1 SUPPLEMENTARY MATERIAL AND METHODS

1.1 Library preparation and RNA sequencing

Samples were processed for RNA-seq analyses as previously described [1]. Briefly, library preparation was performed using the Universal Plus mRNA-Seq kit (Tecan Genomics, Redwood City, CA), following the manufacturer's protocol. RNA samples were quantified and assessed for quality using the Agilent 2100 Bioanalyzer RNA assay (Agilent Technologies, Santa Clara, CA). Final libraries were evaluated using the Qubit 3.0 Fluorometer (Invitrogen, Carlsbad, CA) and the Agilent Bioanalyzer DNA assay. Sequencing libraries were then processed and sequenced in paired-end 150 bp mode on the NovaSeq 6000 platform (Illumina, San Diego, CA).

1.2 RNA-Seq analysis

Raw sequencing data were processed using Illumina BCL Convert v3.9.31, which performed base calling, demultiplexing, and adapter masking. During demultiplexing, adapter sequences were masked by converting them to *N* characters, with corresponding base quality scores overwritten to 2 to facilitate downstream trimming using standard quality filtering tools. Subsequent trimming of low-quality bases and residual adapter sequences was carried out using ERNE software [2]. Cleaned reads were then aligned to the *Homo sapiens* reference genome (hg38) using STAR with default parameters. STAR, a splice-aware aligner optimized for RNA-Seq data, enabled accurate mapping and identification of exon-exon junctions [3]. Transcript assembly and quantification were performed with StringTie, allowing reconstruction of full-length transcripts and estimation of expression levels for multiple spliced isoforms at each gene locus [4]. For quality control, the RSeqQC5 package was employed to assess read strand specificity and gene body coverage, ensuring the integrity and reliability of the RNA-Seq dataset [5].

1.2.1 Pair-wise differential expression analysis

Differential expression analysis was conducted using DESeq2, which applies a Generalized Linear Model (GLM) to estimate expression levels for each gene and transcript. The method incorporates shrinkage estimation for both dispersion and fold change values, enhancing the stability and

interpretability of the results. This approach allows for a more quantitative assessment, emphasizing the magnitude of differential expression rather than its mere presence. Normalization of count data was performed using the median-of-ratios method, and statistical significance was evaluated through the Wald test [6, 7].

1.2.2 Pathway analysis and function

Differentially expressed genes (DEGs)were functionally analysed for associated biological processes using the Database for Annotation, Visualization, and Integrated Discovery (DAVID), version 2025_1 (https://david.ncifcrf.gov). For each annotated term, enrichment was assessed by calculating the corresponding *p*-value, and terms with $p < 0.05$ were considered significantly enriched.

1.3 Western blotting

Western blotting was performed as described previously [1]. Briefly, whole-cell protein extracts cells were prepared using a lysis buffer containing 25 µM Tris-HCl (pH 8.0), 55 µM NaCl, 1 µM EDTA, and a protease inhibitor cocktail (Sigma-Aldrich). Protein concentrations were determined using the Bradford Protein Assay (Thermo Scientific). Equal amounts of protein (20 µg per lane) were separated by SDS-PAGE and transferred to nitrocellulose membranes (Amersham). Membranes were incubated with a primary anti-SMC1A antibody (Fortis Life Sciences), followed by a peroxidase-conjugated secondary antibody (Sigma). Detection was performed using a chemiluminescence system (Amersham), and signals were visualized with a Chemidoc imaging system (Bio-Rad). An anti-tubulin antibody (Merck) was used as a loading control. The ImageJ software was used to carry out semiquantitative image analysis of immunoblotting data, expressed by percent of ataluren treatments (0.5, 1.5 and 3 µg/ml)/control ratio.

1.4 Spontaneous genomic instability assay

Spontaneous genomic instability in cell lines carrying nonsense *SMC1A* variants was assessed using standard cytogenetic protocols. Briefly, colcemid was added to cell cultures for 90 minutes to arrest cells in metaphase, followed by hypotonic treatment with 0.075 M KCl for 20 minutes at 37°C.

Cells were then fixed with multiple changes of Carnoy's fixative (methanol:acetic acid, 3:1). Fixed cells were dropped onto clean, moist microscope slides. For each patient sample, 100 metaphases were analysed. Chromosomal aberrations, including gaps and breaks, were visualized by Giemsa staining and scored by direct microscopic examination.

SUPPLEMENTARY REFERENCES

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4. Pertea M, Pertea GM, Antonescu CM, Chang TC, Mendell JT, Salzberg SL. StringTie enables improved reconstruction of a transcriptome from RNA-seq reads Nat Biotechnol. 2015 Mar;33:290-295.
5. Wang L, Wang S, Li W. RSeQC: quality control of RNA-seq experiments Bioinformatics. 2012 Aug 15;28:2184-2185.
6. Love MI, Huber W, Anders S. Moderated estimation of fold change and dispersion for RNA-seq data with DESeq2 Genome Biol. 2014;15:550.
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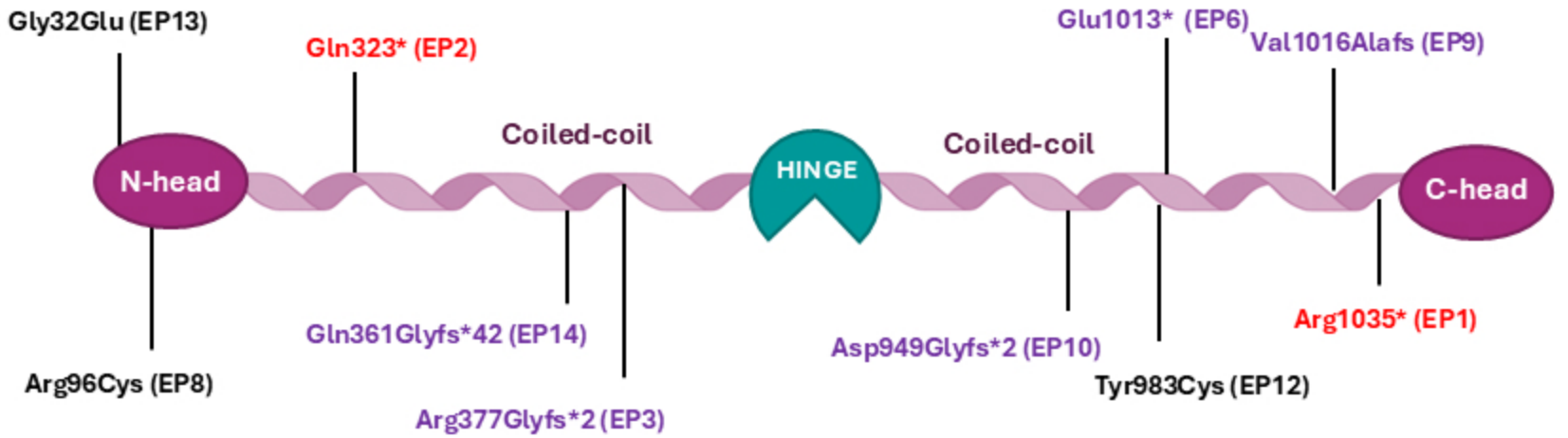

Gly32Glu (EP13)
Gln323* (EP2)
Glu1013* (EP6)
Val1016Alafs (EP9)
Coiled-coil
Coiled-coil
N-head
HINGE
C-head
Gln361Glyfs*42 (EP14)
Arg1035* (EP1)
Asp949Glyfs*2 (EP10)
Arg96Cys (EP8)
Tyr983Cys (EP12)
Arg377Glyfs*2 (EP3)
Nonsense variant
Frameshift variant
Missense variant

Fig. S1

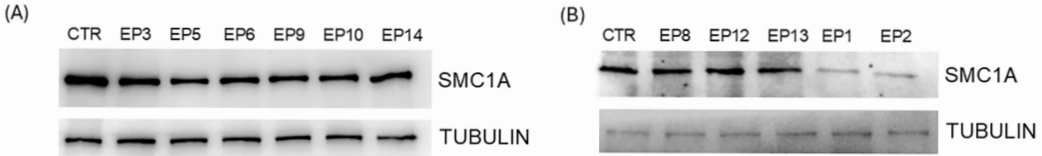

(A)
CTR
EP3
EP5
EP6
EP9
EP10
EP14
SMC1A
TUBULIN
(B)
CTR
EP8
EP12
EP13
EP1
EP2
SMC1A
TUBULIN

Fig. S2

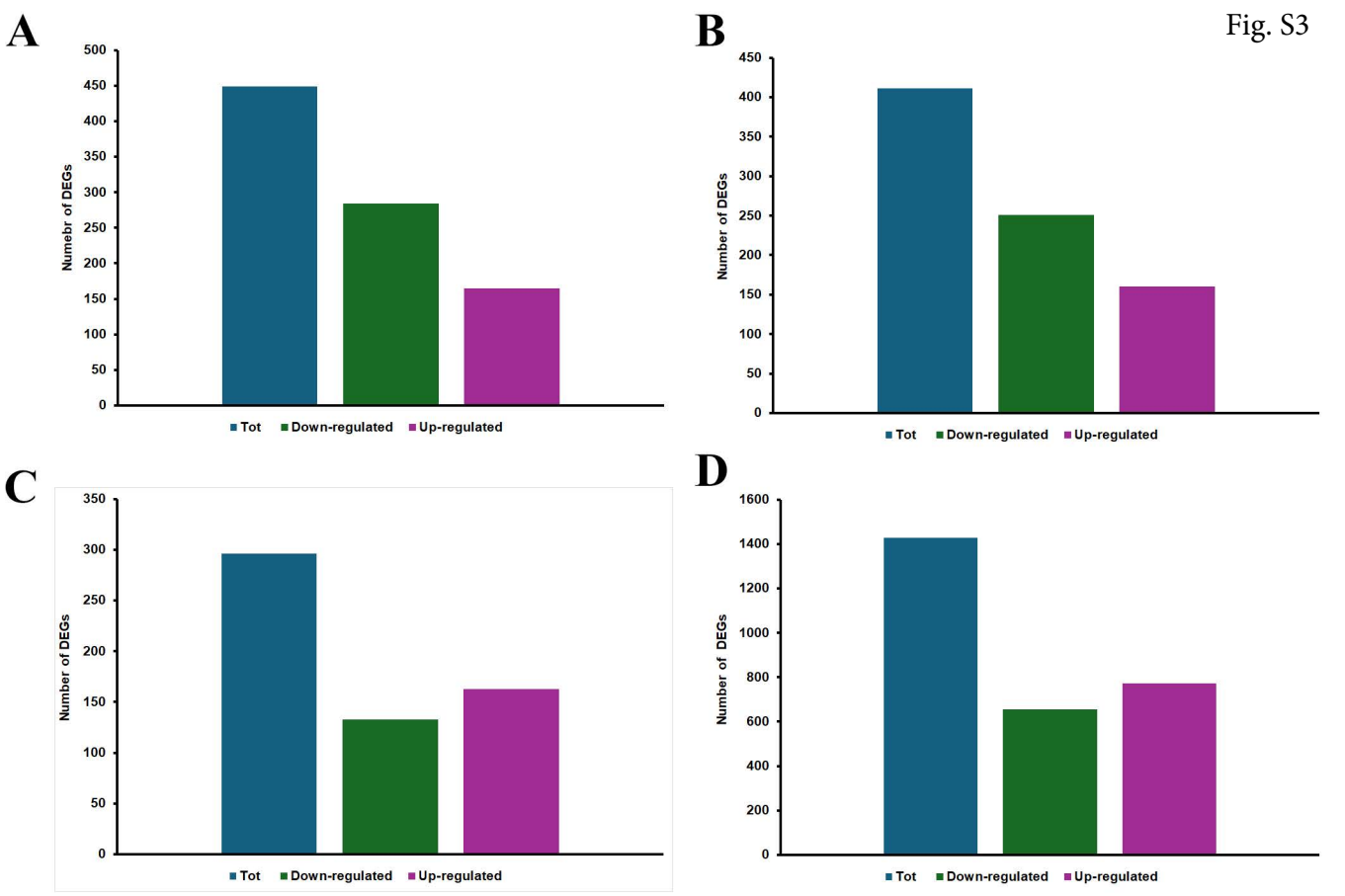

A
Numebr of DEGs
500
450
400
350
300
250
200
150
100
50
0
Tot
Down-regulated
Up-regulated
B
Number of DEGs
450
400
350
300
250
200
150
100
50
0
Tot
Down-regulated
Up-regulated
C
Number of DEGs
350
300
250
200
150
100
50
0
Tot
Down-regulated
Up-regulated
D
Number of DEGs
1600
1400
1200
1000
800
600
400
200
0
Tot
Down-regulated
Up-regulated

Fig. S4

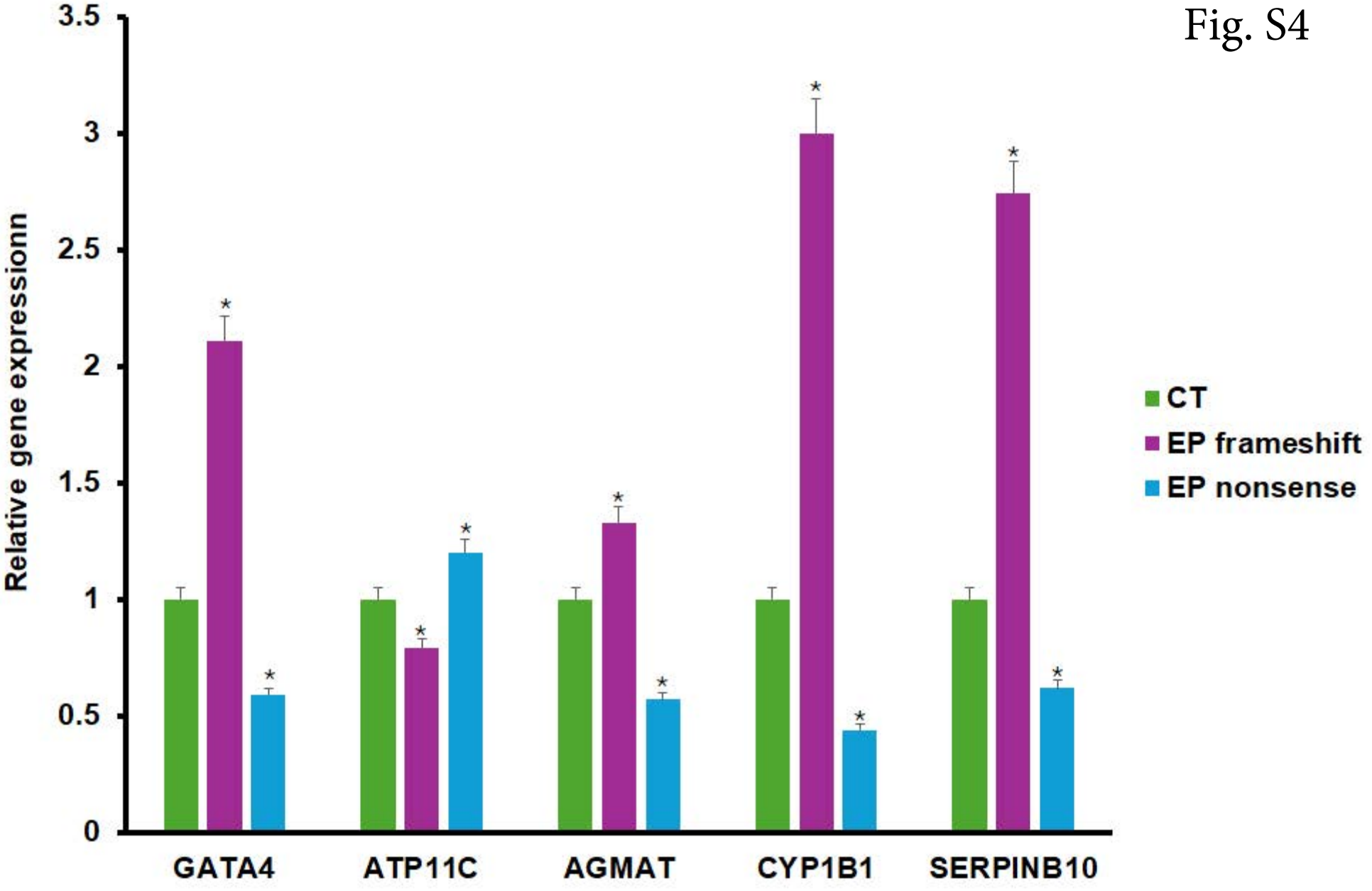
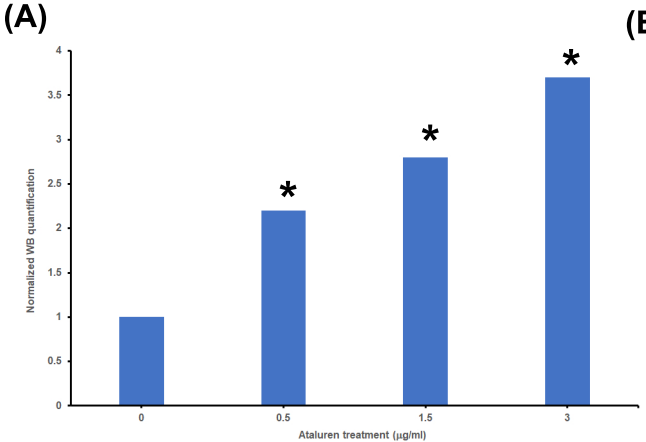
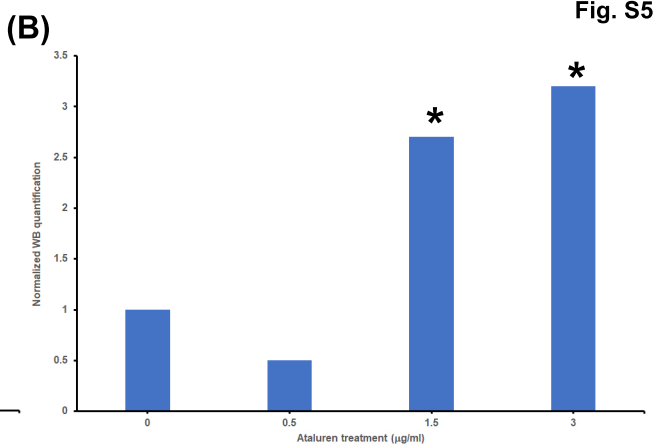
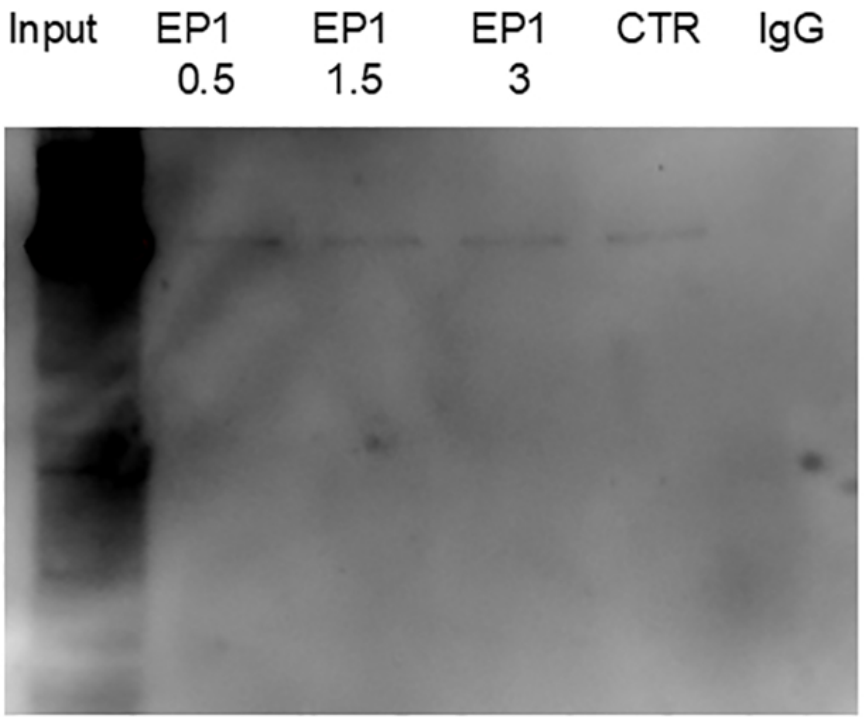

Relative gene expressionn
3.5
3
2.5
2
1.5
1
0.5
0
GATA4
ATP11C
AGMAT
CYP1B1
SERPINB10
CT
EP frameshift
EP nonsense

Fig. S5


(A)
Normalized WB quantification
4
3.5
3
2.5
2
1.5
1
0.5
0
*
*
*
0
0.5
1.5
3
Ataluren treatment (μg/ml)


(B)
Normalized WB quantification
3.5
3
2.5
2
1.5
1
0.5
0
*
*
0
0.5
1.5
3
Ataluren treatment (μg/ml)

(A)



(B)

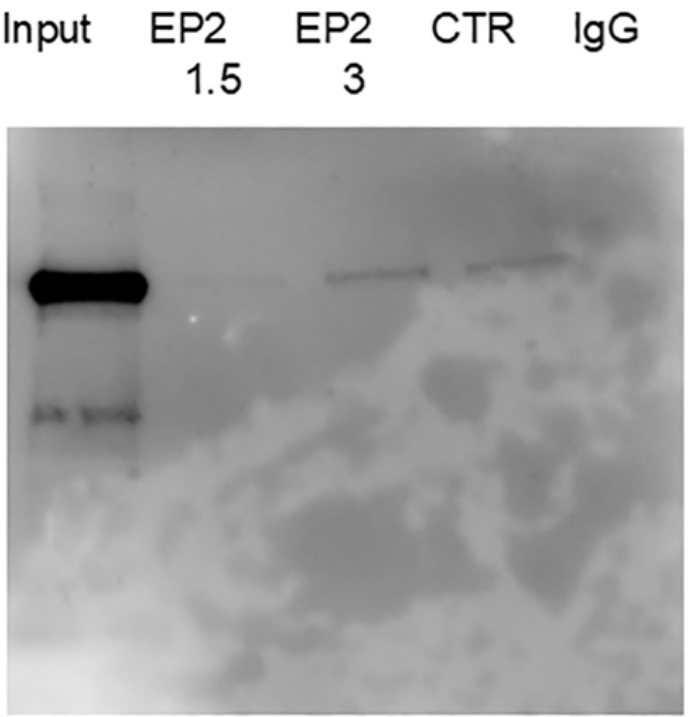
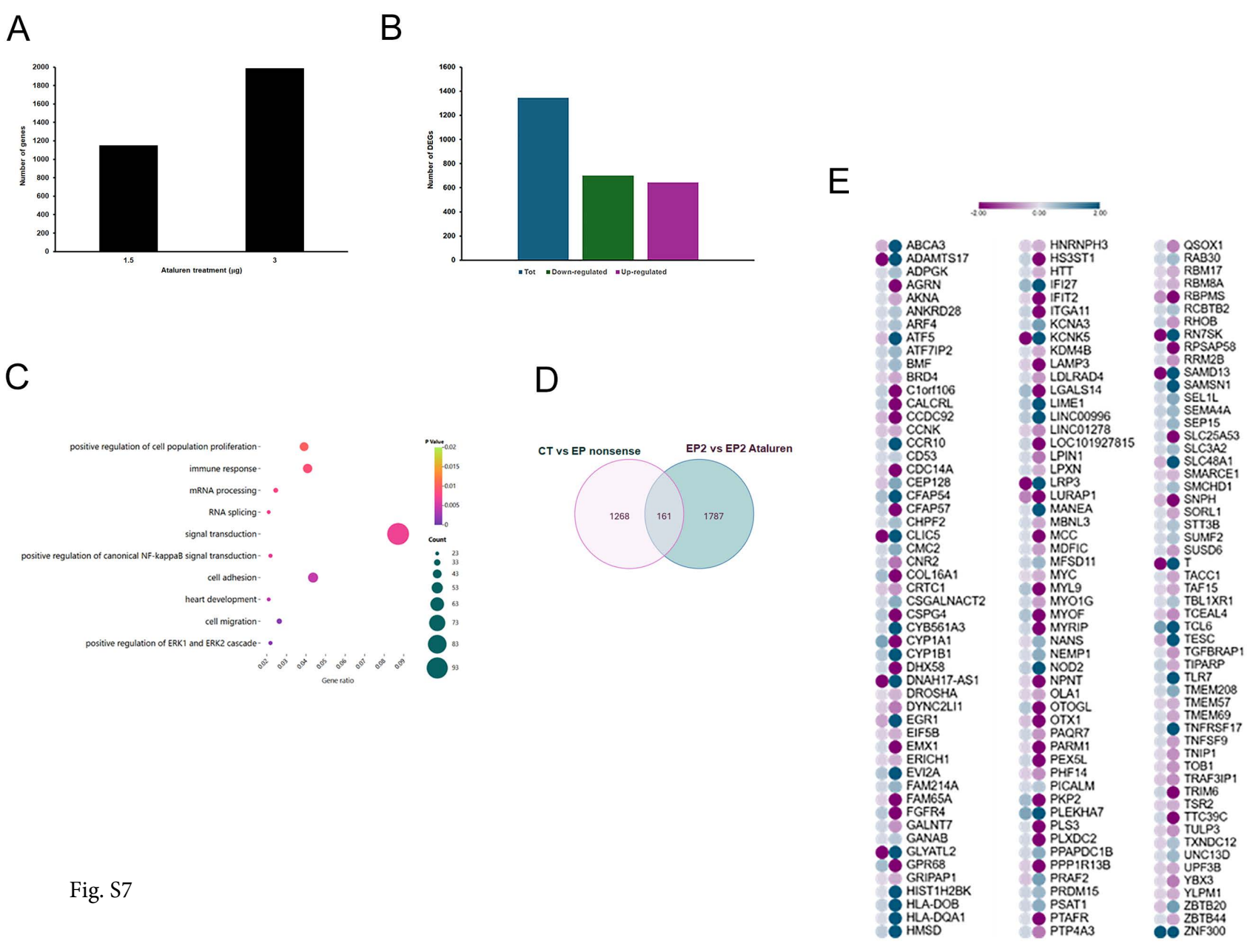


