Drosophila)
7937037		2.740	
8151603	REXO1L2P	2.739	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151607	REXO1L1	2.739	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
8151623	REXO1L2P	2.739	REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 2 (pseudogene) | REX1, RNA exonuclease 1 homolog (S. cerevisiae)-like 1
7912157	ERRFI1	2.734	ERBB receptor feedback inhibitor 1
8018975	LGALS3BP	2.728	lectin, galactoside-binding, soluble, 3 binding protein
8105987	FLJ40092	2.726	similar to Putative POM121-like protein 1-like
7904478	LOC51152	2.718	melanoma antigen
7912145	TNFRSF9	2.713	tumor necrosis factor receptor superfamily, member 9
8035351	JAK3	2.686	Janus kinase 3
8172781	SSX7	2.654	synovial sarcoma, X breakpoint 7

8167482	GAGE4	2.651	G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 4 | G antigen 12J | G antigen 12I | G antigen 5 | G antigen 7 | G antigen 12B | G antigen 12G | G antigen 2B | G antigen 2C | G antigen 2D | G antigen 6 | G antigen 2E | G antigen 8 | G antigen 10 | G antigen 13 | G
8167562	GAGE13	2.651	G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 12J | G antigen 12B | G antigen 4 | G antigen 12G | G antigen 5 | G antigen 6 | G antigen 2A | G antigen 2E | G antigen 8 | G antigen 13 | G antigen 7 | G antigen 2C | G antigen 2D | G antigen 2B | G antigen 12I | G antigen 12F | G antigen 10
8144420	LOC349196	2.647	
8144494	LOC349196	2.647	
8163618	TNFSF15	2.643	tumor necrosis factor (ligand) superfamily, member 15
8161433		2.640	
8144395	USP17L2	2.639	ubiquitin specific peptidase 17-like 2 | ubiquitin specific peptidase 17-like 6 (pseudogene) | ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 1 (pseudogene) | ubiquitin specific peptidase 17-like 3 | ubiquitin specific peptidase 17-like 4 | ubiquitin specific peptidase 17-like 8 | similar to deubiquitinating enzyme 3
8149228		2.630	
8176572	DUX4	2.629	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
7982094	SNRPN	2.621	small nucleolar RNA, C/D box 115-44
7997942	CPNE7	2.620	copine VII
8149216	LOC349196	2.617	
8134403		2.609	
7931665	DUX4	2.607	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
8166509	FAM48B2	2.605	family with sequence similarity 48, member B2 | family with sequence similarity 48, member B1
8171844	FAM48B2	2.605	family with sequence similarity 48, member B2 | family with sequence similarity 48, member B1
7984475	CORO2B	2.603	coronin, actin binding protein, 2B
8150537	SLC20A2	2.597	solute carrier family 20 (phosphate transporter), member 2
8123006	SYNJ2	2.593	synaptojanin 2
7931656	DUX4	2.591	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
7931659	DUX4	2.591	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
7931662	DUX4	2.591	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
7931668	DUX4	2.591	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C

7931671	DUX4	2.591	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
8149243	USP17L2	2.590	ubiquitin specific peptidase 17-like 2 | ubiquitin specific peptidase 17 | ubiquitin specific peptidase 17-like 1 (pseudogene) | ubiquitin specific peptidase 17-like 3 | ubiquitin specific peptidase 17-like 4 | ubiquitin specific peptidase 17-like 8 | similar to deubiquitinating enzyme 3
8149218	LOC349196	2.585	
8149220	LOC349196	2.585	
8149222	LOC349196	2.585	
8149224	LOC349196	2.585	
8149226	LOC349196	2.585	
8144416	LOC349196	2.585	
8144418	LOC349196	2.585	
8144490	LOC349196	2.585	
8144492	LOC349196	2.585	
7937335	IFITM1	2.584	interferon induced transmembrane protein 1 (9-27)
8040742	MAPRE3	2.579	microtubule-associated protein, RP/EB family, member 3
8167508	GAGE13	2.578	G antigen 12J | G antigen 12B | G antigen 6 | G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 13 | G antigen 2E | G antigen 8 | G antigen 12G | G antigen 2D | G antigen 2A | G antigen 2B | G antigen 2C | G antigen 4 | G antigen 12I | G antigen 7 | G antigen 12F | G antigen 5 | G antigen 10 | G antigen 1
8149153	LOC349196	2.569	
8149157	LOC349196	2.569	
8167577	GAGE13	2.568	G antigen 12G | G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 12J | G antigen 12B | G antigen 4 | G antigen 5 | G antigen 6 | G antigen 12I | G antigen 2A | G antigen 7 | G antigen 12F | G antigen 13 | G antigen 2E | G antigen 8 | G antigen 2C | G antigen 2D | G antigen 2B | G antigen 10 | G antigen 1
8167584	GAGE13	2.568	G antigen 12G | G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 12J | G antigen 12B | G antigen 4 | G antigen 5 | G antigen 6 | G antigen 12I | G antigen 2A | G antigen 7 | G antigen 13 | G antigen 2E | G antigen 8 | G antigen 2C | G antigen 2D | G antigen 2B | G antigen 12F | G antigen 10 | G antigen 1
8052674		2.567	
8098725	DUX4	2.563	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C

