

Comparison of the Transcriptomic Signatures in Pediatric and Adult CML

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Methods S1:

FISH

CML CD34+ cells were isolated by magnetic sorting (Miltenyi Biotec, Inc.: Sunnyvale, CA, USA). Sorted cells underwent hypotonic cell expansion and methanol/acetic acid fixation. Slides were prepared, pretreated with 2xSSC, alcohol dehydrated, and hybridized with BCR-ABL t(9;22) dual color, dual fusion translocation probes (Abbott/Vysis). Analysis of 200 interphase nuclei per slide was performed by a fluorescent microscope. Observed signal patterns were tallied and categorized, as per clinical standards.

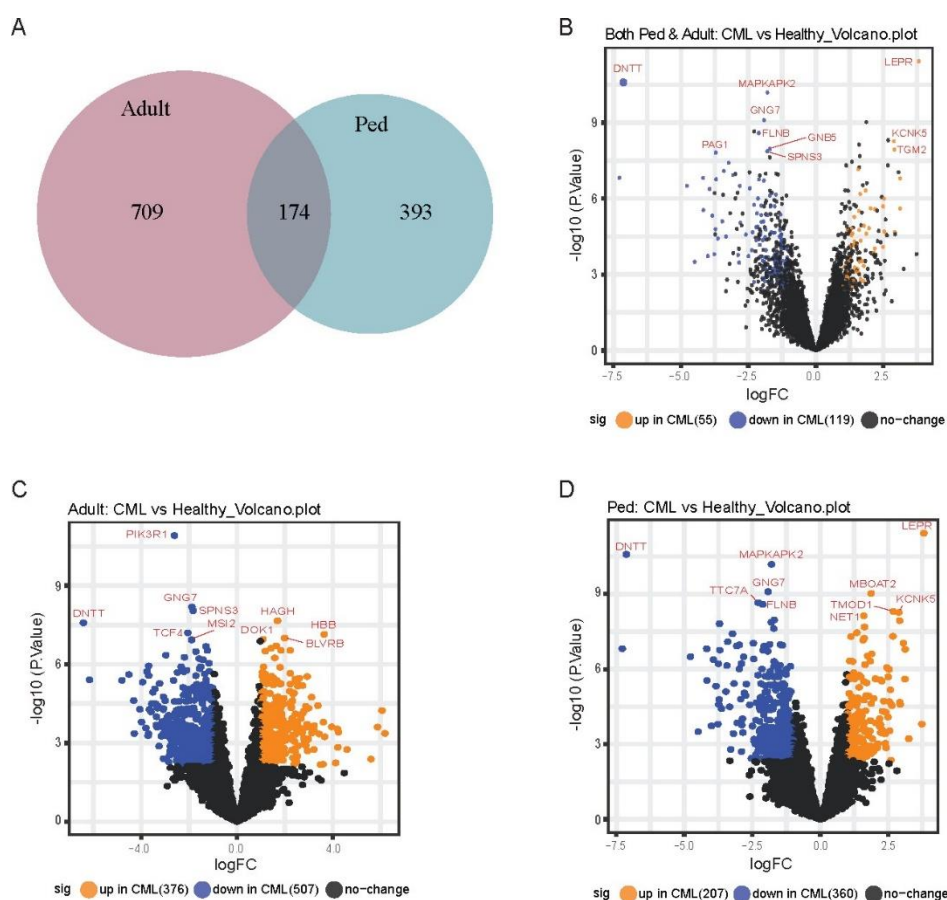


Figure S1. Volcano plots show differentially expressed genes in each comparison. (A) Venn diagram with the number of differentially expressed genes (DEG) between CML CD34+ cells and healthy

control CD34+ cells in each age group. DEG defined as FDR of ≤ 0.05 and absolute log2 fold-change > 1 . **(B)** Volcano plot with commonly regulated genes in both pediatric and adult CML CD34+ cells. **(C)** Volcano plot with DEG comparing adult CML CD34+ cells vs. adult healthy control CD34+ cells. **(D)** Volcano plot with DEG comparing pediatric CML CD34+ cells vs. pediatric healthy control CD34+ cells.

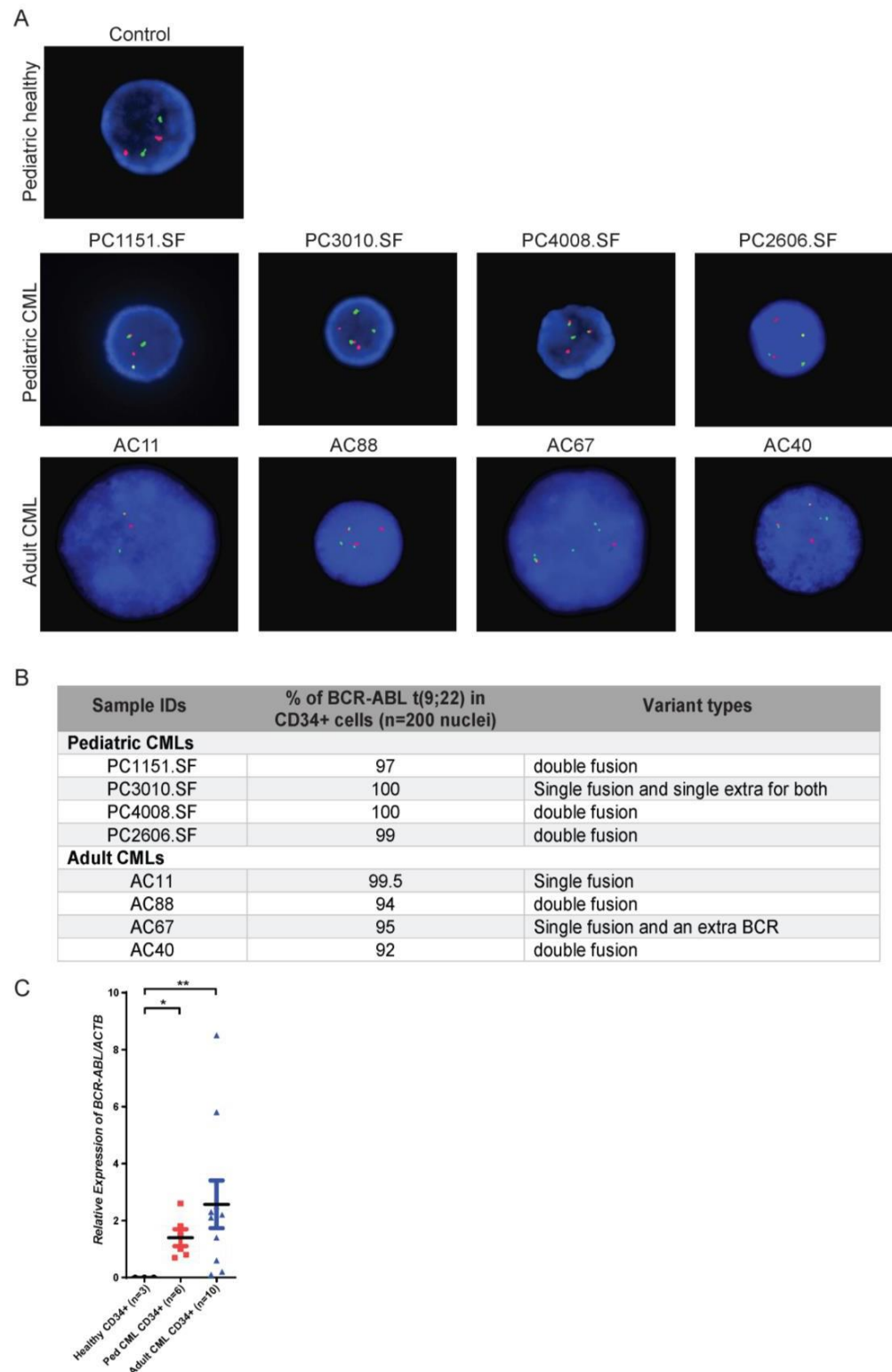


Figure S2. BCR-ABL1 fusions were detected in $\geq 92\%$ of CD34+ cells from both pediatric and adult CML patient samples by FISH analysis. * Green: BCR, Red: ABL1. **(A)** Representative images of

BCR-ABL+ cells in indicated samples. (B) Percentages of BCR-ABL+ cells in each CML CD34+ sample. (C) BCR-ABL expression was detected by RT-qPCR in CD34+ cells from pediatric and adult patients with CML but not in CD34+ cells from healthy donors.

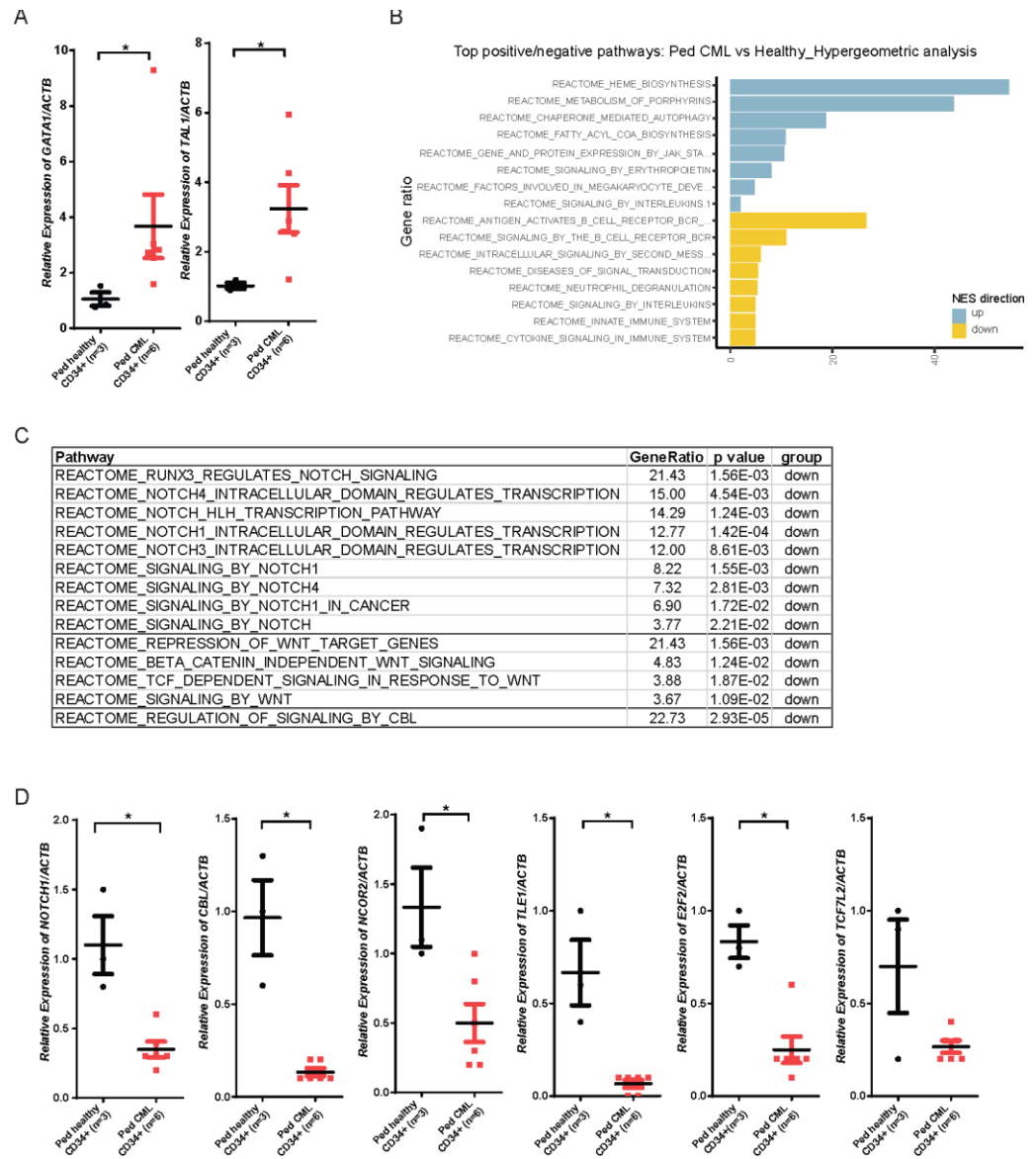


Figure S3. Differentially expressed genes and pathways comparing pediatric CML CD34+ cells vs. pediatric healthy control CD34+ cells. (A) GATA1 and TAL1 expression were significantly increased in pediatric CML CD34+ cells compared to pediatric healthy CD34+ cells. (B) Barplot shows top REACTOME pathways in pediatric CML CD34+ cells compared to pediatric healthy CD34+ cells. (C) NOTCH, WNT, and CBL pathways were significantly downregulated in pediatric CML compared to pediatric healthy controls. (D) Several genes involved in NOTCH, WNT, and CBL pathways demonstrate decreased expressions in pediatric CML CD34+ cells compared to pediatric healthy CD34+ cells. Each spot on the graph represents an individual sample. mRNA levels were assessed by RT-qPCR and normalized against *beta-actin* (*ACTB*) expression. * $p < 0.05$.

