Transcriptional Hallmarks of Noonan Syndrome and Noonan-Like Syndrome with Loose Anagen Hair in Human Peripheral Blood Cells

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Supporting Information

Supp. Methods

I. Microarray data processing and filtering

a. Scaling, Log2 transformation and detection filtering.

Cubic spline-normalized probe signals, together with detection p-values, were obtained using the Illumina BeadStudio 3.1 software with background subtraction. To avoid negative values, the fixed amount of 50 was added back to each data point prior to $\log_2$ transformation. Subsequent data filtering and analysis was carried out with Excel (Microsoft). To the 20584 probes analyzed, we applied a statistical filter to select genes with reliable signal detection, selecting genes with a detection value (as provided by BeadStudio) greater than 0.999 in at least 5 samples.

b. Removal of genes correlated with age, sex, or differential leukocyte count.

To filter out genes correlated to basic clinical features, we collected information on gender, age (years), white blood cells and lymphocyte counts for the NS samples presented in the Table below.

ID	01	34	36	40	02	13	05	17	29	11	16	28	08	20	41	56
Gender (1=F, -1=M)	1	-1	1	1	-1	-1	1	1	-1	-1	1	1	1	-1	-1	-1
AGE (yrs.)	7.06	1.23	5.99	12.83	20.92	3.18	16.21	5.66	19.01	36.16	3.01	6.46	4.21	1.85	4.56	1.77
WBC	8.41				9.12	13.7	10.7	8.11	8.67		14.8	6.16	6.78	10.3		
LY%	12.3				29.3	46.3	17.9	32.1	32.9		62.8	43.5	53.3	79.4		

For each detected gene, we calculated the Pearson correlation with each of the four clinical variables. Probes displaying a Pearson correlation higher than 0.5 with any of the clinical variables were removed from subsequent analyses, which left a total of 5605 probes employed for further analysis.

c. Log$_2$ ratio transformation

For each probe, the $\log_2$ signal in each sample was converted into $\log_2$ ratio against global average expression of that probe in all samples. To avoid distortions due to the different sample sizes (from $n = 5$ for *SHOC2* samples to $n = 21$ for controls), the global average was calculated by first averaging the $\log_2$ signal within each group (CTRL, *PTPN11*, *SOS1* and *SHOC2*) and then by further averaging these four means. The $\log_2$ ratio was then calculated by subtracting $\log_2$ signal of the single sample from the global average.

II. Microarray data analysis

a. Selection of genes differentially expressed between controls and mutated groups.

To be defined as differential between controls and mutated groups, a probe Log_2 ratio signal had to display significance in three basic tests: (i) log_2 ratio between the means in control and mutated group greater than 0.5 (positive or negative); (ii) independent samples, two-way T-test p-value lower than 0.01; (iii) signal-to-noise ratio greater than 0.5 (positive or negative), according to the formula described by Golub and colleagues (Science 286:531-537, 1999).

b. Montecarlo simulation for FDR estimation.

To estimate the False Discovery Rate, i.e. the fraction of false positives expected for the four signatures described in the main text, 2000 orthogonal random permutations of the samples were performed, whereby for each cycle of permutation the three statistical filters employed for genes selection we re-applied, recording the number of significant probes for each of the four signatures. For each signature, median and mean false positives were then compared with true positives as illustrated in Supp. Table S3.

c. Weighted average score for full leave-one-out classification analysis.

After removing a sample from the dataset and redefining the four signatures, the left-out sample was classified by a weighted average score, obtained by subtracting average log2 ratios of probes with higher signal in control samples from average log2 ratio of probes with higher signal in mutated samples.

III. Functional data mining

a. Functional annotation analysis

To define functional annotation keyword enrichment in the mutation-specific signatures, we uploaded the lists of Illumina probes belonging to the *PTPN11*, *SOS1* and *SHOC2* signatures on the David Ease web-based annotation tool (*http://david.abcc.ncifcrf.gov/*). Three types of lists were uploaded for each signature: (i) all probes, both up- and down-regulated in mutated samples; (ii) only probes up-regulated in mutated samples; (iii) only probes down-regulated in mutated samples. As a background list, we employed the 5605 probes passing filtering criteria mentioned in the Results section. Subsequently the various lists underwent "Functional Annotation Clustering" analysis, returning Benjamini corrected enrichment p-values for functional clusters. The output of this analysis was filtered to include only results with corrected p-values of less than 0.01.

### b. Kinase Enrichment analysis

To identify substrates of kinases in the signatures, lists of gene symbols corresponding to Illumina probes of the *PTPN11*, *SOS1* and *SHOC2* signatures were uploaded on the web-based Kinase Enrichment Analysis tool (*http://amp.pharm.mssm.edu/lib/kea.jsp*). The output of this analysis was filtered to include only results with kinase enrichment p-values of less than 0.01.

c. Protein-protein interactions analysis

To check the signatures for enrichment in protein-protein interactions, we employed two web-based tools, Gather *(http://gather.genome.duke.edu/)* and Gene2Network (*http://actin.pharm.mssm.edu/genes2networks/*). The first employs data from two large-scale protein-protein interaction studies in humans, and the second integrates multiple small-scale, high-quality protein-protein interaction datasets. Lists of gene symbols corresponding to Illumina probes of the *PTPN11*, *SOS1* and *SHOC2* signatures were uploaded on the two websites and "in silico" protein-protein interaction analysis was performed. To achieve complete independence between the two analyses, Gene2Network analysis was conducted excluding the "Vidal and Stelzl" dataset, which is by default employed by Gather. Addictional parameters of Gene2Network analysis were the following: (i) max path length threshold =2; (ii) significance cut-off =3; (iii) max interaction for reference=1; (iv) min reference per interaction=no filter.

d. Binding site analysis and transcriptional circuits

To analyze transcription factor activity, a curated, non-redundant list of transcription factors (TFs) was extracted from the JASPAR CORE database (http://jaspar.genereg.net/). This list of TFs was then filtered to maintain only those TFs with available binding site data in the Opossum tool (http://www.cisreg.ca/cgi-bin/oPOSSUM/opossum). Eleven of these TFs were found in one or more of the three signatures: *GFI1* (*PTPN11* and *SOS1* signatures), *GABPA* (*SOS1* and *SHOC2* signatures), and nine TFs only in the *SHOC2* signature (*CEBPA*, *CREB1*, *ELK1*, *ELK4*, *MAX*, *NR3C1*, *SP1*, *STAT1* and *ZNF395*). For each of these eleven TFs, we verified, if the respective *PTPN11*, *SOS1* or *SHOC2* signature was enriched in genes containing one or more specific TF binding sites. To this aim, we employed the "Custom binding site analysis" of Opossum, uploading lists of gene symbols corresponding to Illumina probes of the *PTPN11*, *SOS1* or *SHOC2* signatures, subdivided in up-regulated and down-regulated in mutated samples. As a background list, we employed the 5605 probes passing filtering criteria mentioned in the Results section. The amount of upstream / downstream sequence was set to (2000/0) and Matrix match threshold to 80%. We considered significant Opossum Z-Scores greater than 5 and p-values lower than 0.05. Putative transcriptional circuits highlighted by Opossum and including a TF and its enriched targets in the same signature were consolidated by a complementary procedure, that involved for each given TF: (i) retrieval, using Opossum, of all genes containing binding sites for that TF (putative targets), in the 5605-gene background list and in the signature(s) containing the TF; (ii) hypergeometric distribution analysis of enrichment of putative target genes in the signature vs. background, with subsequent p-value calculation. Results of both analyses are shown in Supp. Table S5.