8142452	TFEC	2.560	transcription factor EC
8149165	LOC349196	2.558	
8149167	LOC349196	2.558	
7924069		2.556	
8144410	LOC349196	2.554	
8149345	CTSB	2.530	cathepsin B
8151709		2.530	
7957260	GLIPR1	2.524	GLI pathogenesis-related 1 | KRR1, small subunit (SSU) processome component, homolog (yeast)
8128123	RRAGD	2.521	Ras-related GTP binding D
7976443	IFI27	2.520	interferon, alpha-inducible protein 27
8095214		2.515	
8149161	LOC349196	2.513	
8149210	LOC349196	2.513	
8160297	PLIN2	2.512	perilipin 2
8099805		2.508	
8085114		2.500	
8144412	LOC349196	2.498	
8144414	LOC349196	2.498	
8157231		2.494	
8022870		2.493	
8073068	APOBEC3C	2.480	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3C | apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3D
8149208	OR7E125P	2.473	olfactory receptor, family 7, subfamily E, member 125 pseudogene | olfactory receptor, family 7, subfamily E, member 87 pseudogene | similar to olfactory receptor 873
7985918		2.472	
8111214		2.462	similar to TBP-associated factor 11
7919324		2.458	
7960896	LOC650293	2.447	olfactory receptor, family 7, subfamily E, member 87 pseudogene | olfactory receptor, family 7, subfamily E, member 125 pseudogene | similar to olfactory receptor 873
7904429	HSD3B1	2.443	3-beta-hydroxysteroid dehydrogenase, tissue-type heart
7960898	OR7E125P	2.443	

8149151	LOC349196	2.438	
8149214	LOC349196	2.438	
8095986	ANXA3	2.435	annexin A3
8066027		2.431	
8010186		2.425	
8098730	DUX4	2.423	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
8098743	DUX4	2.423	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C
7919578	ATG9B	2.398	glutathione S-transferase mu 2 (muscle)
8037614	GPR4	2.398	G protein-coupled receptor 4
8098732	DUX4	2.396	double homeobox, 4 | double homeobox, 4-like | double homeobox, 2 | FSHD region gene 2 family, member C
7981724		2.395	immunoglobulin heavy constant delta | immunoglobulin heavy constant gamma 1 (G1m marker) | hypothetical protein LOC100292999
8011713	CXCL16	2.395	chemokine (C-X-C motif) ligand 16
7953735		2.392	
8098740	DUX4	2.382	double homeobox, 4 | double homeobox, 4-like | double homeobox, 2 | FSHD region gene 2 family, member C
8099841	TLR6	2.378	toll-like receptor 6
8167526	GAGE13	2.373	G antigen 12J | G antigen 6 | G antigen 2A | G antigen 2E | G antigen 8 | G antigen 13 | G antigen 12G | G antigen 4 | G antigen 2C | G antigen 2D | G antigen 12B | G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12H | G antigen 2B | G antigen 5 | G antigen 12I | G antigen 7 | G
8008388	SPATA20	2.366	spermatogenesis associated 20
7986517		2.363	dynamin 1 pseudogene | similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
7986522		2.363	dynamin 1 pseudogene | similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
8071272	GP1BB	2.360	glycoprotein Ib (platelet), beta polypeptide
8154245	PDCD1LG2	2.359	programmed cell death 1 ligand 2
7986509	LOC441734	2.358	dynamin 1 pseudogene | similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
7986512		2.358	similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
7986527	C15orf51	2.358	similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
7986520		2.356	dynamin 1 pseudogene | similar to dynamin 1 | similar to hypothetical protein DKFZp434I1020
7979710	PLEK2	2.348	pleckstrin 2

7917180		2.348	
7985999		2.346	
7973006	OR4H12P	2.334	olfactory receptor, family 4, subfamily H, member 12 pseudogene
8080013	MAPKAPK3	2.332	mitogen-activated protein kinase-activated protein kinase 3
8139943	SPDYE7P	2.326	speedy homolog E7 (Xenopus laevis), pseudogene
8089082	DCBLD2	2.325	discoidin, CUB and LCCL domain containing 2
7902541	IFI44L	2.325	interferon-induced protein 44-like
7962183	AK3L1	2.324	adenylate kinase 3-like 1
8155453	LOC10012903(	2.324	hypothetical protein LOC100289385 | hypothetical LOC100132883
8161375	LOC10012903(	2.324	hypothetical protein LOC100289385 | hypothetical LOC100132883
8089232		2.320	
8144422	LOC349196	2.307	olfactory receptor, family 7, subfamily E, member 125 pseudogene | similar to olfactory receptor
8008454	ABCC3	2.306	ATP-binding cassette, sub-family C (CFTR/MRP), member 3
8155596		2.301	
8113120		2.301	microRNA 1974 | transducer of ERBB2, 2
8165707		2.301	microRNA 1974 | transducer of ERBB2, 2
8115884		2.299	
7981046	IFI27L2	2.292	interferon, alpha-inducible protein 27-like 2
8072360	TCN2	2.289	transcobalamin II | transcobalamin II; macrocytic anemia
7989195		2.288	
8149148	OR7E125P	2.285	olfactory receptor, family 7, subfamily E, member 125 pseudogene | olfactory receptor, family 7, subfamily E, member 87 pseudogene | similar to olfactory receptor 873
7984620		2.276	
7898112		2.266	
8135363	PIK3CG	2.258	phosphoinositide-3-kinase, catalytic, gamma polypeptide
8165672		2.257	replication factor C (activator 1) 1, 145kDa
7944867		2.250	sialic acid acetylesterase
7950370		2.248	
8144488	LOC729346	2.247	
8144496	LOC349196	2.246	olfactory receptor, family 7, subfamily E, member 125 pseudogene | similar to olfactory receptor

