Supplementary Table 1 Top ten upregulated genes

Gene symbol	logFC	AveExpr	t	P value	adj.P.Val	B	Regulation
CEMIP	0.713946	8.304068	2.274403	0.024508	0.999442	-3.89661	Up
KRT80	0.692999	7.060876	3.531774	0.000564	0.999442	-2.67935	Up
EMP2	0.643846	6.784301	2.674557	0.008401	0.999442	-3.55632	Up
APOL4	0.607559	6.608265	2.541088	0.012174	0.999442	-3.67505	Up
IPMK	0.600168	6.785133	2.304913	0.022686	0.999442	-3.87235	Up
C1orf127	0.581271	6.776449	2.020437	0.045302	0.999442	-4.08741	Up
ECM1	0.568048	7.467722	2.840851	0.005192	0.999442	-3.40133	Up
GPR143	0.565186	6.765063	2.16152	0.032407	0.999442	-3.9839	Up
CCL13	0.56505	7.265697	2.525239	0.01271	0.999442	-3.68881	Up
KLF4	0.556894	8.78168	2.364474	0.01947	0.999442	-3.82416	Up

Supplementary Table 2 Top ten downregulated genes

Gene symbol	logFC	AveExpr	t	P value	adj.P.Val	B	Regulation
TM4SF4	-0.87515	8.948214	-1.99544	0.047994	0.999442	-4.10509	Down
FAM3D	-0.83036	9.06233	-2.10242	0.03736	0.999442	-4.02802	Down
MT1M	-0.66506	7.416841	-2.44653	0.015701	0.999442	-3.75604	Down
GC	-0.65746	6.807728	-2.22734	0.027569	0.999442	-3.93348	Down
RPL21	-0.65259	11.31711	-2.37153	0.019117	0.999442	-3.81838	Down
MT1IP	-0.59962	8.376266	-2.26102	0.025346	0.999442	-3.90716	Down
MSRA	-0.58293	8.281615	-2.10377	0.037241	0.999442	-4.02703	Down
SLC25A23	-0.58186	10.61426	-2.44969	0.01557	0.999442	-3.75338	Down
CCDC115	-0.5788	8.889964	-2.8325	0.005322	0.999442	-3.4093	Down
R3HCC1	-0.57634	8.834194	-2.94189	0.003836	0.999442	-3.30344	Down

Supplementary Table 3 Hub genes

up_node	node_degree	hub	LFC	down_node	node_degree	hub	LFC
IL6	41	Y	0.462554	SERPINC1	8	Y	-0.29944
SMAD2	18	Y	0.301392	GC	8	Y	-0.65746
RUNX2	16	Y	0.444083	SLC2A2	7	Y	-0.33863
POMC	15	Y	0.213474	NLE1	7	Y	-0.2271
ACAN	13	Y	0.268402	RPL21	6	Y	-0.65259
CD28	12	Y	0.241099	FETUB	6	Y	-0.15691
IL1A	12	Y	0.37788	PLG	5	Y	-0.2883
CCR2	11	Y	0.313437	KCNQ1	5	Y	-0.30249
SPI1	11	Y	0.406034	HPX	5	Y	-0.23816
ELN	10	Y	0.418283	GPT	5	Y	-0.5431
FBN1	10	Y	0.338357	TRMT2B	4	N	
IL2RA	10	Y	0.369237	TM4SF4	4	N	
LOX	10	Y	0.402483	NVL	4	N	
PDYN	10	Y	0.138849	CYP2R1	4	N	
SOX3	10	Y	0.190835	CLOCK	4	N	
KIF3A	9	N		AVP	4	N	
KLF4	9	N		TTC21B	3	N	
NLRP3	9	N		TRMT1L	3	N	
SLC2A4	9	N		RPL37	3	N	
STK11	9	N		NPM1	3	N	
DVL1	8	N		NME6	3	N	
EHMT2	8	N		INTU	3	N	
SIX1	8	N		HMGCL	3	N	
CLEC7A	7	N		CES1	3	N	
CRH	7	N		BTC	3	N	
DRD1	7	N		BBS1	3	N	
FOXL2	7	N		ATP1B2	3	N	
GNAT1	7	N		ZADH2	2	N	
PRKCG	7	N		TNNI2	2	N	