Fig. S6


A
Number of genes
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1.5
3
Ataluren treatment (μg)
B
Number of DEGs
1600
1400
1200
1000
800
600
400
200
0
Tot
Down-regulated
Up-regulated
C
positive regulation of cell population proliferation
immune response
mRNA processing
RNA splicing
signal transduction
positive regulation of canonical NF-kappaB signal transduction
cell adhesion
heart development
cell migration
positive regulation of ERK1 and ERK2 cascade
Gene ratio
P Value
0.02
0.015
0.01
0.005
0
Count
23
33
43
53
63
73
83
93
D
CT vs EP nonsense
EP2 vs EP2 Ataluren
1268
161
1787
E
-2.00
0.00
2.00
ABCA3
ADAMTS17
ADPGK
AGRN
AKNA
ANKRD28
ARF4
ATF5
ATF7IP2
BMF
BRD4
C1orf106
CALCRL
CCDC92
CCNK
CCR10
CD53
CDC14A
CEP128
CFAP54
CFAP57
CHPF2
CLIC5
CMC2
CNR2
COL16A1
CRTC1
CSGALNACT2
CSPG4
CYB561A3
CYP1A1
CYP1B1
DHX58
DNAH17-AS1
DROSHA
DYNC2LI1
EGR1
EIF5B
EMX1
ERICH1
EVI2A
FAM214A
FAM65A
FGFR4
GALNT7
GANAB
GLYATL2
GPR68
GRIPAP1
HIST1H2BK
HLA-DOB
HLA-DQA1
HMSD
HNRNPH3
HS3ST1
HTT
IFI27
IFIT2
ITGA11
KCNA3
KCNK5
KDM4B
LAMP3
LDLRAD4
LGALS14
LIME1
LINC00996
LINC01278
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LPIN1
LPXN
LRP3
LURAP1
MANEA
MBNL3
MCC
MDFIC
MFSD11
MYC
MYL9
MYO1G
MYOF
MYRIP
NANS
NEMP1
NOD2
NPNT
OLA1
OTOGL
OTX1
PAQR7
PARM1
PEX5L
PHF14
PICALM
PKP2
PLEKHA7
PLS3
PLXDC2
PPAPDC1B
PPP1R13B
PRAF2
PRDM15
PSAT1
PTAFR
PTP4A3
QSOX1
RAB30
RBM17
RBM8A
RBPMS
RCBTB2
RHOB
RN7SK
RPSAP58
RRM2B
SAMD13
SAMSN1
SEL1L
SEMA4A
SEP15
SLC25A53
SLC3A2
SLC48A1
SMARCE1
SMCHD1
SNPH
SORL1
STT3B
SUMF2
SUSD6
T
TACC1
TAF15
TBL1XR1
TCEAL4
TCL6
TESC
TGFBRAP1
TIPARP
TLR7
TMEM208
TMEM57
TMEM69
TNFRSF17
TNFSF9
TNIP1
TOB1
TRAF3IP1
TRIM6
TSR2
TTC39C
TULP3
TXNDC12
UNC13D
UPF3B
YBX3
YLPM1
ZBTB20
ZBTB44
ZNF300

Fig. S7

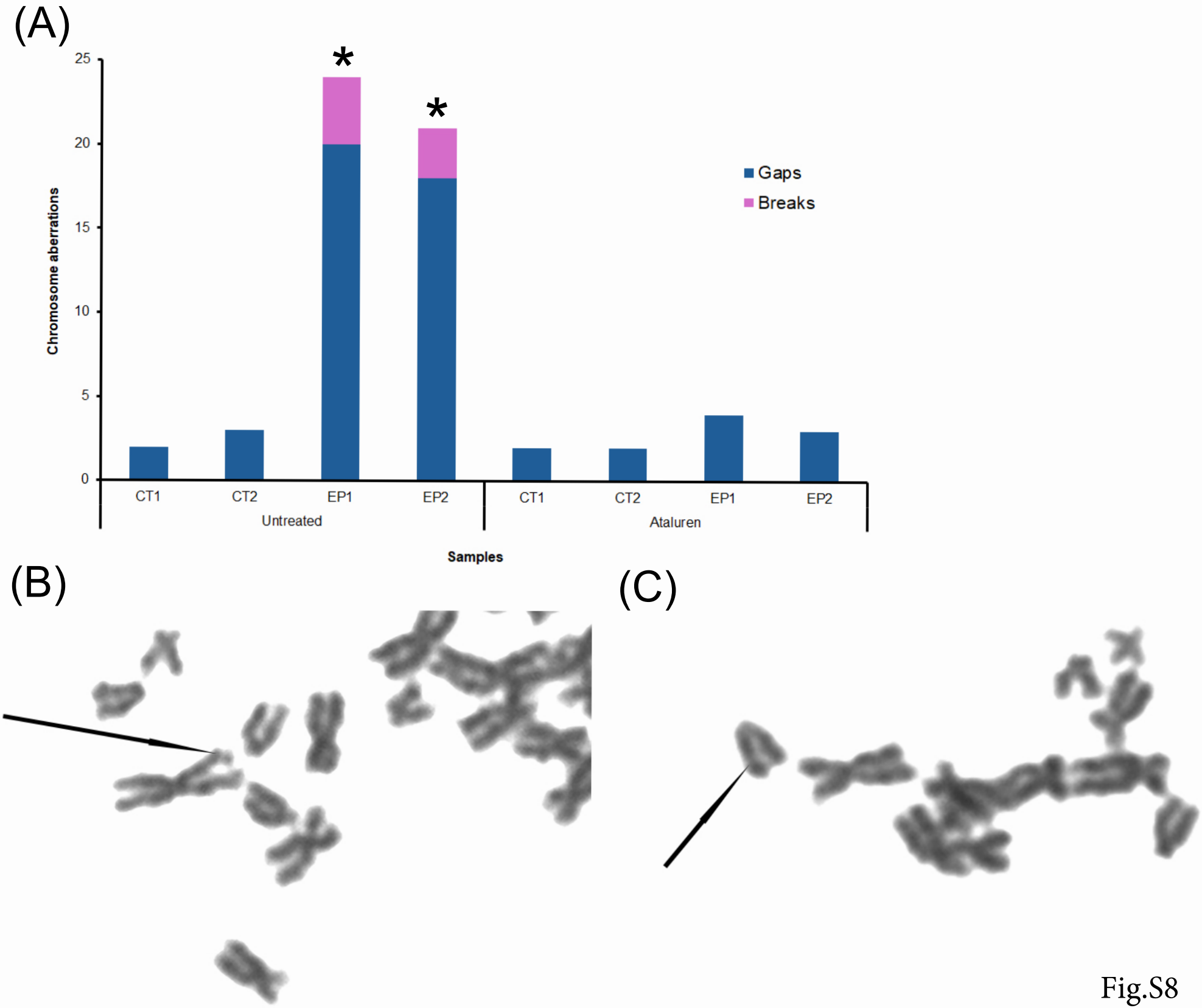
(A)
25
20
15
10
5
0
Chromosome aberrations
*
*
Gaps
Breaks
CT1
CT2
EP1
EP2
CT1
CT2
EP1
EP2
Untreated
Ataluren
Samples
(B)
(C)

Fig.S8

SUPPLEMENTARY FIGURE LEGENDS

Supplementary Figure 1. Localization of amino acid changes identified in DEE85 patients carrying variants in the *SMC1A* gene. The protein length is not in scale.

Supplementary Figure 2. (A) Protein blotting revealed that SMC1A levels in EP cells with frameshift variants (EP3, EP5, EP6, EP9, EP10, and EP14) were comparable to controls. (B) Cells carrying missense variants (EP8, EP12, EP13) showed the same pattern, while EP1 and EP2, harbouring nonsense variants, displayed decreased SMC1A protein levels.

Supplementary Figure 3. (A) Differential gene expression analysis (DGEA) comparing EP cell lines to controls identified 449 DEGs (284 were upregulated and 165 downregulated). (B) EP cell lines with frameshift variants showed 411 DEGs (251 upregulated and 160 downregulated). (C) Missense variants affected 296 genes (133 upregulated and 163 downregulated). (D) Nonsense variants caused the most extensive changes, with 1,429 misregulated genes (656 upregulated and 773 downregulated).

Supplementary Figure 4. RNA-seq data validation through quantitative-PCR.

Supplementary Figure 5. ImageJ software was employed for semiquantitative analysis of immunoblotting data. (A) Ataluren restored SMC1A protein expression in EP1 LCLs carrying the c.901C>T, p.Arg1035 nonsense variant. (B) A similar analysis in EP2 LCLs, harbouring the c.901C>T, p.Gln323* nonsense variant, confirmed ataluren-induced restoration of SMC1A protein levels, with the exception of treatment at 0.5 μg/ml.

Supplementary Figure 6. (A) Newly synthesized SMC1A coimmunoprecipitated with SMC3 in EP1 and (B) EP2 cell lines carrying nonsense variants. No signal was detected in the IPs using IgG-coated beads.

Supplementary Figure 7. Transcriptomic response to ataluren in EP2 cells carrying a nonsense variant in *SMC1A*. (A) Transcriptomic profiling of EP2 lymphoblastoid cells treated with increasing concentrations of ataluren (1.5, and 3 μg/ml for 24 hours) revealed a dose-dependent effect, with 1,152 and 1,938 DEGs, respectively. (B) Upon pooling the treatment data, we identified 1,347

DEGs (703 downregulated, 644 upregulated). (C) GO enrichment analysis of these DEGs highlighted significant involvement in biological processes such again enriched in pathways related to cell proliferation, signal transduction, cell adhesion. (D) Consistently, 161 genes were altered across doses, with 44.7% reverting toward control expression levels.

Supplementary Figure 8. (A) Karyotypic analysis of 100 Giemsa-stained metaphase spreads showed that EP1 and EP2 cells displayed markedly elevated chromosomal aberration frequencies (24 and 21 per 100 metaphases, respectively) compared with controls (2–3/100). Following ataluren treatment, aberration levels decreased to values comparable to controls. Representative partial metaphases illustrating chromosomal abnormalities are shown in (B) a break and (C) a gap in EP1 cells. Aberrations are indicated by arrows.

Supplementary Table 1. EP, CdLS and control cell lines used for the transcriptome analysis.

Sample	SMC1A variant	Amino acid change	Type
EP1	c.3103C>T	p.Arg1035*	Nonsense
EP2	c.901C>T	p.Gln323*	Nonsense
EP3	c.1063delC	p.Arg377Glyfs*2	Frameshift
EP5	19.5 Kb deletion		Frameshift
EP6	c.1609delG	p.Glu1013*	Frameshift
EP8	c.286C>T	p.Arg96Cys	Missense
EP9	c.3046_3048delGTGindG	p.Val1016Alafs	Frameshift
EP10	c.2842_2845dup	p.Asp949Glyfs*2	Frameshift
EP12	c.2948A>G	Tyr983Cys	Missense
EP13	c.95C>A	Gly32Glu	Missense
EP14	c.1078_1079delAG	Gln361Glyfs*42	Frameshift
CdL363	c.2077C>G	Arg693Gly	Missense
CdL565	c.2046_2048delAGA	Glu683del	Deletion
CdL060	c.1487G>A	Arg496His	Missense
LCL1			Control
LCL3			Control
LCL4			Control

Supplementary Table 2. Primer used for RNA-seq data validation.

GENE	PRIMER FORWARD	PRIMER REVERSE
GATA4	CAGCAAGTGAGAAGCGAGAC	GATGGCACTGGCTGAACTT
ATP11C	TGGAAGAACTGCGTGTCCT	GCAGCAGCATCATCATCTTC
AGMAT	TCACCTTCGTGGTCATCGAC	GCAGCAGAAGGTGCAGAAAC
CYP1B1	CCTGGAGACCTTCGGCAAC	GGTGATGAAGGCGTTGTTGG
SERPINB10	GGACCTCAGCCTGACTACCA	CAGGATGAAGTCCAGGGCAT
ABHD6	TGCTGGTCATCTTCGGCTAC	GGATGACGATGACGAGGAAG
HPRT	AGCCAGACTTTGTTGGATTTG	TACTAAGCAGATGGCCACAGA

Supplementary Table 3. Differentially expressed genes (up- and downregulated) in EP cell lines compared to controls.

Down-regulated

Gene	log2FoldChange
PNMAL1	-8,20827E+14
GSTM1	-7,66371E+14
RPRM	-5,93135E+14
FRAS1	-5,68833E+14
SEMA3A	-5,41414E+14
ASB9	-5,25452E+14
PITX2	-5,185E+14
TRIM31	-5,10712E+14
MIR646HG	-4,96669E+14
LOC101926935	-4,94256E+14
UGT2A3	-4,8869E+14
LINC01087	-4,82924E+14
WSCD1	-4,77784E+14
BMP3	-4,77487E+14
RBPMS	-4,76671E+14
RNF217	-4,72396E+14
PLS3	-4,71219E+14
FOXG1	-4,68042E+14
ITGA2	-4,36085E+14
FAM71D	-4,35572E+14
CLDN11	-4,2429E+14
LINC01426	-4,19238E+14
OR4C6	-4,18478E+14
TCF7L1	-4,12116E+14
CCDC149	-4,02013E+14
NOL4	-3,98752E+14
HOGA1	-3,95391E+14
MMP23A	-3,83062E+14
FAM86B1	-3,72323E+14
DNAH14	-3,68768E+14
KCNJ2	-3,68443E+14
ANXA3	-3,6745E+14
FLJ46906	-3,5871E+14
RP1L1	-3,56662E+14
HIC1	-3,53786E+14
SOWAHC	-3,52624E+14
LINC01320	-3,49907E+14
USP32P1	-3,49847E+14
SEMA5A	-3,47181E+14
ST7-OT4	-3,44031E+14
C14orf132	-3,4084E+14
NR2F2	-3,37902E+14

IL1B	-3,3724E+14
PRKCH	-3,20962E+14
PTPRG	-3,18772E+14
LOC102724301	-3,16755E+14
SPEF2	-3,09783E+14
GPM6A	-3,07364E+14
CASC10	-3,07233E+14
TNIP3	-3,058E+14
CREB3L3	-3,04867E+14
PCDHGB4	-3,03269E+14
LOC100130298	-3,0144E+14
TEKT4P2	-2,99621E+14
AMOTL1	-2,97156E+14
LINC01252	-2,91069E+14
BANK1	-2,88131E+14
CYP1A1	-2,78283E+14
MYRF	-2,71008E+14
ROBO3	-2,65134E+14
NAP1L2	-2,61833E+14
TOX	-2,58625E+14
RGS6	-2,55021E+14
ADGRA3	-2,54345E+14
PMCH	-2,53014E+14
MAN1C1	-2,49914E+14
LGR4	-2,45858E+14
OGDHL	-2,44852E+14
FAM198B	-2,44225E+14
GABRB2	-2,41138E+14
PLXNA2	-2,37974E+14
DPP4	-2,35894E+14
FCRL4	-2,34298E+14
ITGA5	-2,33453E+14
FCGRT	-2,29157E+14
COL16A1	-2,2841E+14
ANKRD18A	-2,27494E+14
ROBO1	-2,2461E+14
F5	-2,21425E+14
ACKR3	-2,20762E+14
HLA-DRB6	-2,19721E+14
NPIPA5	-2,17215E+14
CCL17	-2,17102E+14
PARD3	-2,11667E+14
MYH10	-2,11612E+14
SIGLEC14	-2,09967E+14
LOC729737	-2,05041E+14
HS3ST1	-2,00454E+14
STAM-AS1	-1,98999E+14

RAB37	-1,98566E+14
ARHGEF17	-1,94247E+14
CSRNP3	-1,91191E+14
ARRB1	-1,9084E+14
UST	-1,90104E+14
EDARADD	-1,83084E+14
HLA-G	-1,79918E+14
DISP2	-1,77461E+14
TNFRSF19	-1,76789E+14
CR1	-1,76746E+14
RILPL1	-1,73847E+14
CFP	-1,71432E+14
UBQLNL	-1,69688E+14
PCGF2	-1,64906E+14
TNFSF12	-1,62912E+14
NCALD	-1,61265E+14
GIMAP6	-1,60845E+14
LOC554206	-1,58673E+14
ARHGAP24	-1,57518E+14
CASKIN2	-1,56479E+14
DLG4	-1,54236E+14
TMEM229B	-1,53871E+14
ZBTB47	-1,52845E+14
C1orf106	-1,50916E+14
AMZ1	-1,5039E+14
NHSL1	-1,47954E+14
ANKRD34A	-1,45973E+14
PTK2	-1,41729E+14
MS4A14	-1,40071E+14
MGAT4A	-1,38696E+14
MPEG1	-1,35357E+14
ID2	-1,35285E+14
ZNF362	-1,31528E+14
NUDT13	-1,31345E+14
SMIM3	-1,30358E+14
GPR68	-1,29935E+14
CCDC122	-1,27383E+14
EMID1	-1,26106E+14
KCND2	-1,2598E+14
LRP6	-1,23211E+14
TRO	-1,22209E+14
MBOAT2	-1,21753E+14
ACY1	-1,21709E+14
CLIC6	-1,17583E+14
CDK5R1	-1,17067E+14
MNS1	-1,1651E+14
TMEM132A	-1,15355E+14

KIF26B	-1,11587E+14
RIMKLB	-1,07126E+14
NFATC2	-1,05016E+14
SLC45A3	-1,04539E+14
IL2RB	-1,02074E+14
EOMES	-5,27506E+13
KCNJ12	-5,08884E+13
FCRL3	-2,76882E+13
SYNGR1	-2,59966E+13
SORBS2	-2,16873E+13
BHLHE22	-1,76857E+13
TUBA8	-1,59371E+13
WWTR1	-1,55832E+13
LIN7A	-1,51832E+13
LRRIQ3	-1,47034E+13
SEPN1	-1,43195E+13
H1F0	-1,38507E+13
NEURL2	-1,16383E+13
METRN	-1,14342E+13
PHC1	-1,07823E+13
NRARP	-1,02328E+13
DNASE1L3	-1,48911E+12
C1QTNF9B-AS1	-0,985454224
THBS3	-0,977874366
SNHG25	-0,960205606
ZGLP1	-0,939135092
TTC39C	-0,926096682
IL16	-0,921235249
FAM86B3P	-0,919168895
PIK3R6	-0,909975263
TMEM136	-0,905680193
LMO7	-0,901516508
LRP5	-0,894688134
MCPH1-AS1	-0,891687392
RNF144A	-0,88431173
P2RY11	-0,85299404
NT5E	-0,846372078
CBLB	-0,833118839
ETS2	-0,828824273
KTN1-AS1	-0,789375954
CDPF1	-0,785252515
PHLDB3	-0,778528068
RRN3P1	-0,778491349
GSAP	-0,775964618
CTSC	-0,769565071
HMGN5	-0,76221232
FAM86DP	-0,742537069

LZTS2	-0,741160553
AHR	-0,731280741
DHRS4L2	-0,72720644
GRAMD3	-0,725952668
SPINT1	-0,719161926
CYTH3	-0,718206286
DNAJB5	-0,713712846
EID2B	-0,697360344
ENG	-0,672921847
PAAF1	-0,659604108
ENO3	-0,658241902
TSEN54	-0,65186642
TESPA1	-0,646300072
TMEM198B	-0,645561989
CBLN3	-0,635158782
SNX29	-0,629907255
RBM26-AS1	-0,615843983
TSPYL2	-0,610224537
TCEAL4	-0,608368853
TCEAL1	-0,605725123
IKZF2	-0,600613951
ZNF579	-0,594709596
CCDC28B	-0,594633516
PSMD5-AS1	-0,590040786
CHST14	-0,58996655
FBF1	-0,588083112
TFPT	-0,544113221
RAI1	-0,534427906
PCED1A	-0,52647624
SGSM2	-0,524915201
SIK2	-0,520957833
INAFM2	-0,510703922
AGAP3	-0,495296481
HEATR6	-0,495207119
DHFRL1	-0,492836059
PABPN1	-0,489830648
IFT81	-0,479398202
TPCN1	-0,47478551
MAPK12	-0,466215099
ZNF512B	-0,466064391
FAM78A	-0,452300942
SVIP	-0,447001319
ACP6	-0,445471604
SMG6	-0,43959945
ZNF496	-0,43651371
CHKA	-0,434868706
DAPP1	-0,434618158

CDC42EP3	-0,432809206
BRD3	-0,4302674
CEPT1	-0,427983259
LRRC20	-0,427673435
ZNF74	-0,427340412
FBXL19	-0,426918644
SSBP4	-0,42017247
COPRS	-0,418211158
ALKBH4	-0,417943487
MSANTD2	-0,410055636
TMEM110	-0,405645454
ZSWIM4	-0,404179178
CCDC125	-0,389049574
ZMYM3	-0,38605345
HDGFRP2	-0,384484635
MBOAT7	-0,383439707
ZNF234	-0,376489949
MAPK7	-0,376013396
RPIA	-0,374716402
SCFD2	-0,357612432
TBC1D22B	-0,355402311
DCAKD	-0,355095059
CALM3	-0,355023603
EML3	-0,344819967
SUSD6	-0,339704113
BIVM	-0,333750078
ERCC2	-0,331373126
CSK	-0,324539999
TAF15	-0,319962724
GATAD2A	-0,298804748
STX4	-0,295477994
TRIP6	-0,287009852
HNRNPA2B1	-0,285270834
CCDC71	-0,283311392
RPS6KA4	-0,280735375
ANP32A	-0,279886617
C11orf73	-0,278587248
CARM1	-0,27638242
UCK2	-0,270240571
CDC34	-0,262468567
PBX2	-0,259764428
UCKL1	-0,258735147
INTS9	-0,254838514
HNRNPH3	-0,252344322
CTNNBL1	-0,250302252
AKT1	-0,235450318
TRIM11	-0,22910094

PDCD7	-0,206054491
NACC1	-0,205113516
CACTIN	-0,198329218
FAM192A	-0,182825964
NAA60	-0,179087885
FIP1L1	-0,174927809
ATXN2L	-0,167708907

Up-regulated

Gene	log2FoldChange
CAPZA1	0,167452553
RAB5A	0,192710041
SEC22A	0,227184502
BRF2	0,238598264
ITFG2	0,248152999
ERO1A	0,257068851
TM9SF3	0,258506768
RABGEF1	0,258980243
SELT	0,268865392
SCFD1	0,270459721
CHMP2B	0,280320332
TMED4	0,288449622
RANBP9	0,290505753
GATC	0,294139612
ZNF562	0,309298348
ATG4A	0,311540617
CASC4	0,316829517
SDE2	0,326418219
ATF2	0,328938753
MAGT1	0,329052132
PPT1	0,329157896
TTC37	0,329999584
PNPLA8	0,335605042
TM2D3	0,3414044
RETSAT	0,341611108
EMC3	0,342661237
GZF1	0,344743941
ZNF136	0,358248327
CINP	0,360494998
ADPGK	0,361570073
GSKIP	0,361748462
USP48	0,364003615
NGLY1	0,364877872
ITFG1	0,367310608
SLC35A5	0,375642186
TVP23B	0,380929974

CD46	0,383746215
RAP1B	0,387287851
DTWD1	0,388045326
GBA	0,392247219
TAPT1	0,405607504
CDKN1B	0,426240648
ENTPD4	0,443655426
SEC24D	0,445483947
BTN3A1	0,448997726
SARAF	0,464832742
GNE	0,466781706
CHPF2	0,467195274
LAMP2	0,46961364
MAP4K3	0,47055624
ZNF709	0,473793226
RHBDD1	0,476462149
P2RY10	0,478648502
JOSD2	0,489875628
ZNF527	0,49313342
MYO5A	0,497522595
LMAN1	0,499844727
LONRF1	0,507851885
POLE4	0,511491277
ASPHD2	0,521598702
ZXDB	0,522668142
CLIP4	0,53427951
KCTD7	0,54401132
C16orf54	0,551610009
GNS	0,556083411
RELL1	0,56134346
PPP3CC	0,563315472
C10orf32	0,565162272
C15orf57	0,565246639
JAK2	0,580831218
OSTM1	0,584493014
HERPUD1	0,586969845
ZNF383	0,593804135
ZNF506	0,594064275
ELL2	0,601188411
HSPA13	0,626719929
HELB	0,626944932
UBE2J1	0,639279746
ICAM2	0,645374304
CCPG1	0,652301013
SLC41A2	0,6575883
PAM	0,667039117
RNF24	0,670392742

SRGN	0,676592286
ANXA2	0,680979839
WNT10A	0,687132146
ZNF784	0,702580297
TXNDC11	0,733226502
FRRS1	0,734485108
ACP2	0,736044439
PDK1	0,742863075
PDE4DIP	0,744638134
RNF122	0,746093621
DNLZ	0,785079585
MANEA	0,79211581
HECA	0,811469881
APOL6	0,831228556
MIR22HG	0,836387592
PQLC3	0,844442345
C15orf65	0,873848592
TSTD1	0,890080574
CPEB3	0,915550811
ACRC	0,935705487
XBP1	0,945013407
MAN1A1	0,946047149
TTC22	0,956468831
RNF103	0,966736689
PIM2	0,980442728
TUBB2B	1,30946E+13
CHST6	1,52716E+13
ACOXL	1,63318E+13
FHDC1	1,76623E+13
NUGGC	1,82082E+13
TYMP	1,01783E+14
PPP1R32	1,05366E+14
FNDC3B	1,074E+14
SLC26A11	1,07688E+14
TICAM2	1,08901E+14
SNX16	1,12274E+14
ANGPTL2	1,18012E+14
ANP32A-IT1	1,21275E+14
C12orf74	1,2164E+14
GNB4	1,26617E+14
BCAS1	1,34577E+14
AGAP2-AS1	1,38337E+14
LOC101927686	1,46109E+14
TTC39A	1,46274E+14
LOC100507195	1,51257E+14
FAAH	1,55226E+14
SSC4D	1,55317E+14

LOXL2	1,56941E+14
EDN1	1,60079E+14
MIAT	1,63557E+14
PFN2	1,6419E+14
LMTK3	1,71736E+14
NEUROG2	1,73238E+14
M1AP	1,74231E+14
EPS8L1	1,74988E+14
FAM66B	1,81452E+14
PVRL4	1,81613E+14
DENND2C	1,84492E+14
POU4F1	1,94835E+14
F2R	2,01601E+14
PTPRO	2,11842E+14
LOC103908605	2,12072E+14
ADAM21	2,2514E+14
TRPV3	2,2784E+14
MUC20	2,34698E+14
NRN1	2,36213E+14
LOC102546229	2,46023E+14
EMP2	2,54E+14
XXYLT1-AS1	2,74534E+14
JSRP1	2,75519E+14
WNK4	2,78956E+14
MYO18B	2,799E+14
LRRN2	2,94599E+14
A2M	3,04141E+14
TMPRSS3	3,12831E+14
PRKD1	3,22302E+14
LOC646762	3,46586E+14
USP44	3,68748E+14
RGPD1	3,85216E+14
LDLRAD2	4,48837E+14
OVCH1-AS1	5,14766E+14
PROSER2-AS1	6,66255E+14

Supplementary Table 4. Differentially expressed genes (up- and downregulated) in EP cell lines carrying frameshift variants compared to controls.