7986598	GOLGA6L1	2.244	golgin A6 family-like 1 | golgi autoantigen, golgin subfamily a-like | hypothetical LOC645202 | golgin A6 family-like 6 | transmembrane domain-containing protein ENSP00000320207-like | Putative golgin subfamily A member 6-like protein 6
8165663		2.242	glycerol-3-phosphate acyltransferase, mitochondrial
8063345	SNORD12C	2.241	small nucleolar RNA, C/D box 12C
8083594	PTX3	2.234	pentraxin 3, long | pentraxin-related gene, rapidly induced by IL-1 beta
8107857		2.234	
8054513	LOC151009	2.234	hypothetical LOC151009 | hypothetical protein LOC440894
8009301	PRKCA	2.227	protein kinase C, alpha
7986736	LOC100132025	2.226	golgin A6 family-like 1 | golgi autoantigen, golgin subfamily a-like | hypothetical LOC645202 | golgin A6 family-like 6 | transmembrane domain-containing protein ENSP00000320207-like
8168463	FGF16	2.220	fibroblast growth factor 16
7986741	GOLGA6L1	2.219	golgin A6 family-like 1 | golgi autoantigen, golgin subfamily a-like | hypothetical LOC645202 | golgin A6 family-like 6 | transmembrane domain-containing protein ENSP00000320207-like | Putative golgin subfamily A member 6-like protein 6
8145134		2.218	
7981777	LOC400968	2.217	
7961418		2.205	
7905025	DRD5	2.204	dopamine receptor D5
7981722	IGHA1	2.204	immunoglobulin heavy constant alpha 1 | immunoglobulin heavy constant gamma 1 (G1m marker)
8104122	TUBB4Q	2.203	double homeobox, 4 | double homeobox, 4-like | FSHD region gene 2 family, member C | double homeobox 4c
7896750		2.196	glycerol-3-phosphate acyltransferase, mitochondrial
7982254		2.196	
7987110		2.196	
8037374	PLAUR	2.193	plasminogen activator, urokinase receptor
8167573	GAGE13	2.190	G antigen 1 | G antigen 12B | G antigen 12C | G antigen 12D | G antigen 12E | G antigen 12G | G antigen 12H | G antigen 12J | G antigen 13 | G antigen 2A | G antigen 2B | G antigen 2C | G antigen 2D | G antigen 4 | G antigen 6 | G antigen 2E | G antigen 5 | G antigen 8 | G antigen 12I | G antigen 7 | G antigen 12F
7965322	KITLG	2.189	KIT ligand

8149396	LOC442381	2.187	similar to seven transmembrane helix receptor
7982020	SNRPN	2.186	small nucleolar RNA, C/D box 115-7 | small nuclear ribonucleoprotein polypeptide N
8174983		2.181	
7963313	GALNT6	2.180	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase 6 (GalNAc-
8165709		2.173	
8076424	CYP2D6	2.173	cytochrome P450, family 2, subfamily D, polypeptide 6
7913185		2.169	
8079153	ABHD5	2.168	abhydrolase domain containing 5
7975457		2.164	
7981750	LOC400968	2.157	
7994265		2.157	
7977046	TNFAIP2	2.156	tumor necrosis factor, alpha-induced protein 2
8117718	OR2J3	2.149	olfactory receptor, family 2, subfamily J, member 3
8004219		2.146	
7942274	OR7E87P	2.143	olfactory receptor, family 7, subfamily E, member 87 pseudogene
7977450	OR11H1	2.142	olfactory receptor, family 11, subfamily H, member 1 | olfactory receptor, family 11, subfamily H, member 12 | olfactory receptor, family 11, subfamily H, member 2
7971996		2.142	
8141206	BAIAP2L1	2.141	BAI1-associated protein 2-like 1
7901852		2.140	
7903592	KIAA1324	2.139	
8156599		2.136	
8098326		2.136	
8128939	TRAF3IP2	2.136	TRAF3 interacting protein 2
8053057		2.132	
7936673	RGS10	2.130	regulator of G-protein signaling 10
8155754	MAMDC2	2.127	MAM domain containing 2
8147777	CTHRC1	2.127	collagen triple helix repeat containing 1
7952810	IGSF9B	2.126	immunoglobulin superfamily, member 9B
8000480		2.125	
7902400	SNORD45B	2.120	small nucleolar RNA, C/D box 45B | Rab geranylgeranyltransferase, beta subunit

8113356		2.120	glycerol-3-phosphate acyltransferase, mitochondrial
8144424	FAM90A1	2.119	family with sequence similarity 90, member A13 | family with sequence similarity 90, member A14 | family with sequence similarity 90, member A18 | family with sequence similarity 90, member A19 | family with sequence similarity 90, member A5 | family with sequence similarity 90, member A8 | family with sequence similarity 90, member A9 | family with sequence similarity 90, member A7 | family with sequence similarity 90, member A10 | family with sequence similarity 90, member A20 | family with sequence similarity 90, member A1 | family with sequence similarity 90, member A23 pseudogene | family with sequence similarity 90, member A15 | family with sequence similarity 90, member A24 (pseudogene) | family with sequence similarity 90, member A3 | family with sequence similarity 90, member A22 pseudogene | family with sequence similarity 90 pseudogene | hypothetical protein LOC100287045
8144440	FAM90A1	2.119	family with sequence similarity 90, member A13 | family with sequence similarity 90, member A14 | family with sequence similarity 90, member A18 | family with sequence similarity 90, member A19 | family with sequence similarity 90, member A5 | family with sequence similarity 90, member A8 | family with sequence similarity 90, member A9 | family with sequence similarity 90, member A7 | family with sequence similarity 90, member A10 | family with sequence similarity 90, member A20 | family with sequence similarity 90, member A1 | family with sequence similarity 90, member A23 pseudogene | family with sequence similarity 90, member A15 | family with sequence similarity 90, member A24 (pseudogene) | family with sequence similarity 90, member A3 | family with sequence similarity 90, member A22 pseudogene | family with sequence similarity 90 pseudogene | hypothetical protein LOC100287045
8165700		2.117	
7981730	IGHV@	2.117	immunoglobulin lambda joining 3 | immunoglobulin heavy variable 3-23 | immunoglobulin heavy constant gamma 1 (G1m marker) | similar to hCG2036739 | similar to hCG2042717
8093304	CCRL2	2.114	chemokine (C-C motif) receptor-like 2
8136807	TRY6	2.113	protease, serine, 2 (trypsin 2) | trypsinogen C | protease, serine, 3 | protease, serine, 1 (trypsin 1)
7956876		2.111	LLP homolog, long-term synaptic facilitation (Aplysia)
7981787	GOLGA6L1	2.109	golgin A6 family-like 1 | golgi autoantigen, golgin subfamily a-like | hypothetical LOC645202 | golgin A6 family-like 6 | transmembrane domain-containing protein ENSP00000320207-like
8092541	LIPH	2.107	lipase, member H
8113122		2.103	