Supp. Figures
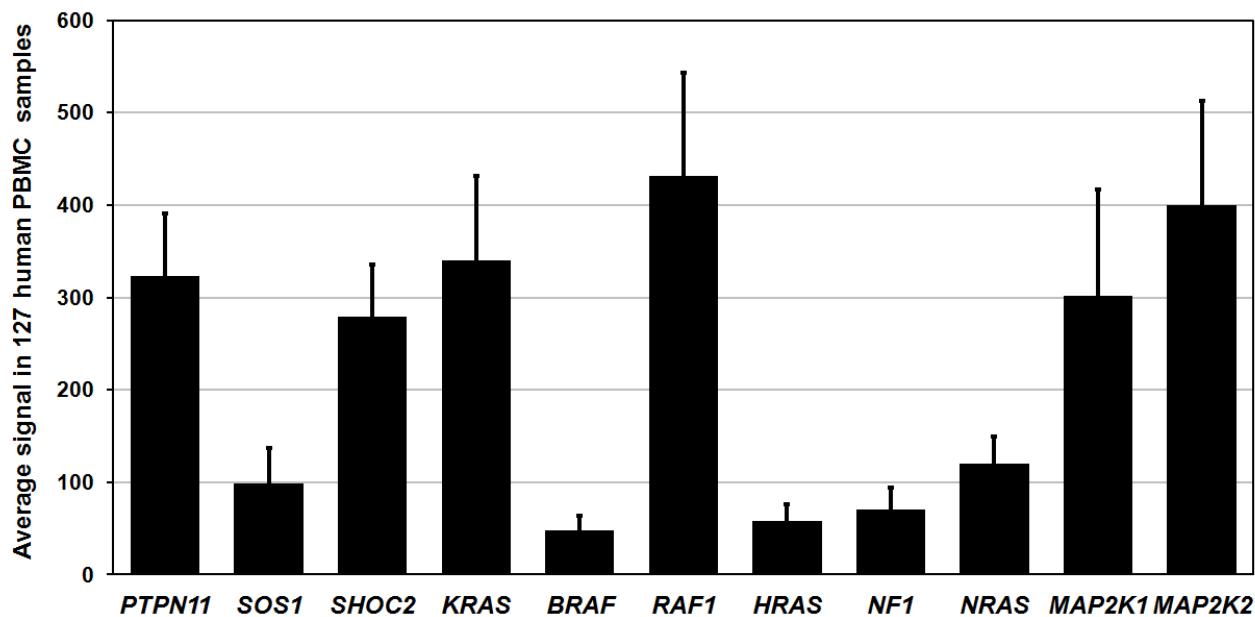
Supp. Figure S1. Expression levels in human PBMCs of RAS/MAPK pathway genes mutated in RASopathies. Histograms represent average expression signal in 127 human PBMC samples (Burczynski et all, J Mol Diagn. 2006). *RAF1*, *MAP2K1*, *MAP2K2*, *KRAS*, *SHOC2* and *PTPN11* genes show high level of expression, while *SOS1*, *NF1*, *HRAS* and *BRAF* present lower, but detectable expression values.
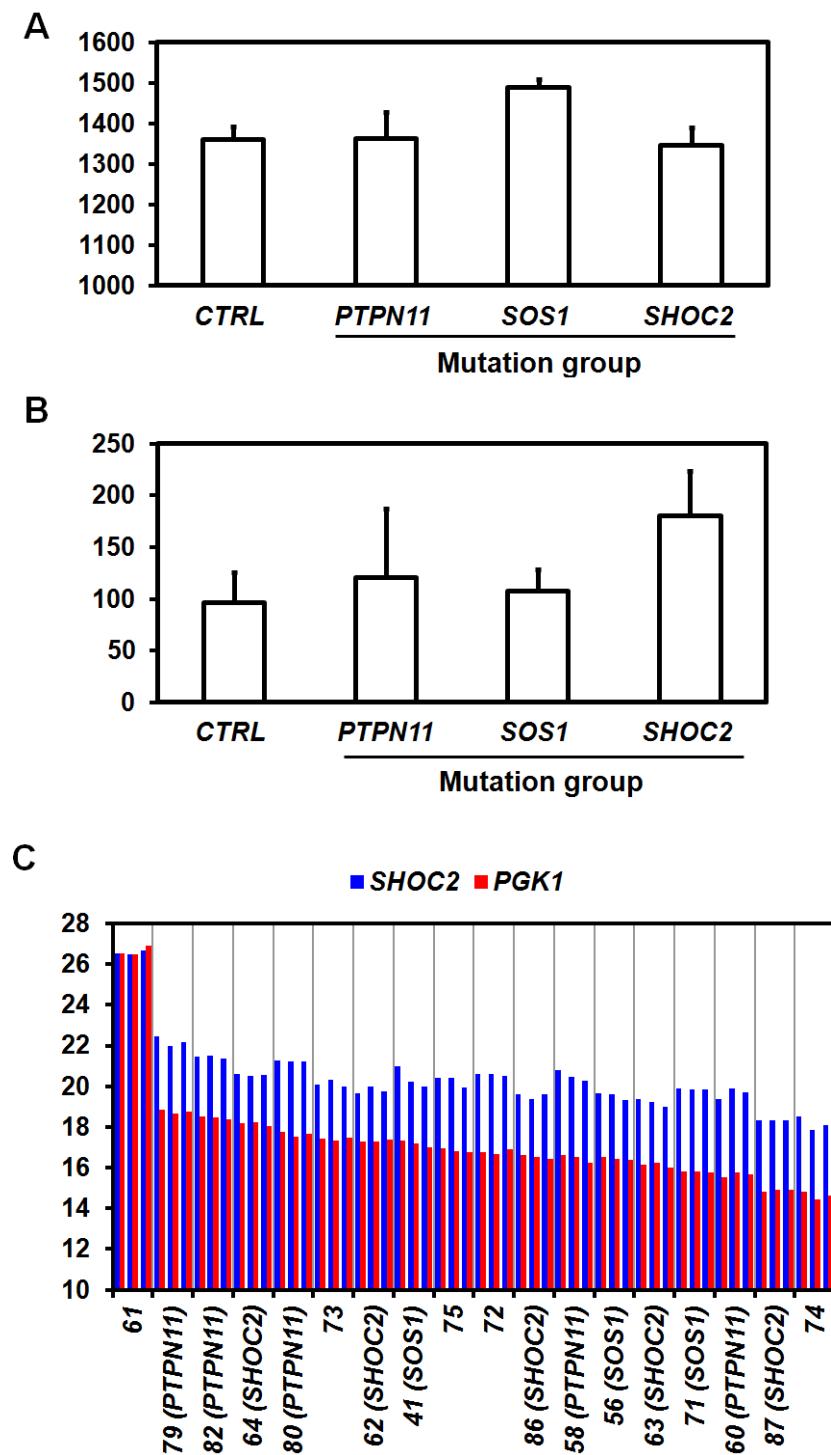
Supp. Figure S2. Expression levels in human PBMCs of *PTPN11*, *SOS1* and *SHOC2*. For *PTPN11* and *SOS1* (A, B), histograms represent average expression signal in our 49-sample human PBMC samples profiled with Illumina gene expression arrays. For *SHOC2*, quantitative realtime PCR triplicate Ct values are reported for *SHOC2* and the housekeeper *PGK1* in 18 PBMC samples chosen among controls, NS and NSL-LAH, as indicated.
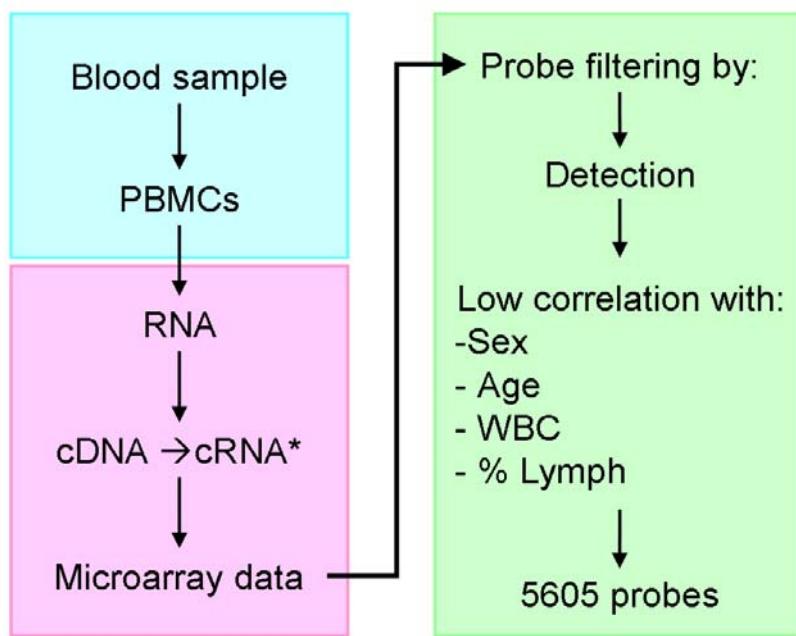
Supp. Figure S3. Experimental workflow for PBMC purification, expression profiling, and data filtering. The workflow is subdivided in three main parts: blood processing (light blue), RNA extraction and gene expression profiling (pink), and data processing for gene filtering (light green).
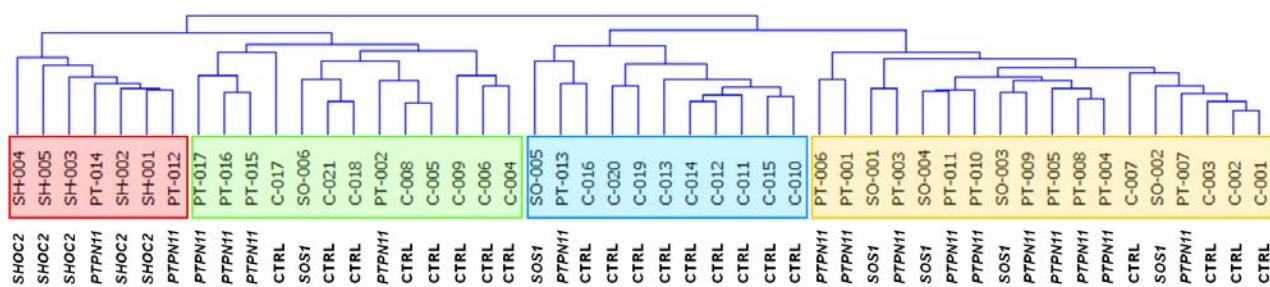
Supp. Figure S4. Unsupervised cluster analysis. Hierarchical clustering of PBMC samples from: (i) 21 control subjects (C-001-021), (ii) 17 NS patients with a *PTPN11* mutation (PT-001-017), (iii) 6 NS patients with a *SOS1* mutation (SO-001-006), and (iv) 6 NS/LAH patients with the *SHOC2* c.4A>G mutation (SH-001-005). Four major transcriptional clusters emerge, two of which are clearly enriched in *SHOC2* samples and *PTPN11 + SOS1* samples, respectively.