Down-regulated

Gene	log2FoldChange
PNMAL1	-8,13026E+14
TDRD12	-5,93242E+14
TMEM176A	-5,6568E+14
LINC01087	-5,56304E+14
CD7	-5,50249E+14
MIR646HG	-5,42462E+14
LOC101926935	-5,41395E+14
RBPMS	-5,40574E+14
MKRN3	-5,10486E+14
AOC1	-5,08035E+14
PLXDC2	-4,98768E+14
BMP3	-4,92426E+14
CTNNA2	-4,90331E+14
WSCD1	-4,76387E+14
FAM71D	-4,65683E+14
KCNJ15	-4,47387E+14
OR4C6	-4,43893E+14
LINC01426	-4,30409E+14
GLIPR1L2	-4,29524E+14
DNAH14	-4,28324E+14
HCK	-4,19139E+14
IL1B	-3,98484E+14
C14orf132	-3,75539E+14
HIC1	-3,68464E+14
SNCG	-3,66472E+14
NR2F2	-3,6382E+14
C2orf91	-3,6174E+14
SOWAHC	-3,55905E+14
HMX3	-3,55657E+14
NOXA1	-3,49006E+14
SPEF2	-3,44947E+14
CREB3L3	-3,3534E+14
ANXA3	-3,3493E+14
GPM6A	-3,29485E+14
CYP1A1	-3,11335E+14
NSG1	-3,11244E+14
ADGRE4P	-3,10358E+14
AFAP1L1	-3,00454E+14
SOBP	-2,9508E+14
FCRL3	-2,90836E+14

FILIP1	-2,89086E+14
EMILIN1	-2,80664E+14
ROBO1	-2,73288E+14
FCRL4	-2,73143E+14
CCL17	-2,70573E+14
FBN2	-2,68981E+14
DPP4	-2,66676E+14
GPR82	-2,65285E+14
COL16A1	-2,59969E+14
NAP1L2	-2,59784E+14
TEKT4P2	-2,56724E+14
HLA-DRB6	-2,55334E+14
PMCH	-2,53144E+14
SYCP2	-2,52283E+14
PGLYRP4	-2,47335E+14
TOX	-2,44696E+14
TULP2	-2,43507E+14
MMP9	-2,3569E+14
PLXNA2	-2,33748E+14
SORBS2	-2,27456E+14
HS3ST1	-2,24173E+14
GATA4	-2,21829E+14
FAM129B	-2,19585E+14
GRPR	-2,18785E+14
MAN1C1	-2,12416E+14
MAL	-2,09058E+14
UST	-2,07766E+14
CLEC4A	-2,05511E+14
TUBA8	-2,05199E+14
HLA-G	-2,01688E+14
KRT7	-2,00855E+14
OTP	-2,00472E+14
MYO7B	-1,96382E+14
RAB37	-1,94885E+14
NCALD	-1,91416E+14
NFATC4	-1,90353E+14
DNASE1L3	-1,87245E+14
CASKIN2	-1,81813E+14
LOC100507600	-1,80249E+14
GUCY1A3	-1,73926E+14
ACKR3	-1,72902E+14
GEM	-1,7243E+14
RAB38	-1,7074E+14
CMTM3	-1,70214E+14
AMZ1	-1,65149E+14
HOOK1	-1,64103E+14
LINC01094	-1,63915E+14

PDE6G	-1,63791E+14
DLG4	-1,59891E+14
LRRIQ3	-1,59528E+14
GRIN2D	-1,57473E+14
GIMAP6	-1,56424E+14
FRMD4A	-1,5498E+14
CETP	-1,53291E+14
IL9R	-1,49417E+14
EDARADD	-1,48434E+14
CCDC122	-1,45743E+14
ZNF362	-1,43905E+14
SMIM3	-1,43654E+14
ADAMTS12	-1,42819E+14
CCDC74B	-1,41299E+14
CDK5R1	-1,40381E+14
CYP1B1	-1,36007E+14
ANO5	-1,34877E+14
TNFSF4	-1,3046E+14
MGAT4A	-1,30085E+14
PTK2	-1,29267E+14
EMID1	-1,28902E+14
KIF26B	-1,28724E+14
MBOAT2	-1,26436E+14
GPR68	-1,2405E+14
NRARP	-1,24026E+14
LOC728175	-1,23893E+14
RIMKLB	-1,22963E+14
CLIC6	-1,22451E+14
MNS1	-1,20919E+14
H1F0	-1,20717E+14
ZGLP1	-1,12186E+14
CNR1	-1,11508E+14
ID2	-1,09568E+14
BHLHE40	-1,074E+14
METRN	-1,04469E+14
PHC1	-1,04364E+14
ILDR2	-1,04008E+14
IL16	-1,00841E+14
LTA	-1,00806E+14
A4GALT	-1,00798E+14
ANKRD20A12P	-4,30303E+13
ST7-OT4	-3,73117E+13
IL17RE	-3,43917E+13
PRKCH	-3,26926E+13
GIPC3	-3,14606E+13
CDH17	-2,92089E+13
FCGRT	-2,88471E+13

RPSAP58	-2,22295E+13
DAPK2	-2,02859E+13
LOC554206	-1,82683E+13
FES	-1,80261E+13
MYH10	-1,70983E+13
SMO	-1,62077E+13
SERPINB10	-1,39906E+13
TMEM132A	-1,1933E+13
KCND2	-1,05619E+13
LOC100130298	-3,26355E+12
PIK3R6	-0,97731706
TK2	-0,974380693
DBN1	-0,970460133
PLA2G4C	-0,95804104
GSAP	-0,935247362
NFATC2	-0,921688759
STAG3	-0,91918832
CRACR2B	-0,912071053
LACC1	-0,89794391
ETS2	-0,870620006
CDPF1	-0,866129954
RRN3P1	-0,863049472
SGK223	-0,846261608
TNF	-0,840522422
DNAJB5	-0,833465923
NR2F6	-0,829751157
LMO7	-0,825888171
HES1	-0,822182204
PAAF1	-0,817397845
IFNGR1	-0,814399316
EXD3	-0,811107101
GRAMD3	-0,796856545
TIMP1	-0,795848346
IL2RB	-0,788950828
REC8	-0,7850489
EID2B	-0,776958909
TCEAL3	-0,771233509
RASSF2	-0,767291178
ALDH2	-0,762934624
LY6G5B	-0,756317762
CBLB	-0,747752913
CHD3	-0,743536851
RGS10	-0,741653226
CYTH3	-0,735824403
ABHD6	-0,727781631
ARMC9	-0,727243722
DHRS4L2	-0,719747619

IRF2BP2	-0,718136936
AGMAT	-0,713869923
CCDC28B	-0,701482768
TFPT	-0,700782662
CHRNA5	-0,694944781
FBF1	-0,692907695
LOC100288798	-0,691632372
ZNF579	-0,690777975
PLCXD1	-0,679839379
PAQR8	-0,677656828
TCEAL4	-0,666071621
SAMD10	-0,661109007
HMGN5	-0,660315207
TSEN54	-0,650974712
ENO3	-0,627472043
TNFSF14	-0,627095776
RGS14	-0,612808893
IL27RA	-0,610075512
PAPLN	-0,610045927
DYNC2LI1	-0,605865069
ZYX	-0,605734265
DFNA5	-0,591353973
CHST14	-0,562117689
SGSM2	-0,560536559
SNX29	-0,559131507
DHFRL1	-0,558731672
C7orf60	-0,548820342
ORAI3	-0,542068536
TSPYL2	-0,538576114
ITPK1	-0,523947744
PCED1A	-0,509294676
NSMF	-0,50892269
ENKD1	-0,50647274
SVIP	-0,501844564
PABPN1	-0,496986174
MSANTD2	-0,489084179
PCBP4	-0,484517461
SEPT9	-0,475717041
MAPK12	-0,468604824
SSBP4	-0,468154824
C6orf47	-0,467971865
PIP5K1C	-0,43898694
FAM78A	-0,432060812
SYS1	-0,424351687
AGAP3	-0,423414368
PLGRKT	-0,420939534
ZNF234	-0,41369165

DAPP1	-0,407971125
ACADS	-0,404501869
LRRC45	-0,395588688
PFN1	-0,388938227
TRAPPC5	-0,385175031
CALM3	-0,383137793
CEPT1	-0,372491989
MOAP1	-0,366765878
RAI1	-0,365456397
ZNF747	-0,364041204
ERCC2	-0,340860367
TMC6	-0,335980908
SMARCE1	-0,325172882
FBXL19	-0,317709543
STX4	-0,308278856
TAF15	-0,306720678
RPS6KA4	-0,279091063
CARM1	-0,277411759
PBX2	-0,275975009
TFEB	-0,272262597
PPP1R18	-0,271449611
TRAF2	-0,227926474
MED15	-0,222251468

Up-regulated

Gene	log2FoldChange
SP3	0,190769035
CAPZA1	0,1979337
PTPN1	0,23613938
EZR	0,243686068
FGFR1OP2	0,256394129
ZNF639	0,258830824
SYVN1	0,266055783
BRPF3	0,28399453
RPRD1A	0,301180111
ZNF562	0,302910669
ERO1A	0,307180226
PNPLA8	0,307821568
ATP11C	0,30891426
PPT1	0,319410306
GNA13	0,323979658
MSH3	0,329159011
CASP3	0,345202148
NGLY1	0,350582607
CLSTN1	0,354648433
SDE2	0,362495128

CASC4	0,363484763
TTC37	0,380965531
CALU	0,382180173
ZNF136	0,384122644
CLDND1	0,394033835
GLCCI1	0,398693683
SEC24D	0,399739208
ELF1	0,399812548
ARID2	0,409698521
JOSD2	0,411871871
LMTK2	0,422750971
FAM91A1	0,422876253
USP48	0,426079334
LIMD1	0,436116183
LAMP2	0,458095169
HERPUD1	0,458497151
TMEM59	0,462526785
RAP1B	0,470067907
GNG7	0,47089141
NLK	0,476124539
LMAN1	0,4768773
RNF19A	0,480257351
CHPF2	0,486672707
GNE	0,491271448
HSP90B1	0,494578022
MTRF1L	0,49932408
ASPHD2	0,506343781
KLHL21	0,514643918
TRAM1	0,525107339
CLIC4	0,525504501
TXNRD1	0,525813225
C15orf57	0,525958174
AFF4	0,528554309
SEMA4B	0,529211218
NDFIP1	0,535915056
SEC24A	0,535987439
POLE4	0,539415301
CCPG1	0,541198345
IFNLR1	0,54648845
GNS	0,553022331
ICAM2	0,56057534
IGF2R	0,563152733
IL10RA	0,565274258
TPD52	0,5653677
ELL2	0,568091756
ENTPD4	0,570821382
GCLM	0,580705187

CD99L2	0,582696818
MBNL2	0,584380999
PPP3CC	0,589952867
PTPN22	0,594586432
FAM214A	0,59592332
UBE2J1	0,600524069
CLIP4	0,600829063
C16orf54	0,603812847
MDM2	0,605670475
HSPA13	0,616950905
MAP4K3	0,633180229
SLC41A2	0,643180423
FAM69A	0,648439813
HELB	0,650055069
TSTD1	0,67283654
CCDC134	0,674492078
TXNDC11	0,676298574
KIF1B	0,688050191
FRRS1	0,700971823
HECA	0,707740737
EDEM3	0,724216038
RPS18P9	0,737417108
ACP2	0,745815929
CCDC88A	0,754318167
ZNF784	0,772285329
ERC1	0,773127477
BACH1	0,774148579
PRDM1	0,781737861
PAM	0,786873518
PDK1	0,789907592
DERL3	0,801829739
MANEA	0,803452733
BCAS1	0,805571235
RRAGD	0,838170322
MAN2A1	0,846587198
MXI1	0,856660721
XBP1	0,879555788
MAN1A1	0,884890023
RNF103	0,891837844
NR1D2	0,895212807
TYMP	0,899483678
ATXN7L1	0,912810828
SLC26A11	0,916000465
ERN1	0,98818956
CPEB3	0,994378547
SOCS2	1,0279E+13
TTC39A	2,13298E+13

A2M	3,42779E+13
FNDC3B	1,02244E+14
SRXN1	1,02954E+14
KCNA3	1,04621E+14
KCNK6	1,05016E+14
STAC3	1,0983E+14
TUBB2B	1,10287E+14
FOSL2	1,12307E+14
SNX16	1,25076E+14
CFAP54	1,25514E+14
FAAH	1,29942E+14
CUEDC1	1,30957E+14
GNB4	1,35185E+14
TMEM169	1,40502E+14
C12orf74	1,40726E+14
KIAA1671	1,45204E+14
DSG2	1,46554E+14
CES4A	1,4667E+14
POU4F1	1,50725E+14
TRPV3	1,67222E+14
MIAT	1,67313E+14
EPS8L1	1,72755E+14
PFN2	1,80733E+14
ACOXL	1,81003E+14
IFNG-AS1	1,96845E+14
HMOX1	1,97876E+14
NEUROG2	1,98359E+14
RAB3B	2,01046E+14
EMP2	2,06236E+14
NRN1	2,06247E+14
GAS6	2,1093E+14
ZNF208	2,18514E+14
KIF5C	2,21651E+14
TMPRSS3	2,59201E+14
SHTN1	2,59765E+14
ADAM21	2,69173E+14
SIX1	2,96739E+14
SIX3	3,01118E+14
C8orf31	3,05596E+14
LRRN2	3,13726E+14
ZNF311	3,18272E+14
PRKD1	3,32053E+14
COL1A2	3,50796E+14
LOC646762	3,67762E+14
MSR1	5,3289E+14
PROSER2-AS1	6,39965E+14

Supplementary Table 5. Differentially expressed genes (up- and downregulated) in EP cell lines carrying missense variants compared to controls.

Down-regulated

Gene	log2FoldChange
LCN8	-6,15549E+14
TRIM31	-5,48946E+14
SNCA	-5,43678E+14
BCHE	-4,86024E+14
STMND1	-4,77016E+14
CRTAM	-4,51216E+14
HMX3	-4,46263E+14
OR4C6	-4,43755E+14
CTNNA2	-4,24047E+14
FKBP10	-4,23994E+14
RNF217	-3,94098E+14
HIC1	-3,80143E+14
NRP1	-3,56545E+14
OSBPL10	-3,47246E+14
MYO7B	-3,46769E+14
C14orf132	-3,37102E+14
ANKRD18A	-3,36782E+14
LOC100130298	-3,3651E+14
CREB5	-3,32466E+14
BMP4	-3,2767E+14
TPD52L1	-3,27095E+14
GPM6A	-3,20539E+14
PDE1C	-3,18292E+14
TUSC1	-3,11627E+14
ADGRA3	-3,07795E+14
FAM201A	-2,99978E+14
RND3	-2,99939E+14
MYRF	-2,89436E+14
PLXNA2	-2,89244E+14
MAN1C1	-2,86863E+14
VIL1	-2,80528E+14
PRKCH	-2,72996E+14
NPIPA5	-2,69786E+14
APBB1	-2,62601E+14
MAST4	-2,59738E+14
DISP2	-2,48637E+14
EIF5AL1	-2,44662E+14
LOC729737	-2,35069E+14
TRPC1	-2,33533E+14
ANKRD36BP2	-2,31329E+14

ADGRE2	-2,31183E+14
DPP4	-2,1843E+14
NGFRAP1	-2,16016E+14
SORBS2	-2,11036E+14
C1orf54	-2,04756E+14
NHSL1	-2,03113E+14
KCND2	-1,79905E+14
AMZ1	-1,78121E+14
PTK2	-1,78038E+14
ROBO1	-1,75476E+14
PYGL	-1,73809E+14
PCGF2	-1,72379E+14
CRYM	-1,69587E+14
TNFRSF19	-1,64044E+14
GRPR	-1,63431E+14
LYPD6B	-1,63069E+14
GPRC5C	-1,62255E+14
HNF4G	-1,62231E+14
SDC3	-1,61709E+14
MICAL3	-1,58098E+14
SEPN1	-1,55015E+14
CLIC6	-1,54104E+14
SERINC2	-1,5244E+14
BHLHE22	-1,50964E+14
ANKRD34A	-1,36636E+14
IL6R	-1,27178E+14
ERICH5	-1,21828E+14
TRERF1	-1,13436E+14
GUCY1A3	-1,11778E+14
NFATC2	-1,07335E+14
BHLHE41	-1,06532E+14
LOC613266	-1,05817E+14
RNF144A	-1,01557E+14
TIMP1	-1,0024E+14
MIR646HG	-4,76648E+13
ITGA5	-3,13912E+13
SMO	-1,49684E+13
PON2	-0,989368902
VANGL1	-0,927698308
DHRS4L2	-0,888381534
ST3GAL1	-0,886256256
ETS2	-0,860179321
ZMIZ1	-0,820657289
HMGN5	-0,802059482
PFKFB3	-0,791483293
ARHGEF5	-0,775704715
VCL	-0,773092785

NCKAP1	-0,758736001
ARHGAP18	-0,724148458
IKZF2	-0,718496959
LMO7	-0,717021806
FAM86DP	-0,714572401
CHD3	-0,691170166
AGAP3	-0,686363679
PSMD5-AS1	-0,673754068
FCGR2B	-0,645643745
SMC1A	-0,637159742
ERMP1	-0,62070133
BRD3	-0,603492425
CTH	-0,582570933
ZNF589	-0,542011207
UNC119B	-0,525044193
TNRC18	-0,516573269
UHRF1	-0,514328742
SVIP	-0,51429402
SCFD2	-0,510323389
KIF14	-0,508264381
TPCN1	-0,508003507
BUB1B	-0,493982635
IRF2BPL	-0,493889937
TEX2	-0,485588553
FAM78A	-0,483621595
SORL1	-0,482842165
CDC42EP3	-0,473079101
SKP2	-0,470595566
RAI1	-0,468816976
MCM6	-0,455934365
TRIP6	-0,446988078
SMC2	-0,443032895
PKP4	-0,427003003
TOP2A	-0,422098536
TCOF1	-0,418061745
DIAPH3	-0,414764091
UCK2	-0,411688834
HMGXB4	-0,411118669
THADA	-0,404561755
NCAPD3	-0,384078127
WDR62	-0,383888238
C15orf39	-0,360846884
SEPT11	-0,351914863
DCAF7	-0,319069805
SRRM1	-0,273372949
ILF3	-0,262801058

Up-regulated

Gene	log2FoldChange
TMED9	0,326063746
P4HB	0,363157414
B2M	0,413930347
IL2RG	0,442823991
PTRHD1	0,453696987
SKAP1	0,454528208
GLRX	0,456872921
PGD	0,457509852
PI4K2B	0,460693369
CINP	0,468973591
GSTZ1	0,47780936
EHMT1	0,48616495
ZNF107	0,50476354
PTPRC	0,520318866
FAM117A	0,524806153
PPP3CA	0,545432944
F11R	0,55767147
IQSEC1	0,558080954
POLE4	0,560400363
SEMA4A	0,564425205
EVI2B	0,610880226
C10orf32	0,633357439
CDKN1A	0,634024116
LY9	0,6433409
NAPRT	0,657625805
CYTIP	0,675794916
C4orf32	0,690537066
FRRS1	0,7005104
PITRM1	0,712581491
ACYP2	0,713724707
ZNF682	0,717946269
ISCU	0,719630924
ZNF506	0,721453343
WDR25	0,733063774
HHAT	0,73462183
C15orf57	0,743316333
NDNL2	0,757584994
ARSA	0,763401722
CD99L2	0,778965538
DERL3	0,796947154
SIDT1	0,804266044
SRGN	0,804513057
AP1S3	0,811854271
TARSL2	0,826935162

HECA	0,834301168
SERPINB9	0,836941016
MS4A7	0,850784552
PMAIP1	0,851585875
HMCES	0,864630413
TMSB10	0,882364649
MIR22HG	0,889422535
LY96	0,902300753
SPATA20	0,939447315
LGMN	0,974627836
UNC13B	0,996313088
RPS6KL1	1,62732E+12
SLC26A11	1,16168E+13
FAM83H	1,1619E+13
FADS3	1,24342E+13
ADAM19	1,38572E+13
PLEKHG1	1,38735E+13
SERPINB1	1,53982E+13
LOXL2	1,87985E+13
SMA4	1,92779E+13
ATAD3C	2,01563E+13
PTGER4	2,04475E+13
CHST6	2,07198E+13
PVRL4	2,62873E+13
CPEB1	3,02677E+13
LAMP5	3,78288E+13
INPP5J	3,85247E+13
OVCH1-AS1	4,32124E+13
ATF3	1,02836E+14
SDSL	1,06406E+14
BLVRA	1,06679E+14
TSTD1	1,07382E+14
GNB4	1,08172E+14
CPEB3	1,10102E+14
SOCS1	1,13021E+14
ABCA3	1,15779E+14
BMS1P20	1,1644E+14
TYMP	1,18224E+14
CDKN2A	1,18804E+14
SAT1	1,19362E+14
GAS7	1,21193E+14
GSN	1,21443E+14
GAL3ST4	1,24229E+14
PQLC3	1,24355E+14
PIM2	1,24367E+14
XXYLT1-AS2	1,26515E+14
P2RX5	1,30409E+14

INSIG1	1,31503E+14
PLK2	1,37409E+14
TTC22	1,39804E+14
MMP25-AS1	1,44041E+14
GTF2IRD2	1,48468E+14
PLEKHB1	1,53831E+14
HCAR3	1,54723E+14
CEP70	1,54827E+14
PTPRO	1,58182E+14
PLTP	1,5823E+14
CCL25	1,60507E+14
ADAP2	1,65787E+14
CELSR1	1,67687E+14
FAM90A1	1,70748E+14
ACOXL	1,71269E+14
TUBB2B	1,71967E+14
CEACAM1	1,73037E+14
ADCY9	1,79613E+14
CSPG4	1,80338E+14
FCER1G	1,85477E+14
MUC20	1,9076E+14
FAAH	1,92146E+14
GAB3	1,93697E+14
SH2D4A	1,98416E+14
ZP3	2,0445E+14
MOXD1	2,07397E+14
TYW1B	2,10478E+14
LMTK3	2,10822E+14
MT2A	2,10939E+14
HOMER2	2,1101E+14
SYNPO2	2,12295E+14
CLEC2B	2,13951E+14
TLDC2	2,15392E+14
HAPLN3	2,22016E+14
UNC13C	2,23797E+14
PER3	2,37483E+14
PTPRN2	2,41422E+14
ST5	2,43321E+14
LINC01150	2,45415E+14
XIRP1	2,48852E+14
CCND1	2,52838E+14
S100A10	2,54653E+14
ST14	2,56201E+14
CES4A	2,6115E+14
IFNG	2,62545E+14
RORA	2,63154E+14
AMBP	2,647E+14

POMC	2,66089E+14
EMP2	2,67399E+14
B4GALNT3	2,68904E+14
ASMT	2,80934E+14
POU4F1	2,81455E+14
MT1E	2,83162E+14
EID3	2,87693E+14
PRKCZ	2,9275E+14
FAM189A1	2,99654E+14
TRPV3	3,00969E+14
EPB41L4A	3,10602E+14
LINC00987	3,13081E+14
ST6GALNAC2	3,28424E+14
EEF1A2	3,63054E+14
IL12B	3,99896E+14
LINC00908	4,02194E+14
SOX18	4,06801E+14
MYO18B	4,85801E+14
LAMP5-AS1	4,89051E+14
LIX1	5,39895E+14
CLEC4C	5,42295E+14
AKR1C3	5,56017E+14
USP44	6,24218E+14
ACTN3	6,4765E+14
PROSER2-AS1	6,6128E+14

Supplementary Table 6. Differentially expressed genes (up- and downregulated) in EP cell lines carrying nonsense variants compared to controls.