8026971	IFI30	2.101	interferon, gamma-inducible protein 30
7951259	MMP10	2.100	matrix metallopeptidase 10 (stromelysin 2)
7949896		2.100	olfactory receptor, family 7, subfamily E, member 87 pseudogene
7916609	JUN	2.100	jun oncogene
8067836	C21orf94	2.099	chromosome 21 open reading frame 94
8095626		2.095	
8112584	ZNF366	2.095	zinc finger protein 366
8103238		2.095	
8151927		2.094	
7960874	C3AR1	2.094	complement component 3a receptor 1
8128445		2.093	
8044731		2.092	
8053725	DRD5	2.090	dopamine receptor D5
8165692		2.090	
8100426		2.090	
7938702		2.088	
7973008	OR4M1	2.086	olfactory receptor, family 4, subfamily M, member 1 | olfactory receptor, family 4, subfamily M, member 2
8174933		2.084	
8147112	CA13	2.083	carbonic anhydrase XIII
8165021		2.082	
7940182	OR4D10	2.075	olfactory receptor, family 4, subfamily D, member 10 | olfactory receptor, family 4, subfamily D, member 11 | olfactory receptor, family 4, subfamily D, member 9
8015230		2.074	keratin associated protein 4-12 | keratin associated protein 4-11 | keratin associated protein 4-6 | keratin associated protein 4-8 | keratin associated protein 4-7
8045275		2.071	
8062251	EPB41L1	2.066	erythrocyte membrane protein band 4.1-like 1
7919584	HIST2H2BF	2.065	histone cluster 2, H2bf | histone cluster 2, H2ba | histone cluster 2, H2be
8103483	FSTL5	2.062	follistatin-like 5
8113344		2.062	
8114207		2.062	

8169634		2.054	
8144448		2.054	family with sequence similarity 90, member A10 | family with sequence similarity 90, member A13 | family with sequence similarity 90, member A14 | family with sequence similarity 90, member A5 | family with sequence similarity 90, member A7 | family with sequence similarity 90, member A8 | family with sequence similarity 90, member A9 | family with sequence similarity 90, member A18 | family with sequence similarity 90, member A19 | family with sequence similarity 90, member A20 | family with sequence similarity 90, member A1 | family with sequence similarity 90, member A15 | family with sequence similarity 90, member A23 pseudogene | family with sequence similarity 90, member A24 (pseudogene) | family with sequence similarity 90, member A3 | family with sequence similarity 90, member A22 pseudogene | family with sequence similarity 90 pseudogene | hypothetical protein LOC100287045
	FAM90A1		
8085370	GSTM1L	2.053	
8003605		2.052	
8027837	CD22	2.051	
7901287	CYP4Z1	2.047	cytochrome P450, family 4, subfamily Z, polypeptide 1
8123336		2.046	
7978331	CBLN3	2.042	cerebellin 3 precursor
8111670	GDNF	2.042	glial cell derived neurotrophic factor
8163825	TRAF1	2.040	TNF receptor-associated factor 1
8095260		2.034	
8115871	FLJ16171	2.029	
7937940	OR52K3P	2.028	olfactory receptor, family 52, subfamily K, member 3 pseudogene
8032212		2.024	NADH dehydrogenase (ubiquinone) Fe-S protein 7, 20kDa (NADH-coenzyme Q reductase)
8155521	FAM27D1	2.024	family with sequence similarity 27, member A | family with sequence similarity 27, member B | family with sequence similarity 27, member C
8090637		2.024	
8149380	DEFB109P1B	2.023	defensin, beta 109, pseudogene 1B | defensin, beta 109, pseudogene 1
8053427		2.020	
7987163		2.017	formin 1
8139458	LOC10012836	2.017	hypothetical LOC100128364 | hypothetical protein LOC100134663
7934411	USP54	2.016	ubiquitin specific peptidase 54

7981990	SNRPN	2.015	small nucleolar RNA, C/D box 116-21 | small nucleolar RNA, C/D box 116 cluster
7919301	LOC10013023(	2.013	
8015218		2.009	keratin associated protein 4-7 | keratin associated protein 4-9 | keratin associated protein 4-8 | keratin associated protein 4-6 | keratin associated protein 4-11
8135031	MUC12	2.006	mucin 12, cell surface associated
8034696		2.005	microRNA 27a
8163729		2.005	microRNA 147
8139242		2.004	

Table S6. Expression changes of LEC- and BEC-specific genes by BMP-9 treatment and Prox1 knockdown, related to Figure 5.