Supp. Tables

Supp. Table S1. Genotypes of NS and NS/LAH patients			
Patient ID	**Gene**	**Nucleotide substitution**	**Amino-acid substitution**
PT-001	*PTPN11*	c.785T>G	p.Leu262Arg
PT-002	*PTPN11*	c.1508G>A	p.Gly503Glu
PT-003	*PTPN11*	c.923A>G	p.Asn308Ser
PT-004	*PTPN11*	c.782T>A	p.Leu261His
PT-005	*PTPN11*	c.1507G>A	p.Gly503Arg
PT-006	*PTPN11*	c.782T>A	p.Leu261His
PT-007	*PTPN11*	c.1510A>G	p.Met504Val
PT-008	*PTPN11*	c.782T>A	p.Leu261His
PT-009	*PTPN11*	c.853T>A	p.Phe285Ile
PT-010	*PTPN11*	c.228G>C	p.Glu76Asp
PT-011	*PTPN11*	c.181G>A	p.Asp61Asn
PT-012	*PTPN11*	c.172A>G	p.Asn58Asp
PT-013	*PTPN11*	c.417G>T	p.Glu139Asp
PT-014	*PTPN11*	c.1510A>G	p.Met504Val
PT-015	*PTPN11*	c.922A>G	p.Asn308Asp
PT-016	*PTPN11*	c.172A>C	p.Asn58His
PT-017	*PTPN11*	c.188A>G	p.Tyr63Cys
SO-001	*SOS1*	c.755T>C	p.Ile252Thr

SO-002	*SOS1*	c.797C>A	p.Thr266Lys
SO-003	*SOS1*	c.806T>C	p.Met269Thr
SO-004	*SOS1*	c.806T>C	p.Met269Thr
SO-005	*SOS1*	c.1654A>G	p.Arg552Gly
SO-006	*SOS1*	c.1297G>A	p.Glu433Lys
SH-001	*SHOC2*	c.4A>G	p.Ser2Gly
SH-002	*SHOC2*	c.4A>G	p.Ser2Gly
SH-003	*SHOC2*	c.4A>G	p.Ser2Gly
SH-004	*SHOC2*	c.4A>G	p.Ser2Gly
SH-005	*SHOC2*	c.4A>G	p.Ser2Gly

GenBank reference sequences:

PTPN11: NM_002834.3; *SOS1*: NM_005633.3; *SHOC2*: NM_007373.3

Nucleotide numbering reflects cDNA numbering with +1 corresponding to the A of the ATG tanslation initiation codon in the reference sequence.