Down-regulated

Gene	log2FoldChange
PLXDC2	-7,64409E+14
TSPAN18	-6,94157E+14
PCDH7	-6,93184E+14
PLS3	-6,44279E+14
NRG3	-6,43486E+14
TBX20	-6,34309E+14
RPRM	-6,29361E+14
UGT2A3	-6,22747E+14
INSM2	-6,20868E+14
WSCD1	-5,94135E+14
CADPS	-5,76505E+14
CLDN10	-5,43758E+14
KCNJ3	-5,42473E+14
FLRT3	-5,31061E+14
ITGA11	-5,27685E+14
KCNJ2	-5,26937E+14
ST8SIA1	-5,22884E+14
SDPR	-5,22847E+14
FAM86B1	-5,15565E+14
LINC01605	-5,10901E+14
TNIP3	-5,05826E+14
KCNJ12	-4,93469E+14
PRKCQ-AS1	-4,91508E+14
MYT1	-4,80464E+14
GAREM	-4,77918E+14
EDIL3	-4,68892E+14
DLX1	-4,63926E+14
MMP7	-4,62985E+14
SLC39A12	-4,61779E+14
FRMPD3	-4,55582E+14
NTN4	-4,45707E+14
IRX6	-4,37299E+14
LINC01320	-4,30616E+14
ROBO3	-4,12137E+14
CDC42BPA	-4,04076E+14
FAXDC2	-4,02225E+14
SBSN	-3,97632E+14
LURAP1	-3,94779E+14
CTNNA2	-3,92623E+14
FAM198B	-3,91051E+14

ACPP	-3,9002E+14
OTOGL	-3,89295E+14
MTL5	-3,89153E+14
GPC4	-3,85801E+14
SHANK2	-3,76602E+14
PCP4L1	-3,72768E+14
TOX	-3,68549E+14
CFTR	-3,66814E+14
RBPMS	-3,66638E+14
PRKCH	-3,59192E+14
SSC5D	-3,58172E+14
PALLD	-3,50285E+14
PMCH	-3,47724E+14
MYH10	-3,4716E+14
GPR87	-3,45042E+14
SCD5	-3,35312E+14
MMP9	-3,352E+14
PDE4C	-3,24505E+14
MYRIP	-3,22165E+14
NRXN3	-3,19697E+14
INTU	-3,157E+14
CR1	-3,13597E+14
EDARADD	-3,13397E+14
PCDHGA5	-3,1327E+14
PHOSPHO1	-3,12785E+14
RPSAP58	-3,07708E+14
NAP1L3	-3,06572E+14
C2orf78	-3,01822E+14
HOXC5	-2,99701E+14
CNKSR2	-2,97849E+14
CASP14	-2,96413E+14
ABCC9	-2,9576E+14
CR2	-2,85446E+14
SH3RF3	-2,85297E+14
COLEC12	-2,82881E+14
LOC101927815	-2,82424E+14
MYO1F	-2,79807E+14
LGR4	-2,79618E+14
SEMA5A	-2,75537E+14
PCDHGB6	-2,73968E+14
OTX1	-2,72894E+14
HOXB6	-2,72771E+14
FAM89A	-2,71954E+14
PTAFR	-2,61349E+14
HS3ST1	-2,58671E+14
ID2	-2,53349E+14
MAK	-2,4839E+14

TPM2	-2,41021E+14
IER5L	-2,38709E+14
CMTM7	-2,37734E+14
MS4A14	-2,35437E+14
POU3F1	-2,35381E+14
GIMAP7	-2,35073E+14
TPBG	-2,35014E+14
PDE1C	-2,33485E+14
ACTN1	-2,33227E+14
MYOF	-2,32926E+14
MARVELD1	-2,29832E+14
WWTR1	-2,29652E+14
CD244	-2,26241E+14
RAB37	-2,24917E+14
GIMAP1	-2,24207E+14
C15orf27	-2,21748E+14
SPINK2	-2,21713E+14
EPHB2	-2,19775E+14
DHRS3	-2,18652E+14
C17orf51	-2,16719E+14
LRRC16A	-2,15154E+14
PCDHGB2	-2,14676E+14
COL16A1	-2,13263E+14
RCOR2	-2,10961E+14
PARD6G	-2,10894E+14
IL2RA	-2,0989E+14
CROCC	-2,08758E+14
CXXC4	-2,07925E+14
GRHL3	-2,03897E+14
OR2T3	-2,03013E+14
SIX4	-2,02701E+14
PTGER2	-2,02597E+14
SNX21	-2,01999E+14
GPR153	-1,99667E+14
HOXB7	-1,99335E+14
GPR68	-1,97819E+14
ARHGEF17	-1,97582E+14
PEX5L	-1,97298E+14
FCRL4	-1,97125E+14
SCARF1	-1,96395E+14
ZNF608	-1,95891E+14
WDR17	-1,94972E+14
C1orf106	-1,94495E+14
TRO	-1,92878E+14
MCC	-1,92241E+14
HDAC11	-1,91184E+14
P2RY1	-1,90853E+14

LRP1	-1,87739E+14
CALCRL	-1,85295E+14
TPM1	-1,80896E+14
TLN2	-1,79526E+14
CDKL5	-1,79495E+14
ZBTB47	-1,77898E+14
TBC1D8B	-1,72797E+14
TGM2	-1,72654E+14
BMP1	-1,70568E+14
ZNF469	-1,66444E+14
MNX1	-1,64931E+14
PI4KAP1	-1,64229E+14
MAP3K4	-1,63864E+14
LOC102724094	-1,62726E+14
TP53BP2	-1,61312E+14
MEX3A	-1,61304E+14
METRN	-1,60957E+14
RABL2A	-1,60936E+14
BEND4	-1,5988E+14
GOLGA2P7	-1,59563E+14
PHC1	-1,58781E+14
CABYR	-1,58458E+14
EPHA2	-1,57883E+14
FGFR1	-1,56999E+14
TGFBR2	-1,56898E+14
CSPG4	-1,56231E+14
PCGF2	-1,55742E+14
IRAK2	-1,54285E+14
MERTK	-1,52935E+14
PIK3IP1	-1,52365E+14
PRDM11	-1,51215E+14
SIGLEC10	-1,49539E+14
EPB41L5	-1,49476E+14
ZNF205	-1,47659E+14
CCDC136	-1,47369E+14
SDC4	-1,47273E+14
LRRC49	-1,47179E+14
CREB5	-1,47059E+14
THBS3	-1,44856E+14
LAMP3	-1,44123E+14
MNS1	-1,43735E+14
CCDC92	-1,43034E+14
GRAMD1B	-1,42249E+14
KIAA0754	-1,41587E+14
KIF16B	-1,41191E+14
LMO2	-1,40974E+14
CFAP57	-1,40464E+14

VWCE	-1,39734E+14
RP9P	-1,3947E+14
TNFSF12	-1,38935E+14
STRIP2	-1,37686E+14
MRC2	-1,37336E+14
L3MBTL4	-1,36607E+14
CASKIN2	-1,35982E+14
NFATC2	-1,35493E+14
C15orf62	-1,35336E+14
C1orf198	-1,35297E+14
NRG4	-1,35047E+14
LINC00877	-1,33476E+14
ADM5	-1,32856E+14
CCL22	-1,32626E+14
SLC16A10	-1,3242E+14
KIF3C	-1,32346E+14
TTC12	-1,32158E+14
KIF26B	-1,32148E+14
CDC14A	-1,31899E+14
SCML1	-1,31183E+14
GIPC1	-1,30456E+14
WDR63	-1,2969E+14
C2orf74	-1,29052E+14
ILDR2	-1,28488E+14
BMI1	-1,28435E+14
PSTPIP2	-1,27324E+14
SOX9	-1,27071E+14
LOC642361	-1,26397E+14
TRIM6	-1,2582E+14
SLC25A53	-1,23475E+14
SAPCD2	-1,2343E+14
SLC25A29	-1,22089E+14
DTX4	-1,21859E+14
FAM109A	-1,20525E+14
LRRC56	-1,1969E+14
LINC00926	-1,19551E+14
ITGA3	-1,19183E+14
WWC3	-1,17867E+14
ACER2	-1,17813E+14
AGRN	-1,17564E+14
PPP1R13B	-1,17456E+14
GBE1	-1,17166E+14
PKP2	-1,16967E+14
TTYH3	-1,16953E+14
XRRA1	-1,16294E+14
ATP6AP1L	-1,1622E+14
TRIB2	-1,15771E+14

FBXO44	-1,1567E+14
MYL9	-1,15242E+14
CBX2	-1,14855E+14
AIM1	-1,14599E+14
PCTP	-1,13648E+14
PTK2	-1,13352E+14
IFIT2	-1,13128E+14
DHX58	-1,12787E+14
GAMT	-1,12072E+14
PPFIBP1	-1,1156E+14
SLC19A2	-1,11113E+14
MYLIP	-1,11002E+14
ETV4	-1,1076E+14
TSC22D3	-1,10489E+14
ETV5	-1,10459E+14
PVR	-1,10172E+14
TTC39C	-1,09539E+14
SNN	-1,09532E+14
ASRGL1	-1,08787E+14
YY2	-1,08532E+14
OCLN	-1,07124E+14
FAM65A	-1,06953E+14
PTMS	-1,05945E+14
NID1	-1,05911E+14
ITGB2-AS1	-1,05516E+14
LGALS14	-1,0467E+14
ROGDI	-1,04379E+14
FAM86C2P	-1,04261E+14
SYNGAP1	-1,04106E+14
ENO3	-1,0361E+14
ABTB2	-1,0212E+14
BCAT1	-1,01847E+14
PAG1	-1,01107E+14
FAM86DP	-1,0104E+14
CHD3	-1,00712E+14
KSR1	-1,00446E+14
PITX2	-6,75939E+13
PRKG2	-5,83049E+13
OLFML2A	-5,08366E+13
CACNA2D1	-4,25281E+13
PTK7	-4,18247E+13
GRB7	-3,69162E+13
ZNF467	-3,65499E+13
RBFOX2	-3,02363E+13
SLC35G2	-2,94821E+13
FSD1	-2,81519E+13
FILIP1	-2,68771E+13

DLG4	-2,28159E+13
FGFR4	-2,265E+13
CYP1A1	-2,21372E+13
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NPNT	-1,66213E+13
CCDC74A	-1,56851E+13
DLG5	-1,53632E+13
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PARM1	-1,47584E+13
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SMIM3	-1,24775E+13
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MFGE8	-1,17945E+13
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ITPR1	-0,94832192
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MAP3K12	-0,896278233
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CHDH	-0,781951684
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FMNL3	-0,760778183
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PHF14	-0,729520901

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TFAP4	-0,718372872
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TRAF3IP1	-0,713092843
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IRF8	-0,679170815
ITPKB	-0,677045778
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MFHAS1	-0,671813598
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CRTC1	-0,663549386
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MDFIC	-0,597383635
TNFSF9	-0,595929969
MGAT3	-0,594883654
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TRAF3IP2	-0,58875066
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PDLIM7	-0,574139627
MYO1G	-0,573473161
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FBXO22	-0,573227856
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DNMT3A	-0,56994628
CYFIP2	-0,569900314
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DYNC1I2	-0,564868371
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ETS1	-0,563917613
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STRN	-0,561138232
CYFIP1	-0,559160938
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PHF8	-0,556353698
TP53BP1	-0,556034068
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ALDH1B1	-0,518278058
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TMEM69	-0,515295622
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MBNL3	-0,508589606
BRD4	-0,508019631
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DOCK2	-0,505891124
TRIM41	-0,505230969
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LUC7L2	-0,502283869
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AP1S1	-0,479401031
EFHD2	-0,479097251
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ATP11A	-0,466776949
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GRIPAP1	-0,463695494
NCBP2	-0,461654762
PACS1	-0,460859825
FAM168A	-0,456976466
PLEKHG2	-0,453231107
CAPN15	-0,452712108
SH3KBP1	-0,452181002
STAT5B	-0,4515917
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TSR2	-0,444706733
SEPT2	-0,444347087
VASP	-0,443845398
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CNOT6	-0,439731827
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ST13	-0,435224521
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ATP11C	-0,430382021
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LPXN	-0,429423554
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MEN1	-0,424065318
CABIN1	-0,423322582
ERICH1	-0,423218459
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FAM168B	-0,422415893
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PRPF40A	-0,415835159
CAPNS1	-0,414449153
REXO1	-0,413911097
MTA1	-0,413444447
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GNAI2	-0,4114011
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ARID3B	-0,401374328
SF1	-0,40003214
DROSHA	-0,399324426
EML3	-0,395710716
LRRFIP1	-0,395517545
OXSR1	-0,394870216
RFX7	-0,389690618
HDLBP	-0,38821861
C9orf114	-0,386902216
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SIN3A	-0,384756777
MGRN1	-0,383932879
SMARCE1	-0,380661221
DENND1C	-0,379071732
MED15	-0,377156285
SUPT16H	-0,374438783
GTF2F1	-0,373087569
SRRM1	-0,364846714
STAT6	-0,36483538
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EIF3D	-0,359288711
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MEF2C	-0,351732456

FLII	-0,351437744
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Up-regulated

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CANX	0,382526448
ATP13A1	0,39619729
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LRPAP1	0,410047965
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TPP1	0,415499468
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NUCB1	0,430484409
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CHSY1	0,441958425
DNASE2	0,442384734
MORF4L2	0,443017743
HSH2D	0,44430423
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C16orf62	0,451161307
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ABI1	0,451847153
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KIAA1551	0,468561875
YIPF2	0,468655347
GOLPH3	0,470983101
TXNDC15	0,472154935
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TXNDC12	0,481043124
HSPB11	0,482567337
ATP2A2	0,4826752
OS9	0,484704968
LAT2	0,488411895
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ARF4	0,4895235
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ENTPD4	0,491170284
SFT2D1	0,493666024
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SGSM3	0,495781247
CLCC1	0,495802798
NARS	0,496212265
TES	0,496457985
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CCM2	0,49750851
GOLGA3	0,498608257
VAPA	0,498730272
COG3	0,503068333
FGFR1OP	0,503720835
MPDU1	0,504311145
USP48	0,505593416
AARS	0,50606509
CIB1	0,508601584
ATP6AP1	0,51009738
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FANCA	0,512102258
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GALNT1	0,516633615
TM9SF2	0,518281889
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TMED4	0,523496984
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ADPGK	0,527753562
PREB	0,529680494
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AFF4	0,534179938
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LONRF1	0,542561434
RPS6KB2	0,543564484
PPT1	0,544869043
CHPF2	0,546180537
DNAJC1	0,54663114
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RLF	0,549186967
IL12RB1	0,549801458
GZF1	0,551254541
NXPE3	0,552934771
GLT8D1	0,558141651
SSR2	0,559865135
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SLC38A2	0,569003394
CHID1	0,569284887
CYBA	0,569699456
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CISD2	0,572346377
ZNF652	0,574615329
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EMC7	0,577809731
ADGRE5	0,57797111
ATP6V1A	0,578242561
SPAST	0,580345005
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SLC3A2	0,581242834
LAMP2	0,586299116
MTG2	0,590110078
PLOD3	0,594103202

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C12orf4	0,597086503
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PSMG2	0,59793313
BMF	0,598079701
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NGLY1	0,60071926
NAGA	0,600777345
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CDKN1B	0,603386525
UNC13D	0,603521127
GNE	0,604396526
CREB3	0,606007972
KLHDC10	0,607378284
CTSD	0,607667272
LMBRD1	0,608425215
PRDM15	0,608694415
SEMA4A	0,609060774
GNPTG	0,610052564
ATP6V1D	0,610101989
SCPEP1	0,611679941
ATOX1	0,612801499
B4GALT4	0,613653929
ING1	0,615090541
ZNF331	0,616874803
ADK	0,618596574
NCAPH2	0,619299747
RPS19BP1	0,620514475
NAA50	0,622101596
GBA	0,622995071
GRK6	0,623052255
MICB	0,623935197
RPRD1A	0,624277635
SRPRB	0,624884683
FAM50B	0,625606943
SLC52A2	0,626264262
MELK	0,627527368
SPNS1	0,628450782
ME1	0,629049094
DXO	0,629146803
MFSD12	0,63018644
NEMP2	0,63170639
MFSD11	0,640184284
NIPSNAP3A	0,642310207
GLA	0,642465544

RHOQ	0,643847796
SRPR	0,644029346
ATF7IP2	0,644639828
PELO	0,646177597
GMPPA	0,646221614
SPTY2D1	0,646804624
ST7	0,648288924
SUB1	0,649363621
ANKRD12	0,649833507
P2RY10	0,649888256
RRNAD1	0,651890222
ALG2	0,652046515
SEP15	0,65284664
CAMKK2	0,656762046
SLC35C1	0,658874117
RAD9A	0,660845925
TTC14	0,661457186
TMED1	0,661613394
CD99L2	0,662071681
TMEM39A	0,662168634
GNS	0,667399421
STS	0,667408379
ZFP36	0,667990471
ABCB6	0,66809479
HDHD2	0,669293181
INSIG2	0,669987552
NMRAL1	0,670854587
FUCA2	0,674595814
SLC17A9	0,67597793
ITGA4	0,67783862
CCDC53	0,679963084
CENPN	0,680935673
ALG8	0,685074215
NCKAP1	0,685101464
ZNF275	0,686051579
RAB24	0,690101265
ZNF296	0,690622363
UQCC2	0,691022051
C10orf32	0,691245947
SPCS1	0,692176476
YIPF6	0,692352204
FAM214A	0,694351649
ENTPD7	0,696437079
ITCH	0,698311688
OSTC	0,702850732
SLC10A7	0,70285712
ALDH3A2	0,705593576

CPD	0,70573161
ALG5	0,705877401
NANS	0,708439541
CAMK4	0,710264505
ZNF701	0,711317209
PLD3	0,712651398
LYSMD3	0,712751805
TAPT1	0,713970752
SEC14L1	0,717107682
DPAGT1	0,718077185
BTLA	0,718671294
ASF1A	0,719082637
SMPD1	0,721703377
KPTN	0,722490595
RFC3	0,722937515
CTBS	0,727097392
FAM63B	0,728024467
ARMCX3	0,728501166
CYB561D2	0,728520964
EDEM2	0,739157735
CALU	0,741372569
NDUFV2	0,742536036
SDCBP	0,742667836
VEGFA	0,742911482
CARD11	0,746318802
ASPHD2	0,747463309
FNDC3A	0,747490898
NOMO1	0,749878758
FAM8A1	0,751918099
KIR3DX1	0,752485678
TAP2	0,763991597
C16orf54	0,765683919
RHBDD1	0,769097798
JTB	0,770349439
EIF2B3	0,774563925
LEPROT	0,776929891
NEMP1	0,777287177
PSENEN	0,777577914
FAM174A	0,778112032
CDK2AP2	0,780692994
PSAT1	0,781027484
STAMBPL1	0,78327099
ZDHHC4	0,783737049
SPCS3	0,783738144
COX7A2	0,785776092
SIL1	0,78599946
RAB31	0,786958904

HLA-DPA1	0,787036693
CSGALNACT2	0,787271931
CMC2	0,788752745
TMEM184B	0,791951519
WDR45	0,792545101
NEU1	0,792650784
RAPGEF2	0,796337313
AGPAT2	0,797331641
PPAPDC1B	0,797745196
KNTC1	0,798610658
C18orf8	0,799192937
DALRD3	0,799891999
LINC00467	0,807287807
CDC25B	0,807422525
TP53I13	0,809249579
CD320	0,815759578
SEC24A	0,818464376
CITED2	0,819167674
DOK3	0,819347875
TMEM208	0,819624846
SEMA4B	0,820426984
SEL1L	0,822123631
LPIN2	0,823087891
ABCA7	0,82661397
ACP2	0,826697364
CCDC50	0,827843463
CIITA	0,829232303
EIF2AK3	0,831292142
FAM117A	0,833809421
PPP3CC	0,839960614
EPB41	0,840359976
JOSD2	0,842146519
NRIP1	0,842471523
PRKXP1	0,846032382
ENO2	0,846056586
PLA2G16	0,847561918
ZNF486	0,847583255
PRDX1	0,848145153
DNASE1L1	0,85014169
POLQ	0,850230848
ZNF841	0,85230424
ZNF397	0,852979944
E2F2	0,858148365
EMP3	0,863350804
BCORL1	0,864789301
KIAA0040	0,865717332
CEP128	0,866584966

JAK2	0,872699385
WFS1	0,873525472
RNF149	0,879325997
RAD51AP1	0,880397818
IER3IP1	0,88148907
TAF4B	0,88347096
CDC42BPB	0,885679304
CDK14	0,888188511
SKA1	0,888948677
SLC41A2	0,891573569
ATP6V0B	0,894632554
HLA-DPB1	0,898266629
TMEM70	0,899514712
ZNF320	0,899641929
HSPA13	0,899657955
SLC35B1	0,900363502
FICD	0,908527954
EAF2	0,910434845
SMCO4	0,911607334
MRPL14	0,912995166
LSR	0,92147062
TCAF2	0,928330158
STAP1	0,942148593
QPCTL	0,946630135
PLP2	0,947587257
TCF19	0,953057183
P2RX4	0,95447122
FBXO16	0,95826053
TMEM106A	0,959535791
C5orf30	0,968298049
HIPK2	0,96961605
PRAF2	0,971930669
CLPTM1L	0,979912259
CBFA2T3	0,979923205
HLA-DMA	0,983894629
DEF8	0,984950704
B3GNT9	0,992955626
GFI1	0,995767572
SRGN	0,996446522
KCNA3	0,997084732
HLA-DRA	0,998476882
ZBTB20	0,999480079
GMNN	0,999656648
NEK3	1,34689E+12
ERC1	1,39412E+12
MUC20	2,81605E+12
SLC6A9	1,04566E+13

TPST2	1,08914E+13
HIST1H2BK	1,18221E+13
KIAA1549L	1,25846E+13
FAM46C	1,30318E+13
EGR1	1,40463E+13
GALC	1,47652E+13
SHROOM1	1,49463E+13
TMEM45A	1,50977E+13
CRY1	1,57273E+13
ENPP5	1,58398E+13
CD72	1,66071E+13
CPM	1,71156E+13
MIXL1	1,79214E+13
MYH15	2,43173E+13
TEX15	3,19762E+13
GATA4	3,20173E+13
LOC101928767	3,3115E+13
ARHGEF37	3,36565E+13
CLIC5	3,38792E+13
SERPINA9	3,97592E+13
SEL1L3	4,07977E+13
T	4,10358E+13
FAM174B	4,53935E+13
DCC	5,04839E+13
ZNF354C	5,23442E+13
BMP8B	5,43232E+13
PBX4	5,47194E+13
CFAP43	5,76575E+13
ADAD2	5,8713E+13
LOC646762	5,9904E+13
GLYATL2	6,02308E+13
NLRP11	6,5684E+13
LDLRAD2	6,57565E+13
PHYHD1	7,60877E+13
XIST	9,32236E+13
SHCBP1	1,00119E+14
CAPG	1,00136E+14
DNASE1	1,00178E+14
SDHAP1	1,00837E+14
MANEA	1,01492E+14
HYI	1,0218E+14
VNN2	1,02352E+14
CEACAM21	1,02385E+14
ATF5	1,02528E+14
RUFY3	1,02552E+14
INO80C	1,02735E+14
CISD3	1,02808E+14