LEC-specific genes

Probe ID	Gene Symbol	Fold Change (4hr) (BMP-9/Control)	Fold Change (24hr) (BMP-9/Control)	Fold Change (siProx1/siControl)
7897044	PRKCZ	0.913	0.968	0.779
7898057	PDPN	0.903	0.52	0.8
7901010	KIF2C	1.089	0.512	0.329
7905826	CKS1B	0.696	0.616	1.041
7909225	DYRK3	2.562	2.458	1.002
7909681	PROX1	0.321	0.628	0.246
7909708	CENPF	1.024	0.442	0.269
7910096	LBR	1.148	1.125	1.433
7916432	DHCR24	0.794	0.89	0.889
7922717	RGS16	0.994	0.983	1.171
7924603	LBR	0.767	0.673	0.416
7926410	MRC1	0.888	0.511	0.742
7926451	MRC1	0.888	0.511	0.742
7926896	CKS1B	1.003	0.561	0.506
7926983	CREM	0.828	0.52	0.551
7927732	ARID5B	1.325	1.221	0.627
7928189	UNC5B	2.94	1.893	0.493
7929258	KIF11	1.188	0.557	0.406
7930380	ADD3	0.932	0.627	0.404
7930413	DUSP5	0.633	0.941	1.105
7932826	KIAA1462	0.662	0.447	1.146
7933194	CXCL12	2.743	4.258	1.22
7934916	CH25H	1.046	0.895	0.758
7934920	LIPA	0.883	0.806	0.456
7935180	PDLIM1	0.959	1.155	0.789
7945767	CDKN1C	0.932	1.154	1.04
7947450	LMO2	1.134	0.967	0.94
7957551	SOCS2	1.202	1.133	0.419
7960340	FOXM1	1.008	0.571	0.442
7961514	MGP	1.302	1.72	0.16
7963280	SMAGP	0.742	0.779	1.185
7965090	CSRP2	0.829	1.003	0.692
7970954	DCLK1	0.776	0.315	0.853
7974404	CDKN3	1.156	0.613	0.281
7979085	PYGL	0.835	1.1	0.887
7979269	GCH1	0.967	0.728	0.759
7982663	BUB1B	1.069	0.53	0.491
7983969	CCNB2	1.151	0.606	0.306
7985662	PDE8A	1.504	1.233	0.455
7985777	ISG20	1.055	0.761	1.531
7989647	KIAA0101	1.017	0.641	0.428
7990391	CYP1A1	0.958	1.753	0.324
7991602	PCSK6	0.886	0.316	1.391
7994109	PLK1	0.971	0.523	0.445

7995907	CETP	0.898	1.048	0.475
7999387	EMP2	0.939	0.899	0.705
7999909	GPRC5B	0.524	0.629	1.255
8002969	MAF	0.875	0.89	0.398
8003903	ARRB2	0.766	0.651	1.593
8007348	RAMP2	1.017	1.374	0.98
8012403	AURKB	0.9	0.443	0.57
8013319	GRAP	2.361	1.154	0.822
8013536	NOS2	0.684	0.57	0.802
8013671	SPAG5	0.985	0.506	0.301
8014974	TOP2A	1.02	0.493	0.369
8018849	TK1	0.854	0.629	0.528
8019857	NDC80	1.128	0.524	0.292
8020110	RAB31	1.637	1.319	0.59
8025303	CLEC4M	0.776	0.504	0.364
8032623	TBXA2R	0.813	0.653	1.152
8036710	GMFG	0.969	0.6	0.697
8037205	CEACAM1	0.738	1.219	0.495
8042326	CEP68	0.683	0.974	0.65
8043310	RMND5A	1.122	1.115	0.438
8046536	HOXD10	0.554	0.451	0.104
8048205	IGFBP2	0.845	0.742	1.078
8048733	ACSL3	1.029	1.246	0.544
8053551	REEP1	1.274	0.846	0.28
8054580	BUB1	0.984	0.517	0.308
8055426	MCM6	0.903	0.632	0.496
8057578	CALCRL	1.239	1.116	0.808
8059177	TUBA4A	0.715	0.688	0.925
8060988	BTBD3	1.103	1.308	0.178
8061471	GINS1	0.931	0.481	0.658
8062766	MYBL2	1.026	0.66	0.389
8063043	UBE2C	1.067	0.648	0.636
8070567	TFF3	0.964	0.596	0.608
8071276	TBX1	0.612	1.016	1.116
8072626	TIMP3	0.601	0.525	0.759
8077899	PPARG	1.181	1.447	0.326
8078619	ITGA9	1.375	1.505	0.638
8078650	CTDSPL	0.712	0.762	0.439
8081657	CD200	1.082	0.934	0.339
8082165	KALRN	0.994	0.687	0.766
8083709	SMC4	1.168	0.768	0.53
8084100	USP13	1.147	0.659	0.448
8090091	PTPLB	0.882	0.637	0.751
8091078	RBP1	1.022	1.664	0.319
8092348	LAMP3	0.853	0.508	0.404
8092959	PPP1R2	1.059	0.995	0.965
8092970	APOD	0.913	0.388	1.243
8097282	SPRY1	0.684	0.365	0.522
8097586	GAB1	0.962	0.635	0.37
8099172	CRMP1	0.991	1.048	1.187