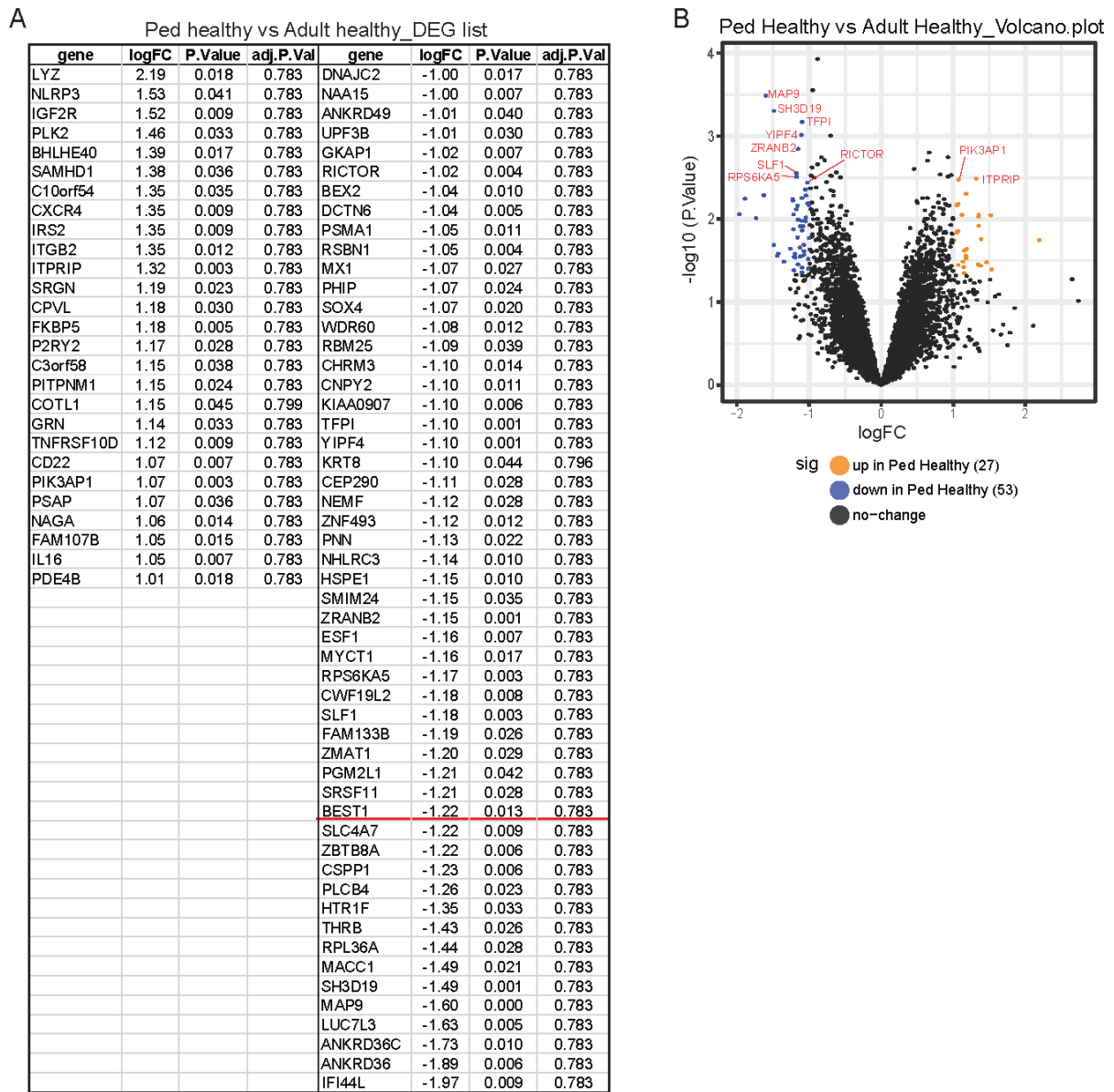
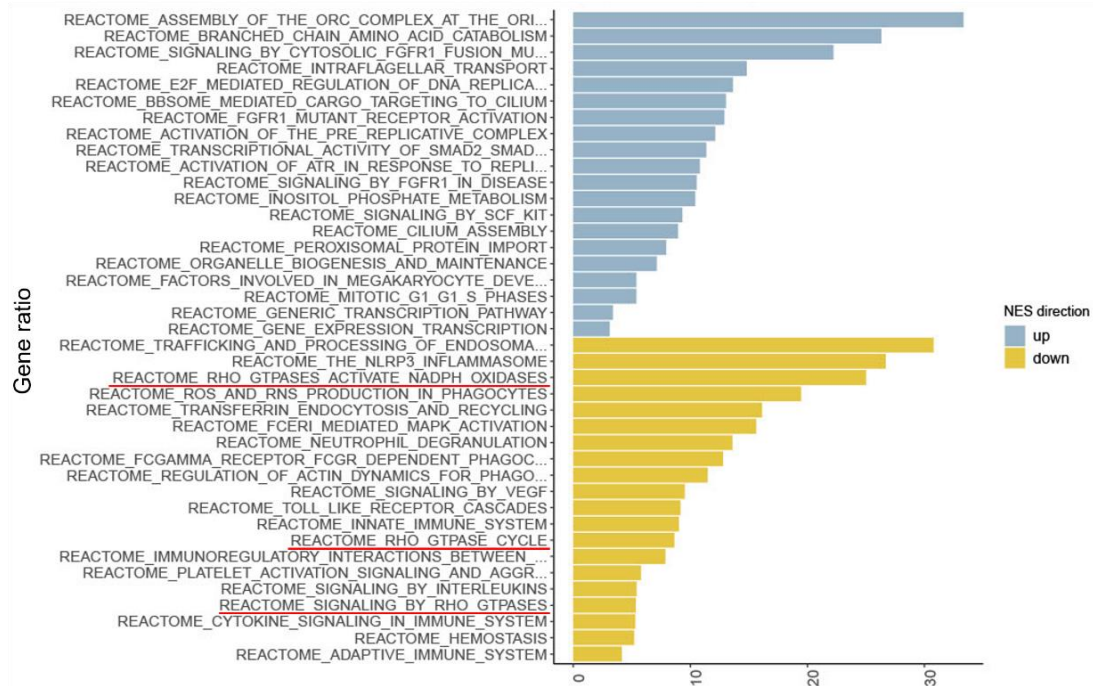


Figure S4. Comparison of pediatric healthy and adult healthy CD34+ cells does not show significant differences. (A) Table and (B) Volcano plot show DEG in pediatric and adult healthy controls. DEG defined as FDR of ≤ 0.8 and absolute \log_2 fold-change > 1 .

A Top positive/negative pathways: (Ped CML vs Ped healthy) vs (adult CML vs adult healthy)_Hypergeometric analysis



B Rho specific pathways: (Ped CML vs Ped healthy) vs (adult CML vs adult healthy)_Hypergeometric analysis

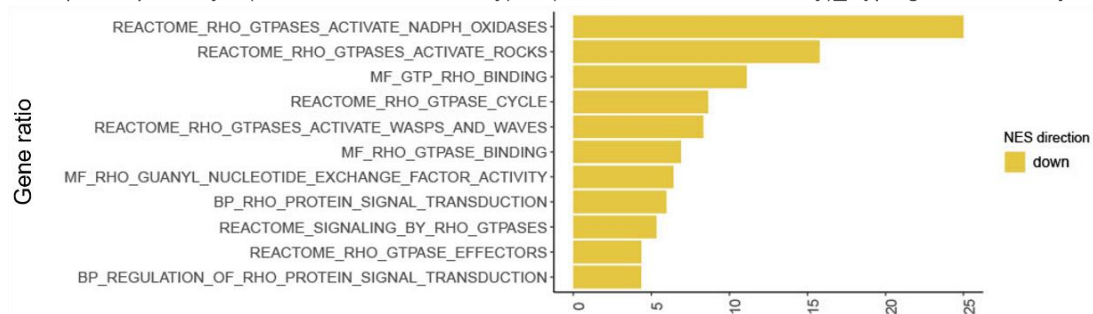


Figure S5. Differentially expressed pathways for (pediatric CML vs pediatric healthy) vs (adult CML vs adult healthy). (A) top REACTOME pathways (B) Rho pathways only; MF and BP are GP terms for Molecular Function and Biological Process, respectively.

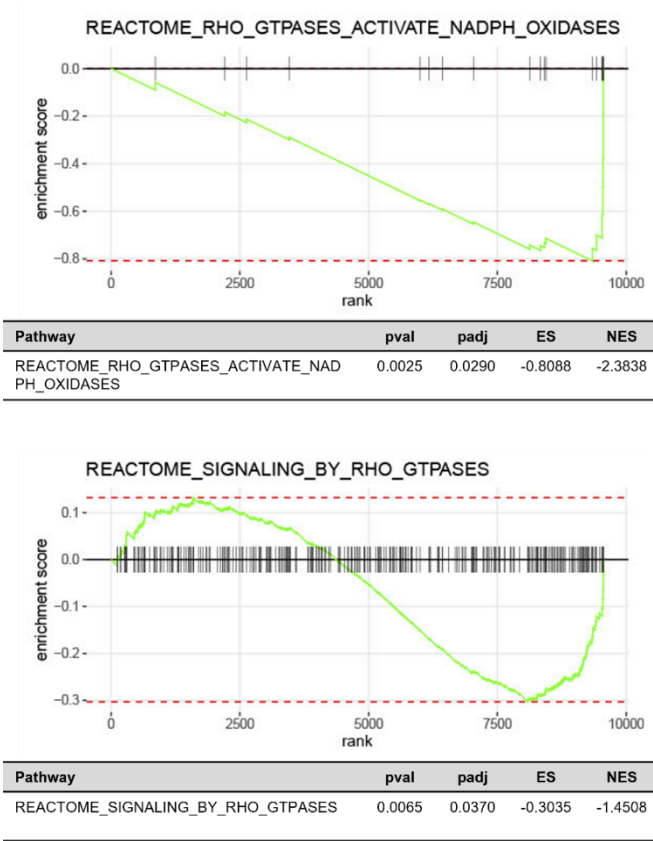


Figure S6. GSEA-enrichment plots of Rho pathways between (pediatric CML vs pediatric healthy) vs (adult CML vs adult healthy).

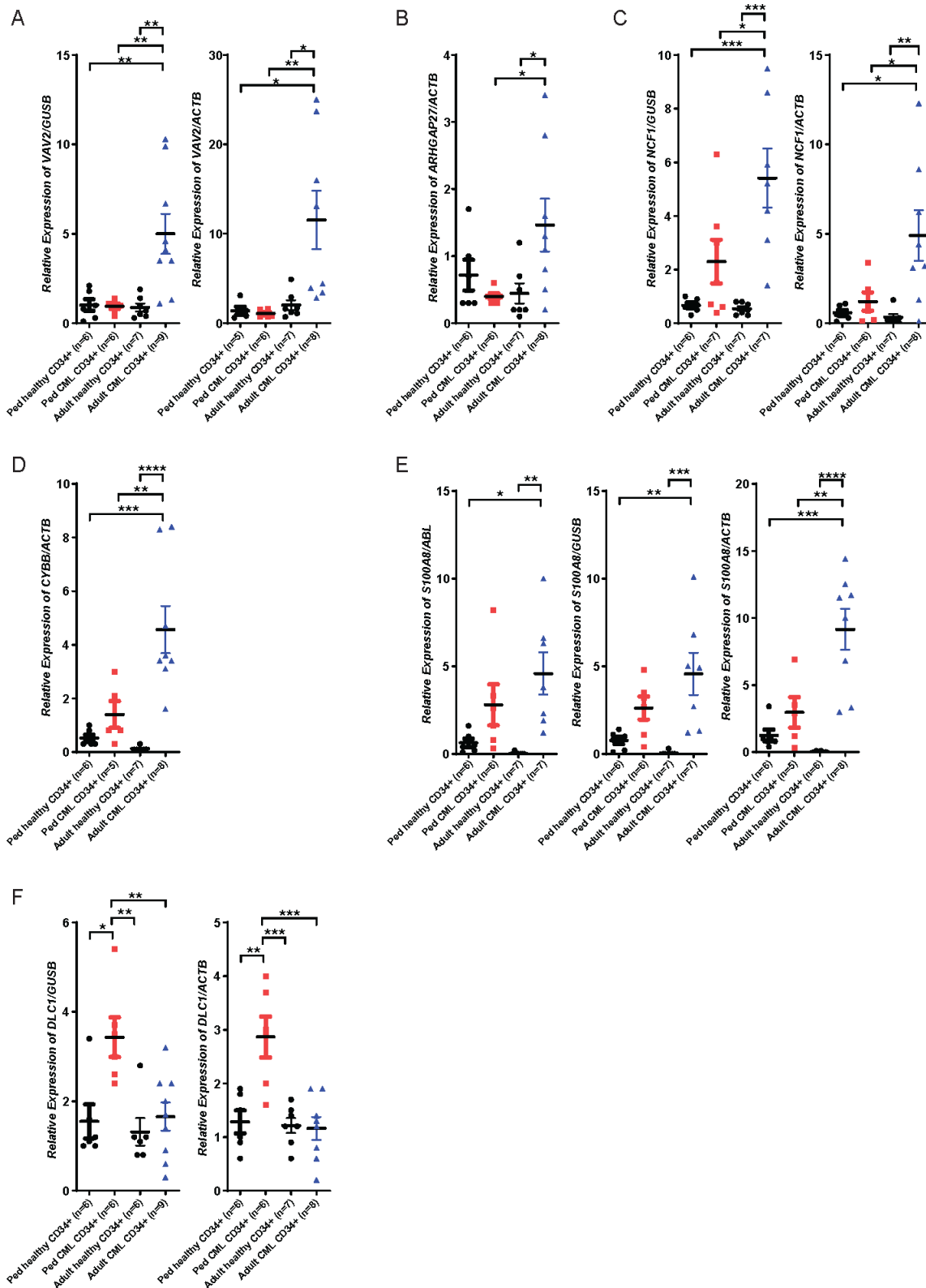


Figure S7. Several genes involved in the Rho pathway were differentially expressed between pediatric CML CD34+ cells and adult CML CD34+ cells. (A–F) mRNA expression levels of dysregulated genes were assessed by RT-qPCR and normalized against *Abelson (ABL)*, *beta-glucuronidase (GUSB)*, or *beta-actin (ACTB)* expression. Data were graphed as mean \pm SEM. Each spot on the graph represents an individual sample. p values for statistical significance were obtained using unpaired Student t-test or ANOVA test (Tukey's multiple comparison). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Table S1. Demographic and clinical characteristics of CML patients and healthy controls.

