

Table S3: Analysis of genes induced in BAHD1 knockdown HEK213 cells.

Top networks associated to genes induced in BAHD1 KD cells (Ingenuity Pathways Analysis).			
Associated Network Functions	Molecules in Network (Molecules in BAHD1-KD transcriptome in upper case)	Score	Focus Molecules
Cancer, Cell Cycle, Cellular Growth and Proliferation	ALCAM, BCL2L11, Caspase, CDKN1C, CLEC11A, CTH, Cyclin A, Cyclin E, DACH1, DSP, ERK, GAL, IGF2, Igfbp, IGFBP7, IL6R, KISS1R, LGALS3, Mmp, NEFM, PDGF BB, PHLDA1, Rb, RBL1, RET, RUNX2, SCARA3, SEPP1, SLC6A6, SOX8, SULF1, TAC1, TACSTD1, VCAN, WWP1	54	27
Immune Response, Respiratory Disease, Organismal Injury and Abnormalities	ADCYAP1R1, ALOX5, Ap1, ATF1, CaMKII, COL13A1, Creb, F12, F2R, FSH, hCG, IL1, INDO, ITCH, LDL, MEOX1, NFkB, NID1, NR2F2, P38 MAPK, Pka, Pkc(s), PLA2G7, PLAU, PLC, PLCD3, PRKAR1A, RAP2B, RIPK2, S1PR3, SUMO1, TANK, Tgf beta, TIMP2, Vegf	39	21

Top Molecular and Cellular Functions associated to genes induced in BAHD1 KD cells (Ingenuity Pathways Analysis).			
Category	Molecules	p-value	# Molecules
Cell Death	SAT1, IL6R, PRKAR1A, PHLDA2, RASL10A, PHLDA1, S1PR3, DSP, IGF2, ADCYAP1R1, ALOX5, QKI, LGALS3, RIPK2, IGFBP7, RUNX2, CDKN1C, PLA2G7, STEAP3, F2R, PLAU, SULF1, KAT2B, RET, BCL2L11, CTH, ATF1, RBL1, DACH1, RTN1, GAL, VCAN, PACS2, TAC1, SUMO1, HLF, EMP2, CLEC11A, TANK, ACSL4, TIMP2, INDO	1,56E-04 - 1,90E-02	43
Cellular Growth and Proliferation	F12, SAT1, IL6R, PRKAR1A, SEC14L2, PHLDA2, RASL10A, PHLDA1, DSP, S1PR3, IGF2, CRLF1, ADCYAP1R1, ALOX5, LAMB1, LGALS3, RIPK2, IGFBP7, ITCH, RUNX2, CDKN1C, STEAP3, KISS1R, F2R, BLZF1, PLAU, TACC2, KAT2B, BCL2L11, RET, CTH, RBL1, CACNA1G, DACH1, GDF11, TFAP2C, GAL, VCAN, TAC1, SUMO1, TACSTD1, CLEC11A, EMP2, TIMP2, INDO	2,35E-04 - 1,90E-02	46

List of genes associated with Cell Death or Cellular Growth and Proliferation

(55 genes among 104 genes eligible for the analysis)

Name	Description	Type	Entrez Gene ID
ACSL4	acyl-CoA synthetase long-chain family member 4	enzyme	2182
ADCYAP1R1	adenylate cyclase activating polypeptide 1 (pituitary) receptor type I	G-protein coupled receptor	117
ALOX5	arachidonate 5-lipoxygenase	enzyme	240
ATF1	activating transcription factor 1	transcription regulator	466
BCL2L11	BCL2-like 11 (apoptosis facilitator)	other	10018
BLZF1	basic leucine zipper nuclear factor 1 (JEM-1)	transcription regulator	8548
CACNA1G	calcium channel, voltage-dependent, T type, alpha 1G subunit	ion channel	8913
CDKN1C	cyclin-dependent kinase inhibitor 1C (p57, Kip2)	other	1028
CLEC11A	C-type lectin domain family 11, member A	growth factor	6320
CRLF1	cytokine receptor-like factor 1	other	9244
CTH	cystathionase (cystathionine gamma-lyase)	enzyme	1491
DACH1	dachshund homolog 1 (Drosophila)	transcription regulator	1602
DSP	desmoplakin	other	1832
EMP2	epithelial membrane protein 2	other	2013
F12	coagulation factor XII (Hageman factor)	peptidase	2161
F2R	coagulation factor II (thrombin) receptor	G-protein coupled receptor	2149
GAL	galanin prepropeptide	other	51083
GDF11	growth differentiation factor 11	growth factor	10220
HLF	hepatic leukemia factor	transcription regulator	3131
HNRNPA1	heterogeneous nuclear ribonucleoprotein A1	other	3178
IGF2	insulin-like growth factor 2 (somatomedin A)	growth factor	3481
IGFBP7	insulin-like growth factor binding protein 7	transporter	3490
IL6R	interleukin 6 receptor	transmembrane receptor	3570
INDO	indoleamine-pyrrole 2,3 dioxygenase	enzyme	3620
ITCH	itchy E3 ubiquitin protein ligase homolog (mouse)	enzyme	83737
KAT2B	K(lysine) acetyltransferase 2B	transcription regulator	8850
KISS1R	KISS1 receptor	G-protein coupled receptor	84634
LAMB1	laminin, beta 1	other	3912
LGALS3	lectin, galactoside-binding, soluble, 3	other	3958
PACS2	phosphofurin acidic cluster sorting protein 2	other	23241
PHLDA1	pleckstrin homology-like domain, family A, member 1	other	22822
PHLDA2	pleckstrin homology-like domain, family A, member 2	other	7262
PLA2G7	phospholipase A2, group VII (platelet-activating factor acetylhydrolase, plasma)	enzyme	7941