8099524	LDB2	0.904	1.46	0.712
8101237	PAQR3	1.033	0.754	1.137
8102643	CCNA2	1.039	0.535	0.402
8102982	GAB1	0.89	0.853	0.678
8103728	HMGB2	1.209	0.517	0.278
8104022	PDLIM3	1.083	0.355	0.456
8105828	CCNB1	1.137	0.54	0.415
8106354	IQGAP2	1.011	2.308	0.226
8106923	NR2F1	0.713	0.8	0.476
8107706	LMNB1	0.991	0.408	0.255
8109639	PTTG1	1.01	0.583	0.487
8111915	SEPP1	0.952	0.543	0.322
8112107	PPAP2A	1.469	1.775	0.406
8112327	CKS1B	0.974	0.561	0.481
8113039	MEF2C	0.897	0.856	0.441
8116445	FLT4	0.806	0.477	0.893
8116780	DSP	0.914	0.624	0.596
8117368	HIST1H4C	1.033	0.544	0.589
8118594	HLA-DPB1	0.816	0.799	1.324
8118863	ANKS1A	0.392	0.539	0.507
8120838	TTK	1.107	0.469	0.297
8132660	RAMP3	0.888	0.984	0.548
8134339	PEG10	0.858	0.512	0.315
8134463	NPTX2	1.074	1.062	1.12
8135436	SLC26A4	0.674	0.609	0.606
8138504	RAPGEF5	0.317	0.212	0.642
8141950	RELN	1.15	0.835	0.306
8145005	EPB49	0.995	0.881	0.732
8145122	SLC39A14	0.686	0.471	1.37
8145669	RBPMS	0.992	0.833	0.917
8146500	LYN	1.191	0.985	0.913
8149071	ANGPT2	0.658	0.508	0.515
8151447	IL7	0.51	0.428	0.629
8151532	FABP4	1	1.055	0.573
8151871	CCNE2	0.941	0.596	0.268
8153002	NDRG1	0.99	0.847	1.228
8157804	OLFML2A	0.896	0.911	1.238
8161755	ALDH1A1	0.95	1.007	0.127
8166925	MAOA	0.809	1.095	0.352
8178220	HLA-DPB1	0.721	0.717	1.234
8179519	HLA-DPB1	0.803	0.682	1.362

BEC-specific genes

Probe ID	Gene Symbol	Fold Change (4hr) (BMP-9/Control)	Fold Change (24hr) (BMP-9/Control)	Fold Change (siProx1/siControl
7896817	ISG15	1.133	0.93	0.69
7896822	AGRN	0.909	0.854	1.655
7897803	PLOD1	0.958	1.137	0.903
7902227	GADD45A	0.778	0.716	1.102
7902565	LPHN2	1.301	5.77	0.576
7902594	PRKACB	1.076	1.006	1.038
7905329	MLLT11	1.065	1.452	0.269
7906863	UAP1	1.447	1.164	1.023
7906919	RGS4	0.524	1.016	0.987
7907160	ATP1B1	1.142	0.961	0.862
7908072	LAMC2	0.911	0.909	1.404
7908351	PLA2G4A	1.867	3.945	0.449
7908917	BTG2	0.651	1.135	1.612
7911038	ZNF238	1.285	1.08	1.665
7912102	KLHL21	1.01	1.017	1.337
7913357	ECE1	1.001	1.047	0.938
7916584	TACSTD2	0.751	0.621	0.752
7916609	JUN	0.699	1.49	2.1
7917532	GBP2	1.121	1.848	1.274
7922200	SELP	0.829	1.102	0.993
7922229	SELE	5.727	1.321	0.564
7927631	DKK1	1.23	0.807	1.705
7927964	SRGN	0.981	1.571	1.156
7928429	PLAU	0.962	0.709	4.343
7932227	NMT2	0.872	1.282	0.56
7933469	ARHGAP22	0.956	0.962	1.768
7934906	ACTA2	0.849	0.798	1.545
7936673	RGS10	1.061	1.184	2.13
7938035	TRIM22	0.904	0.788	1.136
7939120	RCN1	0.946	0.871	1.148
7939341	CD44	1.053	3.018	1.382
7940717	SLC3A2	1.066	1.435	1.445
7943998	NNMT	0.905	0.795	1.025
7944082	TAGLN	0.914	0.845	1.053
7947425	CD59	0.887	0.762	1.092
7947599	CHST1	1.178	1.006	1.374
7948332	LPXN	0.911	1.093	1.602
7950906	CTSC	0.851	0.505	0.929
7951271	MMP1	0.913	0.243	3.318
7953532	ENO2	0.949	0.871	1.018
7955078	PFKM	0.957	1.131	1.201
7955613	KRT7	1.109	1.294	1.686
7958784	ALDH2	0.962	1.259	0.719
7961532	ARHGDIB	1.122	0.941	1.931

7961546	EPS8	0.898	1.372	0.428
7961693	LDHB	0.92	0.891	0.742
7963786	ITGA5	1.041	1.126	0.522
7964360	STAT6	0.97	1.034	1.222
7966026	NUAK1	1.557	1.875	1.487
7970763	FLT1	1.461	2.251	0.818
7973336	MMP14	0.887	0.914	1.238
7974816	SLC38A6	1.019	1.371	1.301
7975760	EIF2B2	0.728	0.739	1.777
7976443	IFI27	1.071	0.936	2.52
7977299	KIAA0284	0.979	0.971	1.497
7977615	RNASE1	0.951	2.364	3.25
7977786	SLC7A7	0.72	1.584	0.723
7980152	LTBP2	1.291	1.103	0.866
7980233	PGF	0.82	0.707	3.633
7981514	AHNAK2	0.881	0.868	1.418
7983393	SORD	0.798	0.537	1.175
7984079	TPM1	1.243	1.159	1.204
7984364	SMAD3	0.781	1.005	1.37
7984517	GLCE	0.824	1.55	0.86
7986329	NR2F2	1.365	1.558	0.751
7991335	ANPEP	0.928	0.697	0.784
7992828	IL32	0.882	0.58	1.568
7994280	IL4R	1.091	0.844	1.506
7994659	MVP	0.895	0.921	1.227
7995292	SLC6A8	1.866	1.42	1.529
7995776	MT3	1.067	1.038	1.45
7995797	MT1E	0.921	0.341	0.578
7995806	MT1A	1.007	0.556	0.719
7995820	MT1B	0.859	1.158	1.337
7995825	MT1F	0.991	0.62	0.818
7995829	MT1H	0.83	1.218	1.001
7995838	MT1X	1.029	0.662	0.598
8001082	SLC6A8	1.823	1.387	1.522
8006433	CCL2	0.573	0.133	1.372
8012126	CLDN7	0.987	1.095	1.067
8017547	ICAM2	0.617	0.422	1.484
8017651	SMURF2	1.668	1.929	1.163
8019061	SGSH	0.899	1.084	1.544
8019074	NPTX1	1.213	1.243	1.479
8022674	CDH2	1.31	1.021	0.911
8025601	ICAM1	0.56	0.289	1.894
8029006	AXL	0.767	0.854	0.967
8030007	EMP3	1.082	1.018	1.271
8034608	LYL1	1.088	1.176	1.332
8038407	RRAS	0.882	0.994	1.261
8039166	MBOAT7	0.998	1.342	1.481
8040473	RHOB	1.54	1.368	0.922
8045933	TANK	0.905	0.847	1.166
8046861	ITGAV	1.391	1.549	0.627