Sample ID	Sex	Age	Race/Ethnicity	CML Phase	WBC Count	Platelet Count	Spleen Size
Pediatric CML patients							
PC1151.SF	M	13	Hispanic	Chronic	291	626	8
PC3010.SF	M	14	Asian	Chronic	351	617	5
PC2606.SF	M	9	Other	Chronic	255	627	2
PC4008.SF	M	17	Asian	Chronic	488	439	5
PC5907.CG	M	10	Asian	Chronic	108	698	Unknown
PC6128.CG	M	10	Asian	Chronic	95	1047	Unknown
PC8267.CG	F	11	Hispanic	Unknown	Unknown	Unknown	Unknown
PC9495.CG	M	9	White	Unknown	Unknown	Unknown	Unknown
PC2300.SF	M	5	White	Chronic	57	870	0
Adult CML patients							
AC10.SF	M	33	Asian	Chronic	370	253	17
AC33.SF	M	55	White	Chronic	57	348	0
AC36.SF	M	62	White	Chronic	37	590	0
AC48.SF	M	23	Hispanic	Chronic	260	134	4
AC64.SF	F	30	Hispanic	Chronic	273	262	0
AC40	M	68	White	Chronic	64	355	0
AC82	M	62	White	Chronic	136	456	0
AC11	M	44	Black	Chronic	167	205	0
AC88	M	62	White	Chronic	126	187	0
AC67	M	53	White	Chronic	149	371	0
Pediatric healthy controls							
PN71.UM	F	12	Asian				
PN81.UM	M	10	White				
PN12	M	19	Other				
PN14	M	19	Other				
PN31	F	19	Hispanic				
PN46	M	19	Black				
PN85	F	18	Black				
PN06	M	19	Black				
PN74	F	19	White				
PN18	M	19	Black				
Adult healthy controls							
AN96	M	33	Black				
AN69	M	35	Hispanic				
AN173	M	31	Black				
AN369	F	32	Black				
AN52	M	29	Black				
AN53	M	44	Other				
AN55	M	28	Black				
AN35.LZ	F	24	Unknown				
AN73.LZ	M	25	Black				
AN62.LZ	M	21	Black				

M=male; F=female; Age is reported in years; Spleen size is reported in centimeters below the costal margin.

Table S2. All DEG in pediatric CML compared to adult CML, sorted according to logFC level. *p* values were obtained using hypergeometric test.

Upregulated in Pediatric CML compared to Adult CML				Downregulated in Pediatric CML compared to Adult CML			
gene	logFC	<i>p</i> .Value	adj. <i>p</i> .Val	Gene	logFC	<i>p</i> .Value	adj. <i>p</i> .Val
PLOD2	3.62	5.00E-04	1.67E-02	GRINA	-1.51	2.00E-04	1.33E-02
FAM199X	3.52	0.00E+00	9.20E-03	NUDT16	-1.52	1.00E-03	2.18E-02
BEND4	3.52	1.00E-04	1.18E-02	C16orf74	-1.54	1.30E-03	2.32E-02
CD40LG	3.41	1.00E-04	1.17E-02	FAM50A	-1.55	3.00E-04	1.40E-02
PKIA	3.32	0.00E+00	1.05E-02	IL18BP	-1.56	2.50E-03	3.10E-02
OXR1	3.28	1.00E-04	1.11E-02	CARD16	-1.57	2.30E-03	3.02E-02
PEX7	3.27	1.00E-04	1.18E-02	ZFHX3	-1.57	4.00E-03	3.79E-02
NUDCD1	3.17	9.00E-04	2.08E-02	HOOK2	-1.58	0.00E+00	9.70E-03
SGPP1	3.15	1.00E-04	1.22E-02	ADGRE5	-1.59	7.00E-04	1.88E-02
NEMP2	3.14	1.00E-04	1.22E-02	S100A4	-1.6	3.20E-03	3.38E-02
MYEF2	3.13	0.00E+00	1.02E-02	JSRP1	-1.61	1.00E-04	1.19E-02
TADA1	3.11	0.00E+00	9.40E-03	PLEKHO1	-1.61	3.00E-04	1.47E-02
WDR44	3.09	0.00E+00	9.70E-03	IL10RB	-1.61	4.00E-04	1.67E-02
FBLN2	3.09	3.00E-04	1.47E-02	HSPA1A	-1.61	3.10E-03	3.35E-02
BMI1	3.08	3.00E-04	1.52E-02	CACFD1	-1.62	5.00E-04	1.67E-02
VANGL2	3.08	6.00E-04	1.81E-02	TSPO	-1.63	1.00E-04	1.18E-02
SH3BGRL2	3.07	3.00E-04	1.42E-02	LST1	-1.63	2.50E-03	3.13E-02
WFDC1	3.04	4.00E-04	1.58E-02	SAT2	-1.64	6.00E-04	1.82E-02
MYCT1	3.02	4.00E-04	1.64E-02	CYBA	-1.65	1.00E-04	1.22E-02
LYSMD3	3.01	1.00E-04	1.22E-02	APOL1	-1.65	7.00E-04	1.91E-02
C5	2.9	0.00E+00	9.90E-03	HIST1H2BG	-1.65	2.70E-03	3.18E-02
MBTPS2	2.9	3.00E-04	1.42E-02	LTB4R	-1.66	1.60E-03	2.61E-02
ZNF675	2.88	1.00E-04	1.22E-02	S100A6	-1.66	4.20E-03	3.86E-02
FNBP1L	2.87	2.00E-04	1.29E-02	BRI3	-1.67	1.20E-03	2.29E-02
GALNT12	2.86	4.00E-04	1.67E-02	RXRA	-1.68	7.00E-04	1.90E-02
FAM160B1	2.85	7.00E-04	1.91E-02	SULT1A1	-1.68	1.20E-03	2.31E-02
TTK	2.85	1.20E-03	2.29E-02	TCIRG1	-1.7	2.00E-03	2.85E-02
ZSCAN12	2.82	2.00E-04	1.33E-02	TRPM2	-1.7	2.00E-03	2.88E-02
MYCN	2.82	1.50E-03	2.50E-02	IL6R	-1.71	1.40E-03	2.45E-02
CLDN10	2.79	1.20E-03	2.31E-02	HLA.DMB	-1.74	4.00E-04	1.63E-02
SCOC	2.77	1.00E-04	1.22E-02	AHNAK	-1.74	1.60E-03	2.63E-02
FANCF	2.77	1.10E-03	2.25E-02	IER2	-1.74	3.60E-03	3.58E-02
NAA30	2.76	1.00E-04	1.22E-02	CD72	-1.74	3.60E-03	3.59E-02
ZNF776	2.74	2.00E-04	1.33E-02	PTPRE	-1.74	6.00E-03	4.70E-02
FKBP14	2.74	4.00E-04	1.58E-02	OPRL1	-1.74	6.50E-03	4.88E-02
CEP70	2.71	1.00E-04	1.18E-02	ANKRD11	-1.75	3.00E-03	3.32E-02
ZNF518B	2.71	2.00E-04	1.33E-02	HLA.F	-1.76	5.00E-03	4.22E-02
EXTL2	2.71	5.00E-04	1.76E-02	UNC93B1	-1.77	4.00E-04	1.63E-02
RRM2B	2.7	1.00E-03	2.21E-02	ANXA2	-1.77	3.40E-03	3.49E-02
SOCS6	2.67	1.00E-04	1.22E-02	MYO1F	-1.78	4.00E-04	1.58E-02
DNAJC18	2.67	2.00E-04	1.23E-02	MVP	-1.78	6.00E-04	1.80E-02
MIER3	2.65	2.00E-04	1.33E-02	ZDHHC1	-1.79	5.00E-04	1.67E-02
IGF2BP2	2.65	5.90E-03	4.67E-02	SH2B2	-1.79	3.30E-03	3.45E-02
CEP83	2.61	2.00E-04	1.32E-02	CTSD	-1.81	6.00E-04	1.84E-02
YOD1	2.61	3.00E-04	1.40E-02	LGALS1	-1.81	2.10E-03	2.91E-02
HOXB2	2.61	7.00E-04	1.91E-02	DUSP2	-1.81	2.80E-03	3.21E-02
C12orf66	2.6	6.00E-04	1.86E-02	TNFAIP8L2	-1.83	4.00E-04	1.64E-02
XPR1	2.59	3.00E-04	1.40E-02	KLF6	-1.83	7.00E-04	1.91E-02
SLC24A3	2.59	1.50E-03	2.53E-02	GRN	-1.83	1.20E-03	2.31E-02

DIRAS1	2.58	2.10E-03	2.92E-02	AGTRAP	-1.84	1.00E-04	1.22E-02
GSTCD	2.57	3.00E-04	1.52E-02	TLE4	-1.84	2.00E-04	1.40E-02
HSPA13	2.57	2.70E-03	3.17E-02	IRF7	-1.85	1.60E-03	2.61E-02
ZBTB11	2.55	7.00E-04	1.91E-02	RRBP1	-1.85	2.40E-03	3.09E-02
PACRGL	2.54	4.00E-04	1.63E-02	CAMK1	-1.86	4.00E-04	1.58E-02
ZNF136	2.54	7.00E-04	1.89E-02	C4orf48	-1.87	7.00E-04	1.91E-02
AIF1L	2.54	5.20E-03	4.31E-02	BEST1	-1.88	5.00E-04	1.77E-02
SERAC1	2.52	0.00E+00	9.90E-03	C1orf162	-1.91	3.00E-03	3.34E-02
RNF217	2.52	1.10E-03	2.26E-02	SH3TC1	-1.91	6.80E-03	4.94E-02
ATP8A1	2.52	5.40E-03	4.40E-02	RRAS	-1.92	3.20E-03	3.38E-02
USP46	2.49	1.00E-04	1.22E-02	HCST	-1.93	2.00E-04	1.38E-02
ARHGAP18	2.49	3.00E-04	1.40E-02	DUSP1	-1.93	2.80E-03	3.21E-02
LATS1	2.49	1.40E-03	2.49E-02	NFKB2	-1.94	1.00E-03	2.21E-02
TMEM231	2.48	7.00E-04	1.91E-02	HRH2	-1.94	2.40E-03	3.10E-02
LRRC37B	2.48	1.10E-03	2.26E-02	FOS	-1.94	4.20E-03	3.87E-02
NEK7	2.46	8.00E-04	2.05E-02	CCDC88B	-1.96	1.20E-03	2.29E-02
SEC23A	2.46	9.00E-04	2.11E-02	CECR1	-1.96	6.40E-03	4.78E-02
SVOPL	2.45	4.00E-04	1.63E-02	NINJ1	-1.96	6.60E-03	4.88E-02
PLEKHA4	2.44	1.40E-03	2.46E-02	ITGAL	-1.97	1.00E-04	1.18E-02
ZNF569	2.43	1.00E-04	1.22E-02	SRGAP2C	-1.97	6.40E-03	4.78E-02
ZBTB34	2.43	6.00E-04	1.86E-02	CYTH4	-1.98	6.00E-04	1.79E-02
ZNF549	2.43	1.80E-03	2.75E-02	ISG15	-1.99	2.50E-03	3.10E-02
RCN2	2.42	1.80E-03	2.75E-02	PSTPIP1	-1.99	3.30E-03	3.45E-02
CHML	2.41	1.40E-03	2.45E-02	METRNL	-1.99	5.40E-03	4.38E-02
HOXA5	2.41	3.60E-03	3.57E-02	LSP1	-2.01	1.00E-04	1.18E-02
WDR35	2.4	3.00E-04	1.52E-02	SLC16A3	-2.01	6.00E-04	1.82E-02
MTHFD2L	2.39	1.20E-03	2.31E-02	SLC43A2	-2.01	2.00E-03	2.84E-02
KLHL28	2.38	2.00E-04	1.38E-02	CST3	-2.02	2.00E-04	1.31E-02
DCUN1D1	2.38	5.00E-04	1.67E-02	TNFAIP2	-2.03	3.10E-03	3.38E-02
ZNF736	2.38	7.00E-04	1.91E-02	CEBPB	-2.07	1.60E-03	2.63E-02
ZBTB38	2.36	4.30E-03	3.88E-02	CDC42EP2	-2.09	2.00E-04	1.27E-02
METTL25	2.35	3.70E-03	3.61E-02	TNFSF10	-2.09	1.20E-03	2.29E-02
CCSAP	2.34	4.00E-04	1.63E-02	SPON2	-2.1	6.00E-04	1.85E-02
TSPYL5	2.34	4.40E-03	3.91E-02	BTG2	-2.1	7.00E-04	1.91E-02
FREM1	2.33	1.80E-03	2.72E-02	CKAP4	-2.1	4.10E-03	3.84E-02
ZNF329	2.32	9.00E-04	2.07E-02	C10orf54	-2.11	1.80E-03	2.75E-02
SWT1	2.32	1.50E-03	2.51E-02	RHOB	-2.12	1.80E-03	2.75E-02
BRIP1	2.32	2.60E-03	3.17E-02	ZFP36	-2.12	4.60E-03	4.02E-02
SLAIN1	2.3	1.00E-03	2.22E-02	IGHM	-2.13	8.00E-04	1.98E-02
TMX3	2.3	1.70E-03	2.68E-02	CD79A	-2.13	3.50E-03	3.55E-02
PBX1	2.29	1.10E-03	2.28E-02	RGS2	-2.16	4.00E-03	3.76E-02
SLCO4A1	2.26	1.10E-03	2.25E-02	IL17RA	-2.19	2.00E-04	1.31E-02
ZNF614	2.26	1.40E-03	2.46E-02	ARL4C	-2.19	1.20E-03	2.30E-02
ACBD5	2.25	1.20E-03	2.31E-02	MSRB1	-2.22	3.00E-04	1.42E-02
THAP1	2.23	4.00E-04	1.58E-02	NKG7	-2.24	2.90E-03	3.25E-02
MFN1	2.23	1.10E-03	2.24E-02	ID2	-2.24	4.50E-03	4.00E-02
GTPBP8	2.22	4.00E-04	1.56E-02	RHBDF2	-2.27	7.00E-04	1.89E-02
DMXL1	2.21	2.70E-03	3.17E-02	CYSTM1	-2.27	2.20E-03	2.97E-02
TWF1	2.2	3.30E-03	3.42E-02	B3GALT4	-2.29	1.10E-03	2.26E-02
SMO	2.2	6.10E-03	4.73E-02	CEBPD	-2.3	2.70E-03	3.20E-02
SCML2	2.19	1.70E-03	2.66E-02	GBP2	-2.32	1.20E-03	2.31E-02
FAM234B	2.19	6.20E-03	4.77E-02	FCER1G	-2.33	6.40E-03	4.81E-02
FAM19A2	2.19	6.80E-03	4.96E-02	FYB	-2.34	5.00E-04	1.71E-02
TBC1D16	2.18	4.70E-03	4.07E-02	ADAP1	-2.37	1.20E-03	2.31E-02