Supp. Table S2A. NS-NS/LAH signature (125 probes, 124 genes)					
Symbol	**TargetID**	**Accession**	**L2R Disease/CTRL**	**ABS SNR Disease/CTRL**	**T-test p-value Disease vs Control**
NCF1	ILMN_136961	NM_000265.1	1.321084166	0.554650871	0.00055653
ECGF1	ILMN_18760	NM_001953.2	1.139301768	0.56287464	0.00044382
CGI-38	ILMN_754	NM_015964.2	1.132573662	0.673556676	0.00002621
FGL2	ILMN_19861	NM_006682.1	1.070279843	0.57143162	0.00028665
RAPGEF1	ILMN_3184	NM_198679.1	0.98206944	0.561509994	0.00105147
GRN	ILMN_18655	NM_002087.2	0.964791405	0.568916029	0.00045024
SASH1	ILMN_22260	NM_015278.3	0.957600681	0.686162499	0.00002612
RP2	ILMN_28618	NM_006915.1	0.90480327	0.791543608	0.00000200
TUBB6	ILMN_26276	NM_032525.1	0.853006817	0.527954118	0.00057275
SLC25A24	ILMN_15753	NM_013386.2	0.837217818	0.860356608	0.00000062
MTMR11	ILMN_137079	NM_181873.1	0.808285699	0.655443175	0.00003297
PFC	ILMN_24742	NM_002621.1	0.791994208	0.504731573	0.00101265
CSF1R	ILMN_24980	NM_005211.2	0.766481286	0.566002268	0.00026247
CYBB	ILMN_13274	NM_000397.2	0.751730075	0.630439746	0.00010382
WARS	ILMN_25430	NM_213646.1	0.749824997	0.533953615	0.00061560
C9orf72	ILMN_9580	NM_145005.3	0.730448006	0.576732623	0.00021012
LOC339745	ILMN_21364	NM_001001664.1	0.725297986	0.847062003	0.00000035
MSR1	ILMN_16779	NM_002445.2	0.709933122	0.527357886	0.00089285
WDR33	ILMN_6704	NM_001006623.1	0.69789313	0.557560131	0.00076950
RB1	ILMN_4636	NM_000321.1	0.688171798	0.609960242	0.00009345
ADAM9	ILMN_922	NM_003816.2	0.673507261	0.559339882	0.00103667
P2RX1	ILMN_1134	NM_002558.2	0.667173036	0.582373311	0.00018210
TBC1D9	ILMN_25527	NM_015130.1	0.661083435	0.533359533	0.00052298
MCTP1	ILMN_2499	NM_001002796.1	0.657310261	0.552273564	0.00037623

VMO1	**ILMN_18899**	**NM_182566.1**	**0.643428254**	**0.539386685**	**0.00102405**
EMR1	**ILMN_12984**	**NM_001974.3**	**0.633183529**	**0.557693009**	**0.00036571**
PRDX3	**ILMN_13029**	**NM_014098.2**	**0.626217596**	**0.616369174**	**0.00020419**
MTSS1	**ILMN_7083**	**NM_014751.2**	**0.624826288**	**0.717204372**	**0.00000989**
PECAM1	**ILMN_7862**	**NM_000442.2**	**0.623438681**	**0.532080738**	**0.00072899**
SSFA2	**ILMN_4525**	**NM_006751.3**	**0.605800152**	**0.545007535**	**0.00050355**
CTDSP1	**ILMN_13739**	**NM_182642.1**	**0.60301904**	**0.540296413**	**0.00043850**
MLL3	**ILMN_24027**	**NM_021230.1**	**0.595752173**	**0.50418616**	**0.00094331**
ATP6V0A1	**ILMN_138088**	**NM_005177.2**	**0.56619738**	**0.618763559**	**0.00007647**
CST6	**ILMN_20022**	**NM_001323.2**	**0.565753462**	**0.534088911**	**0.00194061**
DPYSL2	**ILMN_9671**	**NM_001386.4**	**0.565577205**	**0.517590614**	**0.00081030**
LOC51136	**ILMN_27239**	**NM_016125.2**	**0.55785882**	**0.524110701**	**0.00070125**
SYK	**ILMN_8126**	**NM_003177.3**	**0.557306354**	**0.508150751**	**0.00100071**
RNPEP	**ILMN_22895**	**NM_020216.3**	**0.55610558**	**0.598623524**	**0.00016502**
ATP6V1A	**ILMN_30226**	**NM_001690.2**	**0.550949418**	**0.573954134**	**0.00026355**
MLL3	**ILMN_14020**	**NM_170606.1**	**0.549391752**	**0.548625483**	**0.00041986**
QKI	**ILMN_4124**	**NM_206854.1**	**0.545749725**	**0.53359302**	**0.00053097**
HLA-DMB	**ILMN_2252**	**NM_002118.3**	**0.541171517**	**0.741714584**	**0.00000443**
UTRN	**ILMN_15375**	**NM_007124.1**	**0.527936565**	**0.626744433**	**0.00008486**
AGPAT2	**ILMN_6967**	**NM_006412.3**	**0.526089017**	**0.537277823**	**0.00107744**
SLC36A1	**ILMN_22384**	**NM_078483.2**	**0.525363533**	**0.579074576**	**0.00018789**
WDFY2	**ILMN_14243**	**NM_052950.2**	**0.51738607**	**0.949471314**	**0.00000014**
SNX2	**ILMN_4948**	**NM_003100.2**	**0.511419645**	**0.645587156**	**0.00004356**
POGZ	**ILMN_14081**	**NM_145796.2**	**0.509196883**	**0.614652705**	**0.00034779**
CBR3	**ILMN_8256**	**NM_001236.3**	**-0.501548372**	**0.576774225**	**0.00031293**
ACOT4	**ILMN_5812**	**NM_152331.2**	**-0.506300623**	**0.501282601**	**0.00145993**
ZNF545	**ILMN_15084**	**NM_133466.1**	**-0.50676991**	**0.666747897**	**0.00004604**
ARHGAP10	**ILMN_24582**	**NM_024605.3**	**-0.507674999**	**0.658071995**	**0.00003942**
ATXN7L2	**ILMN_6796**	**NM_153340.2**	**-0.509429145**	**0.506309516**	**0.00116308**