8050702	TP53I3	0.893	0.901	1.549
8051573	CDC42EP3	0.371	0.983	3.306
8052355	EFEMP1	1.005	0.925	0.47
8053417	CAPG	0.948	0.891	1.013
8054377	FHL2	0.717	0.803	1.325
8055465	CXCR4	0.683	0.357	0.324
8056113	LY75	0.925	0.588	0.839
8056257	FAP	1.213	0.993	1.223
8059854	ARL4C	0.688	0.821	1.352
8060758	PRNP	0.917	0.946	0.931
8062108	PROCR	0.916	1.523	1.178
8066214	TGM2	0.83	0.769	0.685
8066619	PLTP	0.817	0.987	3.558
8067409	LAMA5	0.885	0.769	1.739
8069269	COL6A1	1.011	1.082	1.475
8072360	TCN2	0.905	2.071	2.289
8072678	HMOX1	0.777	0.499	8.035
8074498	TXNRD2	0.832	0.856	0.954
8075910	RAC2	0.843	1.032	1.811
8078461	FBXL2	0.965	1.334	1.591
8079407	CCRL2	0.751	1.351	1.985
8080013	MAPKAPK3	0.929	1.02	2.332
8080320	NISCH	1.188	1.664	1.136
8080926	ARL6IP5	0.949	1.243	1.014
8081235	COL8A1	0.794	1.781	1.433
8083318	PFN2	0.937	0.992	1.305
8088415	FAM107A	0.933	1.058	1.519
8090162	ITGB5	0.88	0.576	0.632
8091283	PLOD2	0.872	0.807	0.502
8091446	PFN2	1.031	0.934	1.219
8091972	MECOM	1.505	4.306	0.575
8093304	CCRL2	0.738	1.259	2.114
8094778	UCHL1	0.887	0.821	0.592
8095680	IL8	1.15	1.191	1.219
8095697	CXCL1	0.932	0.735	1.703
8095986	ANXA3	0.829	0.441	2.435
8099982	APBB2	0.902	0.628	1.138
8103822	VEGFC	2.593	2.597	0.889
8104601	BASP1	1.151	0.993	1.398
8106743	VCAN	0.895	0.984	1.345
8107897	PDLIM4	1.066	1.395	1.493
8108217	TGFBI	1.5	1.652	0.688
8109528	CYFIP2	0.821	0.537	1.854
8114767	PCDH1	1.446	1.619	1.571
8115234	ANXA6	0.801	0.756	1.314
8116818	BMP6	1.222	1.932	0.569
8117054	CAP2	0.902	1.075	1.766
8119088	CDKN1A	1.043	0.819	1.871
8122365	GPR126	0.883	1.352	1.144
8124848	IER3	0.469	0.746	1.727

8126839	TNFRSF21	0.917	0.874	0.71
8127051	TRAM2	0.68	0.655	1.311
8131803	IL6	0.745	1.105	3.024
8132725	UPP1	1.04	0.781	1.303
8134263	COL1A2	0.912	0.927	0.814
8135069	SERPINE1	1.409	0.689	1.158
8138566	IGF2BP3	0.942	0.977	0.786
8138602	DFNA5	0.955	2.206	1.524
8142270	NRCAM	1	3.156	0.942
8142452	TFEC	0.857	0.797	2.56
8147012	PKIA	0.987	0.776	1.185
8149774	LOXL2	0.892	0.547	1.414
8149927	CLU	0.797	0.81	0.644
8152491	EXT1	1.23	0.94	0.633
8154135	SLC1A1	0.563	1.066	1.158
8161044	TPM2	0.938	1.06	1.442
8168749	SRPX2	0.992	1.508	1.054
8170648	BGN	1.229	2.033	1.221
8170662	SLC6A8	1.132	1.317	1.347
8172043	SRPX	0.906	1.45	0.441
8173755	ITM2A	0.952	1.923	0.61
8174779	LAMP2	0.995	1.07	0.583
8178435	IER3	0.468	0.683	1.648
8179704	IER3	0.469	0.746	1.727