BBS7	2.17	6.00E-04	1.86E-02	CFP	-2.38	1.20E-03	2.30E-02
RAB39B	2.16	3.80E-03	3.65E-02	HVCN1	-2.4	2.50E-03	3.14E-02
CEP162	2.16	4.10E-03	3.79E-02	NAGK	-2.44	0.00E+00	7.10E-03
CGRRF1	2.16	4.60E-03	4.02E-02	IFI27L2	-2.45	2.00E-04	1.27E-02
LEPR	2.15	0.00E+00	1.00E-04	JUN	-2.46	4.00E-04	1.56E-02
KCNQ5	2.15	2.70E-03	3.20E-02	P2RX7	-2.48	2.00E-04	1.23E-02
TRIB2	2.14	2.00E-03	2.84E-02	PLAUR	-2.49	6.30E-03	4.78E-02
RFX7	2.14	6.70E-03	4.91E-02	PLK3	-2.5	2.00E-04	1.23E-02
CCDC171	2.13	4.40E-03	3.91E-02	TYROBP	-2.52	4.50E-03	4.00E-02
DTD2	2.12	5.00E-03	4.23E-02	TNFRSF1B	-2.53	5.00E-04	1.78E-02
THAP5	2.12	5.90E-03	4.67E-02	GRK5	-2.53	6.00E-04	1.84E-02
EOGT	2.11	4.00E-04	1.63E-02	APOBR	-2.62	2.00E-04	1.29E-02
COG6	2.11	4.40E-03	3.91E-02	DOK2	-2.63	6.00E-04	1.80E-02
SPRY2	2.09	3.00E-04	1.47E-02	SLC2A6	-2.64	1.40E-03	2.47E-02
ARL5B	2.09	2.80E-03	3.25E-02	EGR1	-2.64	1.70E-03	2.72E-02
FZD1	2.09	4.50E-03	4.00E-02	JAML	-2.64	2.00E-03	2.85E-02
ZNF367	2.08	3.40E-03	3.45E-02	S100A11	-2.72	8.00E-04	1.91E-02
KCTD9	2.07	1.80E-03	2.72E-02	FGR	-2.8	3.20E-03	3.38E-02
PAQR3	2.06	1.60E-03	2.61E-02	CTSH	-2.82	1.10E-03	2.25E-02
MED21	2.06	2.60E-03	3.15E-02	NBPF26	-2.82	5.40E-03	4.41E-02
AASDH	2.05	2.50E-03	3.13E-02	LTB	-2.84	1.00E-03	2.22E-02
C2orf69	2.04	1.90E-03	2.79E-02	HCK	-2.85	6.00E-04	1.86E-02
STXBP1	2.04	2.40E-03	3.10E-02	CYBB	-2.87	5.10E-03	4.26E-02
IL6ST	2.04	3.40E-03	3.46E-02	SLC11A1	-2.9	3.00E-04	1.45E-02
PLEKHA8	2.03	3.50E-03	3.52E-02	ASGR1	-2.93	2.00E-04	1.23E-02
PDZD8	2.02	0.00E+00	7.10E-03	LILRB2	-2.96	3.60E-03	3.56E-02
MTRF1L	2.02	2.80E-03	3.25E-02	POU2F2	-3	1.00E-04	1.22E-02
SNUPN	2.02	4.20E-03	3.87E-02	KLF2	-3.05	2.00E-04	1.29E-02
ACTR6	2.01	1.10E-03	2.25E-02	NCF1	-3.31	6.20E-03	4.75E-02
SCYL2	2.01	1.50E-03	2.50E-02	FAM20C	-3.42	7.00E-04	1.88E-02
ZNF761	2.01	4.20E-03	3.86E-02	PLEC	-3.63	2.00E-04	1.23E-02
RALGAPA1	2.01	5.90E-03	4.66E-02	TYMP	-3.96	3.00E-04	1.47E-02
NEDD4	2	1.50E-03	2.56E-02	FCN1	-4.17	6.00E-04	1.80E-02
OMA1	1.99	7.00E-04	1.91E-02	S100A9	-4.3	1.10E-03	2.24E-02
VCPKMT	1.99	1.10E-03	2.26E-02	S100A8	-4.36	1.10E-03	2.28E-02
CLIC4	1.99	3.10E-03	3.35E-02	SERPINA1	-4.48	1.10E-03	2.26E-02
FKTN	1.99	6.00E-03	4.72E-02	LRP1	-4.85	4.20E-03	3.86E-02
ASAP2	1.98	4.70E-03	4.04E-02				
CFAP97	1.97	1.00E-04	1.18E-02				
BCKDHB	1.97	9.00E-04	2.07E-02				
FGGY	1.97	1.30E-03	2.36E-02				
GAN	1.97	2.90E-03	3.28E-02				
MPP6	1.97	5.60E-03	4.53E-02				
C9orf85	1.96	2.60E-03	3.14E-02				
ZNF880	1.96	3.10E-03	3.36E-02				
PANK3	1.95	3.30E-03	3.42E-02				
PDGFC	1.95	4.00E-03	3.79E-02				
PTBP2	1.95	6.80E-03	4.94E-02				
ABCC4	1.94	0.00E+00	7.10E-03				
GNA13	1.94	1.60E-03	2.61E-02				
TMEM237	1.94	2.40E-03	3.10E-02				
CLC	1.94	2.70E-03	3.19E-02				
PRPF18	1.94	3.10E-03	3.35E-02				
SLC22A5	1.93	2.40E-03	3.10E-02				

ZNF521	1.93	2.40E-03	3.10E-02
RBBP9	1.93	5.50E-03	4.47E-02
SLC35D1	1.92	1.10E-03	2.24E-02
GABPA	1.92	2.20E-03	3.01E-02
FAM83D	1.92	2.90E-03	3.29E-02
SLC41A1	1.92	4.30E-03	3.88E-02
DEPDC1B	1.92	4.70E-03	4.07E-02
ZNF256	1.92	6.80E-03	4.95E-02
TMEM64	1.91	1.00E-04	1.08E-02
RBM45	1.91	2.30E-03	3.03E-02
METTL10	1.91	2.90E-03	3.27E-02
TRIM59	1.9	6.00E-04	1.83E-02
NR1D2	1.9	2.10E-03	2.92E-02
ZNF354A	1.9	3.40E-03	3.45E-02
TRUB1	1.89	1.00E-03	2.21E-02
PCYT1B	1.89	6.10E-03	4.75E-02
ZNF850	1.88	2.50E-03	3.14E-02
SLC25A15	1.86	9.00E-04	2.11E-02
CEP97	1.85	1.20E-03	2.29E-02
SCRN1	1.85	1.30E-03	2.33E-02
MBNL2	1.85	1.70E-03	2.68E-02
ZNF124	1.85	3.20E-03	3.38E-02
DCAF17	1.85	3.70E-03	3.62E-02
NUP54	1.84	2.60E-03	3.14E-02
CYYR1	1.83	2.00E-04	1.33E-02
C1orf109	1.83	7.00E-04	1.89E-02
RHOBTB1	1.82	1.70E-03	2.68E-02
UACA	1.82	2.10E-03	2.93E-02
ZNF711	1.82	2.30E-03	3.07E-02
TMEM106B	1.82	6.70E-03	4.94E-02
ZNF493	1.8	2.80E-03	3.21E-02
MED12L	1.8	3.60E-03	3.59E-02
ZNF717	1.8	5.00E-03	4.22E-02
IFT81	1.8	6.90E-03	4.98E-02
DLC1	1.79	1.00E-04	1.22E-02
TPD52	1.79	2.00E-03	2.86E-02
ZSCAN9	1.78	3.80E-03	3.67E-02
FRS2	1.78	5.60E-03	4.51E-02
KPNA5	1.78	6.60E-03	4.90E-02
RHOBTB3	1.77	1.70E-03	2.66E-02
ZNF726	1.77	5.60E-03	4.51E-02
ZNF568	1.77	5.70E-03	4.55E-02
FNDC3A	1.77	6.10E-03	4.73E-02
SUCLG2	1.76	4.30E-03	3.88E-02
METTL21B	1.74	9.00E-04	2.11E-02
ZNF792	1.74	1.90E-03	2.79E-02
ZNF254	1.73	3.80E-03	3.64E-02
TTC26	1.72	2.90E-03	3.29E-02
MBIP	1.71	1.50E-03	2.50E-02
ACADSB	1.71	1.70E-03	2.69E-02
RRAGB	1.71	2.00E-03	2.88E-02
CAMKMT	1.71	2.70E-03	3.17E-02
POT1	1.71	3.10E-03	3.35E-02
BDH2	1.7	1.50E-03	2.52E-02

LRRC40	1.7	2.70E-03	3.18E-02
PEX1	1.7	4.20E-03	3.86E-02
GPHN	1.7	4.30E-03	3.89E-02
UBE2E3	1.69	1.00E-03	2.21E-02
CDC23	1.69	3.20E-03	3.38E-02
CCNT1	1.69	4.00E-03	3.78E-02
PRKACB	1.68	1.00E-04	1.22E-02
PARPBP	1.68	2.10E-03	2.92E-02
CKAP2	1.66	1.00E-04	1.23E-02
SPAST	1.66	5.00E-04	1.71E-02
THAP12	1.66	3.70E-03	3.61E-02
AHCYL2	1.66	4.60E-03	4.02E-02
MORC3	1.65	2.70E-03	3.17E-02
RIMKLB	1.65	6.70E-03	4.94E-02
DPY19L3	1.64	3.20E-03	3.38E-02
DNAJC6	1.64	4.50E-03	3.97E-02
PIKFYVE	1.63	3.80E-03	3.64E-02
FAM8A1	1.62	3.90E-03	3.71E-02
STK3	1.62	4.20E-03	3.86E-02
CDC14A	1.62	5.40E-03	4.38E-02
TOM1L1	1.62	5.80E-03	4.58E-02
MBNL3	1.61	6.00E-04	1.86E-02
ZNF141	1.6	9.00E-04	2.11E-02
SH3YL1	1.6	4.50E-03	3.99E-02
ZNF664	1.59	0.00E+00	8.50E-03
FBXO28	1.59	4.20E-03	3.86E-02
TWSG1	1.58	2.00E-04	1.38E-02
POLE2	1.58	4.90E-03	4.17E-02
LCLAT1	1.58	5.80E-03	4.61E-02
SSX2IP	1.56	3.50E-03	3.52E-02
TMTC4	1.56	5.60E-03	4.51E-02
PRRC1	1.56	6.50E-03	4.83E-02
LYPLA1	1.55	1.10E-03	2.24E-02
ENOX2	1.55	2.90E-03	3.25E-02
PDK1	1.55	3.20E-03	3.38E-02
STXBP5	1.54	0.00E+00	7.10E-03
PRKCI	1.54	5.00E-04	1.67E-02
ATP13A3	1.54	1.10E-03	2.25E-02
VPS13A	1.54	3.70E-03	3.62E-02
VAV3	1.54	4.00E-03	3.76E-02
DUS4L	1.53	3.80E-03	3.66E-02
CUL4B	1.53	5.50E-03	4.47E-02
ZNF383	1.52	3.90E-03	3.70E-02
PRKAR2B	1.51	0.00E+00	2.10E-03
KIF2A	1.5	4.00E-04	1.63E-02
DNAJC12	1.5	2.60E-03	3.17E-02
PARP11	1.5	5.00E-03	4.21E-02

Table S3. All pathways differentially regulated in pediatric CML compared to adult CML, sorted according to GeneRatio level. *p* values were obtained using hypergeometric test.