PIP5K2A	**ILMN_6957**	NM_005028.3	-0.511620973	0.766986504	0.00000303
BRF2	**ILMN_2966**	NM_018310.2	-0.513168419	0.573735878	0.00022956
LAX1	**ILMN_29004**	NM_017773.2	-0.520792925	0.715075083	0.00001090
PTGER4	**ILMN_13328**	NM_000958.2	-0.532099462	0.562488851	0.00039290
C21orf57	**ILMN_21121**	NM_058181.1	-0.532614088	0.557683419	0.00039802
CCDC58	**ILMN_27140**	NM_001017928.2	-0.54006179	0.626422203	0.00008076
ALDOC	**ILMN_15767**	NM_005165.2	-0.551121983	0.599294042	0.00013341
SDCCAG33	**ILMN_138968**	NM_005786.3	-0.55159881	0.635549907	0.00012881
FAM84B	**ILMN_7137**	NM_174911.3	-0.555973314	0.66943369	0.00004156
SLC25A23	**ILMN_5925**	NM_024103.2	-0.564123021	0.656348275	0.00011161
NPDC1	**ILMN_5190**	NM_015392.2	-0.566353596	0.51503047	0.00078580
FYN	**ILMN_5919**	NM_002037.3	-0.570318002	0.644773866	0.00004925
RHOF	**ILMN_1762**	NM_019034.2	-0.588562031	0.512472435	0.00087113
LCMT2	**ILMN_7283**	NM_014793.3	-0.59408272	0.676237692	0.00004917
LPHN1	**ILMN_12017**	NM_014921.3	-0.595977927	0.555516456	0.00060169
ACACB	**ILMN_3318**	NM_001093.2	-0.60148083	0.647708036	0.00004546
PIM2	**ILMN_27932**	NM_006875.2	-0.606699437	0.745720347	0.00000688
RASA3	**ILMN_19501**	NM_007368.2	-0.609728339	0.51866888	0.00084582
CD2	**ILMN_6738**	NM_001767.2	-0.613600011	0.646691342	0.00006305
MGC17330	**ILMN_15026**	NM_052880.3	-0.615102387	0.554114679	0.00124969
PITPNC1	**ILMN_12660**	NM_181671.1	-0.617188651	0.763012992	0.00000348
IL18RAP	**ILMN_16084**	NM_003853.2	-0.618785163	0.595867225	0.00013053
ABHD14B	**ILMN_24812**	NM_032750.1	-0.620384302	0.753596144	0.00000525
TNFSF9	**ILMN_18030**	NM_003811.2	-0.63645865	0.504502625	0.00123920
GFI1	**ILMN_30079**	NM_005263.2	-0.638218337	0.810063077	0.00000130
ZBTB16	**ILMN_11903**	NM_006006.4	-0.640383593	0.523059876	0.00068922
STAT4	**ILMN_8937**	NM_003151.2	-0.642277435	0.741700081	0.00000514
SMPD1	**ILMN_8257**	NM_001007593.1	-0.648648924	0.538651833	0.00047990
SFXN1	**ILMN_16398**	NM_022754.4	-0.654170933	0.523626325	0.00080819

TCEA3	**ILMN_27218**	**NM_003196.1**	**-0.657704996**	**0.592066255**	**0.00024669**
CD8A	**ILMN_2358**	**NM_001768.4**	**-0.660860793**	**0.594696025**	**0.00014620**
PRR7	**ILMN_17178**	**NM_030567.2**	**-0.665158852**	**0.536832382**	**0.00057470**
C10orf35	**ILMN_13661**	**NM_145306.1**	**-0.669357423**	**0.58713647**	**0.00016046**
PLCG1	**ILMN_3773**	**NM_002660.2**	**-0.669392435**	**0.584297133**	**0.00019981**
PAFAH2	**ILMN_3410**	**NM_000437.2**	**-0.684827426**	**0.892782604**	**0.00000055**
CACNA2D2	**ILMN_15989**	**NM_001005505.1**	**-0.686912394**	**0.613426228**	**0.00010529**
ITK	**ILMN_23317**	**NM_005546.3**	**-0.690033069**	**0.704824671**	**0.00002724**
MGAT4A	**ILMN_139237**	**NM_012214.1**	**-0.701476401**	**0.588282515**	**0.00018484**
TGFBR3	**ILMN_22620**	**NM_003243.2**	**-0.708248557**	**0.697370522**	**0.00002515**
CD3E	**ILMN_24240**	**NM_000733.2**	**-0.711671939**	**0.629082883**	**0.00008905**
TKTL1	**ILMN_23315**	**NM_012253.2**	**-0.727727687**	**0.605461651**	**0.00018975**
HOXB2	**ILMN_137588**	**NM_002145.2**	**-0.739430194**	**0.551939309**	**0.00033964**
ICOS	**ILMN_9996**	**NM_012092.2**	**-0.745024028**	**0.513242042**	**0.00083515**
CTLA4	**ILMN_138103**	**NM_005214.2**	**-0.750478694**	**0.934673244**	**0.00000008**
PTPRM	**ILMN_19957**	**NM_002845.2**	**-0.752842383**	**0.636816195**	**0.00006099**
FHIT	**ILMN_15082**	**NM_002012.1**	**-0.766674862**	**0.578811154**	**0.00046674**
TSEN54	**ILMN_8569**	**NM_207346.1**	**-0.776875745**	**0.599435131**	**0.00011930**
PDZD4	**ILMN_3986**	**NM_032512.2**	**-0.777079223**	**0.603890033**	**0.00011783**
ELA1	**ILMN_24603**	**NM_001971.4**	**-0.778277484**	**0.725031145**	**0.00000665**
CD5	**ILMN_29547**	**NM_014207.2**	**-0.780011452**	**0.501385904**	**0.00123187**
FLT3LG	**ILMN_4754**	**NM_001459.2**	**-0.786977344**	**0.672271482**	**0.00002435**
PPP2R2B	**ILMN_1007**	**NM_181676.1**	**-0.790685672**	**0.615737601**	**0.00012564**
TARP	**ILMN_25716**	**NM_001003799.1**	**-0.793277751**	**0.64274719**	**0.00006665**
BCL9L	**ILMN_27555**	**NM_182557.1**	**-0.808789234**	**0.554059637**	**0.00032290**
SOCS1	**ILMN_3038**	**NM_003745.1**	**-0.825203535**	**0.502522482**	**0.00114042**
CCDC65	**ILMN_22276**	**NM_033124.2**	**-0.826315503**	**0.575384317**	**0.00020769**
BAMBI	**ILMN_8469**	**NM_012342.2**	**-0.828451265**	**0.502263163**	**0.00097632**
PLEKHB1	**ILMN_2859**	**NM_021200.1**	**-0.840020952**	**0.839629344**	**0.00000093**