RGS8	7	N		TNFRSF13C	2	N
SIRT6	7	N		SLC25A18	2	N
AGRP	6	N		SKP1	2	N
AKT3	6	N		RPAP1	2	N
CACNB2	6	N		PTK6	2	N
CD1D	6	N		PLCB3	2	N
GNAZ	6	N		NRG4	2	N
HDAC5	6	N		N6AMT1	2	N
KCNJ10	6	N		MYBPC3	2	N
KDM5C	6	N		MSRA	2	N
PPP1R9B	6	N		MAP3K14	2	N
PPP2R2C	6	N		LIAS	2	N
TRPV5	6	N		KCNS2	2	N
WNT2B	6	N		IFT46	2	N
BRCC3	5	N		GUCY1B3	2	N
BSND	5	N		FOLR1	2	N
CACNA2D3	5	N		FAM149A	2	N
CALB2	5	N		CYP4V2	2	N
CCL11	5	N		CRAT	2	N
CLEC12A	5	N		CELSR1	2	N
CYP19A1	5	N		CATSPERB	2	N
FCN2	5	N		ACOX3	2	N
FGF3	5	N		ZNF236	1	N
HK2	5	N		WWOX	1	N
HRH3	5	N		WIPF2	1	N
KIF4A	5	N		WARS2	1	N
MCHR1	5	N		UPK1A	1	N
NCR1	5	N		TTC12	1	N
NID2	5	N		TMEM64	1	N
PPP2R3B	5	N		TIMM10B	1	N
SP7	5	N		TAOK1	1	N

STXBP1	5	N	SYT12	1	N
SYNPR	5	N	SNTA1	1	N
T	5	N	SLC25A23	1	N
CD1E	4	N	SLC22A7	1	N
COLEC11	4	N	SH3GL3	1	N
DNAAF1	4	N	SFTPD	1	N
FOSL1	4	N	SETD4	1	N
GLIS2	4	N	SEC23A	1	N
GRIA4	4	N	SDSL	1	N
LMX1A	4	N	SDC3	1	N
MAPK12	4	N	SCRN2	1	N
MFAP2	4	N	SAP18	1	N
MKI67	4	N	SAMD13	1	N
NPSR1	4	N	RSPH3	1	N
PAX1	4	N	ROM1	1	N
PDE6C	4	N	R3HCC1	1	N
RIMS2	4	N	PRICKLE2	1	N
TEAD4	4	N	PPOX	1	N
TNFSF4	4	N	PPIL3	1	N
APOBR	3	N	POM121	1	N
C3AR1	3	N	PIK3C2G	1	N
CATSPERG	3	N	PANK3	1	N
CCL13	3	N	NPAS4	1	N
CDX4	3	N	NMT2	1	N
CLCN2	3	N	NMBR	1	N
CLCN4	3	N	NEFM	1	N
COL12A1	3	N	NDST3	1	N
DHH	3	N	NAT2	1	N
DLGAP3	3	N	MARK3	1	N
DNAH9	3	N	MAP4	1	N
ERC1	3	N	MAP3K13	1	N

GPR161	3	N	LRRC6	1	N
GUCY2F	3	N	LPAR4	1	N
HCAR2	3	N	KLHDC9	1	N
IBSP	3	N	KLF15	1	N
IL17RE	3	N	KLC1	1	N
IL1RL1	3	N	IL12B	1	N
IL25	3	N	IGFALS	1	N
INHA	3	N	IFNLR1	1	N
KCNJ2	3	N	HMGN5	1	N
KIR3DL1	3	N	HDAC8	1	N
KLC4	3	N	GP1BA	1	N
KRT82	3	N	FCF1	1	N
LRP8	3	N	FAM161A	1	N
MYH4	3	N	FAM129C	1	N
NEK9	3	N	EZH1	1	N
OTUD3	3	N	EXOC3L4	1	N
PDE4A	3	N	ENTPD4	1	N
PHC2	3	N	ENDOG	1	N
PORCN	3	N	DPH5	1	N
PSPN	3	N	CYP4A11	1	N
RAB3C	3	N	CSNK1A1	1	N
RABEP2	3	N	CRYZL1	1	N
RNF43	3	N	COQ7	1	N
SETD5	3	N	CDH19	1	N
SLC12A3	3	N	CARS2	1	N
TAS2R1	3	N	C9orf3	1	N
TGM2	3	N	C10orf62	1	N
TNFAIP6	3	N	BRF2	1	N
TSHR	3	N	ATP1B4	1	N
ZIC1	3	N	ASL	1	N
ZSCAN1	3	N	ACMSD	1	N