Pathway.	GeneRatio	<i>p</i> Value	Group
REACTOME_CROSS_PRESENTATION_OF_PARTICULATE_EXOGENOUS_ANTIGENS _PHAGOSOMES	37.50	1.67E-05	down
REACTOME_METAL_SEQUESTRATION_BY_ANTIMICROBIAL_PROTEINS	33.33	6.73E-04	down
REACTOME_DEX_H_BOX_HELICASES_ACTIVATE_TYPE_I_IFN_AND_INFLAMMATO RY_CYTOKINES_PRODUCTION	28.57	9.38E-04	down
REACTOME_RHO_GTPASES_ACTIVATE_NADPH_OXIDASES	20.83	5.11E-07	down
REACTOME_THE_NLRP3_INFLAMMASOME	20.00	1.31E-04	down
REACTOME_ACTIVATION_OF_THE_AP_1_FAMILY_OF_TRANSCRIPTION_FACTORS	20.00	1.98E-03	down
REACTOME_ALTERNATIVE_COMPLEMENT_ACTIVATION	20.00	3.35E-02	down
REACTOME_CD22_MEDIATED_BCR_REGULATION	20.00	3.35E-02	down
REACTOME_FICOLINS_BIND_TO_REPETITIVE_CARBOHYDRATE_STRUCTURES_O N_THE_TARGET_CELL_SURFACE	20.00	3.35E-02	down
REACTOME_LEUKOTRIENE_RECEPTORS	20.00	3.35E-02	down
REACTOME_CREB1_PHOSPHORYLATION_THROUGH_THE_ACTIVATION_OF_ADEN YLATE_CYCLASE	16.67	9.85E-03	up
REACTOME_ROS_AND_RNS_PRODUCTION_IN_PHAGOCYTES	16.67	1.44E-07	down
REACTOME_FCGR_ACTIVATION	16.67	2.88E-03	down
REACTOME_PROTEIN_REPAIR	16.67	4.00E-02	down
REACTOME_PROTON_COUPLED_MONOCARBOXYLATE_TRANSPORT	16.67	4.00E-02	down
REACTOME_RUNX3_REGULATES_IMMUNE_RESPONSE_AND_CELL_MIGRATION	16.67	4.00E-02	down
REACTOME_VLDL_CLEARANCE	16.67	4.00E-02	down
REACTOME DISSOLUTION OF FIBRIN CLOT	15.38	3.39E-03	down
REACTOME_SCAVENGING_OF_HEME_FROM_PLASMA	15.38	3.39E-03	down
REACTOME_INFLAMMASOMES	15.00	3.20E-04	down
REACTOME_ACTIVATION_OF_C3_AND_C5	14.29	4.65E-02	down
REACTOME_ACTIVATION_OF_RAC1_DOWNSTREAM_OF_NMDARS	14.29	4.65E-02	down
REACTOME_ATTACHMENT_OF_GPI_ANCHOR_TO_UPAR	14.29	4.65E-02	down
REACTOME_IKBA_VARIANT_LEADS_TO_EDA_ID	14.29	4.65E-02	down
REACTOME_PHOSPHATE_BOND_HYDROLYSIS_BY_NUDT_PROTEINS	14.29	4.65E-02	down
REACTOME_RUNX3_REGULATES_CDKN1A_TRANSCRIPTION	14.29	4.65E-02	down
REACTOME_RAF_INDEPENDENT_MAPK1_3_ACTIVATION	13.04	4.90E-04	down
REACTOME_PKA_ACTIVATION_IN_GLUCAGON_SIGNALLING	11.76	1.95E-02	up
REACTOME_PROTEIN_METHYLATION	11.76	1.95E-02	up
REACTOME_BRANCHED_CHAIN_AMINO_ACID_CATABOLISM	10.53	2.41E-02	up
REACTOME_CONVERSION_FROM_APC_C:CD20_TO_APC_C:CDH1_IN_LATE_ANA PHASE	10.53	2.41E-02	up
REACTOME_PKA_MEDIATED_PHOSPHORYLATION_OF_CREB	10.53	2.41E-02	up
REACTOME_OTHER_SEMAPHORIN_INTERACTIONS	10.53	7.24E-03	down
REACTOME_REGULATION_OF_TLR_BY_ENDOGENOUS_LIGAND	10.53	7.24E-03	down
REACTOME_SIGNALING_BY_HIPPO	10.00	2.65E-02	up
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_ADDITIONAL_CELL_CYCLE_ GENES_WHOSE_EXACT_ROLE_IN_THE_P53_PATHWAY_REMAIN_UNCERTAIN	9.52	8.82E-03	down
REACTOME_FICOLINS_BIND_TO_REPETITIVE_CARBOHYDRATE_STRUCTURES_O N_THE_TARGET_CELL_SURFACE	9.38	1.31E-03	down
REACTOME_INITIAL_TRIGGERING_OF_COMPLEMENT	9.09	9.66E-03	down
REACTOME_BBSOME_MEDIATED_CARGO_TARGETING_TO_CILIUM	8.70	3.44E-02	up
REACTOME_DARPP_32_EVENTS	8.33	3.73E-02	up
REACTOME_DISEASES_OF_IMMUNE_SYSTEM	8.33	1.14E-02	down
REACTOME_SEMA4D_IN_SEMAPHORIN_SIGNALING	8.33	1.14E-02	down
REACTOME_RETROGRADE_TRANSPORT_AT_THE_TRANS_GOLGI_NETWORK	8.16	3.50E-03	up
REACTOME_DETOXIFICATION_OF_REACTIVE_OXYGEN_SPECIES	8.11	2.00E-03	down
REACTOME_SURFACTANT_METABOLISM	6.90	1.65E-02	down

REACTOME_MAPK_TARGETS_NUCLEAR_EVENTS_MEDIATED_BY_MAP_KINASES	6.45	1.87E-02	down
REACTOME_PYRUVATE_METABOLISM	6.45	1.87E-02	down
REACTOME_NEUTROPHIL_DEGRANULATION	6.28	9.76E-21	down
REACTOME_SEMAPHORIN_INTERACTIONS	6.25	9.40E-04	down
REACTOME_INTERFERON_ALPHA_BETA_SIGNALING	5.80	1.25E-03	down
REACTOME_GPVI_MEDIATED_ACTIVATION_CASCADE	5.71	2.35E-02	down
REACTOME_INTRAFLAGELLAR_TRANSPORT	5.56	3.16E-02	up
REACTOME_NUCLEOTIDE_BINDING_DOMAIN_LEUCINE_RICH_REPEAT_CONTAINING_RECEPTOR_NLR_SIGNALING_PATHWAYS	5.56	5.89E-03	down
REACTOME_NUCLEOBASE_CATABOLISM	5.56	2.48E-02	down
REACTOME_O_GLYCOSYLATION_OF_TSR_DOMAIN_CONTAINING_PROTEINS	5.26	2.74E-02	down
REACTOME_ANCHORING_OF_THE_BASAL_BODY_TO_THE_PLASMA_MEMBRANE	5.15	8.10E-03	up
REACTOME_NEGATIVE_REGULATION_OF_MAPK_PATHWAY	5.00	3.01E-02	down
REACTOME_CILIUM_ASSEMBLY	4.98	2.70E-04	up
REACTOME_REGULATION_OF_INSULIN_LIKE_GROWTH_FACTOR_IGF_TRANSPORT_AND_UPTAKE_BY_INSULIN_LIKE_GROWTH_FACTOR_BINDING_PROTEINS_IGFBP5	4.84	2.02E-04	down
REACTOME_BINDING_AND_UPTAKE_OF_LIGANDS_BY_SCAVENGER_RECEPTORS	4.76	3.30E-02	down
REACTOME_TOLL_LIKE_RECEPTOR_CASCADES	4.58	8.43E-05	down
REACTOME_INTERLEUKIN_10_SIGNALING	4.35	3.89E-02	down
REACTOME_RHO_GTPASE_CYCLE	4.32	8.95E-03	up
REACTOME_INTERLEUKIN_17_SIGNALING	4.23	1.25E-02	down
REACTOME_TOLL_LIKE_RECEPTOR_9_TLR9_CASCADE	4.21	4.01E-03	down
REACTOME_TRIF_TICAM1_MEDIATED_TLR4_SIGNALING	4.12	4.31E-03	down
REACTOME_TP53_REGULATES_TRANSCRIPTION_OF_CELL_CYCLE_GENES	4.08	4.37E-02	down
REACTOME_ORGANELLE_BIOGENESIS_AND_MAINTENANCE	4.07	4.33E-04	up
REACTOME_IMMUNOREGULATORY_INTERACTIONS_BETWEEN_A_LYMPHOID_AND_A_NON_LYMPHOID_CELL	3.94	1.75E-03	down
REACTOME_DDX58_IFIH1_MEDIATED_INDUCION_OF_INTERFERON_ALPHA_BETA	3.85	1.61E-02	down
REACTOME_INNATE_IMMUNE_SYSTEM	3.83	7.94E-20	down
REACTOME_INTERLEUKIN_4_AND_INTERLEUKIN_13_SIGNALING	3.70	6.30E-03	down
REACTOME_CELL_SURFACE_INTERACTIONS_AT_THE_VASCULAR_WALL	3.65	2.44E-03	down
REACTOME_MYD88_CASCADE_INITIATED_ON_PLASMA_MEMBRANE	3.57	1.95E-02	down
REACTOME_TRANSCRIPTIONAL_REGULATION_OF_WHITE_ADIPOCYTE_DIFFERENTIATION	3.57	1.95E-02	down
REACTOME_TRANSCRIPTIONAL_REGULATION_OF_GRANULOPOIESIS	3.41	2.21E-02	down
REACTOME_TOLL_LIKE_RECEPTOR_4_TLR4_CASCADE	3.15	1.10E-02	down
REACTOME_ANTIMICROBIAL_PEPTIDES	3.13	2.76E-02	down
REACTOME_TOLL_LIKE_RECEPTOR_TLR1:TLR2_CASCADE	3.09	2.84E-02	down
REACTOME_ANTIGEN_PROCESSING_CROSS_PRESENTATION	3.03	2.99E-02	down
REACTOME_TNFR2_NON_CANONICAL_NF_KB_PATHWAY	3.00	3.07E-02	down
REACTOME_SIGNALING_BY_VEGF	2.86	3.47E-02	down
REACTOME_SENESCENCE_ASSOCIATED_SECRETORY_PHENOTYPE_SASP	2.78	3.72E-02	down
REACTOME_GENERIC_TRANSCRIPTION_PATHWAY	2.14	7.07E-03	up
REACTOME_CYTOKINE_SIGNALING_IN_IMMUNE_SYSTEM	2.12	1.80E-05	down
REACTOME_SIGNALING_BY_INTERLEUKINS	2.07	3.51E-04	down
REACTOME_INTERFERON_SIGNALING	2.01	4.68E-02	down
REACTOME_HEMOSTASIS	1.94	1.02E-03	down
REACTOME_RHO_GTPASE_EFFECTORS	1.87	2.24E-02	down
REACTOME_GENE_EXPRESSION_TRANSCRIPTION	1.83	3.81E-02	up
REACTOME_CELLULAR_RESPONSES_TO_STRESS	1.60	3.00E-02	down
REACTOME_ADAPTIVE_IMMUNE_SYSTEM	1.47	1.30E-02	down

Table S4. All DEG in comparison of (pediatric CML vs pediatric healthy) vs (adult CML vs adult healthy), sorted according to logFC level. *p* values were obtained using hypergeometric test. In red are genes that we validated by RT-qPCR.

Upregulated in Pediatric CML Compared to Adult CML				Downregulated in Pediatric CML Compared to Adult CML			
Gene	logFC	<i>p</i> .Value	adj. <i>p</i> .Val	Gene	logFC	<i>p</i> .Value	adj. <i>p</i> .Val
PLOD2	4.19	1.30E-03	6.44E-02	HM13	-1.01	3.70E-03	8.19E-02
MYCT1	4.18	0.00E+00	4.06E-02	SLC43A3	-1.01	9.50E-03	1.10E-01
CD40LG	3.88	9.00E-04	5.99E-02	ACAA1	-1.02	1.30E-03	6.43E-02
SH3BGRL2	3.63	1.40E-03	6.53E-02	TANGO2	-1.02	1.60E-03	6.69E-02
FAM171A2	3.55	5.30E-03	9.11E-02	SYK	-1.02	1.80E-03	6.73E-02
WDR44	3.52	2.00E-04	4.42E-02	LAMTOR2	-1.02	8.80E-03	1.08E-01
MYEF2	3.51	1.00E-04	4.16E-02	RHOG	-1.03	7.20E-03	1.01E-01
PKIA	3.51	2.00E-04	4.61E-02	NUBP1	-1.04	1.10E-03	6.35E-02
FAM199X	3.47	3.00E-04	5.12E-02	STX10	-1.04	4.40E-03	8.74E-02
FREM1	3.47	7.90E-03	1.05E-01	DNAJB1	-1.04	7.40E-03	1.01E-01
CLDN10	3.45	5.00E-04	5.64E-02	CPTP	-1.04	8.40E-03	1.06E-01
CEP70	3.42	0.00E+00	4.06E-02	SNX20	-1.04	1.02E-02	1.12E-01
BEND4	3.42	1.40E-03	6.48E-02	GNB2	-1.05	7.00E-03	1.00E-01
LYSMD3	3.38	8.00E-04	5.85E-02	BORCS6	-1.06	7.30E-03	1.01E-01
BMI1	3.37	8.00E-04	5.85E-02	HLA.DPA1	-1.06	1.00E-02	1.12E-01
VANGL2	3.37	5.10E-03	9.01E-02	HPCAL1	-1.07	2.70E-03	7.38E-02
SLC24A3	3.36	1.90E-03	6.76E-02	IL27RA	-1.08	7.30E-03	1.01E-01
MYCN	3.33	2.90E-03	7.64E-02	VPS18	-1.09	2.30E-03	7.13E-02
WFDC1	3.32	2.70E-03	7.38E-02	TOLLIP	-1.09	3.00E-03	7.79E-02
PEX7	3.29	1.10E-03	6.25E-02	PLOD1	-1.09	4.80E-03	8.88E-02
SGPP1	3.29	2.10E-03	6.85E-02	PLD3	-1.09	5.50E-03	9.19E-02
SVOPL	3.28	8.00E-04	5.85E-02	TRIOBP	-1.1	1.60E-03	6.73E-02
TTK	3.26	2.90E-03	7.64E-02	KIAA0922	-1.1	6.50E-03	9.78E-02
ZNF675	3.24	5.00E-04	5.61E-02	PTPN18	-1.1	6.80E-03	9.95E-02
FKBP14	3.18	1.60E-03	6.73E-02	NUP214	-1.1	8.80E-03	1.08E-01
OXR1	3.14	7.00E-04	5.85E-02	CCM2	-1.11	7.00E-04	5.85E-02
FNBP1L	3.09	1.30E-03	6.43E-02	MFS12	-1.11	1.90E-03	6.77E-02
SCOC	3.07	4.00E-04	5.14E-02	PARVG	-1.11	5.00E-03	8.94E-02
SERAC1	3	1.00E-04	4.06E-02	RPS6KA1	-1.12	1.00E-03	6.16E-02
FAM160B1	3	2.00E-03	6.85E-02	MARK2	-1.12	1.50E-03	6.62E-02
NUDCD1	3	8.60E-03	1.07E-01	HLA.DPB1	-1.12	3.70E-03	8.18E-02
ZSCAN12	2.99	1.10E-03	6.33E-02	GALNS	-1.12	1.12E-02	1.17E-01
TMEM163	2.98	7.30E-03	1.01E-01	PQLC1	-1.13	1.60E-03	6.69E-02
NEMP2	2.96	1.10E-03	6.33E-02	LAIR1	-1.13	4.50E-03	8.76E-02
ZNF776	2.94	6.00E-04	5.80E-02	APLP2	-1.13	4.60E-03	8.76E-02
GALNT12	2.93	1.80E-03	6.76E-02	RNF135	-1.13	6.60E-03	9.79E-02
ZNF493	2.92	2.00E-04	4.42E-02	SPINT1	-1.14	4.50E-03	8.76E-02
DIRAS1	2.92	2.10E-03	6.85E-02	SLC27A1	-1.14	8.00E-03	1.05E-01
ZNF136	2.91	1.30E-03	6.48E-02	TWF2	-1.14	9.70E-03	1.11E-01
DNAJC18	2.89	4.00E-04	5.14E-02	SUN2	-1.15	6.50E-03	9.78E-02
TADA1	2.89	9.00E-04	5.88E-02	TRADD	-1.16	2.10E-03	6.85E-02
HOXB2	2.88	1.90E-03	6.76E-02	ABHD8	-1.16	5.00E-03	8.94E-02
C12orf66	2.87	1.70E-03	6.73E-02	LSM10	-1.16	6.50E-03	9.78E-02
ZNF555	2.87	4.80E-03	8.87E-02	C20orf27	-1.16	8.80E-03	1.08E-01
IGF2BP2	2.86	6.70E-03	9.91E-02	EHD1	-1.16	9.20E-03	1.10E-01
MTHFD2L	2.84	8.00E-04	5.85E-02	ACTB	-1.17	5.30E-03	9.11E-02
FANCF	2.83	6.30E-03	9.76E-02	ITPK1	-1.17	8.30E-03	1.06E-01
RRM2B	2.81	3.30E-03	7.88E-02	SLC3A2	-1.18	1.00E-04	4.42E-02
EXTL2	2.81	4.90E-03	8.88E-02	LRPAP1	-1.18	7.00E-04	5.80E-02
THRB	2.79	9.00E-04	5.88E-02	SHKBP1	-1.18	1.90E-03	6.78E-02