C6orf105	**ILMN_10287**	**NM_032744.1**	**-0.840919329**	**0.664422571**	**0.00003018**
KSP37	**ILMN_16684**	**NM_031950.2**	**-0.842708345**	**0.681807509**	**0.00002272**
GZMH	**ILMN_10239**	**NM_033423.2**	**-0.845233571**	**0.527411198**	**0.00086217**
ADRB2	**ILMN_2022**	**NM_000024.3**	**-0.86626972**	**0.847589262**	**0.00000084**
MAL	**ILMN_3411**	**NM_002371.2**	**-0.877719549**	**0.925808311**	**0.00000027**
CITED4	**ILMN_15271**	**NM_133467.2**	**-0.880279922**	**0.765096915**	**0.00000907**
PTGDS	**ILMN_19248**	**NM_000954.5**	**-0.885287037**	**0.505533305**	**0.00172082**
AKR1C3	**ILMN_11871**	**NM_003739.4**	**-0.93749951**	**0.627865296**	**0.00008072**
H2AFX	**ILMN_23585**	**NM_002105.2**	**-0.942415472**	**0.813438146**	**0.00000080**
FEZ1	**ILMN_28992**	**NM_005103.3**	**-1.016084362**	**0.763414541**	**0.00000304**
ZNF683	**ILMN_2307**	**NM_173574.1**	**-1.017805442**	**0.562264358**	**0.00032947**
IL23A	**ILMN_20797**	**NM_016584.2**	**-1.054966924**	**0.588923763**	**0.00017724**
GNLY	**ILMN_13145**	**NM_012483.1**	**-1.061532661**	**0.821905939**	**0.00000159**
BATF	**ILMN_3307**	**NM_006399.2**	**-1.12180425**	**0.519569456**	**0.00075257**

Supp. Table S2B. *PTPN11* signature (225 probes, 223 genes)					
Symbol	**TargetID**	**Accession**	**L2R Disease/CTRL**	**ABS SNR Disease/CTRL**	**T-test p-value Disease vs Control**
HCA112	ILMN_24990	NM_018487.2	1.640572025	0.46899836	0.00045873
EMP1	ILMN_25097	NM_001423.1	1.573890651	0.30682888	0.00314480
TNFRSF12A	ILMN_11654	NM_016639.1	1.471344009	0.327517025	0.00230098
RAPGEF1	ILMN_3184	NM_198679.1	1.350848899	0.561509994	0.00002477
CGI-38	ILMN_754	NM_015964.2	1.26429885	0.673556676	0.00001957
EGR2	ILMN_10721	NM_000399.2	1.25189554	0.216246616	0.00078760
ECGF1	ILMN_18760	NM_001953.2	1.227244131	0.56287464	0.00025184
VASH1	ILMN_4905	NM_014909.2	1.187049881	0.436937865	0.00009345
NCF1	ILMN_136961	NM_000265.1	1.183170469	0.554650871	0.00215972
C1QA	ILMN_138176	NM_015991.1	1.174230265	0.460228509	0.00038154
LILRA5	ILMN_13562	NM_181986.1	1.157891702	0.495486116	0.00025816
FGL2	ILMN_19861	NM_006682.1	1.117058744	0.57143162	0.00016718
HBEGF	ILMN_13020	NM_001945.1	1.103141795	0.251961923	0.00140005
OSCAR	ILMN_3784	NM_130771.2	1.064976797	0.450026773	0.00017363
PTRF	ILMN_22301	NM_012232.2	1.049816639	0.426525135	0.00301579
CD300LB	ILMN_22665	NM_174892.1	1.029237831	0.417482967	0.00014046
NP	ILMN_18063	NM_000270.1	1.004914876	0.450327209	0.00137933
BTBD14A	ILMN_10561	NM_144653.3	0.977900069	0.497255735	0.00000093
SERPINE1	ILMN_6244	NM_000602.1	0.976345257	0.398119074	0.00471708
GRN	ILMN_18655	NM_002087.2	0.971879492	0.568916029	0.00009629
SASH1	ILMN_22260	NM_015278.3	0.968150053	0.686162499	0.00002487
TUBB6	ILMN_26276	NM_032525.1	0.957340349	0.527954118	0.00134300

WARS	**ILMN_25430**	**NM_213646.1**	**0.928591613**	**0.533953615**	**0.00019458**
RP2	**ILMN_28618**	**NM_006915.1**	**0.917224311**	**0.791543608**	**0.00000945**
C9orf72	**ILMN_9580**	**NM_145005.3**	**0.913617277**	**0.576732623**	**0.00002725**
ALDH3B1	**ILMN_26797**	**NM_001030010.1**	**0.901692076**	**0.482841759**	**0.00018900**
ADAM9	**ILMN_922**	**NM_003816.2**	**0.893136784**	**0.559339882**	**0.00015938**
LOC401233	**ILMN_17894**	**NM_001013680.1**	**0.892889063**	**0.394707704**	**0.00145884**
MTMR11	**ILMN_137079**	**NM_181873.1**	**0.883969064**	**0.655443175**	**0.00006313**
MSR1	**ILMN_16779**	**NM_002445.2**	**0.883563599**	**0.527357886**	**0.00094744**
CSF1R	**ILMN_24980**	**NM_005211.2**	**0.864191294**	**0.566002268**	**0.00038381**
PFC	**ILMN_24742**	**NM_002621.1**	**0.845059664**	**0.504731573**	**0.00056782**
UNQ3033	**ILMN_29051**	**NM_198481.1**	**0.837564175**	**0.313324062**	**0.00308231**
CYBB	**ILMN_13274**	**NM_000397.2**	**0.832261527**	**0.630439746**	**0.00001732**
P2RX1	**ILMN_1134**	**NM_002558.2**	**0.830035069**	**0.582373311**	**0.00009607**
WDR33	**ILMN_6704**	**NM_001006623.1**	**0.816852502**	**0.557560131**	**0.00038434**
CST6	**ILMN_20022**	**NM_001323.2**	**0.807324519**	**0.534088911**	**0.00007649**
ZNF503	**ILMN_2048**	**NM_032772.3**	**0.805381467**	**0.432169646**	**0.00091319**
LIMS1	**ILMN_11207**	**NM_004987.3**	**0.800923571**	**0.336151079**	**0.00198880**
VMO1	**ILMN_18899**	**NM_182566.1**	**0.785342972**	**0.539386685**	**0.00027633**
ANKDD1A	**ILMN_6117**	**NM_182703.2**	**0.781657454**	**0.356691847**	**0.00079619**
CAMK1	**ILMN_21373**	**NM_003656.3**	**0.759144587**	**0.492115675**	**0.00061577**
APLP2	**ILMN_19935**	**NM_001642.1**	**0.752003991**	**0.455656335**	**0.00215605**
ZDHHC1	**ILMN_29630**	**NM_013304.1**	**0.751814563**	**0.488268233**	**0.00134316**
SLC25A24	**ILMN_15753**	**NM_013386.2**	**0.74510769**	**0.860356608**	**0.00000472**
IL1RAP	**ILMN_8626**	**NM_134470.2**	**0.728393523**	**0.398730293**	**0.00112381**
IGSF6	**ILMN_7979**	**NM_005849.1**	**0.722354415**	**0.404621481**	**0.00184215**
MLL3	**ILMN_24027**	**NM_021230.1**	**0.707646583**	**0.50418616**	**0.00089322**
SSFA2	**ILMN_4525**	**NM_006751.3**	**0.704568057**	**0.545007535**	**0.00009856**
LOC339745	**ILMN_21364**	**NM_001001664.1**	**0.700391983**	**0.847062003**	**0.00001529**
QKI	**ILMN_4124**	**NM_206854.1**	**0.691646151**	**0.53359302**	**0.00016360**