NCF4	1,03057E+14
GGH	1,03198E+14
BIN2	1,03235E+14
NUCB2	1,03374E+14
ANKRD37	1,03654E+14
CCR10	1,03845E+14
STAP2	1,04631E+14
IGFLR1	1,05247E+14
GPR155	1,05393E+14
C7orf13	1,06259E+14
ZNF844	1,06977E+14
HLA-DRB1	1,08526E+14
CCPG1	1,09293E+14
ABHD6	1,09322E+14
ZNF714	1,09335E+14
MSL3P1	1,09638E+14
CYB561A3	1,09949E+14
CYP1B1	1,10099E+14
SRXN1	1,12029E+14
ZFP82	1,1229E+14
ABCD2	1,13015E+14
TYMP	1,13538E+14
DNLZ	1,13771E+14
ANK2	1,13902E+14
ITM2C	1,14492E+14
ARRDC3	1,14693E+14
ASS1	1,15483E+14
ANXA1	1,15874E+14
SLC16A3	1,16007E+14
KIAA0513	1,16176E+14
PLIN2	1,16427E+14
B3GALT4	1,16428E+14
GPR55	1,17939E+14
CYB561	1,18203E+14
RNF157	1,18251E+14
ASPH	1,18885E+14
LRRC8B	1,19166E+14
AGMAT	1,19691E+14
WNT10A	1,19751E+14
ZNF681	1,19806E+14
TNFRSF17	1,20095E+14
APOL1	1,20766E+14
TWSG1	1,2115E+14
CLEC2D	1,2121E+14
TM6SF1	1,22339E+14
C17orf96	1,2252E+14
CD68	1,23602E+14

ZNF229	1,23705E+14
LINC00996	1,23822E+14
MICAL2	1,24012E+14
RN7SK	1,24196E+14
FOXO3B	1,24532E+14
SNX18	1,25123E+14
CLDN14	1,26938E+14
LIME1	1,27743E+14
LRFN4	1,28251E+14
HLA-DOB	1,29304E+14
LINC00152	1,29387E+14
LINC00324	1,29844E+14
GNB4	1,29864E+14
LTBP3	1,30396E+14
MIR22HG	1,31077E+14
P2RX1	1,31495E+14
RNASE6	1,31825E+14
UNC13B	1,32313E+14
SLC48A1	1,3311E+14
FNDC3B	1,33928E+14
BTD	1,34094E+14
NADK2	1,34265E+14
PINLYP	1,34913E+14
GALNT3	1,35146E+14
TCN2	1,36666E+14
SLFN11	1,37528E+14
MTSS1	1,38006E+14
RWDD2A	1,38738E+14
VASH2	1,39006E+14
ARHGEF35	1,39757E+14
ZYG11A	1,40058E+14
NPDC1	1,40765E+14
RNF122	1,41624E+14
SIK1	1,42658E+14
DDX12P	1,43074E+14
TUBB2B	1,43424E+14
HMSD	1,43984E+14
HLA-DQA1	1,4485E+14
ARHGEF5	1,45046E+14
SPATS2L	1,45118E+14
DHRS13	1,45294E+14
MYO3B	1,45321E+14
SBF2-AS1	1,46806E+14
ZNF665	1,47056E+14
SLC26A11	1,48095E+14
KCNK1	1,48763E+14
PRICKLE1	1,49302E+14

SERPINB10	1,49539E+14
TLR7	1,49675E+14
NOL3	1,50158E+14
GPNMB	1,5028E+14
LINC01480	1,50576E+14
MLC1	1,50631E+14
SAMSN1	1,51617E+14
KL	1,51837E+14
FKBP11	1,51957E+14
CELSR2	1,53055E+14
TFR2	1,5434E+14
KIAA0226L	1,54806E+14
HSPA5	1,54847E+14
F12	1,55407E+14
HSBP1L1	1,55936E+14
ZNF571-AS1	1,56902E+14
DEPDC7	1,576E+14
SLC27A2	1,58245E+14
LBX2-AS1	1,58938E+14
KCTD12	1,59026E+14
IL12RB2	1,61501E+14
TMEM44-AS1	1,61609E+14
AHNAK	1,61908E+14
HIST1H4H	1,6205E+14
ABCA3	1,634E+14
SLC30A4	1,64392E+14
DNAH17	1,65765E+14
MIR5195	1,67279E+14
ESR2	1,69414E+14
DCHS1	1,69535E+14
PVRIG	1,69885E+14
SOWAHD	1,71097E+14
LOXL2	1,71977E+14
ARHGEF34P	1,72475E+14
GPR19	1,73319E+14
CKAP4	1,73326E+14
SPTBN4	1,79171E+14
ZBTB8A	1,79582E+14
NOTCH2	1,81185E+14
LOC613266	1,81934E+14
KIAA1217	1,82404E+14
FCRL5	1,83042E+14
KCNK6	1,83251E+14
COL4A4	1,83694E+14
LOC729603	1,84583E+14
ZFYVE9	1,86495E+14
FAAH	1,86571E+14

ERN1	1,86628E+14
MIR4539	1,86677E+14
C1orf162	1,86884E+14
BTBD19	1,86906E+14
PTPRN2	1,87093E+14
MPZ	1,87832E+14
AEBP1	1,88255E+14
GAB1	1,88263E+14
NEFH	1,88264E+14
NFIX	1,90176E+14
INPP5F	1,90904E+14
EPS8L1	1,91165E+14
HCAR3	1,94438E+14
DIP2C	1,97247E+14
RGCC	1,97658E+14
COL4A3	2,01834E+14
CBARP	2,04982E+14
CHST6	2,06348E+14
CCR1	2,06451E+14
NOD2	2,08574E+14
IRF6	2,0903E+14
LIPG	2,11005E+14
LRP12	2,11457E+14
LINC00539	2,1209E+14
BCAR3	2,12451E+14
TMEM65	2,13467E+14
CD9	2,14218E+14
ZNF793-AS1	2,15072E+14
EVI2A	2,15727E+14
MUC4	2,15826E+14
ARHGAP42	2,18118E+14
PDGFA	2,19047E+14
BCL2L10	2,1966E+14
LINC00528	2,19945E+14
CLEC2B	2,20226E+14
MT2A	2,20264E+14
CFAP54	2,23559E+14
PDE9A	2,25257E+14
MAFF	2,26499E+14
HSPA7	2,269E+14
BAIAP3	2,28385E+14
SSTR3	2,33535E+14
CCDC144B	2,35323E+14
TPTE2	2,44311E+14
PRKCZ	2,46299E+14
LGALS3BP	2,46327E+14
ZNF711	2,46894E+14

LYPD6B	2,47619E+14
PC	2,48864E+14
GLB1L2	2,49711E+14
RIMBP2	2,50329E+14
RGAG1	2,51029E+14
PDE6G	2,52863E+14
CEBPA	2,54359E+14
ADAP2	2,5552E+14
IL32	2,56503E+14
MIR4538	2,56509E+14
POU4F1	2,57061E+14
TNFRSF18	2,59448E+14
LAD1	2,59452E+14
C17orf107	2,62084E+14
ZBP1	2,65359E+14
HRASLS2	2,67372E+14
SERPINB2	2,70461E+14
PTPRS	2,70502E+14
PLEKHA7	2,70597E+14
MAP1LC3A	2,74522E+14
IRS2	2,7581E+14
ESPNL	2,78251E+14
SPTA1	2,80273E+14
RAB36	2,83668E+14
ST14	2,83961E+14
MYO1D	2,84347E+14
ACRBP	2,84431E+14
CTBP2	2,89189E+14
LMCD1	2,91448E+14
ST3GAL6	2,9308E+14
RARRES2	2,93242E+14
NDFIP1	2,93563E+14
SERPINF1	2,95109E+14
CKB	2,97377E+14
FAM109B	2,97591E+14
ITGAX	2,97668E+14
C11orf63	2,97846E+14
JCHAIN	2,98778E+14
COTL1	2,99097E+14
TIMD4	3,01162E+14
TCL6	3,01927E+14
CD180	3,02032E+14
FAM171A1	3,02134E+14
BTN1A1	3,02442E+14
FHOD3	3,02743E+14
MZB1	3,04149E+14
NSUN7	3,06086E+14

TESC	3,09034E+14
PECAM1	3,10503E+14
INPP5J	3,10563E+14
ESRP2	3,10835E+14
ZNF208	3,12503E+14
PCBP3	3,14235E+14
RNF5P1	3,16595E+14
LDOC1L	3,16666E+14
IFI27	3,18555E+14
CASP1	3,20406E+14
LNX1	3,22206E+14
ASMT	3,23345E+14
CUEDC1	3,23592E+14
RNASE4	3,24453E+14
PYHIN1	3,28529E+14
LAMA5	3,30662E+14
PROSER2	3,3112E+14
ARHGEF10	3,4008E+14
ZNF300	3,40976E+14
NEURL1	3,41792E+14
COL6A1	3,41969E+14
DLGAP2	3,43122E+14
ADAMTS17	3,43491E+14
DNAH17-AS1	3,45317E+14
TRPS1	3,45647E+14
EVC	3,4575E+14
TRIM47	3,49554E+14
MCOLN3	3,52079E+14
PRR18	3,5403E+14
FAM129C	3,5489E+14
RHBDF1	3,58876E+14
GAS6	3,59898E+14
LINC00242	3,61483E+14
LOC441666	3,62484E+14
KCNK5	3,66615E+14
SYT12	3,67259E+14
GABRR2	3,68702E+14
DERL3	3,68918E+14
GJB2	3,69788E+14
CTGLF12P	3,71848E+14
ARHGEF10L	3,72574E+14
USP44	3,72745E+14
RASGEF1A	3,73061E+14
MARC2	3,75196E+14
PCSK6	3,83591E+14
SIT1	3,90684E+14
ITGA6	3,9085E+14

IGF2BP1	3,93778E+14
PTPN21	3,95753E+14
CDHR1	3,97514E+14
CRNDE	3,99158E+14
HORMAD2-AS1	4,05066E+14
ADAMTSL2	4,05657E+14
SCGB3A1	4,09664E+14
MTCL1	4,11213E+14
SYDE2	4,12212E+14
DENND2C	4,20681E+14
ANKRD36BP2	4,21624E+14
PDCD1	4,31577E+14
TEAD1	4,41137E+14
FMNL2	4,4727E+14
HMX2	4,52718E+14
A2M	4,53166E+14
ZNF492	4,54519E+14
WFDC2	4,56199E+14
PXDN	4,60727E+14
CCNI2	4,61603E+14
KLB	4,65206E+14
XIRP1	4,65642E+14
GPR141	4,66867E+14
ADTRP	4,66933E+14
LHFPL1	4,68921E+14
ZNF542P	4,69438E+14
LINC00540	4,79017E+14
GSTM3	4,81769E+14
SYBU	4,83002E+14
CHST4	4,91477E+14
ITM2A	4,92279E+14
SLC6A12	4,94743E+14
ITGB5	5,02846E+14
SOX18	5,05506E+14
PIEZO2	5,06019E+14
EPB41L4A	5,07744E+14
ARSD	5,27059E+14
PPP1R27	5,29453E+14
NUAK2	5,2986E+14
XCL1	5,30707E+14
CLEC4C	5,34988E+14
ACSBG1	5,3946E+14
ADGRE1	5,4039E+14
EDNRA	5,40568E+14
ELFN1-AS1	5,50508E+14
AMPD1	5,50908E+14
MARK1	5,54398E+14

SCT	5,56716E+14
TSPAN1	5,60955E+14
ACE	5,61052E+14
ANKK1	5,65482E+14
LRRN2	5,67854E+14
EGFR	5,70722E+14
XKRX	5,82863E+14
KGFLP1	5,82955E+14
LONRF3	5,85823E+14
TMEM52B	5,88831E+14
NUP62CL	6,05523E+14
LRP3	6,07769E+14
THNSL2	6,0808E+14
IFNG	6,19331E+14
COL4A2	6,21845E+14
SAMD13	6,22488E+14
TSPAN7	6,25838E+14
LIX1	6,2885E+14
KDELR3	6,33684E+14
SLC8A1	6,36907E+14
MAP1B	6,43971E+14
SLC32A1	6,52996E+14
GIMAP4	6,57335E+14
EDNRB	6,70032E+14
HHEX	6,7595E+14
CCR2	6,90284E+14
APP	7,06132E+14
PRSS21	7,29639E+14
TLE1	7,30108E+14
TCL1B	7,46692E+14

Supplementary Table 7. Differentially expressed genes (up- and downregulated) in EP compared to CdLS cell lines.

Down-regulated

Gene	log2FoldChange
CHIA	-6,7219E+14
ITGA11	-6,29338E+14
C1orf21	-5,83974E+14
PAX8-AS1	-5,21556E+14
PLCB1	-5,18647E+14
SIGLEC15	-5,08284E+14
SCHIP1	-5,06417E+14
CA4	-4,97667E+14
PPP2R2C	-4,70739E+14
CRTAM	-4,68034E+14
CTTNBP2	-4,46948E+14
RIN2	-4,40295E+14
MIR548D1	-4,35559E+14
CORO2A	-4,35007E+14
CNTNAP3	-4,22921E+14
JAKMIP2	-4,20219E+14
FOXG1	-4,1198E+14
NPY	-4,11822E+14
CBR3	-4,11084E+14
ATP10A	-4,09979E+14
ZNF462	-4,01483E+14
DIP2A-IT1	-3,99539E+14
WWTR1-AS1	-3,84611E+14
SNORD33	-3,81519E+14
CALML6	-3,77748E+14
USP32P2	-3,57384E+14
LINC00977	-3,55836E+14
PRKCQ	-3,5335E+14
PKP2	-3,44477E+14
TPM2	-3,35093E+14
SNORD47	-3,26738E+14
APP	-3,20254E+14
TOX	-3,11856E+14
PDE3B	-3,03428E+14
SNORA65	-2,97458E+14
GRAP2	-2,89353E+14
RHPN1	-2,81952E+14
PEX5L	-2,79186E+14
SNORD42A	-2,7587E+14
C17orf97	-2,66034E+14
DAPK2	-2,52685E+14
WWC1	-2,48382E+14

AXIN2	-2,43853E+14
LOC101929574	-2,42077E+14
PAPSS2	-2,40193E+14
JAKMIP1	-2,39781E+14
GABRB2	-2,39198E+14
FAM89A	-2,37491E+14
SPNS3	-2,37395E+14
TMEM178B	-2,37031E+14
HS3ST1	-2,32481E+14
ADRB1	-2,26531E+14
FAM110B	-2,22008E+14
CNKSR2	-2,20927E+14
MCC	-2,19875E+14
LOC729737	-2,09445E+14
DLSTP1	-2,04065E+14
JAM3	-2,02552E+14
DHRS3	-1,98917E+14
ARHGEF17	-1,97952E+14
SNORD45C	-1,97707E+14
STXBP1	-1,87536E+14
DOCK4	-1,80635E+14
ITGB3	-1,79781E+14
HEY1	-1,7908E+14
SLC23A3	-1,78908E+14
HPSE	-1,7004E+14
CCDC74A	-1,6139E+14
ERP27	-1,59873E+14
SYNJ2	-1,59841E+14
KLF5	-1,54593E+14
ZFP92	-1,54378E+14
WDR17	-1,54102E+14
EDARADD	-1,50885E+14
PTGER4	-1,49703E+14
TP53BP2	-1,40328E+14
LOC730183	-1,36988E+14
SATB1	-1,32142E+14
AMZ1	-1,31262E+14
FAM222A	-1,31225E+14
CAPN2	-1,30142E+14
ACY1	-1,28331E+14
SNORD5	-1,26404E+14
FOXD2-AS1	-1,20733E+14
APOBR	-1,20586E+14
ZMIZ1	-1,15967E+14
MTHFS	-1,07525E+14
EIF1AY	-1,06589E+14
CDCA7	-1,02483E+14

ACCS	-1,01567E+14
TMIGD2	-6,1429E+13
S100A9	-5,25753E+13
NCCRP1	-4,68797E+13
LOC339874	-4,10344E+13
MMEL1	-4,01215E+13
SNORD28	-2,80383E+13
MIR3191	-1,91922E+13
MIR8072	-1,50849E+13
GIMAP6	-1,4734E+13
GBGT1	-0,991629029
S1PR1	-0,956967139
CRYBB2P1	-0,950009039
PIK3C2B	-0,872317706
TMTC4	-0,871211323
GTF2H2B	-0,842139439
KLF12	-0,834163393
NAV2	-0,833767628
MACROD1	-0,799665593
SLC39A10	-0,748598408
RGS16	-0,727575882
E2F8	-0,711600512
SAMD4A	-0,710303595
ROCK2	-0,708501016
ELOVL6	-0,702595978
ENTPD1-AS1	-0,6790245
RAI1	-0,673841151
NFATC2	-0,663377388
SLC35G1	-0,658210214
FAM72D	-0,658181103
MCM6	-0,656319861
SPAG16	-0,649405197
MARCKS	-0,633470248
UHRF1	-0,628238831
SLC4A7	-0,621013878
BARD1	-0,619758636
LY75	-0,61668858
CEP78	-0,612746287
ARL5A	-0,602596871
TAF1B	-0,600528708
DUSP7	-0,595429284
CENPL	-0,588905817
E2F1	-0,585308241
MBLAC2	-0,57927944
TMPO	-0,570727056
BLM	-0,570326118
CORO1A	-0,568704098

LRRC20	-0,563134293
MCM7	-0,5609095
SPTLC2	-0,560172331
RIF1	-0,556013301
POLR3G	-0,554767366
CPOX	-0,553435415
C4orf46	-0,552731706
LRRC58	-0,549113019
PLD6	-0,547216895
SLC20A2	-0,546805297
ARL13B	-0,545895779
ENTPD5	-0,545527125
POLA1	-0,543710035
ANP32E	-0,532397138
SMC4	-0,523458889
UBE2D1	-0,516653811
MSH2	-0,510476384
OSBPL8	-0,505319755
ECT2	-0,504786457
CCNF	-0,504493682
CD3EAP	-0,503109428
ARHGAP11A	-0,500944099
SNRNP48	-0,499649339
MZT1	-0,496486935
CDCA4	-0,493990868
MTHFD1L	-0,490389793
IPMK	-0,486844057
ITPK1	-0,484379833
PTMA	-0,481538761
SRSF1	-0,481522789
PRKAA1	-0,471070577
GINS4	-0,46843495
XPO4	-0,466670282
SCAI	-0,465920781
NUCKS1	-0,460591192
CHD7	-0,460270597
PFAS	-0,456891286
DCTPP1	-0,454998493
GPR180	-0,451341394
CEP135	-0,450718636
PMS1	-0,450418728
TRIM33	-0,450080042
ZNF100	-0,448303926
DPY19L4	-0,445386016
SUZ12	-0,443781246
DHX33	-0,441760773
FAM122B	-0,439882387

GMEB1	-0,438002706
AGPS	-0,437312941
SFMBT1	-0,43662119
MFNG	-0,434960724
MTFMT	-0,427170515
ACOT7	-0,425746574
HNRNPD	-0,425585315
PARPBP	-0,425264721
TRUB1	-0,424703446
GNPNAT1	-0,424577368
FAM78A	-0,424283149
RANBP1	-0,424161654
MSH6	-0,423691097
FBXO45	-0,421101264
RCL1	-0,419838133
RFC2	-0,419085923
LIG3	-0,417112216
RPGR	-0,41491393
KNOP1	-0,414878998
TMEM110	-0,414151965
ZDHHC17	-0,413916619
TWISTNB	-0,413555286
ALG10B	-0,411350349
BAG4	-0,411014278
TMEM201	-0,409448482
LIG1	-0,408128099
SRSF2	-0,408048949
GMFB	-0,406728799
LMNB2	-0,406391452
GABPA	-0,405722485
RRS1	-0,405327204
TMEM170A	-0,403714075
YTHDC2	-0,401268091
PABPN1	-0,397773027
SCOC	-0,393840916
ZNF619	-0,393108482
NAA25	-0,3929099
TP53	-0,391801778
ERI1	-0,388812001
HDAC2	-0,386707789
AEBP2	-0,385985972
PIGW	-0,383324505
TTLL12	-0,382083593
SLC16A1	-0,380917833
HNRNPA3	-0,380233192
LINC00265	-0,376345026
ARID3A	-0,375638943

NCL	-0,374772578
MBNL1	-0,373213099
NOP9	-0,37301745
PTER	-0,372253594
CENPB	-0,371191791
IPO7	-0,370812559
TIMM23B	-0,367833653
ESF1	-0,366848074
GEMIN6	-0,365835229
SLMO2	-0,364790843
FUS	-0,361208701
UCK2	-0,360257677
HNRNPA2B1	-0,359611521
CASP2	-0,35937506
CELF1	-0,357320017
GOLT1B	-0,356810915
TRMT5	-0,356801385
HDGF	-0,356477463
SORD	-0,355657012
SAP30	-0,353838663
LYPLA1	-0,353108729
YWHAQ	-0,351086167
PPP1CB	-0,349338018
SMNDC1	-0,34777243
TUBA1B	-0,347440496
B4GALT2	-0,347412487
IKZF3	-0,347072722
LIMS1	-0,346543956
PCK2	-0,346401843
KPNA3	-0,346393215
MRTO4	-0,345624831
MOSPD1	-0,345550025
KLHL42	-0,343325411
FANCL	-0,343299808
HN1L	-0,343159327
CABLES2	-0,342926027
PAPD5	-0,341784389
SHMT2	-0,340914844
RAD18	-0,339883777
DPP8	-0,339433326
PURB	-0,337797471
SREK1IP1	-0,337710272
TSEN15	-0,337398792
PGGT1B	-0,337196583
GNA11	-0,336801964
NIPA2	-0,33676931
TRA2B	-0,335313075

C12orf65	-0,331914499
BAZ1A	-0,328261361
TRA2A	-0,328069719
PROSER1	-0,326103484
UNG	-0,324203963
RBM14	-0,323540928
PKNOX1	-0,323074623
SLC35A3	-0,322590142
NUDT21	-0,319794458
ZNF326	-0,319059419
MAZ	-0,318449726
SET	-0,31838869
KPNB1	-0,318180142
GATAD2A	-0,317679043
HNRNPH3	-0,317550057
ANP32A	-0,315048635
MED27	-0,313143576
PA2G4	-0,31207199
SF3B3	-0,311863679
HNRNPM	-0,311780647
KIAA0020	-0,311769566
C9orf114	-0,311605089
HNRNPR	-0,307811364
MRE11A	-0,307417133
TTC33	-0,307174056
C2orf44	-0,300951227
PDAP1	-0,300509748
AKT1	-0,300054401
SDCCAG3	-0,29615538
WDR12	-0,295096678
FUBP1	-0,294266401
TAF6	-0,290059763
SLC25A51	-0,288499004
HNRNPH1	-0,287497977
TFAM	-0,287468175
GABPB1	-0,287289063
CREB1	-0,287116951
NSUN2	-0,286045763
NCOA5	-0,284218838
EWSR1	-0,283765598
NUP50	-0,283637038
TSNAX	-0,283417069
PPAT	-0,281538135
ILF3	-0,280306185
NIP7	-0,278486214
HNRNPUL2	-0,27814224
BYSL	-0,277854261

MTF2	-0,27739736
CCT5	-0,277197626
LSM12	-0,273987254
DR1	-0,270576109
MRPL42	-0,269280811
UBE2K	-0,268788359
LSM14A	-0,268717567
CBX3	-0,267958069
MAT2A	-0,267358165
ZRANB2	-0,267090443
SRSF10	-0,26557541
ATAD1	-0,262817798
MPRIP	-0,260403428
CARM1	-0,260141561
BLMH	-0,257950709
ACTR2	-0,25786633
SNRNP40	-0,254062935
ABCE1	-0,253881921
STK35	-0,253678501
SPIDR	-0,253594616
SERBP1	-0,250668161
STAM	-0,248468307
HIRA	-0,246906641
HNRNPU	-0,244841927
DAZAP1	-0,243981978
CPSF3	-0,243542386
NUDCD1	-0,243206144
FAM210A	-0,242402172
PPP1R8	-0,242014076
CPSF6	-0,237890375
TFCP2	-0,234396276
SF3A3	-0,233179425
HAUS2	-0,228367805
SRF	-0,221293197
LEO1	-0,220931086
NONO	-0,219601351
PCNP	-0,21786925
SYNCRIP	-0,215750532
NRAS	-0,212779754
THUMPD1	-0,211427783
RNPS1	-0,207032912
GTPBP4	-0,205096639
CDC123	-0,194097337
PITPNB	-0,185785986
RAVER1	-0,176385949
WBP11	-0,166448471
KHDRBS1	-0,164665512