PLEKHA4	2.78	4.10E-03	8.59E-02	QSOX1	-1.18	4.40E-03	8.74E-02
SWT1	2.78	5.70E-03	9.29E-02	APOL3	-1.18	5.20E-03	9.10E-02
USP46	2.76	6.00E-04	5.80E-02	NADK	-1.19	6.00E-04	5.80E-02
SASS6	2.76	2.40E-03	7.14E-02	LENG1	-1.19	2.20E-03	6.92E-02
MBTPS2	2.76	3.90E-03	8.43E-02	CHCHD10	-1.19	7.40E-03	1.01E-01
TMEM231	2.75	4.50E-03	8.74E-02	PIK3CD	-1.19	8.10E-03	1.05E-01
ZNF569	2.72	9.00E-04	5.85E-02	PPP1R18	-1.2	1.50E-03	6.65E-02
WDR35	2.69	8.00E-04	5.85E-02	LTBR	-1.2	3.30E-03	7.86E-02
C5	2.66	1.20E-03	6.43E-02	MAN2B1	-1.2	5.80E-03	9.36E-02
KLHL28	2.62	1.00E-03	6.18E-02	CBX6	-1.2	8.30E-03	1.06E-01
ZNF549	2.62	8.40E-03	1.07E-01	CCDC137	-1.2	9.50E-03	1.10E-01
PCYT1B	2.61	6.10E-03	9.62E-02	RNF122	-1.2	1.03E-02	1.12E-01
PACRGL	2.6	3.90E-03	8.42E-02	PAK1	-1.21	2.10E-03	6.85E-02
NAA30	2.58	2.10E-03	6.85E-02	SRA1	-1.21	5.30E-03	9.11E-02
DCUN1D1	2.57	1.50E-03	6.62E-02	DBNL	-1.24	8.00E-04	5.85E-02
RNF217	2.56	5.10E-03	9.01E-02	DES1	-1.25	1.60E-03	6.69E-02
KPNA5	2.55	1.80E-03	6.76E-02	MAP3K11	-1.25	2.60E-03	7.32E-02
ZNF518B	2.55	2.60E-03	7.37E-02	TRIM8	-1.25	6.40E-03	9.78E-02
TRO	2.54	1.11E-02	1.17E-01	ZDHHC12	-1.26	3.00E-04	4.61E-02
PBX1	2.53	2.80E-03	7.50E-02	GMPPB	-1.26	1.60E-03	6.73E-02
MPP6	2.53	3.30E-03	7.86E-02	OAZ1	-1.26	5.40E-03	9.18E-02
CEP83	2.53	3.40E-03	7.92E-02	MYO1G	-1.26	5.90E-03	9.44E-02
TRIB2	2.53	6.80E-03	9.91E-02	FRAT1	-1.26	9.90E-03	1.11E-01
ZNF254	2.52	7.00E-04	5.85E-02	GPSM3	-1.28	3.20E-03	7.79E-02
PLCB4	2.52	2.40E-03	7.15E-02	FRAT2	-1.28	4.90E-03	8.88E-02
PIGZ	2.51	1.07E-02	1.15E-01	SNX8	-1.29	0.00E+00	4.06E-02
CCDC171	2.5	5.80E-03	9.36E-02	PTK2B	-1.29	3.00E-04	4.87E-02
OMA1	2.49	2.20E-03	7.02E-02	LIMK1	-1.29	4.20E-03	8.59E-02
SOC56	2.47	2.20E-03	7.01E-02	NEK6	-1.29	6.40E-03	9.78E-02
XPR1	2.47	2.50E-03	7.27E-02	XKR8	-1.29	9.70E-03	1.10E-01
H1F0	2.46	3.40E-03	7.92E-02	RIN3	-1.3	2.40E-03	7.14E-02
TOM1L1	2.44	2.70E-03	7.38E-02	RENBP	-1.3	1.05E-02	1.14E-01
SPAG16	2.44	9.10E-03	1.09E-01	DOK3	-1.31	1.30E-03	6.43E-02
METTL10	2.43	3.60E-03	8.18E-02	POR	-1.31	3.20E-03	7.86E-02
CGRRF1	2.43	1.08E-02	1.16E-01	MAP2K3	-1.32	1.00E-04	4.06E-02
MEIS1	2.42	7.30E-03	1.01E-01	CDK2AP2	-1.32	4.00E-04	5.16E-02
GSTCD	2.41	6.30E-03	9.78E-02	RNPEPL1	-1.32	1.00E-03	6.09E-02
USP51	2.41	1.06E-02	1.15E-01	HCLS1	-1.32	2.40E-03	7.14E-02
ZNF521	2.39	1.60E-03	6.69E-02	HLA.DQA1	-1.32	7.10E-03	1.01E-01
ATF7IP2	2.39	2.60E-03	7.32E-02	FAM110A	-1.32	9.70E-03	1.10E-01
EPHX2	2.39	7.80E-03	1.04E-01	UCP2	-1.33	4.00E-04	5.16E-02
ZNF614	2.39	7.90E-03	1.04E-01	S1PR4	-1.33	7.00E-04	5.85E-02
ACTR6	2.38	2.10E-03	6.85E-02	GNAI2	-1.34	2.20E-03	7.02E-02
FAM83D	2.38	6.70E-03	9.88E-02	WAS	-1.35	6.00E-04	5.80E-02
MIER3	2.37	6.70E-03	9.88E-02	SDF2L1	-1.35	8.00E-04	5.85E-02
SMO	2.37	8.00E-03	1.05E-01	FAM65B	-1.35	3.90E-03	8.43E-02
CHRM3	2.37	1.06E-02	1.14E-01	SLC38A10	-1.37	1.00E-04	4.06E-02
LRRC37B	2.36	5.30E-03	9.10E-02	SLC9A1	-1.37	2.00E-03	6.85E-02
AASDH	2.36	6.30E-03	9.78E-02	TSPAN14	-1.38	4.00E-04	5.14E-02
ZNF736	2.34	5.90E-03	9.41E-02	GPX1	-1.38	4.20E-03	8.70E-02
ARHGAP18	2.32	5.50E-03	9.23E-02	CYTH1	-1.39	3.60E-03	8.18E-02
SEC23A	2.3	7.40E-03	1.02E-01	SP110	-1.39	9.80E-03	1.11E-01
CLGN	2.3	9.50E-03	1.10E-01	HLA.C	-1.39	1.12E-02	1.17E-01
COG6	2.3	1.15E-02	1.19E-01	CNPY3	-1.4	2.00E-04	4.42E-02

UACA	2.28	6.00E-03	9.50E-02	FGD3	-1.4	2.50E-03	7.27E-02
CLC	2.28	1.12E-02	1.17E-01	PRKACA	-1.4	2.70E-03	7.38E-02
SERPINE2	2.26	4.00E-04	5.16E-02	HLA.DRA	-1.4	3.30E-03	7.86E-02
TPD52	2.25	1.00E-03	6.18E-02	TBC1D2	-1.4	5.00E-03	8.94E-02
TRIM59	2.25	2.10E-03	6.85E-02	SEPT9	-1.41	3.20E-03	7.79E-02
ZNF880	2.23	4.40E-03	8.71E-02	ARHGAP45	-1.41	5.80E-03	9.36E-02
MED21	2.23	8.80E-03	1.08E-01	TTC7A	-1.42	1.40E-03	6.53E-02
PINLYP	2.23	9.10E-03	1.09E-01	CST7	-1.42	2.70E-03	7.38E-02
ZSCAN9	2.22	5.90E-03	9.41E-02	NEU1	-1.43	1.60E-03	6.69E-02
ZNF329	2.22	7.10E-03	1.01E-01	REEP4	-1.43	1.70E-03	6.73E-02
TMX3	2.22	1.05E-02	1.14E-01	ABR	-1.43	4.30E-03	8.70E-02
POLE2	2.21	2.30E-03	7.02E-02	PXN	-1.43	4.90E-03	8.89E-02
TMEM237	2.21	3.50E-03	8.08E-02	CYB561D2	-1.43	7.40E-03	1.01E-01
KIF27	2.21	1.02E-02	1.12E-01	LPCAT1	-1.43	1.01E-02	1.12E-01
BBS9	2.2	9.70E-03	1.10E-01	TMSB10	-1.43	1.03E-02	1.13E-01
ZBTB34	2.2	1.09E-02	1.16E-01	SCO2	-1.44	8.70E-03	1.08E-01
IFT81	2.19	6.30E-03	9.76E-02	ATP6V0B	-1.44	1.11E-02	1.17E-01
ZNF256	2.18	9.90E-03	1.11E-01	RILPL2	-1.45	5.50E-03	9.19E-02
RCN2	2.17	1.15E-02	1.19E-01	DOCK10	-1.45	9.50E-03	1.10E-01
MFN1	2.16	7.40E-03	1.01E-01	AKAP13	-1.45	9.70E-03	1.10E-01
PIR	2.16	7.70E-03	1.04E-01	PDXK	-1.45	1.06E-02	1.15E-01
LEPR	2.14	1.40E-03	6.53E-02	MCOLN1	-1.46	2.60E-03	7.32E-02
GAN	2.14	4.90E-03	8.88E-02	PKM	-1.46	4.00E-03	8.50E-02
C9orf85	2.14	6.70E-03	9.88E-02	ROGDI	-1.46	5.90E-03	9.41E-02
METTL21B	2.13	3.10E-03	7.79E-02	RPS6KA4	-1.47	3.00E-04	4.99E-02
ABCC4	2.12	2.00E-04	4.61E-02	LAPTM5	-1.47	2.90E-03	7.60E-02
STAT4	2.12	3.20E-03	7.79E-02	GMIP	-1.47	3.30E-03	7.89E-02
ZNF711	2.11	3.50E-03	7.96E-02	RCSD1	-1.47	8.10E-03	1.05E-01
NEDD4	2.11	4.90E-03	8.88E-02	HS1BP3	-1.48	1.70E-03	6.73E-02
FHIT	2.11	1.14E-02	1.18E-01	HOOK2	-1.48	4.60E-03	8.76E-02
NUP54	2.1	3.40E-03	7.92E-02	MYD88	-1.48	8.80E-03	1.08E-01
IMPA1	2.1	9.20E-03	1.09E-01	PREX1	-1.49	3.00E-04	4.61E-02
MTRF1L	2.1	1.02E-02	1.12E-01	ANXA6	-1.49	3.70E-03	8.18E-02
ITGB3BP	2.09	6.10E-03	9.64E-02	ABCD1	-1.49	7.20E-03	1.01E-01
SPATA7	2.08	2.30E-03	7.08E-02	RNASET2	-1.49	9.50E-03	1.10E-01
VCPKMT	2.07	8.90E-03	1.08E-01	ESRRA	-1.5	2.00E-04	4.42E-02
CCSAP	2.07	1.03E-02	1.12E-01	C17orf62	-1.5	1.90E-03	6.77E-02
C2orf69	2.07	1.08E-02	1.16E-01	OGFR	-1.53	4.00E-04	5.14E-02
TMOD1	2.06	4.00E-04	5.14E-02	SH3BP1	-1.53	3.90E-03	8.43E-02
DYNLT3	2.06	1.13E-02	1.17E-01	E2F2	-1.53	4.50E-03	8.74E-02
CEP97	2.05	4.30E-03	8.70E-02	GOLGA3	-1.53	4.80E-03	8.87E-02
ZNF124	2.05	1.04E-02	1.13E-01	GM2A	-1.53	9.20E-03	1.10E-01
LRRC40	2.02	6.80E-03	9.98E-02	TEP1	-1.53	9.60E-03	1.10E-01
KCTD9	2.02	9.10E-03	1.09E-01	TMEM8A	-1.54	0.00E+00	4.06E-02
RBM45	2.01	8.70E-03	1.08E-01	TAP1	-1.55	2.00E-04	4.61E-02
BEX2	2.01	1.00E-02	1.12E-01	ARAP1	-1.56	2.00E-04	4.42E-02
ZNF141	2	1.50E-03	6.65E-02	RNH1	-1.57	7.00E-04	5.85E-02
MECOM	1.99	1.50E-03	6.62E-02	IMPDH1	-1.58	0.00E+00	4.06E-02
SLAIN1	1.99	1.13E-02	1.17E-01	RNF213	-1.58	3.60E-03	8.18E-02
BCKDHB	1.98	4.40E-03	8.74E-02	IL4R	-1.58	8.70E-03	1.08E-01
PRPF18	1.98	1.10E-02	1.17E-01	HLA.DRB1	-1.59	1.80E-03	6.76E-02
FGGY	1.96	9.30E-03	1.10E-01	SMAP2	-1.59	3.10E-03	7.79E-02
TFPI	1.95	6.00E-04	5.80E-02	NBEAL2	-1.59	8.70E-03	1.08E-01
TRUB1	1.95	8.50E-03	1.07E-01	TOM1	-1.59	9.30E-03	1.10E-01