PLEKHQ1	**ILMN_25713**	**NM_025201.3**	**0.68445947**	**0.381013076**	**0.00203275**
TGM2	**ILMN_8134**	**NM_198951.1**	**0.682066115**	**0.417835214**	**0.00021976**
ARRDC4	**ILMN_11014**	**NM_183376.1**	**0.672533706**	**0.417237908**	**0.00456098**
FGR	**ILMN_21930**	**NM_005248.1**	**0.669375621**	**0.466533807**	**0.00161083**
RGS12	**ILMN_15717**	**NM_002926.2**	**0.667379422**	**0.456153285**	**0.00063938**
RNPEP	**ILMN_22895**	**NM_020216.3**	**0.666137061**	**0.598623524**	**0.00000576**
SH2D3C	**ILMN_8703**	**NM_170600.1**	**0.665808955**	**0.403944385**	**0.00567878**
SYK	**ILMN_8126**	**NM_003177.3**	**0.6626873**	**0.508150751**	**0.00016720**
ATP6V0A1	**ILMN_138088**	**NM_005177.2**	**0.652003802**	**0.618763559**	**0.00017335**
KIAA0513	**ILMN_21473**	**NM_014732.2**	**0.646910539**	**0.482625046**	**0.00007375**
POGZ	**ILMN_14081**	**NM_145796.2**	**0.638240534**	**0.614652705**	**0.00002428**
MCTP1	**ILMN_2499**	**NM_001002796.1**	**0.631772234**	**0.552273564**	**0.00088773**
GBGT1	**ILMN_18833**	**NM_021996.3**	**0.621287266**	**0.423734301**	**0.00332459**
EMR1	**ILMN_12984**	**NM_001974.3**	**0.619543816**	**0.557693009**	**0.00157518**
CTSS	**ILMN_13149**	**NM_004079.3**	**0.61862623**	**0.483715093**	**0.00125229**
RB1	**ILMN_4636**	**NM_000321.1**	**0.613674119**	**0.609960242**	**0.00277011**
DAPK1	**ILMN_138506**	**NM_004938.1**	**0.611697486**	**0.442825305**	**0.00275467**
PECAM1	**ILMN_7862**	**NM_000442.2**	**0.60917983**	**0.532080738**	**0.00082461**
DPYSL2	**ILMN_9671**	**NM_001386.4**	**0.598054115**	**0.517590614**	**0.00082555**
BCL2L2	**ILMN_9171**	**NM_004050.2**	**0.595693337**	**0.618322489**	**0.00002477**
NAPSA	**ILMN_12115**	**NM_004851.1**	**0.589618584**	**0.280978366**	**0.00392265**
PFKFB2	**ILMN_12195**	**NM_006212.2**	**0.58781744**	**0.527917721**	**0.00022229**
AP1S2	**ILMN_3812**	**NM_003916.3**	**0.586783759**	**0.488969433**	**0.00197668**
SIPA1L1	**ILMN_3802**	**NM_015556.1**	**0.586288021**	**0.240962801**	**0.00379876**
HSBP1	**ILMN_3025**	**NM_001537.2**	**0.583504819**	**1.028093735**	**0.00000000**
GM2A	**ILMN_8836**	**NM_000405.3**	**0.581321147**	**0.336407175**	**0.00381796**
MLL3	**ILMN_14020**	**NM_170606.1**	**0.581109919**	**0.548625483**	**0.00087683**
PARP14	**ILMN_28517**	**NM_017554.1**	**0.576341503**	**0.437357265**	**0.00125215**
SLC36A1	**ILMN_22384**	**NM_078483.2**	**0.569195789**	**0.579074576**	**0.00078930**

IL15	**ILMN_16803**	**NM_172174.1**	**0.564822943**	**0.431587521**	**0.00418995**
CTDSP1	**ILMN_13739**	**NM_182642.1**	**0.561848041**	**0.540296413**	**0.00535669**
ATP6V1A	**ILMN_30226**	**NM_001690.2**	**0.55307366**	**0.573954134**	**0.00042831**
MGC33692	**ILMN_17332**	**NM_001001794.1**	**0.551155723**	**0.452553135**	**0.00013551**
PRDX3	**ILMN_13029**	**NM_014098.2**	**0.549182004**	**0.616369174**	**0.00026009**
PHCA	**ILMN_3836**	**NM_018367.3**	**0.545298912**	**0.513985519**	**0.00048863**
GNS	**ILMN_6937**	**NM_002076.2**	**0.54005597**	**0.702188774**	**0.00000296**
UTRN	**ILMN_15375**	**NM_007124.1**	**0.537147127**	**0.626744433**	**0.00057966**
FAM65A	**ILMN_17641**	**NM_024519.2**	**0.533570053**	**0.520527473**	**0.00007999**
MTSS1	**ILMN_7083**	**NM_014751.2**	**0.528607408**	**0.717204372**	**0.00086115**
WDR41	**ILMN_28575**	**NM_018268.2**	**0.526931841**	**0.420502405**	**0.00262646**
PSRC2	**ILMN_139272**	**NM_144982.3**	**0.522449121**	**0.532229639**	**0.00143090**
WDFY2	**ILMN_14243**	**NM_052950.2**	**0.522160857**	**0.949471314**	**0.00000051**
HLA-DMB	**ILMN_2252**	**NM_002118.3**	**0.521835548**	**0.741714584**	**0.00015061**
LYL1	**ILMN_18317**	**NM_005583.3**	**0.510433643**	**0.450602912**	**0.00217954**
BCKDK	**ILMN_13829**	**NM_005881.1**	**0.506453376**	**0.42032352**	**0.00081655**
RAPH1	**ILMN_7647**	**NM_025252.3**	**0.501989973**	**0.498454201**	**0.00010081**
STAT5A	**ILMN_10520**	**NM_003152.2**	**-0.500670735**	**0.435370699**	**0.00157763**
PHF20	**ILMN_20893**	**NM_016436.3**	**-0.503987875**	**0.498824041**	**0.00341753**
GALM	**ILMN_10698**	**NM_138801.1**	**-0.504181622**	**0.359664965**	**0.00069713**
F8A1	**ILMN_23293**	**NM_012151.3**	**-0.507798082**	**0.491539841**	**0.00083689**
NCK2	**ILMN_8369**	**NM_003581.2**	**-0.51108628**	**0.586738229**	**0.00008988**
NUCB2	**ILMN_23510**	**NM_005013.1**	**-0.511382323**	**0.40932896**	**0.00212353**
C21orf57	**ILMN_21121**	**NM_058181.1**	**-0.512831996**	**0.557683419**	**0.00314669**
TERF2	**ILMN_21134**	**NM_005652.2**	**-0.513847741**	**0.330032666**	**0.00011668**
ALDOC	**ILMN_15767**	**NM_005165.2**	**-0.516607321**	**0.599294042**	**0.00077976**
PIP5K2A	**ILMN_6957**	**NM_005028.3**	**-0.517743119**	**0.766986504**	**0.00000226**
CCNB1IP1	**ILMN_16420**	**NM_021178.2**	**-0.518250647**	**0.8164184**	**0.00000075**
MLLT11	**ILMN_21397**	**NM_006818.3**	**-0.518730151**	**0.456654026**	**0.00009982**