ATXN2L	-0,157866285
AKT2	-0,153035792
ZNF207	-0,151296938

Up-regulated

Gene	log2FoldChange
GPBP1	0,179066855
TMBIM6	0,199276014
UBC	0,209094956
SNX17	0,25197902
ZKSCAN5	0,253953306
C9orf156	0,254478608
SQRDL	0,259028717
NDEL1	0,266253807
SPG7	0,269191442
TMEM115	0,273171189
ARL2BP	0,274456701
COQ5	0,28227352
SNAPIN	0,283147497
ASPSCR1	0,293232865
CCDC22	0,30076485
CINP	0,303480176
MGAT4B	0,305428324
NR1H2	0,305549829
NDUFA4	0,311315334
KIAA1191	0,313273853
ITFG2	0,317875412
SYNGR2	0,318577766
DEDD2	0,319045021
B4GALT7	0,327183626
R3HDM4	0,329359259
TM2D3	0,330183097
ZNF761	0,344056185
ZNF717	0,349973424
PNPLA8	0,351699975
EMC3	0,357530178
ANKRD42	0,359686002
TCTA	0,362925215
NDUFB2	0,365871878
RNF14	0,371488434
C19orf60	0,373407639
CD99L2	0,373897033
ORMDL2	0,380335303
BAD	0,385604917
PARP6	0,390301558
TMC6	0,397735638

ZNF18	0,403280189
PDE4DIP	0,40427584
MFSD11	0,406371587
TMEM129	0,406970298
FBXL15	0,409599968
POLE4	0,413665152
FAM98C	0,419866877
CCM2	0,431687012
RMND5B	0,434931873
WDR45	0,439467946
MTIF3	0,443617305
PAK1	0,444503822
TRPT1	0,44534882
SERINC1	0,445743159
ZNF671	0,453578901
TMED9	0,464015731
GNS	0,465882783
WDR83OS	0,466177282
PLA2G6	0,466632511
TMEM216	0,466985824
TPP1	0,472377255
KPTN	0,473817969
LOC100131564	0,486787645
IFT43	0,493751186
SLC46A3	0,494004461
ZNF700	0,494225053
TPT1-AS1	0,494371119
PLA2G15	0,495872847
PSTPIP1	0,497234298
KCTD21	0,497654194
LOC285074	0,4994021
EVI5	0,501755839
PGAP3	0,503574612
DLEU1	0,504804516
PHTF1	0,514603403
CCDC159	0,524519161
TBC1D17	0,529338359
PSENEN	0,529991417
TMEM99	0,532242163
LIPT1	0,533560477
CHPF2	0,533778623
ACADM	0,535654522
PHF1	0,53650866
NUDT17	0,54069888
FLJ37453	0,54260512
BIN1	0,548284219
CYB5D2	0,559042317

PNPLA4	0,559175501
SGSH	0,562063463
GM2A	0,574749745
SLC31A2	0,578986153
H1FX	0,579506583
LYSMD1	0,581430976
TCAF2	0,583032423
GLT8D1	0,585066405
SPATA2L	0,593172974
DHRS12	0,611162473
VAT1	0,613400512
C2orf81	0,618423613
IGFLR1	0,622942195
C5orf45	0,629883031
DGKQ	0,630661218
NDNL2	0,637426347
SQSTM1	0,655592913
ZNF559	0,659155845
WASH3P	0,6616276
PPP2R5B	0,667897385
ZNF837	0,719438836
MAP3K14-AS1	0,721112007
FLJ20021	0,722141401
LOC728743	0,72578161
JOSD2	0,741221238
MIR22HG	0,775774481
ABCA2	0,784173897
SDCBP2-AS1	0,809526402
MYL5	0,81621216
CTTN	0,827992972
TYMP	0,831850757
ZNF763	0,836741024
ZNF699	0,84655015
SCAMP1-AS1	0,881764631
B3GALT4	0,887743786
ABHD4	0,896938644
GPNMB	0,921696884
PKIG	0,926865177
GABARAPL1	0,931549418
EMILIN2	0,951420352
TMEM44-AS1	0,956187168
NPIPB4	0,971274593
KIAA0226L	0,991814487
DDR1	0,996368592
RUSC2	1,51855E+12
ETV2	1,14632E+13
GSTA4	1,5133E+13

TPTE2	1,59254E+13
HHLA2	2,33951E+13
PRODH	2,34508E+13
CX3CL1	4,01769E+13
CPEB3	1,00112E+14
SLC26A11	1,02564E+14
ANGPTL2	1,03295E+14
OSER1-AS1	1,03853E+14
RAP2C-AS1	1,04362E+14
LIN7B	1,06578E+14
ZNF880	1,07334E+14
C14orf79	1,08429E+14
MIR5195	1,0846E+14
LOC100507283	1,09463E+14
SLC16A5	1,09877E+14
KLHL6	1,1056E+14
LY6G5C	1,10722E+14
UXT-AS1	1,1103E+14
LOC728392	1,15851E+14
TTC22	1,22495E+14
TTC39A	1,37953E+14
GPR157	1,38069E+14
SLC7A7	1,38112E+14
YTHDF3-AS1	1,39581E+14
RRAD	1,4116E+14
MIR3064	1,41531E+14
HEPH	1,47215E+14
HMOX1	1,48438E+14
PVRL4	1,50655E+14
PFN4	1,51551E+14
PTPRF	1,53362E+14
KIAA0895	1,55647E+14
ITGAM	1,57596E+14
DNM1P46	1,62663E+14
SH3BGRL2	1,64137E+14
CHRNE	1,65273E+14
CACNA1E	1,65475E+14
FAM167B	1,66498E+14
TMEM51	1,66767E+14
C20orf194	1,70689E+14
PLEKHG6	1,7102E+14
EDN1	1,71541E+14
POU4F1	1,7326E+14
GABBR1	1,73868E+14
HCN2	1,87329E+14
LARP6	1,90091E+14
GUCY2C	1,98495E+14

DENND2C	2,05185E+14
INCA1	2,05339E+14
SEMA3B	2,08052E+14
PIWIL2	2,21341E+14
TTC7B	2,26177E+14
SGK2	2,30811E+14
HPCAL4	2,3325E+14
LINC00540	2,37784E+14
NRN1	2,38082E+14
PCDH8	2,40565E+14
OSBPL6	2,43551E+14
LINC00925	2,43788E+14
HAL	2,50636E+14
UTS2R	2,51E+14
ADGRA3	2,70363E+14
DRC7	2,72599E+14
SEPP1	2,83571E+14
RASD1	2,8955E+14
LOC730102	2,90396E+14
ARHGEF10L	2,99544E+14
TCTE1	3,02987E+14
PAX9	3,34621E+14
FAM46B	3,35461E+14
EGFL6	3,58334E+14
LOC100506860	3,58852E+14
PAX3	3,7936E+14
KIF17	3,79976E+14
INHBB	4,01232E+14
GUSBP3	4,03097E+14
AHSG	4,10712E+14
TMEM176B	5,25843E+14
LINC00221	9,60697E+14

Supplementary Table 8. Differentially expressed genes (up- and downregulated) in EP versus CdLS cell lines, both carrying missense variants.

Down-regulated

Gene	log2FoldChange
LINC01115	-7,49312E+14
TLE1	-6,93177E+14
GZMH	-6,61912E+14
NETO1	-6,09623E+14
EML5	-5,94021E+14
KCTD15	-5,93567E+14
CBR3	-5,62118E+14
ZFX-AS1	-5,56557E+14
CRTAM	-5,16042E+14
MAGI2	-4,7322E+14
GRIA1	-4,6603E+14
SNORD47	-4,53412E+14
AXIN2	-4,34965E+14
C17orf97	-4,17491E+14
SPTSSB	-3,49986E+14
IL17RC	-3,44633E+14
DLSTP1	-2,70394E+14
LOC729737	-2,6578E+14
SPNS3	-2,6196E+14
DOCK4	-2,10965E+14
PHKA1	-2,09937E+14
FCGR2C	-2,09611E+14
MAN1C1	-2,04229E+14
KLHL13	-1,9062E+14
HLA-DQB1	-1,86144E+14
PALD1	-1,86005E+14
ZNF818P	-1,74512E+14
NLRP2	-1,66248E+14
FAM86B3P	-1,63769E+14
HLA-DQA1	-1,54727E+14
AMZ1	-1,53514E+14
WDR17	-1,51911E+14
ITGB3	-1,49035E+14
STC2	-1,27302E+14
KCTD12	-1,11262E+14
ZNF584	-1,08477E+14
MYB	-1,02139E+14
JAKMIP1	-3,19922E+13
EIF5AL1	-2,38558E+13
CTH	-0,998662919

PHGDH	-0,979837369
PSAT1	-0,968122819
UHRF1	-0,904708037
CCDC126	-0,901470442
HDAC4	-0,898122368
NDC1	-0,857162636
SPAG16	-0,849866252
PKP4	-0,832765622
MCM7	-0,827767061
TFAP4	-0,807011831
TAPBPL	-0,805193861
SLC25A10	-0,802819493
SMC4	-0,797174425
RBL1	-0,79430949
SLC19A1	-0,793968727
SMC2	-0,792414163
LZIC	-0,792189711
DNAJC15	-0,786470876
CEP78	-0,781968075
MMS22L	-0,772762245
POLA1	-0,770340951
MCM3	-0,758595957
TMPO	-0,757591077
RIF1	-0,754040057
ARHGAP11A	-0,753330268
MCM4	-0,736658475
MZT1	-0,735469051
SLC4A7	-0,726032675
NUP155	-0,719818523
PRDM10	-0,719268622
PFAS	-0,71746258
XPO4	-0,713952009
SRSF1	-0,706830422
MZT2A	-0,706150832
CBFB	-0,704266057
CEP57L1	-0,69979738
ARHGAP19	-0,695034906
CASC5	-0,692039054
MKI67	-0,691483333
WDR76	-0,689425128
LRRC58	-0,687356993
CHML	-0,684050777
MCM5	-0,675909032
ST3GAL1	-0,67478489
MCMBP	-0,670748887
MARCKS	-0,666214144
COLGALT1	-0,664882004

PAG1	-0,662280758
ITPRIPL1	-0,66082516
ANP32E	-0,654057258
FAM122B	-0,64563338
TOP2A	-0,644914381
IRAK1	-0,642328471
WDR4	-0,641819102
NAA15	-0,640278059
WHSC1	-0,631384427
CENPU	-0,631322422
MIPEP	-0,629554865
TCOF1	-0,62097737
MFNG	-0,620383692
XPOT	-0,616611679
MCM2	-0,615932743
RNF138	-0,610128797
MTHFD1L	-0,608551052
HNRNPD	-0,601290636
NAA50	-0,597949516
SLC7A1	-0,596215735
NCL	-0,595900491
SLC7A5	-0,595667647
NOL8	-0,590613007
APIP	-0,590031205
HNRNPA3	-0,576455512
BRIP1	-0,573440444
RFC2	-0,572909455
OSBPL8	-0,572878708
PARPBP	-0,57267797
RAI1	-0,569237959
PRKDC	-0,568630678
DIAPH3	-0,56840732
SMC1A	-0,567399222
HNRNPA2B1	-0,566760236
DDX21	-0,56556733
GPR180	-0,559515283
AMD1	-0,558464895
DHX33	-0,558084017
NUP160	-0,557786124
C10orf2	-0,552601798
MEF2A	-0,546614095
SUZ12	-0,541928541
NUCKS1	-0,535665488
MAZ	-0,530164395
TCERG1	-0,527909101
LIG3	-0,525520194
BAG4	-0,524720734

GMFB	-0,521276696
DHX9	-0,511409529
PSPH	-0,5098762
ANP32B	-0,508083613
ESF1	-0,507905886
DOCK8	-0,506175699
HK2	-0,504540134
TTLL12	-0,503033128
TP53	-0,498264991
DOCK7	-0,496504844
SRSF10	-0,49390015
TRA2B	-0,493535436
XPO1	-0,492474328
TTLL4	-0,49242609
SF3B3	-0,491139379
SSRP1	-0,48705857
LIG1	-0,486436385
FBXO41	-0,485087738
HDGF	-0,478749471
LPGAT1	-0,473975854
BOP1	-0,470458557
RUVBL1	-0,469690828
TMEM123	-0,468823805
NUP153	-0,464783258
BAZ1A	-0,463753307
KIAA0196	-0,462732666
KPNA3	-0,462006717
SET	-0,46083482
PPP1CB	-0,459418269
ZNHIT6	-0,453222226
NOL11	-0,453206888
NOLC1	-0,452368264
CCT5	-0,44384123
RNF219	-0,440263208
HNRNPH3	-0,437512944
IPO7	-0,437440272
UCHL5	-0,437128039
ARMC10	-0,436448853
KHSRP	-0,433488124
STX7	-0,433465753
GPATCH4	-0,433201232
MBNL1	-0,430874311
PURB	-0,430318723
TCP1	-0,424575147
RBM14	-0,424014547
CELF1	-0,423737092
HNRNPM	-0,422172466

WDR36	-0,422043224
LARP4	-0,42126076
IDH3A	-0,420450265
KPNB1	-0,420208835
SNRNP27	-0,419994913
CBX3	-0,419118741
HNRNPR	-0,418360907
WDR3	-0,413650576
ILF3	-0,41108704
HSPD1	-0,41105277
EIF1AX	-0,410583855
BAZ1B	-0,409584366
ARHGAP18	-0,408361908
LSM14A	-0,407470969
IPO4	-0,402176896
RBBP8	-0,400975812
MPRIP	-0,398891077
HNRNPH1	-0,396581442
KIAA0020	-0,390772644
HSP90AA1	-0,390421524
RBM25	-0,388539108
PES1	-0,384958896
NUP50	-0,374819341
SERBP1	-0,372476699
CACTIN	-0,369392874
NPM1	-0,36850778
C15orf39	-0,35855081
SRRM1	-0,354573492
SENP1	-0,353357761
IARS	-0,353102556
NUPL1	-0,3504704
DAZAP1	-0,346783096
HNRNPU	-0,345991534
ABCF2	-0,345937112
UBE2K	-0,341531823
ZRANB2	-0,340712929
EIF2S2	-0,339664288
NACC1	-0,336104371
SF3A3	-0,331109719

Up-regulated

Gene	log2FoldChange
CTSA	0,384553823
SLC25A1	0,389285919
GPX4	0,410899146
TRAFD1	0,424447721

NCSTN	0,448821905
SHISA5	0,453262697
NDEL1	0,455169458
PSENEN	0,460976937
IRF9	0,466435819
CCND2	0,475330582
F11R	0,478185587
IL2RG	0,482963624
HLA-E	0,486188913
MCOLN2	0,493717168
AVEN	0,497362547
CST3	0,502490068
TRAF1	0,517186497
PNOC	0,527698073
EHMT1	0,539252259
SKAP1	0,543128761
TTYH3	0,545837538
ICAM3	0,545985471
ACP2	0,546309276
SERINC1	0,547289579
THEMIS2	0,548280521
PVT1	0,578494413
LAPTM5	0,579700429
ZNF581	0,584963139
INPP1	0,596203513
BBC3	0,599580867
CD99L2	0,603136887
SPRYD4	0,604025768
DTX3	0,608800272
ALOX5AP	0,612229331
LIPA	0,616615429
TMEM164	0,618431558
MICAL1	0,620282441
PIGV	0,624810353
ZNF331	0,629877047
CFLAR	0,636966145
RGS20	0,640097101
MVD	0,640864208
RAB9A	0,643151636
ACADM	0,652926943
DNAJB2	0,65918492
HAAO	0,659373664
B4GALT3	0,668237155
FCER2	0,689213705
FAM117A	0,703190049
SERPINB8	0,714867166
TMOD1	0,718556538

TM7SF2	0,725378884
SGSH	0,727856603
MKNK2	0,730338218
ARSA	0,747934452
CRTC1	0,755508352
IGFLR1	0,759851953
ZC3H12D	0,765013324
RGL1	0,779926731
CCDC102A	0,781546323
CCDC64	0,781846696
PNKD	0,790636788
TNFSF13B	0,797379593
ATHL1	0,799672081
IKZF1	0,805957917
RASGRP1	0,809690346
CDKN1A	0,816454132
ATF3	0,823814064
LGALS3	0,830816468
ABHD4	0,832787057
CHRNB1	0,84768966
FDXR	0,850291947
HMCES	0,851230807
TBC1D17	0,857495232
PITRM1	0,87425056
FBXO44	0,876883032
CD83	0,901424804
RN7SK	0,903248363
ISCU	0,9056246
PHLDA3	0,907688788
SOCS1	0,908678614
CHDH	0,911694008
ASRGL1	0,91517423
KLK1	0,921746687
CTTN	0,922670371
YPEL3	0,935515301
STARD10	0,95129929
RTN2	0,955289226
TUBB2A	0,957732164
PIM2	0,96023619
HHAT	0,986226803
ENDOV	1,0039E+13
TMEM25	1,15974E+13
PLXNB1	1,23626E+13
CAB39L	1,24806E+13
CNR1	1,26652E+13
B3GALT4	1,28699E+13
B3GNT9	1,29385E+13

HECW2	1,36148E+13
PLTP	1,37574E+13
ANXA1	1,82192E+13
BCAS1	2,05096E+13
SLC32A1	2,44528E+13
ZNF503	2,44947E+13
STEAP2	2,63505E+13
MSRB3	2,79704E+13
SNPH	2,90132E+13
ESPN	4,39682E+13
SDPR	6,64161E+13
AOC1	1,00279E+14
QPRT	1,0091E+14
ASTN2	1,02234E+14
KIAA1217	1,04637E+14
GABARAPL1	1,08344E+14
MYL5	1,10241E+14
ST3GAL6	1,11665E+14
PKIG	1,13491E+14
SULF2	1,13669E+14
MAP3K12	1,14642E+14
SYNPO	1,15293E+14
CLECL1	1,16775E+14
TNFSF4	1,16906E+14
LACC1	1,17266E+14
PMS2P5	1,18248E+14
SDCBP2-AS1	1,20721E+14
EVA1B	1,22118E+14
SHF	1,22868E+14
GAMT	1,24572E+14
SCAMP1-AS1	1,26357E+14
SPATA20	1,28518E+14
NTRK2	1,296E+14
APOL1	1,3035E+14
GPR15	1,32007E+14
WNT10A	1,32471E+14
LINC00936	1,35197E+14
ETV7	1,37009E+14
CLIP3	1,37178E+14
ABCA3	1,37198E+14
TMEM140	1,38226E+14
TK2	1,39383E+14
KLHL6	1,39405E+14
CCR7	1,42287E+14
CKB	1,4235E+14
GAL3ST4	1,43763E+14
GUCY1A3	1,44927E+14

XXYLT1-AS2	1,45229E+14
ADAM19	1,47516E+14
S100A4	1,49702E+14
SLC7A7	1,53637E+14
ZNF880	1,53871E+14
PERP	1,5482E+14
DOK4	1,57577E+14
ST3GAL6-AS1	1,58159E+14
IGFBP4	1,58517E+14
FAM46A	1,58799E+14
CHST6	1,59808E+14
GAREML	1,60466E+14
MOXD1	1,62391E+14
MT2A	1,6443E+14
CDKN2A	1,64929E+14
PLK2	1,65587E+14
CSPG4	1,6677E+14
LNX1	1,6804E+14
F2R	1,70841E+14
LTBR	1,72081E+14
MAB21L3	1,73492E+14
TTC22	1,74416E+14
ABCA9	1,7489E+14
CYP1B1	1,75789E+14
ELF3	1,79125E+14
LIPH	1,81358E+14
MAL	1,83069E+14
RRAD	1,859E+14
EMX1	1,91103E+14
HCN2	1,92528E+14
SPINT2	1,96425E+14
EPHA2	1,97373E+14
HES2	1,98092E+14
SERPINB1	1,99894E+14
ENPP2	2,0518E+14
GLIS3	2,05922E+14
TLN2	2,08662E+14
CLEC2B	2,09397E+14
OSBPL6	2,1087E+14
TCN2	2,12553E+14
C10orf10	2,14355E+14
CYSLTR2	2,15994E+14
PDE6G	2,1643E+14
STEAP1	2,1927E+14
CXCR5	2,19998E+14
JUP	2,27343E+14
C20orf194	2,28079E+14

EPHB1	2,28595E+14
TIGIT	2,28694E+14
SERPINB10	2,29404E+14
ITGAM	2,354E+14
EDN1	2,36738E+14
IFNG	2,37152E+14
LOC100190986	2,37491E+14
LAG3	2,38014E+14
PLEKHG6	2,39778E+14
TNFRSF4	2,41079E+14
MUC13	2,4137E+14
NAALADL1	2,44462E+14
MAP7D2	2,52512E+14
ABCA12	2,52872E+14
ST14	2,58061E+14
GTF2IRD2	2,59027E+14
SYTL2	2,59253E+14
ZNF578	2,59406E+14
HLA-DQA2	2,5996E+14
ADGRA3	2,63012E+14
DLGAP1	2,63472E+14
LINC00176	2,6573E+14
ANO3	2,67899E+14
DDR2	2,69253E+14
RUSC2	2,69692E+14
SEPP1	2,82432E+14
CACNB2	2,8313E+14
POU4F1	2,84463E+14
FAM167B	2,86236E+14
PCDHGB5	2,88506E+14
CALD1	2,88992E+14
DTHD1	2,90801E+14
OR2T3	2,90935E+14
MOCS1	2,91326E+14
PLCL1	2,96139E+14
HOMER3	3,02053E+14
LINC01150	3,02983E+14
RYR3	3,04053E+14
PHEX	3,06481E+14
LINC01258	3,16131E+14
PRODH	3,16626E+14
HPCAL4	3,16888E+14
LOC101930010	3,24743E+14
AMBP	3,26739E+14
NINL	3,27754E+14
LINC00987	3,30934E+14
SLIT1	3,35207E+14

ASPA	3,40634E+14
SLC4A4	3,45134E+14
HHLA2	3,52924E+14
CREB3L3	3,58671E+14
NAP1L3	3,67292E+14
LINC01320	3,68264E+14
POMC	3,76991E+14
LOC730102	3,91074E+14
LHFPL3-AS2	3,97057E+14
LRRN3	3,98183E+14
WFDC2	4,00476E+14
WNT7B	4,07489E+14
CPA4	4,34219E+14
MIR4507	4,51656E+14
LINC00689	5,20609E+14
KIF17	5,30967E+14
THEMIS	5,3812E+14
CX3CL1	5,49747E+14
OR5H6	6,2858E+14
CLEC4C	6,33978E+14
ACTN3	6,88642E+14

Supplementary Table 9. Dysregulated genes (both downregulated and upregulated) identified upon comparison of ataluren EP1-treated cells versus untreated controls.