CFAP97	1.94	1.00E-03	6.16E-02	UNC119	-1.6	1.50E-03	6.62E-02
TTC26	1.94	5.90E-03	9.45E-02	DTX2	-1.61	1.20E-03	6.43E-02
HACD1	1.93	2.90E-03	7.64E-02	CCDC142	-1.61	5.50E-03	9.21E-02
MBIP	1.93	2.90E-03	7.64E-02	MID1IP1	-1.62	6.00E-04	5.80E-02
MED12L	1.92	9.90E-03	1.11E-01	ARRB2	-1.62	4.70E-03	8.83E-02
GATA2	1.92	1.10E-02	1.16E-01	SH3BP2	-1.62	6.40E-03	9.78E-02
PEX1	1.91	8.80E-03	1.08E-01	WARS	-1.63	1.10E-03	6.35E-02
BDH2	1.89	3.50E-03	8.09E-02	ATP6V0D1	-1.63	3.90E-03	8.42E-02
DLC1	1.89	5.10E-03	9.01E-02	TLE4	-1.63	8.30E-03	1.06E-01
RHOBTB1	1.89	5.80E-03	9.36E-02	APOL1	-1.63	1.08E-02	1.15E-01
GPHN	1.89	7.30E-03	1.01E-01	MGAT1	-1.64	1.00E-04	4.42E-02
CASD1	1.87	3.00E-04	5.12E-02	HLA.B	-1.64	1.20E-03	6.43E-02
CCNT1	1.87	8.50E-03	1.07E-01	ABTB1	-1.64	2.00E-03	6.85E-02
RIMKLB	1.87	9.10E-03	1.09E-01	RAB11FIP1	-1.64	4.70E-03	8.78E-02
CNRIP1	1.86	1.90E-03	6.78E-02	ARHGAP30	-1.65	2.10E-03	6.86E-02
TMEM64	1.86	2.20E-03	6.98E-02	DEF8	-1.65	2.20E-03	7.01E-02
YEATS4	1.86	1.05E-02	1.14E-01	C15orf39	-1.67	1.00E-04	4.06E-02
EOGT	1.85	9.70E-03	1.11E-01	EMILIN2	-1.68	4.70E-03	8.78E-02
MAP9	1.84	7.10E-03	1.01E-01	JMJD6	-1.69	2.30E-03	7.13E-02
NR1D2	1.84	8.00E-03	1.05E-01	SLC35F6	-1.69	4.10E-03	8.59E-02
C12orf29	1.83	5.70E-03	9.29E-02	HLA.A	-1.71	1.20E-03	6.43E-02
BMT2	1.83	9.60E-03	1.10E-01	SP11	-1.72	3.00E-03	7.76E-02
ZNF551	1.83	1.12E-02	1.17E-01	PECAM1	-1.72	4.60E-03	8.76E-02
PAWR	1.82	2.70E-03	7.38E-02	BASP1	-1.72	6.80E-03	9.95E-02
MORC3	1.82	7.80E-03	1.04E-01	TMEM175	-1.74	1.40E-03	6.53E-02
PARP11	1.81	6.00E-03	9.50E-02	IL10RB	-1.74	4.80E-03	8.88E-02
PDZD8	1.8	2.40E-03	7.17E-02	SAT2	-1.74	5.00E-03	9.00E-02
C2orf88	1.8	6.10E-03	9.64E-02	NLRC5	-1.74	7.10E-03	1.01E-01
PGBD1	1.8	6.70E-03	9.90E-02	ALDH3B1	-1.74	8.40E-03	1.06E-01
CENPK	1.8	9.90E-03	1.11E-01	PYCARD	-1.75	1.40E-03	6.48E-02
ZNF765	1.79	7.30E-03	1.01E-01	FAM50A	-1.75	1.90E-03	6.76E-02
MLLT3	1.78	0.00E+00	4.06E-02	CD74	-1.76	1.00E-04	4.06E-02
ST8SIA6	1.78	1.30E-03	6.43E-02	FBXO6	-1.76	1.15E-02	1.19E-01
SENP7	1.78	8.50E-03	1.07E-01	IL16	-1.77	2.50E-03	7.19E-02
STK3	1.78	1.02E-02	1.12E-01	ARPC1B	-1.78	1.10E-03	6.39E-02
ACADSB	1.77	6.90E-03	1.00E-01	PARD6A	-1.78	2.40E-03	7.14E-02
PRKCI	1.72	1.70E-03	6.73E-02	EHBP1L1	-1.78	5.10E-03	9.01E-02
CYYR1	1.72	6.90E-03	1.00E-01	AP5B1	-1.79	1.50E-03	6.62E-02
RRAGB	1.71	7.70E-03	1.03E-01	PQLC2	-1.8	1.70E-03	6.73E-02
ALDH1A1	1.71	8.30E-03	1.06E-01	SH2D3C	-1.81	1.80E-03	6.76E-02
RABL2A	1.71	9.50E-03	1.10E-01	SLC12A9	-1.82	1.00E-04	4.42E-02
DUS4L	1.7	1.06E-02	1.15E-01	NAGA	-1.82	3.70E-03	8.26E-02
PDK1	1.69	6.90E-03	1.00E-01	NUDT16	-1.82	4.00E-03	8.47E-02
TTC7B	1.68	8.00E-04	5.85E-02	SH3BGRL3	-1.82	6.00E-03	9.55E-02
GSKIP	1.68	7.60E-03	1.03E-01	EFHD2	-1.84	6.00E-04	5.77E-02
C1orf21	1.66	1.00E-03	6.16E-02	TMSB4X	-1.84	3.60E-03	8.18E-02
BEX3	1.66	1.40E-03	6.48E-02	ALDH2	-1.84	4.20E-03	8.70E-02
ACSM3	1.66	1.40E-03	6.53E-02	TIMP2	-1.84	5.00E-03	8.94E-02
STXBP5	1.64	2.00E-04	4.61E-02	HERPUD1	-1.85	2.00E-03	6.85E-02
MTURN	1.62	0.00E+00	4.06E-02	CCDC88C	-1.85	7.20E-03	1.01E-01
ZNF43	1.61	3.00E-04	5.12E-02	HDAC4	-1.86	5.00E-04	5.64E-02
RP11.382A20.3	1.6	3.80E-03	8.28E-02	FTL	-1.86	6.50E-03	9.78E-02
PRKACB	1.6	4.50E-03	8.74E-02	CCND3	-1.88	0.00E+00	4.06E-02
CDADC1	1.6	4.60E-03	8.76E-02	SULT1A1	-1.88	8.90E-03	1.08E-01

ORC3	1.6	1.11E-02	1.17E-01	ADGRE5	-1.89	3.10E-03	7.79E-02
ZNF512	1.59	3.00E-04	4.61E-02	CD53	-1.91	9.00E-04	5.85E-02
CSNK1G3	1.59	1.01E-02	1.12E-01	S100A4	-1.93	9.40E-03	1.10E-01
CUL5	1.58	2.00E-04	4.42E-02	SLC27A3	-1.94	9.00E-04	5.88E-02
MCTP2	1.58	8.00E-04	5.85E-02	CD52	-1.94	6.20E-03	9.72E-02
CD2AP	1.56	1.40E-03	6.53E-02	CITED4	-1.96	6.00E-04	5.80E-02
AGL	1.56	9.00E-03	1.09E-01	AKNA	-1.96	2.70E-03	7.38E-02
CDK17	1.55	8.00E-04	5.85E-02	SH2B2	-1.96	1.16E-02	1.19E-01
ARHGAP5	1.55	5.50E-03	9.23E-02	MOB3A	-1.97	2.00E-04	4.42E-02
DEPTOR	1.55	6.60E-03	9.78E-02	CTSA	-1.97	3.00E-04	5.12E-02
UFSP2	1.55	9.90E-03	1.11E-01	CYBA	-1.97	9.00E-04	5.85E-02
HOMER2	1.54	0.00E+00	4.06E-02	RGS19	-1.98	7.00E-04	5.85E-02
CKAP2	1.54	4.60E-03	8.78E-02	SEMA4B	-1.98	1.50E-03	6.62E-02
TWSG1	1.54	4.70E-03	8.83E-02	HLX	-1.98	2.10E-03	6.85E-02
IMMP2L	1.54	8.00E-03	1.05E-01	ZDHH1	-1.98	2.90E-03	7.60E-02
EPSTI1	1.53	1.00E-04	4.06E-02	TSC22D3	-1.98	3.70E-03	8.24E-02
GTDC1	1.53	3.90E-03	8.43E-02	CACFD1	-1.99	8.00E-04	5.85E-02
LRBA	1.52	4.10E-03	8.55E-02	TUBA4A	-1.99	1.30E-03	6.44E-02
PHF6	1.52	5.30E-03	9.10E-02	LTB4R	-1.99	5.10E-03	9.01E-02
N4BP2	1.51	8.00E-04	5.85E-02	ARHGAP27	-2.02	6.00E-04	5.80E-02
DNAJB14	1.5	1.90E-03	6.76E-02	BRI3	-2.02	3.90E-03	8.43E-02
ERMP1	1.5	7.20E-03	1.01E-01	SPON2	-2.03	3.60E-03	8.18E-02
ASB9	1.49	2.90E-03	7.64E-02	CORO1A	-2.06	1.00E-04	4.16E-02
STAP1	1.48	3.20E-03	7.79E-02	SCPEP1	-2.06	1.02E-02	1.12E-01
NCK1	1.46	4.80E-03	8.88E-02	GRINA	-2.08	2.00E-04	4.61E-02
HOXA9	1.45	1.70E-03	6.73E-02	GAA	-2.08	1.10E-03	6.33E-02
STAM	1.45	5.30E-03	9.10E-02	MVP	-2.08	2.50E-03	7.24E-02
KIF2A	1.45	5.80E-03	9.36E-02	ZFHX3	-2.08	4.50E-03	8.74E-02
CDK6	1.44	9.40E-03	1.10E-01	BTG1	-2.09	1.70E-03	6.73E-02
BIVM	1.42	2.90E-03	7.64E-02	CFD	-2.09	6.60E-03	9.78E-02
FAM92A	1.42	4.50E-03	8.76E-02	KIAA0930	-2.1	0.00E+00	4.06E-02
TTC8	1.42	7.60E-03	1.03E-01	IQSEC1	-2.1	2.00E-04	4.42E-02
NET1	1.41	1.00E-04	4.06E-02	PLXNB2	-2.11	1.40E-03	6.48E-02
STRADB	1.41	2.00E-04	4.42E-02	HCST	-2.11	2.70E-03	7.38E-02
PRKAR2B	1.41	3.00E-04	4.98E-02	PITPNM1	-2.11	8.40E-03	1.07E-01
ZNF33B	1.41	8.00E-04	5.85E-02	HLA.DMB	-2.12	1.00E-03	6.09E-02
LRRCC1	1.4	3.90E-03	8.43E-02	S100A6	-2.12	7.60E-03	1.03E-01
PEX13	1.4	9.80E-03	1.11E-01	SEMA4A	-2.14	4.00E-04	5.14E-02
FAIM	1.39	7.70E-03	1.03E-01	FCGRT	-2.14	8.00E-04	5.85E-02
RICTOR	1.39	8.90E-03	1.08E-01	IRF7	-2.14	4.30E-03	8.70E-02
DDHD2	1.38	1.00E-04	4.42E-02	ITPRIP	-2.15	8.00E-04	5.85E-02
CCNG1	1.38	6.50E-03	9.78E-02	GBP2	-2.15	9.70E-03	1.11E-01
ORC4	1.37	2.00E-04	4.61E-02	TSPO	-2.16	2.00E-04	4.42E-02
MNAT1	1.37	1.00E-03	6.23E-02	CAPG	-2.16	1.20E-03	6.43E-02
IFT74	1.37	1.50E-03	6.62E-02	MAST3	-2.16	3.20E-03	7.79E-02
ZNF664	1.37	3.10E-03	7.79E-02	CCDC88B	-2.16	8.10E-03	1.05E-01
ABCD3	1.37	5.60E-03	9.23E-02	GLIPR2	-2.17	6.30E-03	9.75E-02
GCF2	1.36	1.90E-03	6.76E-02	CDKN2D	-2.18	4.50E-03	8.76E-02
PRKD3	1.36	2.40E-03	7.18E-02	VAV2	-2.19	2.40E-03	7.18E-02
TOX	1.36	4.50E-03	8.74E-02	CDC42EP2	-2.22	1.70E-03	6.73E-02
PIIP5K1	1.36	8.00E-03	1.05E-01	RXRA	-2.23	1.00E-03	6.16E-02
LANCL1	1.36	1.10E-02	1.16E-01	NFKBIZ	-2.23	3.10E-03	7.79E-02
NT5C3A	1.35	5.00E-04	5.74E-02	CTSB	-2.24	4.00E-04	5.16E-02
MMS22L	1.35	3.40E-03	7.92E-02	CXCR4	-2.24	3.30E-03	7.86E-02