PLAU	plasminogen activator, urokinase	peptidase	5328
PRKAR1A	protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1)	kinase	5573
QKI	quaking homolog, KH domain RNA binding (mouse)	other	9444
RASL10A	RAS-like, family 10, member A	enzyme	10633
RBL1	retinoblastoma-like 1 (p107)	other	5933
RET	ret proto-oncogene	kinase	5979
RIPK2	receptor-interacting serine-threonine kinase 2	kinase	8767
RTN1	reticulum 1	other	6252
RUNX2	runt-related transcription factor 2	transcription regulator	860
S1PR3	sphingosine-1-phosphate receptor 3	G-protein coupled receptor	1903
SAT1	spermidine/spermine N1-acetyltransferase 1	enzyme	6303
SEC14L2	SEC14-like 2 (S. cerevisiae)	transporter	23541
STEAP3	STEAP family member 3	transporter	55240
SULF1	sulfatase 1	enzyme	23213
SUMO1	SMT3 suppressor of mif two 3 homolog 1 (S. cerevisiae)	enzyme	7341
TAC1	tachykinin, precursor 1	other	6863
TACC2	transforming, acidic coiled-coil containing protein 2	other	10579
TACSTD1	tumor-associated calcium signal transducer 1	other	4072
TANK	TRAF family member-associated NFKB activator	other	10010
TFAP2C	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)	transcription regulator	7022
TIMP2	TIMP metalloproteinase inhibitor 2	other	7077
VCAN	versican	other	1462

List of PcG target genes upregulated in BAHD1 KD cells

Name	Description
IGF2	insulin-like growth factor 2 (somatomedin A)
CD24	CD24 molecule
CHRDL1	chordin-like 1
CPLX1	complexin 1
LOC152573	hypothetical protein BC012029
RUNX2	runt-related transcription factor 2
SCN4B	sodium channel, voltage-gated, type IV, beta
ALOX5	arachidonate 5-lipoxygenase
RET	ret proto-oncogene
RORB	RAR-related orphan receptor B
MEOX1	mesenchyme homeobox 1
ADCYAP1R1	Adenylate cyclase activating polypeptide 1 (pituitary) receptor type I
DDEF1	development and differentiation enhancing factor 1
GDF11	growth differentiation factor 11
ZCCHC12	zinc finger, CCHC domain containing 12
SLC10A4	solute carrier family 10 (sodium/bile acid cotransporter family), member 4
RTN1	reticulum 1
MEGF11	multiple EGF-like-domains 11
CRLF1	cytokine receptor-like factor 1

TACSTD1	tumor-associated calcium signal transducer 1
TFAP2C	transcription factor AP-2 gamma (activating enhancer binding protein 2 gamma)
HLF	hepatic leukemia factor
CACNA1G	calcium channel, voltage-dependent, T type, alpha 1G subunit
C6orf141	chromosome 6 open reading frame 141
GAL	galanin
ProSAPiP1	ProSAPiP1 protein
DSP	desmoplakin
ACSL1	acyl-CoA synthetase long-chain family member 1
PLA2G7	phospholipase A2, group VII (platelet-activating factor acetylhydrolase, plasma)
SCOC	short coiled-coil protein
F12	coagulation factor XII (Hageman factor)
ADCY1	adenylate cyclase 1 (brain)
D4S234E	DNA segment on chromosome 4 (unique) 234 expressed sequence
PKIB	protein kinase (cAMP-dependent, catalytic) inhibitor beta
DACH1	dachshund homolog 1 (Drosophila)