A4GNT	2	N	ABHD14B	1	N
AJUBA	2	N	8-Sep	1	N
ARHGEF4	2	N	ZP3	0	N
ARMC9	2	N	ZNF692	0	N
ARPP21	2	N	ZNF565	0	N
AVPR1B	2	N	ZNF525	0	N
CALCR	2	N	ZNF214	0	N
CCDC144A	2	N	ZAR1L	0	N
CCDC63	2	N	WDR37	0	N
CEMIP	2	N	WDR27	0	N
CRYM	2	N	VAX2	0	N
EPHA7	2	N	USP30	0	N
FDXR	2	N	USP10	0	N
FEZF2	2	N	UBR5	0	N
FSTL3	2	N	TTC32	0	N
GAL3ST1	2	N	TSSK2	0	N
GJB3	2	N	TRIM61	0	N
GJB5	2	N	TRIM49D1	0	N
GJC3	2	N	TOX	0	N
GPR143	2	N	TMEM42	0	N
GRAP2	2	N	TMEM213	0	N
HOXC13	2	N	TMEM14E	0	N
IFT22	2	N	TATDN3	0	N
IGSF21	2	N	STK17B	0	N
KCNS1	2	N	SRA1	0	N
KIAA1279	2	N	SNRNP40	0	N
KRT80	2	N	SMLR1	0	N
KRTAP15-1	2	N	SLX4IP	0	N
KY	2	N	SLC17A8	0	N
LCT	2	N	S100A7A	0	N
MLN	2	N	RWDD2B	0	N

NLRP6	2	N	RNASEH2C	0	N
NOP2	2	N	RIPK3	0	N
NRF1	2	N	RALGPS2	0	N
PARD3B	2	N	RAD51C	0	N
PCGF3	2	N	PXMP2	0	N
PLP2	2	N	PXK	0	N
PLXNA2	2	N	PRND	0	N
PLXNB3	2	N	PRKCE	0	N
RAB3D	2	N	PRELID2	0	N
RASAL2	2	N	PPP1R12B	0	N
RBP3	2	N	PDZD3	0	N
3-Sep	2	N	PAQR9	0	N
SETD6	2	N	PABPC3	0	N
SLC16A1	2	N	OR10Q1	0	N
SLC6A6	2	N	NT5DC1	0	N
SNTG2	2	N	NBPF3	0	N
SPRED3	2	N	NBPF19	0	N
THRB	2	N	NBEAL1	0	N
TMEM95	2	N	MTUS2	0	N
WDR63	2	N	MTERF1	0	N
ZNF174	2	N	MT1M	0	N
ZSCAN20	2	N	MORN2	0	N
ABCA12	1	N	MOGAT1	0	N
ABHD2	1	N	MED23	0	N
AGPAT6	1	N	MAPK15	0	N
ALAS1	1	N	MAB21L3	0	N
APOL4	1	N	LMNTD2	0	N
ARHGAP31	1	N	LEAP2	0	N
ARL4C	1	N	KRT28	0	N
ASB11	1	N	IQSEC1	0	N
B9D1	1	N	IGIP	0	N

BBC3	1	N	HOXD13	0	N
BEND3	1	N	HOXC8	0	N
BEST2	1	N	HOOK3	0	N
C1orf127	1	N	HMX1	0	N
C1orf192	1	N	HEATR9	0	N
C9orf131	1	N	HEATR5B	0	N
CAV2	1	N	HAPLN4	0	N
CLSTN2	1	N	GYG2	0	N
CNTD2	1	N	GTPBP1	0	N
CYP27C1	1	N	GPR89B	0	N
DACT2	1	N	GNRHR	0	N
DUSP10	1	N	GDF7	0	N
EHD3	1	N	FRMD4A	0	N
EPHA5	1	N	FAM3D	0	N
EPHX3	1	N	FAM13A	0	N
FAM71E2	1	N	ERMAP	0	N
FAM92B	1	N	ELL	0	N
FANCA	1	N	DUSP21	0	N
FKBP7	1	N	DEXI	0	N
GCH1	1	N	CTC1	0	N
GEMIN7	1	N	CLYBL	0	N
GPRC5D	1	N	CERS4	0	N
GPRIN1	1	N	CELA3A	0	N
GRIK3	1	N	CCNB1IP1	0	N
GSX1	1	N	CCDC82	0	N
HAS3	1	N	CCDC176	0	N
HGSNAT	1	N	CCDC171	0	N
HS6ST2	1	N	CCDC115	0	N
IFNA5	1	N	CCDC105	0	N
IFNA7	1	N	C19orf44	0	N
IL15RA	1	N	C14orf28	0	N