FER	1.35	6.40E-03	9.78E-02	AGTRAP	-2.26	5.00E-04	5.64E-02
APOOL	1.35	6.90E-03	1.00E-01	KLF6	-2.26	2.50E-03	7.27E-02
NEDD4L	1.35	7.80E-03	1.04E-01	IL6R	-2.27	1.60E-03	6.73E-02
ZRANB2	1.35	8.10E-03	1.05E-01	TAGAP	-2.27	8.30E-03	1.06E-01
NLK	1.34	1.00E-04	4.06E-02	TRPM2	-2.28	9.00E-04	5.88E-02
SCAI	1.34	1.70E-03	6.73E-02	DDIT4	-2.28	7.00E-03	1.01E-01
SMAD5	1.34	8.80E-03	1.08E-01	LSP1	-2.29	1.00E-03	6.09E-02
ATP6V0A2	1.33	1.00E-04	4.42E-02	CD72	-2.29	1.30E-03	6.43E-02
SLC35A3	1.33	4.00E-04	5.14E-02	SELPLG	-2.3	1.40E-03	6.48E-02
CBR4	1.33	1.01E-02	1.12E-01	IER2	-2.31	5.40E-03	9.11E-02
TTC37	1.31	3.80E-03	8.28E-02	TCIRG1	-2.32	2.40E-03	7.14E-02
AMT	1.31	4.80E-03	8.88E-02	SLC43A2	-2.36	6.50E-03	9.78E-02
KLHDC2	1.3	7.00E-04	5.85E-02	PRKCD	-2.37	3.00E-04	4.61E-02
RC3H2	1.3	1.50E-03	6.62E-02	CTSD	-2.38	1.20E-03	6.43E-02
EXOC6	1.29	7.00E-04	5.85E-02	IRS2	-2.38	2.00E-03	6.85E-02
ATP2C1	1.29	1.20E-03	6.43E-02	CTSZ	-2.38	3.70E-03	8.24E-02
HBS1L	1.28	4.00E-04	5.14E-02	IFI27L2	-2.4	1.70E-03	6.73E-02
ICA1	1.28	5.00E-04	5.25E-02	P2RX7	-2.4	5.30E-03	9.10E-02
HNRNPLL	1.28	8.00E-04	5.85E-02	C1orf162	-2.4	6.50E-03	9.78E-02
SLC39A8	1.28	4.00E-03	8.47E-02	PSAP	-2.41	1.50E-03	6.65E-02
SCD	1.28	8.90E-03	1.08E-01	MILR1	-2.42	2.60E-03	7.32E-02
DZIP3	1.27	1.50E-03	6.62E-02	COTL1	-2.42	4.30E-03	8.70E-02
COX11	1.27	1.80E-03	6.73E-02	CD79A	-2.43	4.10E-03	8.57E-02
TRAPPC6B	1.27	4.90E-03	8.88E-02	MYO1F	-2.44	4.00E-04	5.16E-02
PPM1A	1.26	4.30E-03	8.70E-02	CYSTM1	-2.45	6.40E-03	9.78E-02
ZFAND1	1.26	5.60E-03	9.23E-02	IRF8	-2.46	3.40E-03	7.92E-02
MAP4K5	1.26	5.70E-03	9.31E-02	HRH2	-2.46	7.00E-03	1.01E-01
HLCS	1.26	9.10E-03	1.09E-01	DUSP5	-2.47	8.00E-03	1.05E-01
PPIL4	1.25	1.20E-03	6.43E-02	CYTH4	-2.49	2.10E-03	6.85E-02
ZNF22	1.25	2.00E-03	6.85E-02	HLA.F	-2.49	2.50E-03	7.24E-02
KIFAP3	1.25	5.30E-03	9.11E-02	ARL4C	-2.49	4.40E-03	8.71E-02
PUS7L	1.25	8.30E-03	1.06E-01	PSTPIP1	-2.49	7.10E-03	1.01E-01
PKIG	1.25	9.50E-03	1.10E-01	HIVEP3	-2.49	8.70E-03	1.08E-01
DOCK7	1.24	4.60E-03	8.76E-02	JUNB	-2.49	9.10E-03	1.09E-01
CCND2	1.24	7.10E-03	1.01E-01	UNC93B1	-2.5	4.00E-04	5.14E-02
LRPPRC	1.23	2.00E-04	4.42E-02	B3GALT4	-2.51	5.90E-03	9.44E-02
DHX40	1.22	8.00E-04	5.85E-02	ASGR1	-2.51	1.07E-02	1.15E-01
C11orf1	1.22	4.10E-03	8.50E-02	FYB	-2.52	6.30E-03	9.76E-02
TOP2B	1.22	7.50E-03	1.03E-01	NKG7	-2.52	8.40E-03	1.06E-01
PFDN4	1.22	9.50E-03	1.10E-01	RNASE6	-2.54	4.00E-03	8.43E-02
STAT5A	1.21	6.00E-04	5.80E-02	ADAP1	-2.54	9.20E-03	1.09E-01
ABCE1	1.21	1.30E-03	6.43E-02	ITGAL	-2.55	1.00E-04	4.42E-02
CAPRIN1	1.21	2.40E-03	7.14E-02	AHNAK	-2.55	1.00E-03	6.16E-02
TTC21B	1.21	9.50E-03	1.10E-01	FOS	-2.57	5.70E-03	9.34E-02
AK3	1.2	9.00E-04	6.02E-02	GRK5	-2.63	3.10E-03	7.79E-02
CDC7	1.2	1.80E-03	6.73E-02	ANXA2	-2.66	1.90E-03	6.78E-02
RAVER2	1.2	1.90E-03	6.76E-02	BTG2	-2.67	1.10E-03	6.38E-02
CGGBP1	1.2	2.00E-03	6.84E-02	SLC16A3	-2.67	3.10E-03	7.79E-02
HAUS6	1.19	3.10E-03	7.79E-02	RAB31	-2.7	1.09E-02	1.16E-01
TFDP2	1.19	4.70E-03	8.78E-02	JUN	-2.71	3.60E-03	8.18E-02
TIA1	1.19	6.90E-03	1.00E-01	NINJ1	-2.71	4.50E-03	8.76E-02
TRIM58	1.19	1.10E-02	1.17E-01	LGALS1	-2.72	1.00E-03	6.16E-02
PM20D2	1.18	1.10E-02	1.17E-01	CTSS	-2.72	9.20E-03	1.09E-01
XPOT	1.17	5.00E-04	5.64E-02	CD22	-2.72	9.90E-03	1.11E-01

ZFAND6	1.16	4.70E-03	8.78E-02	RHOB	-2.77	3.90E-03	8.43E-02
CCNB1IP1	1.16	1.03E-02	1.12E-01	LILRA2	-2.77	5.40E-03	9.17E-02
KCTD3	1.15	2.40E-03	7.14E-02	NAGK	-2.78	3.00E-04	5.12E-02
OPA1	1.15	5.70E-03	9.31E-02	ITGB2	-2.78	5.00E-04	5.64E-02
TAF2	1.15	1.09E-02	1.16E-01	IL17RA	-2.81	4.00E-04	5.14E-02
BEX4	1.14	6.00E-04	5.80E-02	CST3	-2.82	2.00E-04	4.42E-02
TIPRL	1.14	7.00E-04	5.85E-02	DUSP1	-2.84	1.70E-03	6.73E-02
CCNC	1.14	3.20E-03	7.79E-02	TNFAIP2	-2.84	1.07E-02	1.15E-01
GTF3C3	1.14	5.10E-03	9.01E-02	NFKBIA	-2.85	7.70E-03	1.04E-01
IFT88	1.14	5.10E-03	9.01E-02	DUSP2	-2.85	7.90E-03	1.05E-01
WDR48	1.13	6.00E-04	5.80E-02	CKAP4	-2.86	8.80E-03	1.08E-01
KLHL5	1.13	1.70E-03	6.73E-02	SH3TC1	-2.89	6.00E-04	5.80E-02
PIK3R1	1.13	4.60E-03	8.78E-02	MSRB1	-2.93	1.90E-03	6.78E-02
NME7	1.13	6.60E-03	9.78E-02	CSF1R	-2.93	3.10E-03	7.79E-02
IPO5	1.12	1.70E-03	6.73E-02	GRN	-2.96	2.00E-04	4.61E-02
BRWD1	1.12	1.70E-03	6.73E-02	CEBPB	-2.96	1.50E-03	6.65E-02
CEP57	1.12	2.30E-03	7.13E-02	PLK3	-2.96	1.90E-03	6.76E-02
NPM1	1.12	3.40E-03	7.92E-02	LTB	-2.99	2.50E-03	7.19E-02
LMAN1	1.12	4.30E-03	8.70E-02	ST14	-2.99	1.06E-02	1.15E-01
MTMR2	1.12	8.30E-03	1.06E-01	IGF2R	-3.01	1.10E-03	6.33E-02
PDCD4	1.11	2.00E-04	4.61E-02	CECR1	-3.02	2.00E-03	6.85E-02
OXCT1	1.11	5.20E-03	9.10E-02	RGS2	-3.02	4.40E-03	8.73E-02
SEPT11	1.11	6.50E-03	9.78E-02	RHBDF2	-3.04	4.00E-04	5.14E-02
KRR1	1.11	6.70E-03	9.88E-02	NLRP3	-3.06	6.80E-03	9.92E-02
IREB2	1.1	6.00E-04	5.80E-02	SAMHD1	-3.08	1.60E-03	6.66E-02
NUDT4	1.1	3.30E-03	7.86E-02	HVCN1	-3.08	3.30E-03	7.86E-02
TRIM24	1.1	4.10E-03	8.50E-02	APOBR	-3.13	1.30E-03	6.43E-02
SLC30A9	1.1	4.30E-03	8.70E-02	CFP	-3.15	3.00E-03	7.76E-02
TPM1	1.1	4.40E-03	8.70E-02	POU2F2	-3.26	1.30E-03	6.48E-02
RBMXL1	1.09	1.20E-03	6.43E-02	BCL6	-3.28	8.30E-03	1.06E-01
CDC27	1.09	2.30E-03	7.02E-02	ID2	-3.29	3.30E-03	7.86E-02
TBL1XR1	1.09	3.20E-03	7.79E-02	TNFAIP3	-3.29	4.30E-03	8.70E-02
MBOAT2	1.08	2.70E-03	7.38E-02	PLAUR	-3.38	7.30E-03	1.01E-01
TOMM70	1.08	2.90E-03	7.64E-02	ZFP36	-3.4	1.40E-03	6.48E-02
ABI2	1.07	3.70E-03	8.18E-02	S100A11	-3.42	5.60E-03	9.23E-02
HIBCH	1.07	5.40E-03	9.11E-02	KLF4	-3.42	6.40E-03	9.78E-02
DLD	1.07	5.70E-03	9.29E-02	C10orf54	-3.46	3.00E-04	5.14E-02
HS2ST1	1.07	9.50E-03	1.10E-01	JAML	-3.51	2.10E-03	6.85E-02
RABL3	1.07	9.60E-03	1.10E-01	TYROBP	-3.56	6.50E-03	9.78E-02
TIMM10B	1.06	5.50E-03	9.21E-02	EGR1	-3.59	3.10E-03	7.79E-02
SNRNP48	1.06	5.70E-03	9.33E-02	SLC2A6	-3.63	3.30E-03	7.86E-02
RBM7	1.06	6.60E-03	9.78E-02	CEBPD	-3.82	8.00E-04	5.85E-02
SMIM8	1.06	8.10E-03	1.05E-01	TNFRSF1B	-3.9	2.00E-04	4.61E-02
FUBP1	1.05	1.20E-03	6.43E-02	LILRB2	-3.91	7.40E-03	1.01E-01
RMND5A	1.05	2.90E-03	7.64E-02	KLF2	-4.06	2.00E-04	4.61E-02
USP33	1.05	4.30E-03	8.70E-02	LILRB4	-4.06	6.20E-03	9.72E-02
CCDC58	1.05	5.60E-03	9.26E-02	LYZ	-4.08	2.70E-03	7.40E-02
FAM98B	1.05	9.30E-03	1.10E-01	HCK	-4.08	5.10E-03	9.01E-02
TTC19	1.04	1.00E-04	4.16E-02	FAM20C	-4.12	2.00E-03	6.85E-02
RAD17	1.04	3.40E-03	7.92E-02	TYMP	-4.16	6.90E-03	1.00E-01
TNPO1	1.03	1.70E-03	6.73E-02	CYBB	-4.42	7.70E-03	1.03E-01
DDX1	1.03	4.30E-03	8.70E-02	FGR	-4.47	1.08E-02	1.16E-01
UBLCP1	1.03	9.50E-03	1.10E-01	CTSH	-4.51	4.40E-03	8.70E-02
TYW3	1.02	1.80E-03	6.76E-02	NCF1	-4.57	7.60E-03	1.03E-01

CHD1L	1.02	3.30E-03	7.86E-02	MPEG1	-4.65	5.90E-03	9.41E-02
NUDT21	1.02	3.90E-03	8.43E-02	PLEC	-4.75	1.00E-04	4.42E-02
COQ8A	1.02	5.20E-03	9.08E-02	FCN1	-5.95	2.50E-03	7.27E-02
ZC3H8	1.02	9.10E-03	1.09E-01	LRP1	-6.18	4.70E-03	8.78E-02
HIGD1A	1.02	9.70E-03	1.10E-01	S100A9	-6.95	4.00E-04	5.14E-02
CTPS2	1.01	2.00E-03	6.84E-02	S100A8	-7.1	1.20E-03	6.43E-02
ZNF639	1.01	7.00E-03	1.00E-01				
CFAP36	1.01	7.00E-03	1.01E-01				
IP6K2	1.01	1.02E-02	1.12E-01				