Table S7. List of primers used for RT-PCR analysis

Primers for semi-quantitative RT-PCR

species	Transcript	Primer Sequence（5' to 3'）	
human	β-actin	5'	TCACCCACACTGTGCCCATCTACGA
		3'	CAGCGGAACCGCTCATTGCCAATGG
human	ALK-1	5'	CTCTACGACTTTCTGCAGAG
		3'	CCACTTGTAGGACTCAAAGC
human	ALK-2	5'	ATGTCTTTTAGCCTGCCTGCTG
		3'	ATCAAGCTGATTGGTGCTCTGG
human	ALK-3	5'	TGATTTGGAACAGGATGAAGC
		3'	TGTAGCACATTTCAGGAAGTC
human	ALK-4	5'	TCCAAAGACAAGACGCTCC
		3'	ATCATCTTCCCCATCACCC
human	ALK-5	5'	TCGCCCTTTTATTTCAGAGGGTACT
		3'	ACAGCAAGTTCCATTCTTCTTTACC
human	ALK-6	5'	GCAGCACAGACGGATATTGT
		3'	TTTCATGCCTCATCAACACT
human	TGF-βR-II	5'	ATAAGGCCAAGCTGAAGCAG
		3'	CTTCTGGAGCCATGTATCTTG
human	BMPR-II	5'	CTGCACAGTGTGCTGAGGAAAG
		3'	TGAACTGCCCTGTTACTGCCA
human	ActR-II	5'	GCAAAATGAATACGAAGTCTA
		3'	GCACCCTCTAATACCTCTGGA
human	ActR-IIB	5'	ACACGGGAGTGCATCTACTACAACG
		3'	TCATGAGCTGGGCCTTCCAGA
human	endoglin	5'	AAGTTTGTCTTGCGCAGTGCTT
		3'	GCGTGTGCGAGTAGATGTACCA
human	betaglycan	5'	CAAAGGACCCTGTCATTCCCA
		3'	CATCATGGCCCAGATTATCGA
human	Smad1	5'	TGCCACTCAACGCCACTTTT
		3'	TCATAAGCAACCGCCTGAACAT
human	Smad2	5'	CCCATCGAAAAGGATTGCCACA
		3'	TGCATGGAAGGTTTCTCCAACC
human	Smad3	5'	GGACGACTACAGCCATTCCA
		3'	TTCCGATGTGTCTCCGTGTCA
human	Smad4	5'	CTTTGAAATGGATGGATGTTCAG
		3'	CATCCTGATAAGGTTAAGGG
human	Smad5	5'	ACGTCAATGGCCAGCTTGTT
		3'	TCCAACGGCTTTAGCTCATGA
human	Smad8	5'	ATCTTTGTGCAGAGCCGGAA
		3'	TCCTGGCGATGATACTCAGCA
human	Prox1	5'	CCCAGGACAGTTTATTGACCGA
		3'	GGTTGTAAGGAGTTTGGCCCAT
human	PECAM-1	5'	GGAAAAGGCCCCAATACACTT
		3'	TAAAACGCGGTCCTGTTCCTC

Primers for quantitative RT-PCR

species	Transcript	Primer	Sequence（5' to 3'）
human	ALK-1	5'	ATGTGCTGGTCAAGAGCAACCT
		3'	ACGATGCCATTCACGATGGT
human	ALK-2	5'	GCGGATGGTGAGCAATGGTATA
		3'	GGCCTTTGTTGATCCACACAGA
human	ALK-5	5'	TGGAGAGGAAAGTGGCGGGGAG
		3'	GCCTCACGGAACCACGAACG
human	PAI-1	5'	AATCAGACGGCAGCACTGTCT
		3'	GGCAGTTCCAGGATGTCGTAGT
human	Id1	5'	AGCACGTCATCGACTACATCAGG
		3'	GGATTCCGAGTTCAGCTCCAA
human	Smad7	5'	TGCAACCCCCATCACCTTAG
		3'	GACAGTCTGCAGTTGGTTTGAGA
human	Prox1	5'	CCCAGGACAGTTTATTGACCGA
		3'	GGTTGTAAGGAGTTTGGCCCAT
human	ABCG2	5'	AGATGGGTTTCCAAGCGTTCAT
		3'	CCAGTCCCAGTACGACTGTGACA
human	β-actin	5'	TCACCCACACTGTGCCCATCTACGA
		3'	CAGCGGAACCGCTCATTGCCAATGG
human	cyclin E2	5'	CCCAGATAATCCAGGCCAAGA
		3'	CCCAGATAATACAGGTGGCCAA
human	VEGFR3	5'	AGTACATCAAGGCACGCATCGA
		3'	ACCAAGAGCGTGTCAGGCTTGT
human	LYVE-1	5'	AGCCTGGTGTTGCTTCTCACT
		3'	GGTTCGCCTTTTTGCTCACA
human	podoplanin	5'	GTGACTCTAAGCTTGCTCCC
		3'	TCCAGAACAAAGCAGCCAAT
human	neuropillin-2	5'	TGCGGAGGTCGTTTGAATTC
		3'	ACCGGGAGAGGTGATATAGCC
human	angiopoietin-2	5'	TCTTGTCTTGGCCGCAGCCT
		3'	TCGTATTCGAGCGGCGCGTC
human	VEGFR2	5'	CAGAATCCCTGCGAAGTACCTT
		3'	GTCAGTACATGCCCCGCTTTAA
human	endoglin	5'	AAGTTTGTCTTGCGCAGTGCTT
		3'	ACCTTTTTCCGCTGTGGTGAT
human	neuropillin-1	5'	TCATCGGGCATTCTCTCCAT
		3'	TCTTCTGAGACACTGCTCTGCAA
human	TIE-2	5'	GGTGGAAAAGCCCTTCAACA
		3'	CATCCCCAAAGTAAGGCTCAG
human	GAPDH	5'	GAAGGTGAAGGTCGGAGTC
		3'	GAAGATGGTGATGGGATTTC
human	VE-cadherin	5'	TAGCATTGGATACTCCATCCGC
		3'	TTTGGCCTCCACAGTCAGGTTA