IPMK	1	N	C11orf54	0	N
JAKMIP1	1	N	APOBEC3F	0	N
KAL1	1	N	AIG1	0	N
KIAA1549L	1	N	AGFG1	0	N
KLK5	1	N	AGBL2	0	N
L1CAM	1	N	ADPRHL1	0	N
LPHN3	1	N			
LSP1	1	N			
MAB21L2	1	N			
MAZ	1	N			
MESP1	1	N			
MLXIP	1	N			
MUC21	1	N			
NEURL1	1	N			
NLRP12	1	N			
NTF4	1	N			
OR3A1	1	N			
OR4D1	1	N			
OR6A2	1	N			
PATZ1	1	N			
PKDREJ	1	N			
PLK2	1	N			
PNLIPRP1	1	N			
POLR1A	1	N			
PRICKLE3	1	N			
PRR19	1	N			
PRR7	1	N			
PRSS50	1	N			
PRSS57	1	N			
RHEBL1	1	N			
RPP30	1	N			

RTEL1	1	N
SLC2A9	1	N
SOCS5	1	N
SPON2	1	N
SRPK3	1	N
SRRM3	1	N
ST8SIA1	1	N
TAS2R3	1	N
TDO2	1	N
TEC	1	N
THSD7A	1	N
TMOD3	1	N
TRIM46	1	N
VSIG10	1	N
ZNF449	1	N
ZNF592	1	N
ZNF619	1	N
ZNF703	1	N
ZNF804B	1	N
ZNF81	1	N
ABHD1	0	N
ACTR3B	0	N
ADAD2	0	N
AKR1E2	0	N
ALS2CR12	0	N
ANP32E	0	N
ASRGL1	0	N
ATE1	0	N
C10orf95	0	N
C14orf37	0	N
C1orf228	0	N

C3orf80	0	N
C5orf46	0	N
CCDC102B	0	N
CCDC184	0	N
CCDC70	0	N
CCDC89	0	N
CD200R1L	0	N
CDH7	0	N
CILP2	0	N
CXorf65	0	N
CXorf66	0	N
DMWD	0	N
DUSP13	0	N
ECE2	0	N
ECM1	0	N
EGFL8	0	N
EMP2	0	N
EMR3	0	N
FAM131B	0	N
FAM209B	0	N
FAM222A	0	N
FAM53B	0	N
FBXW12	0	N
FRMD5	0	N
GOLGA7B	0	N
HHIPL2	0	N
HMGA1	0	N
ING1	0	N
INPP4A	0	N
KBTBD6	0	N
KLK2	0	N

KREMEN2	0	N
LCE3A	0	N
LILRA2	0	N
LSMEM2	0	N
LTK	0	N
LY6G6D	0	N
MAD2L1BP	0	N
10-Mar	0	N
MAT1A	0	N
MEIS3	0	N
MEST	0	N
MEX3B	0	N
MIA2	0	N
MORN1	0	N
MOSPD2	0	N
MYLK4	0	N
MYO19	0	N
MZT2A	0	N
NCAPH2	0	N
NME9	0	N
NUDT10	0	N
NXPE4	0	N
ODF3L1	0	N
OGFOD2	0	N
OR10H4	0	N
OR1D2	0	N
OR2T4	0	N
OR3A3	0	N
OR5A2	0	N
OR5B17	0	N
OR5M3	0	N

OR6B1	0	N
OR6X1	0	N
OVCA2	0	N
P2RY6	0	N
PALD1	0	N
PARP15	0	N
PHKG1	0	N
PLA2G2F	0	N
PLCXD2	0	N
PLEKHA8	0	N
POLR3G	0	N
PPP1R42	0	N
PRLHR	0	N
PRR27	0	N
PSG3	0	N
PTPRN2	0	N
RHCG	0	N
SECTM1	0	N
SERPINB13	0	N
SH3PXD2B	0	N
SHC2	0	N
SLC7A11	0	N
SLCO5A1	0	N
SNURF	0	N
SPANXN3	0	N
SRSF12	0	N
ST8SIA2	0	N
STEAP1	0	N
TMEM105	0	N
TSPAN10	0	N
UBXN11	0	N

USP18	0	N
VSTM1	0	N
WFDC13	0	N
ZIK1	0	N
ZNF267	0	N
ZNF469	0	N
ZNF48	0	N
ZNF628	0	N
ZNF677	0	N
ZNF74	0	N