Down-regulated

Gene	log2FoldChange2
MIR4785	-6,3E+14
LOC283440	-5,7E+14
SNORD18B	-5,4E+14
LDB2	-5,2E+14
EFCAB9	-5E+14
C1orf189	-5E+14
CASC19	-5E+14
PDCD1	-4,8E+14
LOC101929473	-4,8E+14
LOC102723517	-4,8E+14
ABCG1	-3,1E+14
CXCR2P1	-2,9E+14
RBM5-AS1	-2,9E+14
KCNQ5-IT1	-2,8E+14
CCL3L1	-2,7E+14
LST1	-2,5E+14
INSM1	-2,4E+14
LOC100130872	-2,4E+14
XCL1	-2,2E+14
CYP51A1-AS1	-2,1E+14
SREBF1	-2,1E+14
OLMALINC	-2E+14
C1orf228	-2E+14
PTGER2	-2E+14
RUFY4	-1,9E+14
LINC01176	-1,9E+14
PIPOX	-1,9E+14
ULBP2	-1,8E+14
MIR6774	-1,8E+14
TAS2R4	-1,8E+14
MIR4517	-1,7E+14
SCD	-1,7E+14
NPW	-1,7E+14
PNPLA3	-1,7E+14
LOC100506801	-1,6E+14
MST1P2	-1,6E+14
TMEM191B	-1,6E+14
GRAMD1B	-1,6E+14
KLHL29	-1,6E+14
LOC100506457	-1,5E+14

TSNAXIP1	-1,5E+14
SCML1	-1,5E+14
SNORD14D	-1,5E+14
EDN1	-1,5E+14
KCNA1	-1,5E+14
LOC102724596	-1,4E+14
GPR84	-1,4E+14
EGR3	-1,4E+14
SETBP1	-1,4E+14
SLC29A2	-1,4E+14
PDGFA	-1,4E+14
LOC646471	-1,4E+14
HOXB9	-1,4E+14
LINC01126	-1,4E+14
DHRS9	-1,4E+14
THY1	-1,4E+14
AK1	-1,4E+14
SNHG25	-1,3E+14
PCYT1B	-1,3E+14
TPTE2P5	-1,3E+14
HES6	-1,2E+14
ZBED3-AS1	-1,2E+14
HIST4H4	-1,2E+14
ALDH8A1	-1,2E+14
SPON2	-1,2E+14
PCSK4	-1,2E+14
CD4	-1,2E+14
FAM129C	-1,2E+14
SEMA6C	-1,2E+14
RAB33A	-1,2E+14
CHRNA10	-1,2E+14
LINC00106	-1,2E+14
SSSCA1-AS1	-1,2E+14
LINC00504	-1,2E+14
CFAP46	-1,2E+14
DLGAP4-AS1	-1,1E+14
LOC105377348	-1,1E+14
MYO1F	-1,1E+14
C1QTNF6	-1,1E+14
AK4	-1,1E+14
FCRL5	-1,1E+14
CCDC24	-1,1E+14
TMEM145	-1,1E+14
EFEMP2	-1,1E+14
NPIPB15	-1,1E+14
BMPR1A	-1,1E+14

SMPDL3B	-1,1E+14
FCRL3	-1,1E+14
MC1R	-1,1E+14
NRARP	-1,1E+14
PLAUR	-1,1E+14
MIR34A	-1,1E+14
MOK	-1,1E+14
GATA3-AS1	-1,1E+14
PLEKHG6	-1,1E+14
SYT17	-1,1E+14
NPHP1	-1,1E+14
WHAMMP1	-1,1E+14
SNAI3-AS1	-1E+14
SNHG19	-1E+14
HCN3	-1E+14
CCDC74A	-1E+14
FBXL8	-1E+14
IL13RA1	-1E+14
NPFF	-1E+14
CFHR4	-5E+13
C11orf91	-5E+13
LOC100130417	-4,9E+13
H1FX-AS1	-2,5E+13
LOC103908605	-2,2E+13
ZDHHC1	-1,8E+13
SNORA63	-1,5E+13
GALM	-1,3E+13
LINC00957	-1,2E+13
FSCN2	-1,2E+13
RIMKLB	-1,1E+13
NPPA-AS1	-1,1E+13
ACSS2	-1,1E+13
HIST1H1E	-1E+13
AK7	-1E+13
LOC401557	-5,1E+12
GRIN1	-1,6E+12
NR4A1	-1,2E+12
PALD1	-1,2E+12
ANKRD6	-0,99729
BMS1P5	-0,99588
TMEM198	-0,99401
KLHDC1	-0,98807
CLCN6	-0,98612
TTLL3	-0,98312
PFKFB4	-0,98254
C5AR1	-0,98082

LINC01311	-0,98021
GUCA1B	-0,97816
TMEM9B-AS1	-0,97179
EPHB2	-0,97155
ACAD11	-0,96445
MFSD2A	-0,96381
CPNE7	-0,96024
MIR4292	-0,95737
ARHGAP24	-0,9571
GEM	-0,95511
MIR3064	-0,95479
URB1-AS1	-0,94771
CD69	-0,94597
LBHD1	-0,94098
SNORD104	-0,94009
FER1L4	-0,93252
SNORD2	-0,92929
KIF6	-0,92884
KIAA0226L	-0,92837
GABBR1	-0,92188
TUBB3	-0,91684
RBMS1	-0,90975
LOC100270804	-0,90964
MIR1914	-0,90543
LOC644656	-0,9044
ARHGAP39	-0,89967
ANKRD24	-0,8973
RARG	-0,89269
TSPAN32	-0,88891
TPBG	-0,88889
ETV7	-0,88784
PAN3-AS1	-0,88729
RGS3	-0,88634
MYCBPAP	-0,88533
SPTBN5	-0,87613
WHAMMP3	-0,87531
GIPR	-0,87079
TMEM44-AS1	-0,8686
RHOV	-0,86688
TMEM150A	-0,86478
COL4A3	-0,86319
DUOX1	-0,85959
MST1R	-0,85922
HAPLN3	-0,85667
TGM1	-0,85361
LOC101927740	-0,84712

INTS6-AS1	-0,83914
RGS6	-0,83764
PRICKLE4	-0,8357
ZNRD1-AS1	-0,82704
BTNL9	-0,82687
CTC-338M12,4	-0,81819
ZBTB10	-0,81789
ANKRD13B	-0,81415
LINC00494	-0,81186
TMEM136	-0,80692
PROCA1	-0,80676
RPSAP9	-0,80364
MIR22HG	-0,80029
KIAA1875	-0,79802
CELF6	-0,78288
CCNI2	-0,78074
C8orf44	-0,77889
DBNDD1	-0,77699
MNDA	-0,77404
SNHG9	-0,77401
COL9A2	-0,76887
ICAM5	-0,76836
IDUA	-0,76762
FAM53A	-0,76638
PPP1R32	-0,76413
DHRS2	-0,76394
HSD17B7	-0,7619
SLCO4C1	-0,7615
CORO1B	-0,76017
HAGHL	-0,75547
SLC26A11	-0,75382
ZSWIM6	-0,75323
LZTFL1	-0,74866
PLEKHG1	-0,74704
ARRDC3-AS1	-0,74251
SNORD58C	-0,74235
CBLN3	-0,7399
C14orf79	-0,73896
CREB5	-0,73833
WBP1	-0,73111
CD72	-0,72962
TUBB2B	-0,72893
GOLGA6L10	-0,72862
ZC3H12C	-0,72626
C19orf71	-0,72413
QRICH2	-0,72072

AMY2B	-0,7198
TCEB3-AS1	-0,71901
RPARP-AS1	-0,71639
AMT	-0,7148
APTR	-0,71328
TNFAIP2	-0,71192
TFAP2A-AS1	-0,70991
CAPN3	-0,70807
BCORP1	-0,70455
SERPINB1	-0,7016
NLGN2	-0,69965
LMO2	-0,69948
GSTM2	-0,69706
MAP3K14-AS1	-0,69482
MXI1	-0,69435
MORN2	-0,6943
RPL36A	-0,69316
LOC102724814	-0,69173
NPDC1	-0,69137
PRR7	-0,69006
ZNF846	-0,68737
NPIPA1	-0,68463
C16orf93	-0,68444
RTKN	-0,68013
PATL2	-0,67845
SAP25	-0,67624
ASMTL-AS1	-0,67192
LOC100506127	-0,66885
CD40	-0,66871
SENP8	-0,66619
LINC01138	-0,66502
ST20	-0,66477
CBWD3	-0,66181
C12orf77	-0,66163
SNHG11	-0,65937
KCNC4	-0,65892
C12orf79	-0,65823
PRORSD1P	-0,65396
PAQR6	-0,65359
NT5M	-0,6488
NPHP3	-0,64747
MZF1-AS1	-0,64283
FSTL3	-0,64214
SPAG4	-0,64206
NFYC-AS1	-0,64023
RDH14	-0,63985

PPT2	-0,63955
IFT20	-0,63786
RAB11B-AS1	-0,63675
HIST1H3E	-0,6361
DNHD1	-0,63609
SRI	-0,63403
TSPO	-0,63201
MFSD10	-0,62945
IDH1	-0,6285
MERTK	-0,6279
SNHG10	-0,62502
LINC01089	-0,62321
CD200R1	-0,6228
GPR89B	-0,62075
ANKDD1A	-0,61754
PTK2	-0,61501
ELMO3	-0,61495
LOC100049716	-0,61471
MYH3	-0,61289
DLL1	-0,6127
ODF3B	-0,61263
TNFRSF9	-0,61223
LINC01004	-0,6109
SMG1P7	-0,60983
THBS3	-0,6091
CROCCP3	-0,60705
NSDHL	-0,60642
STK19	-0,60613
PAX6	-0,60461
LOC100506258	-0,60113
ANKHD1	-0,60083
ALOX12P2	-0,6007
LINC01534	-0,60057
SLC2A6	-0,60057
THEMIS2	-0,59979
EMILIN2	-0,59624
LONRF1	-0,59564
L3HYPDH	-0,59401
LRRC26	-0,59276
PPP1R3E	-0,59095
RAD51-AS1	-0,58957
SORBS3	-0,58939
CRIP1	-0,58718
SFN	-0,58449
PCYT2	-0,58336
ARRDC1	-0,58222

RABGGTB	-0,58114
LOC101929709	-0,58018
CTTN	-0,57873
FAHD2CP	-0,57857
LOC728323	-0,57816
SCAMP1-AS1	-0,57508
RRAGD	-0,57482
LINC00674	-0,57101
LYSMD4	-0,57071
ZNF529-AS1	-0,56933
PTOV1-AS2	-0,56909
RPL32P3	-0,56704
PPM1K	-0,56684
PLEKHM1P	-0,56605
COL11A2	-0,5654
DND1	-0,56511
SQLE	-0,56496
WRAP73	-0,56465
BOLA1	-0,56415
FBXL15	-0,56395
C2orf76	-0,56339
NPIPA5	-0,56313
TCF7	-0,56257
LINC01160	-0,56248
PCBP1-AS1	-0,56241
NFKBIA	-0,56155
RPH3AL	-0,56068
TPCN2	-0,56014
LOC102606465	-0,55911
CIB1	-0,55892
MPST	-0,55825
DDX26B	-0,55825
PARGP1	-0,55771
DBI	-0,55716
ANKRD16	-0,55673
LOC100128398	-0,55648
FAM216A	-0,55354
ZGLP1	-0,55289
CEBPB	-0,55272
ZFYVE19	-0,55264
LOC728613	-0,55243
LOC729737	-0,55179
MAPKAPK5-AS1	-0,55086
LOC100507006	-0,55064
MAMDC4	-0,5505
ENTPD2	-0,55016

SEMA4C	-0,54789
TRIP10	-0,54642
DPM3	-0,54604
RPL23AP82	-0,54495
CLCF1	-0,54448
IER2	-0,53554
TRIM52	-0,53508
LTB4R2	-0,53347
MAPK11	-0,53254
STARD4	-0,53101
GTF2IP20	-0,52954
SNHG4	-0,5253
SLC26A6	-0,52415
SUZ12P1	-0,52394
MIR142	-0,52365
LOC155060	-0,52227
ABCA2	-0,52164
PDXDC2P	-0,52056
SLC27A1	-0,51812
SUSD3	-0,51713
SPATA24	-0,51702
ARHGEF17	-0,51617
MMP25-AS1	-0,51604
LHX4-AS1	-0,51542
HMGCR	-0,51524
CCDC120	-0,51334
RNF215	-0,51315
EHD1	-0,51284
PIK3AP1	-0,51275
TNF	-0,51153
RRN3P1	-0,51032
ZFP3	-0,5093
SPSB3	-0,50822
TPT1-AS1	-0,50821
NFKB2	-0,50727
SLC50A1	-0,50571
SEC61A2	-0,50564
PIGBOS1	-0,50532
RASSF4	-0,50491
AGAP9	-0,50445
ACHE	-0,50417
PIK3IP1	-0,50391
TOPORS-AS1	-0,5014
SNORA40	-0,50108
ALOX12-AS1	-0,50102
TMEM129	-0,50045

ZSCAN16-AS1	-0,49951
C2orf81	-0,49892
MAP3K8	-0,49862
TNFRSF14	-0,49767
SLC29A3	-0,49731
CCDC136	-0,49703
RSAD2	-0,49683
IFNGR1	-0,49671
FBXO6	-0,49576
GLUD1P3	-0,49545
MKNK2	-0,49542
AGER	-0,49333
DUSP10	-0,49105
FBXL19-AS1	-0,49083
CSF1	-0,49046
PIM3	-0,48934
PHYKPL	-0,48926
LRRC27	-0,48839
EPHB4	-0,48643
NPR2	-0,4864
TRPV1	-0,48628
RPL17	-0,48419
RRN3P2	-0,48239
UPB1	-0,48192
NFKBIE	-0,48187
IL4R	-0,48099
OVCA2	-0,48097
LRMP	-0,48003
TMEM161B-AS1	-0,47972
MIR17HG	-0,47912
TMEM80	-0,47838
UNC119	-0,47592
VPS9D1	-0,47514
LGALS3	-0,4749
DMPK	-0,47479
S100A6	-0,47433
KCTD13	-0,47385
P2RX5	-0,47177
GPR75	-0,47114
STX1A	-0,47032
LMBR1L	-0,46976
ABTB2	-0,46974
ZBTB32	-0,46944
CSTB	-0,46832
EMID1	-0,46769
IFI44L	-0,46747

ZNF222	-0,46722
MAFIP	-0,46695
SNHG7	-0,46516
TRADD	-0,46426
CASC10	-0,46255
ATAT1	-0,46229
LINC00493	-0,46225
ATG16L2	-0,46143
CLIC4	-0,46046
SIAH2	-0,46034
PSMG3	-0,45952
ZNF593	-0,4582
ADAT2	-0,45793
ERV3-1	-0,45708
LUC7L	-0,45456
RAB11FIP1	-0,45332
ID2	-0,45292
IFITM1	-0,45223
DKFZP434I0714	-0,45176
HLA-L	-0,4517
HERC2P9	-0,45063
TARBP1	-0,45062
NBR2	-0,45048
C15orf40	-0,44945
SRGN	-0,44785
ADAP1	-0,44703
TP53I13	-0,44573
MAP4K3	-0,4443
PMS2P3	-0,44409
IL6R	-0,4438
C11orf71	-0,44335
MIR3916	-0,44334
FBXW9	-0,44265
TNFAIP3	-0,44259
DVL1	-0,4421
GRAMD1A	-0,44166
MICA	-0,44103
POR	-0,43983
TNFRSF13C	-0,43946
HOOK2	-0,43894
LYSMD2	-0,43842
MCOLN2	-0,43841
DGKQ	-0,43836
COMMD3	-0,43782
GGA1	-0,43777
ARRDC1-AS1	-0,43774

DEXI	-0,43772
KPTN	-0,43744
ABCA10	-0,43736
TMEM55B	-0,43714
SH3BP2	-0,43707
METTL22	-0,43604
TCTN1	-0,43541
DPP7	-0,43345
NUPL2	-0,43266
PGBD2	-0,43192
IFIT2	-0,4312
C5orf45	-0,4302
PCGF1	-0,4301
ANKZF1	-0,42956
IRX6	-0,42722
PLXNA3	-0,42588
ARID5A	-0,42519
ERO1B	-0,42504
PHC1	-0,4247
TESK2	-0,42468
EBI3	-0,4238
LIN37	-0,42371
PPIEL	-0,42369
OSBPL7	-0,42348
HOXB3	-0,42317
PGBD4	-0,42285
TSPAN15	-0,42281
DNAAF2	-0,42249
FKBP14	-0,42103
SNHG15	-0,41992
PDE6D	-0,41928
PTRH2	-0,4182
FAM73B	-0,41737
GRHPR	-0,41722
CD58	-0,41675
PLD2	-0,41674
ZC3H12A	-0,41649
WASH7P	-0,41638
C19orf66	-0,41596
ANKRD23	-0,41591
VIMP	-0,4148
CD46	-0,41464
NECAB3	-0,41251
NSMF	-0,41196
EBP	-0,41149
LINC-PINT	-0,41094

ELP5	-0,41087
DHRS1	-0,41082
NPRL2	-0,41068
PPP1R12C	-0,41053
CTSZ	-0,41016
NAT14	-0,40799
PLXNB1	-0,40751
RSAD1	-0,40742
LOC441242	-0,40736
C9orf72	-0,40732
ATP6AP1L	-0,40359
VAMP5	-0,40336
ZNF446	-0,4031
C21orf91	-0,40278
RFNG	-0,40249
ARHGAP33	-0,40241
BISPR	-0,40228
TMSB10	-0,40202
PSMG4	-0,40187
RTN2	-0,40141
TFAP2A	-0,401
OSGEPL1	-0,4009
GUSBP1	-0,40027
SYNGAP1	-0,40009
DPY19L2P2	-0,3999
SS18L2	-0,39963
ABCA7	-0,39699
DENND3	-0,395
LZTR1	-0,39425
KLC4	-0,39415
CDKN2A	-0,39336
DYNC2LI1	-0,39315
INAFM2	-0,39197
COA5	-0,39178
FAM173A	-0,39139
SS18L1	-0,39116
NAT9	-0,39043
ALPK1	-0,38891
HNRNPU-AS1	-0,38863
CYTH2	-0,38861
YPEL3	-0,38846
DUS4L	-0,3876
FASTKD3	-0,38666
UAP1L1	-0,38598
SNHG5	-0,38545
TRIB3	-0,38505

KDM5D	-0,38392
RRAGB	-0,38321
DUSP11	-0,38142
TMEM243	-0,38071
ZNF839	-0,38051
ISG20	-0,37991
EIF1	-0,37987
KIAA1407	-0,37922
BTN2A2	-0,3788
VMAC	-0,37865
CCDC92	-0,37848
TMEM63B	-0,37732
HDHD3	-0,37716
MIF-AS1	-0,37683
TSNARE1	-0,37588
LOC440434	-0,37585
FAM60A	-0,37562
ECHDC2	-0,37552
WDR19	-0,37526
COQ10A	-0,37498
MED7	-0,37484
LINS	-0,37472
SUPT7L	-0,37427
PPP4R1L	-0,37411
FAM89B	-0,37399
NR2C1	-0,37371
RRAS	-0,37333
STAG3L4	-0,37281
NFKBID	-0,37235
CALCOCO1	-0,37019
TAGLN	-0,36962
WASH1	-0,36938
ERMARD	-0,36858
HTRA2	-0,36822
LOC100507195	-0,3677
BSDC1	-0,36668
CCNG2	-0,36564
QPCTL	-0,36554
ACTR1B	-0,36532
PKD1P6	-0,36484
FASTK	-0,36462
HSH2D	-0,3645
TMEM216	-0,36398
FADS3	-0,36385
TAZ	-0,36339
C6orf1	-0,36259

GPR137B	-0,36222
NUMBL	-0,36163
CLK2	-0,36149
P4HTM	-0,3611
USP18	-0,36026
DHX58	-0,36026
PCMTD2	-0,35915
FLYWCH2	-0,35909
EZH1	-0,35817
ELMOD3	-0,35771
NCBP2-AS2	-0,35753
IFT140	-0,35742
FAM195B	-0,35676
MAPKBP1	-0,35672
TRIM41	-0,35529
ENDOG	-0,35526
DCUN1D2	-0,35486
XPNPEP1	-0,35455
ORMDL1	-0,35422
TMEM175	-0,35402
HIST1H2AC	-0,35372
LRP8	-0,35361
SLC25A37	-0,35319
CD22	-0,35275
TYMP	-0,35248
SFI1	-0,35246
LAT2	-0,35168
SH3YL1	-0,35162
P2RX4	-0,34995
AFMID	-0,34984
ZDHHC8	-0,34892
FLOT1	-0,34878
POP5	-0,34826
N4BP2L2	-0,34773
ago-04	-0,34734
CYP4V2	-0,34697
PPAPDC1B	-0,34627
SLC12A9	-0,34624
WDR5B	-0,34576
PEX16	-0,34533
DDX5	-0,34518
NADSYN1	-0,34495
REC8	-0,34479
MAT2A	-0,34468
STARD3NL	-0,34431
FBXO44	-0,34428

HSBP1	-0,34398
C9orf142	-0,34396
GALE	-0,34393
ZFC3H1	-0,34336
CD80	-0,34228
CYB5A	-0,34145
STAT6	-0,34107
NOP10	-0,34103
NUDT16L1	-0,34076
RANGRF	-0,34055
LINC01215	-0,33959
BCS1L	-0,33916
GBA2	-0,33906
CD274	-0,33881
HMG20B	-0,33809
LHX2	-0,3379
POLM	-0,33783
UTP6	-0,33727
PDCD5	-0,33719
PGS1	-0,33716
LINC00623	-0,33697
FANCL	-0,33675
TJAP1	-0,33635
OFD1	-0,33593
ACSF2	-0,33573
ZNRD1	-0,33555
CCDC142	-0,33545
PAX8-AS1	-0,33533
COX10-AS1	-0,33453
RPL22L1	-0,33412
TRMT10B	-0,33341
FAHD2A	-0,33226
UBL5	-0,33224
CCDC85B	-0,33071
RPL39	-0,33054
ANKRD13D	-0,33035
LRSAM1	-0,33017
ZNF75D	-0,33016
OXLD1	-0,32945
ZNF251	-0,32936
LAMTOR2	-0,32899
ACAP3	-0,32883
C19orf60	-0,32687
KAT2A	-0,32684
ZNF581	-0,32653
WASH3P	-0,32646

SLAMF1	-0,32595
RBM48	-0,32593
PTS	-0,32559
MAP3K10	-0,32454
MARCH9	-0,32378
ZFAS1	-0,3236
TIMM23B	-0,32341
RNF170	-0,32273
ACYP1	-0,32251
SGTB	-0,32166
RAB40C	-0,32122
CHMP5	-0,32114
ZBTB26	-0,32092
NBPF8	-0,32008
IKBKE	-0,31991
WDR91	-0,31972
ARFIP2	-0,31955
ARNTL	-0,31842
NR6A1	-0,31822
RRN3P3	-0,31819
MPG	-0,31748
CCDC159	-0,3171
ANKRD10	-0,31689
CBWD5	-0,31657
CCDC14	-0,31637
NBPF11	-0,31637
IP6K2	-0,31527
PSMA3-AS1	-0,31504
UGCG	-0,31492
N4BP2L1	-0,31434
PI4KAP2	-0,31411
TUBE1	-0,31402
EMC6	-0,31375
DALRD3	-0,31348
PARP6	-0,31336
NIT1	-0,31321
SELO	-0,31311
TRAF4	-0,31277
BTAF1	-0,31275
TRMT61B	-0,3126
C11orf49	-0,31259
WDR45	-0,31211
MRPL14	-0,31095
BTN2A1	-0,31089
RPL36	-0,31058
PLSCR1	-0,3098

PLEKHF2	-0,30947
MRPL33	-0,30942
MXD4	-0,30867
NEK8	-0,30862
CHPT1	-0,3086
DIMT1	-0,30848
MPLKIP	-0,30797
TBCK	-0,30502
ALKBH6	-0,30473
ZNF83	-0,30343
FBXO9	-0,3028
GEMIN7	-0,30257
IFI44	-0,30185
LINC00909	-0,30181
ARL16	-0,30179
QTRT1	-0,30161
MAGEF1	-0,3016
CCDC84	-0,3015
USMG5	-0,30112
FCHSD1	-0,30094
TMEM43	-0,30082
ALKBH7	-0,30066
C17orf75	-0,30021
ABCC10	-0,30002
RHOQ	-0,30002
C21orf59	-0,29898
AKTIP	-0,29874
SNRPD2	-0,29841
ISG15	-0,29716
DNAJC19	-0,29654
SRSF5	-0,29634
ANAPC10	-0,29561
AP4M1	-0,29531
RPL35	-0,29522
TIMM8B	-0,29485
CRYBB2P1	-0,29457
MRPS21	-0,2944
MICAL1	-0,29393
RIC8B	-0,2937
RRP7BP	-0,2936
RBX1	-0,29329
MKS1	-0,2929
MED30	-0,29283
RAB11FIP3	-0,29281
ZNF226	-0,29199
CLSTN3	-0,29144

APBA3	-0,29108
FNBP4	-0,29088
GSKIP	-0,29054
C16orf13	-0,29048
CDK7	-0,29048
DFFB	-0,29017
C21orf33	-0,28979
SPATA20	-0,28964
GSTK1	-0,2892
TMEM134	-0,28897
TMEM161A	-0,28873
ASB16-AS1	-0,2887
RBCK1	-0,28862
ARV1	-0,28856
ZNF428	-0,28845
LINC00094	-0,28831
BBS2	-0,28812
SAT2	-0,28672
DNAJB9	-0,28596
APIP	-0,28578
TRABD	-0,28577
AFG3L1P	-0,28515
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Up-regulated

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HNRNPUL2	0,306399254
NUP214	0,306529074
PIK3CG	0,307054164
KCNJ3	0,307363592
CDH2	0,307378911
CTNNAL1	0,307508345
FNIP2	0,307676547
KAT6A	0,308228812
DDI2	0,308492399
TNFRSF11A	0,308619365
KIAA0513	0,308897161
KIAA2018	0,309034867
MGAT3	0,309125239
HDHD1	0,309289662
EP400	0,310751544
UGGT1	0,311527213
PAFAH2	0,313376428
DACT1	0,313422091
GIMAP6	0,313596225
CEP350	0,315760644

ANXA11	0,315887858
SYNJ2	0,316084807
GPAT3	0,316575295
FBXW7	0,317482159
ADPRH	0,317869494
RSC1A1	0,319881595
INCENP	0,32000712
SYNE3	0,321584708
CTCF	0,321836122
C1R	0,322126659
HS3ST1	0,322934086
CENPL	0,325227504
MCM2	0,326387344
ERMP1	0,327569613
CEND1	0,327657536
MCC	0,328563432
LUZP1	0,330741381
PAG1	0,330957467
NCOA3	0,331196671
LAPTM5	0,331357786
CDC25B	0,331754531
HCFC1	0,331785254
FTL	0,331803066
SORL1	0,331847208
ZNF880	0,333405793
DCP2	0,333685963
TMTC1	0,334125571
NSD1	0,336245448
POU2F1	0,337377561
C10orf12	0,338101408
ORC1	0,338438994
DYNC1H1	0,3388466
DST	0,339365735
SIPA1L3	0,33997626
REV3L	0,341919297
HTT	0,343485261
TULP4	0,343825345
ANK1	0,344037934
HDAC9	0,344299909
GIMAP8	0,34507651
ZNF385A	0,345312376
TUBA1B	0,345548331
DTL	0,345878872
MMS22L	0,347858156
KLK1	0,349053625
ABL2	0,349274579

CNOT6L	0,349559348
TPX2	0,349739072
ZNF106	0,34985516
RBFOX2	0,350638496
PPP3CA	0,351176296
ASCC3	0,351478825
DHFR	0,351593599
SLF1	0,351981355
ALG10	0,352427248
MYBPC2	0,352832132
BIRC6	0,352873212
DSCC1	0,353375353
HERC2	0,35394011
ETS1	0,355554822
HERC1	0,356024023
NUDT15	0,356028894
SPTY2D1	0,357644829
MFHAS1	0,359041541
TOP2A	0,359736885
SKA3	0,361545549
ESCO2	0,362419163
WHSC1	0,363658987
OTUD1	0,363670018
SHISA5	0,364239869
FOXRED2	0,36429712
GALNT7	0,365061832
ALMS1	0,365204736
AKAP5	0,365701446
ZFHX3	0,36601546
NNT	0,36672497
PRR11	0,366778422
SPTBN1	0,367814982
PINK1-AS	0,368783768
CKAP2L	0,369458163
CDKN3	0,370264996
RN7SL2	0,370535093
PRKDC	0,372230122
PRKACB	0,374406363
SMC1A	0,376526408
KCTD12	0,376975436
TBC1D9	0,377779899
KIF4A	0,379077133
SHCBP1	0,379616476
IKZF1	0,380661002
CD84	0,382227634
LRP6	0,382360146

UTRN	0,384102533
RAB30	0,385942865
ZNF829	0,386218034
FLJ42627	0,386289337
HIRIP3	0,387262127
FRYL	0,387989092
CDCA2	0,390569267
APOBEC3C	0,39197726
SASH1	0,392159973
PRDM1	0,392379809
MYH10	0,393204324
RBL1	0,393501352
CCDC15	0,394962694
FOXN3	0,395018362
KMT2A	0,397752086
GGH	0,397836447
MBNL3	0,398507202
VANGL1	0,401410551
SLX4IP	0,404557381
LRRC16A	0,404948112
SMC2	0,405605844
RRM1	0,40610047
CORO2B	0,407315862
FAM111B	0,408730119
KMT2D	0,408769899
VPS13D	0,410055132
ITGB3	0,410462241
TLR9	0,411887975
ANK3	0,412044443
PCDHGC3	0,412600388
RAD51	0,418275309
STARD13	0,418483526
PTPRK	0,421787451
ROBO1	0,421997618
CRIM1	0,423022946
SEMA4A	0,424387341
CCDC141	0,424499901
TRRAP	0,425104015
CPM	0,430331532
LOC103611081	0,433018302
ARHGAP11A	0,434141688
ITPR2	0,436287834
AHNAK	0,43731253
FRMPD3	0,438450574
TREML2	0,438972337
LIPH	0,443949475

CLSPN	0,444403126
ZNF462	0,444515162
ZFP36L2	0,446363541
CENPF	0,446462019
GLIPR1	0,448618574
RIMS3	0,449432917
FRAS1	0,450209156
ILDR2	0,452412151
MYBL2	0,455757366
SCARB2	0,458066948
KMT2C	0,459995733
LOC101927550	0,461196391
CD109	0,461661733
KCNV1	0,462853238
ZBTB37	0,466374808
TLN2	0,467561961
CDC42BPA	0,469387929
KCNN3	0,469951894
NEO1	0,480723242
PKI55	0,485921833
FBN1	0,485944931
IER5L	0,486528163
SPSB1	0,486948805
PLXDC2	0,487807466
CABLES1	0,492040072
WFS1	0,492815354
KANK2	0,493540028
PRTFDC1	0,499260637
SOGA1	0,500762333
PALLD	0,502664486
ARHGAP5	0,503110886
TUBA4A	0,508258218
RGL1	0,514234055
AMICA1	0,518699208
NOTCH2	0,519277759
FOXO3	0,519303691
SMIM3	0,523934056
AAK1	0,52681521
WDFY3	0,527862041
SEMA3D	0,529337884
TPRG1	0,529461791
CREB3L1	0,53188822
FOXO1	0,532219291
CA5B	0,533761651
FILIP1	0,534477489
TTN	0,536944782

GDF15	0,539752866
ACER2	0,542979232
ZNF784	0,548077011
MICAL2	0,549224617
KLLN	0,551161768
CBX5	0,551501338
RNF213	0,553529481
TLR3	0,555484049
CPT1A	0,556717085
GPC4	0,556980981
AMOTL1	0,557203682
KLF5	0,559207191
SMPD3	0,570731609
CDCP1	0,571704308
TMEM2	0,571739233
NCKAP5	0,58064654
PEG10	0,582335503
CTTNBP2	0,596873461
CCNE2	0,597078031
MTUS1	0,598557557
FZD7	0,602660361
MITF	0,612372162
BMP2	0,620878928
LINC01358	0,633244719
FAT1	0,637849668
FN1	0,638124098
NKAIN2	0,64592732
CADPS2	0,649986322
MYRIP	0,659399274
KIAA2022	0,662856631
TCAF2	0,664151973
ARHGAP23	0,66510804
AMZ1	0,670797804
TENM2	0,681531833
LOC102723373	0,682695202
UBASH3B	0,684929775
ANXA1	0,693468905
PLXNA2	0,713807996
F2RL3	0,722596431
SIGLEC15	0,736953118
ZNF703	0,741713643
CCNJL	0,759155402
PCDH7	0,767222781
MFAP3L	0,783636654
LRCH2	0,786829051
GNAQ	0,788342851

MAP1A	0,791375931
ADCY9	0,804152332
PTPN14	0,817743693
LIMD1-AS1	0,822805495
FGL2	0,837940237
RASA4B	0,843530833
LRP1	0,865149758
ARHGAP31-AS1	0,869710647
IL1B	0,872835596
DGCR11	0,875390708
PAPSS2	0,878785995
IGFBP3	0,893119388
SLC24A3	0,895408435
MIR5195	0,900245601
SNTA1	0,937785681
AGAP2-AS1	0,941692896
MAGI2	0,966153315
PTRF	0,972831557
CELSR1	0,982844974
FOXP3	0,986968455
ADAMTS8	3,07345E+12
ZBED2	1,07315E+13
RNA28S5	1,14566E+13
NEBL	1,1462E+13
SLC26A7	1,36196E+13
TGFBI	1,41458E+13
BMPR1B	1,52477E+13
UNC13C	1,69251E+13
CNTN6	1,88843E+13
ROS1	2,03975E+13
TRHDE-AS1	2,15835E+13
LINC00508	2,35767E+13
FST	2,52123E+13
ZNF99	2,5691E+13
PCDHB11	2,60248E+13
KRT9	2,69092E+13
LOC101927769	2,71113E+13
LOC100996291	2,75932E+13
TMEM92	3,19726E+13
KIAA1210	3,4517E+13
C1orf137	4,0428E+13
PRKG1-AS1	4,0428E+13
PWRN1	4,0428E+13
LILRA6	4,0428E+13
SULT1C4	4,0428E+13

PCK1	4,0428E+13
LOC101928269	4,0428E+13
SNTN	4,0428E+13
LINC01054	4,84847E+13
LINC00488	1,00626E+14
CYP1A1	1,02529E+14
RNA45S5	1,03291E+14
ADGRV1	1,04146E+14
MYBPH	1,04784E+14
COL4A5	1,05106E+14
SV2B	1,0774E+14
C14orf132	1,10162E+14
GRIA3	1,11999E+14
EHD3	1,12364E+14
NR5A2	1,12436E+14
F5	1,12667E+14
HIST1H2BL	1,12692E+14
MMRN1	1,12791E+14
ARMC2	1,13978E+14
NWD1	1,1442E+14
C1orf226	1,1567E+14
ENPEP	1,1603E+14
SLC8A1	1,18006E+14
OSBPL1A	1,19598E+14
VIL1	1,21682E+14
EFCAB5	1,25611E+14
THEMIS	1,28939E+14
BMP3	1,29414E+14
AKR1C3	1,31754E+14
ARHGEF10	1,32413E+14
SCARNA7	1,34101E+14
ST14	1,36711E+14
GAS1	1,37114E+14
MYOM3	1,38417E+14
KIRREL3	1,39436E+14
GNAT2	1,45562E+14
HMCN2	1,46675E+14
CRTC3-AS1	1,48841E+14
FREM1	1,54575E+14
CDK5R2	1,54782E+14
EREG	1,56322E+14
SLC4A10	1,56419E+14
CCBE1	1,59293E+14
PLXDC1	1,59697E+14
SCUBE3	1,63158E+14
FLT4	1,63441E+14

MET	1,67698E+14
LINC01234	1,70268E+14
VSTM4	1,71646E+14
SLC34A2	1,75359E+14
DRAXIN	1,75739E+14
PAPPA	1,7826E+14
PLEKHD1	1,79384E+14
DEAR	1,84483E+14
DLGAP2	1,87596E+14
OR2T2	1,91259E+14
THSD4	1,91631E+14
GLI2	1,94076E+14
LPPR5	1,94518E+14
IL1A	1,95692E+14
ERICH6	1,96152E+14
C1QL1	1,99842E+14
MTMR7	2,00677E+14
NRG1	2,04113E+14
SPARCL1	2,04564E+14
CUX2	2,05922E+14
STEAP4	2,05968E+14
ZNF704	2,06277E+14
LOC414300	2,07163E+14
MEP1B	2,10392E+14
ANKRD35	2,10466E+14
PCDHGC4	2,11199E+14
CCDC129	2,14811E+14
HSD3BP4	2,15472E+14
PDE10A	2,16771E+14
BIN3-IT1	2,17067E+14
ANKK1	2,17901E+14
PIWIL1	2,18959E+14
ALX4	2,19432E+14
ALDH1A2	2,19432E+14
C1orf94	2,25643E+14
PLSCR2	2,25943E+14
ASPG	2,26415E+14
PEAR1	2,27049E+14
LOC100129697	2,28466E+14
FLG2	2,32867E+14
KCNH7	2,33404E+14
GALNT15	2,35776E+14
IQCA1L	2,41613E+14
LIN28B	2,41979E+14
LINC00521	2,42689E+14
RADIL	2,42689E+14

ADGRF1	2,43408E+14
CDH18	2,44297E+14
CDHR3	2,47275E+14
GNA14	2,50783E+14
SIGLEC8	2,5122E+14
PLD5	2,5176E+14
ADGRB3	2,52869E+14
TECTB	2,55361E+14
JPH3	2,55885E+14
LPCAT2	2,57457E+14
KCNB1	2,59937E+14
CPN2	2,60186E+14
PDZD3	2,62604E+14
CYP4F22	2,62809E+14
LOC101926962	2,63406E+14
COLEC11	2,63826E+14
CLCA4	2,64302E+14
KRT80	2,65543E+14
BEST3	2,67166E+14
C11orf96	2,68177E+14
GOLGA6L17P	2,69475E+14
TPH2	2,69585E+14
CSMD2-AS1	2,70215E+14
ZNF806	2,721E+14
KLHL31	2,74614E+14
CA12	2,76267E+14
S100B	2,77366E+14
SNORD36B	2,77366E+14
AGBL1	2,77798E+14
LINC01182	2,77798E+14
LOC401242	2,77798E+14
CXorf36	2,81207E+14
SPINK5	2,83041E+14
DNAJC22	2,84193E+14
LOC442132	2,86738E+14
LOC101928519	2,87715E+14
TDRD6	2,87715E+14
LOC100133077	2,87715E+14
PAX7	2,87769E+14
SLC5A8	2,89819E+14
VAX1	2,94274E+14
CLCA3P	2,97267E+14
ZDHHC15	3,00262E+14
DCX	3,00363E+14
KCNJ5	3,00557E+14
LOC100128531	3,00557E+14

CYR61	3,03592E+14
OTOP3	3,03592E+14
ST7-OT3	3,03663E+14
TMC4	3,06887E+14
KCNK2	3,09578E+14
SERPINA4	3,12848E+14
CLRN1	3,12848E+14
PNLIPRP1	3,1475E+14
GNAT1	3,1475E+14
ZNF804B	3,15388E+14
TMEM47	3,18172E+14
CFAP221	3,22969E+14
CADM3-AS1	3,24434E+14
LINC01180	3,25655E+14
RBM46	3,2688E+14
SPOCK3	3,2688E+14
TRIM43	3,30067E+14
LOC643542	3,34029E+14
CD1E	3,3517E+14
RNU6ATAC	3,4014E+14
ADH7	3,45286E+14
MMP10	3,47609E+14
SMOC2	3,54992E+14
CDC14C	3,58002E+14
LINC01222	3,60231E+14
LOC283299	3,60231E+14
SACS-AS1	3,60231E+14
REREP3	3,60231E+14
RNU6-10P	3,60231E+14
PRDM14	3,64614E+14
LOC284950	3,65955E+14
NPTX2	3,66065E+14
LINC00964	3,70812E+14
ADRB3	3,72559E+14
LINC01492	3,72559E+14
LEFTY2	3,78001E+14
AKR1B10	3,82179E+14
EPCAM	3,89829E+14
WNT8A	3,89829E+14
LINC01375	3,90265E+14
TRIM49C	3,90627E+14
SIGLECL1	3,96655E+14
GPR37	3,96655E+14
DLX3	4,09747E+14
LOC100506085	4,09747E+14
AFAP1-AS1	4,16788E+14

OR10A3	4,20275E+14
LOC101928778	4,22253E+14
CD3G	4,22253E+14
PSG5	4,22409E+14
PRSS48	4,22409E+14
PLCZ1	4,38597E+14
SULT1B1	4,38597E+14
WNT16	4,38597E+14
CLEC12B	4,39108E+14
LOC101927653	4,39108E+14
GYPE	4,53214E+14
ARSE	4,53214E+14
LINC00554	4,54186E+14
MGC27382	4,66533E+14
KLHL40	4,66533E+14
SERP2	4,67827E+14
TCP10L2	4,67827E+14
CD2	4,78764E+14
OMP	4,80281E+14
MIR30E	4,89315E+14
PDZK1IP1	4,89315E+14
LOC100996263	4,89315E+14
OR51A7	4,89315E+14
GPHA2	4,89315E+14
FAM181A	4,89315E+14
LINC00483	4,89315E+14
MIR216B	4,89315E+14
LINC00489	4,89315E+14
SPINT3	4,89315E+14
LOC101929412	4,89315E+14
NUPR1L	4,89315E+14
TAS2R38	4,89315E+14
DEFA6	4,89315E+14
LINC00208	4,89315E+14
LINC00548	4,98479E+14
KRT4	5,08601E+14
LINC01143	5,08601E+14
KRTAP13-1	5,08601E+14
ARHGEF3-AS1	5,08601E+14
OTOL1	5,08601E+14
TMED11P	5,08601E+14
LOC102477328	5,08601E+14
LOC100128993	5,08601E+14
KLRF2	5,21472E+14
HIST2H2BA	5,2561E+14
FAM163A	5,2561E+14

LOC101927787	5,2561E+14
THPO	5,2561E+14
MEP1A	5,2823E+14
IFNL4	5,40823E+14
SSX5	5,54585E+14
OLAH	5,67147E+14

Supplementary Table 10. Dysregulated genes (both downregulated and upregulated) identified upon comparison of ataluren EP2-treated cells versus untreated controls.

Down-regulated

Gene	log2FoldChange
NELL2	-6,93587E+14
CRX	-6,91785E+14
GPA33	-6,84302E+14
ADGRF5	-6,84302E+14
HYDIN2	-6,79683E+14
SLC9C1	-6,73048E+14
ADAM33	-6,72833E+14
PPP1R9A	-6,72833E+14
SLC14A2-AS1	-6,71866E+14
AMBN	-6,71866E+14
LOC101927666	-6,68217E+14
LINC01492	-6,66947E+14
ZNF366	-6,64592E+14
HEPHL1	-6,6428E+14
CDH3	-6,6217E+14
SLC26A5	-6,62063E+14
ATP1A2	-6,5955E+14
MOG	-6,58244E+14
GLRA2	-6,55143E+14
TSPYL6	-6,52904E+14
LOC442028	-6,52904E+14
NDST3	-6,52904E+14
ENPP3	-6,52904E+14
BPIFB1	-6,51506E+14
KNG1	-6,51506E+14
LOC101927766	-6,50233E+14
WFDC1	-6,50068E+14
XIST	-6,50068E+14
ALS2CR11	-6,46028E+14
SLC47A1	-6,44587E+14
B3GNT3	-6,44587E+14
SYT3	-6,44587E+14
LINC00547	-6,41599E+14
GCSAML	-6,40274E+14
RFX4	-6,38787E+14
MIR124-2HG	-6,35941E+14
PIANP	-6,3576E+14
CCDC170	-6,3576E+14
PCDHA1	-6,34339E+14
LOC101928150	-6,34201E+14

TRPM5	-6,3275E+14
ST8SIA3	-6,31166E+14
LOC284865	-6,31166E+14
GRIA2	-6,31166E+14
IL21-AS1	-6,27978E+14
C5orf47	-6,27978E+14
TMEM255B	-6,26615E+14
CYP4A22	-6,26354E+14
GABRA1	-6,26354E+14
TERT	-6,24872E+14
PKD1L3	-6,24697E+14
KLHL1	-6,23155E+14
MIR8078	-6,23155E+14
GIPC2	-6,22995E+14
ADAMTS14	-6,22995E+14
LGI2	-6,21449E+14
TSG1	-6,21449E+14
FGF1	-6,21231E+14
DKK3	-6,19743E+14
DKFZP434A062	-6,19743E+14
MYOM3	-6,18027E+14
LOC440390	-6,18027E+14
LAMB4	-6,18027E+14
LACTBL1	-6,1629E+14
BMP4	-6,1629E+14
TMC5	-6,1629E+14
HTR2B	-6,1629E+14
CDH18	-6,1629E+14
GRM6	-6,1629E+14
TRIML2	-6,14764E+14
LOC101929488	-6,14764E+14
BDKRB2	-6,1452E+14
ECEL1	-6,1452E+14
CNTN6	-6,1452E+14
ZIC1	-6,1452E+14
EBF2	-6,1452E+14
LOC101927623	-6,1452E+14
ADGRG4	-6,1452E+14
ARMC4	-6,12703E+14
LOC646903	-6,12703E+14
CD163L1	-6,11037E+14
TDRD1	-6,09191E+14
APOA4	-6,09191E+14
LOC283177	-6,09191E+14
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LILRA1	-5,93769E+14

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F11	-5,93769E+14
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LONRF2	-3,73902E+14
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LRRC9	-2,89157E+14
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MYO15A	-2,06521E+14
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MUC17	-2,04702E+14
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ENAM	-1,92461E+14
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FOXK2	-0,127348052
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SFSWAP	-0,118232829
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Up-regulated

Gene	log2FoldChange
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PCM1	0,100840676
SEPT9	0,10267629
IGF2R	0,102946263
ETS1	0,103439076
ARPC5	0,103501774
ANXA6	0,10409322
H2AFZ	0,10420576
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STARD7	0,105192137
PMAIP1	0,106191677
RPS28	0,106462924
NEK6	0,107664391
HLA-DQB1	0,107736438
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GOT2	0,110369947
SRSF3	0,111143038
CTSC	0,111317134
STMN1	0,111356949
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H2AFX	0,112230782
MARS	0,112634863
ADRBK1	0,112653395
PTDSS1	0,113573746
GTF2I	0,11487447
MTDH	0,115091759
GSTP1	0,115490974
MTHFD2	0,115646884
ATP5A1	0,115739738
ANAPC1	0,115996078
LIMD2	0,117706815
IDH3A	0,118220601
BCAT1	0,118221546
VARS	0,118239489
SETX	0,119366347
LRPPRC	0,119904431
YARS	0,119964336
RANBP1	0,120126096
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GALNT2	0,120394712
RBBP4	0,12075484
SHMT2	0,120786935
RPS13	0,120857621
TXNDC11	0,121265358
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HLA-DQA1	0,121730824
SELT	0,121840149
PAFAH1B1	0,122117097
CD79B	0,122183054
LYPLA1	0,122200111
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LGALS9	0,123054016
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PGAM5	0,129926928
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AKNA	0,130797118
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NDUFS7	0,14921218
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SOGA1	0,18661116
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CENPV	0,199746071
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COL19A1	0,202812926
FIZ1	0,20369808
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ABCA6	0,205413893
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ISOC2	0,212669546
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MAD2L1BP	0,212752066
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GPCPD1	0,215468414
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SEMA4D	0,217725207
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EDRF1	0,219529819
ZFAND4	0,22109401
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LY9	0,223053447
LOC101927027	0,223294094
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PSMB10	0,228936161
GALNT7	0,230134726
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PXMP2	0,233452064
SLC25A53	0,234020878
CD84	0,2343549
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TMEM140	0,243993973
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C19orf52	0,268882758
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CCR10	0,302633356
LIPH	0,302796142
MPZL3	0,302859715
ADCK5	0,305473252
RHOB	0,306612999
HS3ST1	0,306825959
C1orf106	0,308011125
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YDJC	0,313629132
H3F3AP4	0,314293402
TLR9	0,314325928
KLK1	0,315779948
CFAP57	0,320009131
CACNA1E	0,323559991
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FJX1	0,333398616
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SLITRK6	0,334516131
MS4A7	0,338258476
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ITGA11	0,349451482
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CCR6	0,35193935
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NCAM2	0,357308415
CD200R1	0,363858682
SLCO4A1	0,364552851
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NOD2	0,373751133
TNFSF15	0,377972921
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CREB3L1	0,38624142
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B3GLCT	0,391994796
EPHA4	0,393988743
CSPG4	0,398646647
DPYD	0,404107075
ASB9	0,415098026
SAMSN1	0,41619098
S100A4	0,416194743
BTNL9	0,418723728
LINC00996	0,423670352
CD101	0,428875128
FGFR4	0,440268017
LINC00426	0,442358831
BZW2	0,444424392
RNASE6	0,445068764
KCNIP2	0,447014816
LINC01551	0,448804259
GAS2	0,464225615
SFN	0,465652579
GPR174	0,469021863
CORO2B	0,469791654
FRMD4A	0,480824747
EVI2A	0,48906891
INHBE	0,491059985
TPRG1	0,491222641
OTOGL	0,491853806
CLNK	0,493473034
TIAM2	0,494388312
RFX3-AS1	0,500890338
SGMS1-AS1	0,503150776
CD28	0,507427629
TGM2	0,511527564
FCGBP	0,513548078

MYO5C	0,519026454
CMKLR1	0,526639812
GRAP2	0,52723991
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PRLR	0,531522108
DOK2	0,532473927
SMG1P3	0,539625388
VWA1	0,542395418
PCDHGC3	0,545010851
MYH11	0,54615443
ADGRD1	0,546476592
SIX4	0,54675682
NEURL3	0,552418326
CTTNBP2	0,55554532
TDO2	0,555770761
CLDN1	0,561501384
HES2	0,573002198
PTPN13	0,576357624
LOXL3	0,576695127
GPR18	0,581032819
LOC101929450	0,581462748
RASGRP2	0,583749777
CEACAM1	0,584147889
PKP2	0,585944279
CFAP54	0,587077975
AMZ1	0,591580884
MYOF	0,592861327
PVRIG	0,593284511
MIR1282	0,598491019
GNAZ	0,599097131
LINC01226	0,610621644
ZBED2	0,621561272
LOC100128164	0,634511027
IL21R-AS1	0,634688354
PADI2	0,637779764
UGT2A3	0,645345442
CXCL8	0,663747359
EBLN2	0,682903004
LGALS14	0,687187143
LOC100130093	0,704783347
CHST9	0,713731434
CCL25	0,732991288
NINJ2	0,769009986
DOK7	0,770174857
FSD2	0,787083787
F2RL3	0,792281859

NEUROD2	0,800873819
SLFNL1-AS1	0,80847723
TMEM119	0,832893717
LOC728989	0,872768812
IGF1	0,92550886
CDKN1C	0,940395985
NFATC4	0,969091963
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SEPP1	1,01104E+14
PRC1-AS1	1,03715E+14
MIR1268A	1,04096E+14
PDZRN3	1,04536E+14
GPRC5C	1,07297E+14
TCL6	1,08758E+14
NCR2	1,16967E+14
C8orf89	1,42992E+14
GYLTL1B	1,57438E+14
FAM69B	1,71583E+14
HK3	1,72777E+14
GTF2H2C	1,82611E+14
SNORA72	1,96424E+14
THBS1	2,41631E+14
MIR378J	3,52522E+14
C18orf61	5,40073E+14