DNAJB9	**ILMN_14354**	**NM_012328.1**	**-0.520897603**	**0.409938084**	**0.00286409**
IL32	**ILMN_3781**	**NM_001012632.1**	**-0.522542869**	**0.44597114**	**0.00295954**
C10orf58	**ILMN_17906**	**NM_032333.2**	**-0.529379401**	**0.490332648**	**0.00003745**
ACTR8	**ILMN_13548**	**NM_022899.3**	**-0.529602637**	**0.57196257**	**0.00006576**
FTS	**ILMN_9667**	**NM_022476.2**	**-0.537860477**	**0.34369181**	**0.00399328**
C10orf104	**ILMN_7723**	**NM_173473.2**	**-0.538052773**	**0.406663671**	**0.00136886**
FLJ38451	**ILMN_19229**	**NM_175872.3**	**-0.538937665**	**0.495254186**	**0.00114409**
ZNF545	**ILMN_15084**	**NM_133466.1**	**-0.550666864**	**0.666747897**	**0.00002844**
FYN	**ILMN_5919**	**NM_002037.3**	**-0.551294472**	**0.644773866**	**0.00023300**
C9orf30	**ILMN_15668**	**NM_080655.1**	**-0.551461916**	**0.564346926**	**0.00012317**
PTPN4	**ILMN_29562**	**NM_002830.2**	**-0.552003607**	**0.518687009**	**0.00005066**
LOC81558	**ILMN_29450**	**NM_030802.2**	**-0.555552873**	**0.386435279**	**0.00176926**
ARHGAP10	**ILMN_24582**	**NM_024605.3**	**-0.555899324**	**0.658071995**	**0.00024664**
RNF144	**ILMN_15740**	**NM_014746.2**	**-0.558532274**	**0.398131551**	**0.00229456**
PRAF1	**ILMN_2978**	**NM_022490.1**	**-0.558972433**	**0.701645712**	**0.00001024**
NDFIP2	**ILMN_23410**	**NM_019080.1**	**-0.564231612**	**0.273391931**	**0.00514154**
HAPLN3	**ILMN_19816**	**NM_178232.2**	**-0.565399962**	**0.479939961**	**0.00441729**
CCDC58	**ILMN_27140**	**NM_001017928.2**	**-0.568494148**	**0.626422203**	**0.00010018**
TPST2	**ILMN_13248**	**NM_001008566.1**	**-0.568686202**	**0.407049282**	**0.00051135**
RAB7L1	**ILMN_27192**	**NM_003929.1**	**-0.576039588**	**0.826731839**	**0.00000008**
LAX1	**ILMN_29004**	**NM_017773.2**	**-0.576809737**	**0.715075083**	**0.00000556**
TUBE1	**ILMN_7563**	**NM_016262.3**	**-0.579367228**	**0.372958665**	**0.00033726**
SFXN1	**ILMN_16398**	**NM_022754.4**	**-0.58091346**	**0.523626325**	**0.00185844**
ACACB	**ILMN_3318**	**NM_001093.2**	**-0.582496141**	**0.647708036**	**0.00095975**
TBCC	**ILMN_25053**	**NM_003192.1**	**-0.585662135**	**0.47986098**	**0.00022676**
CBR3	**ILMN_8256**	**NM_001236.3**	**-0.587778543**	**0.576774225**	**0.00006243**
SATB1	**ILMN_6836**	**NM_002971.2**	**-0.59024576**	**0.491733379**	**0.00029065**
MGC17330	**ILMN_15026**	**NM_052880.3**	**-0.592236188**	**0.554114679**	**0.00105096**
VIPR1	**ILMN_27565**	**NM_004624.2**	**-0.593070326**	**0.451776741**	**0.00062580**

NPDC1	**ILMN_5190**	**NM_015392.2**	**-0.593493903**	**0.51503047**	**0.00186892**
AGMAT	**ILMN_24467**	**NM_024758.3**	**-0.595396271**	**0.460747866**	**0.00275354**
ZNF184	**ILMN_22535**	**NM_007149.1**	**-0.597689887**	**0.368618408**	**0.00486717**
PRR7	**ILMN_17178**	**NM_030567.2**	**-0.604413556**	**0.536832382**	**0.00286203**
SMPD1	**ILMN_8257**	**NM_001007593.1**	**-0.604949755**	**0.538651833**	**0.00161182**
BRF2	**ILMN_2966**	**NM_018310.2**	**-0.606067504**	**0.573735878**	**0.00010726**
PTGER4	**ILMN_13328**	**NM_000958.2**	**-0.606450332**	**0.562488851**	**0.00001934**
FEZ1	**ILMN_419**	**NM_022549.2**	**-0.609292102**	**0.457577683**	**0.00682154**
SDCCAG33	**ILMN_138968**	**NM_005786.3**	**-0.614368954**	**0.635549907**	**0.00001713**
DPP4	**ILMN_20248**	**NM_001935.3**	**-0.618288342**	**0.45091084**	**0.00176525**
PNRC1	**ILMN_24710**	**NM_006813.1**	**-0.628831373**	**0.489596307**	**0.00111420**
FLJ20152	**ILMN_139301**	**NM_019000.2**	**-0.634230056**	**0.456511434**	**0.00109561**
MAN1C1	**ILMN_12633**	**NM_020379.1**	**-0.635341768**	**0.48916714**	**0.00048381**
SOX8	**ILMN_30180**	**NM_014587.2**	**-0.638937302**	**0.457483381**	**0.00089229**
CACNA2D2	**ILMN_15989**	**NM_001005505.1**	**-0.647755763**	**0.613426228**	**0.00134567**
DNAJB1	**ILMN_19740**	**NM_006145.1**	**-0.647877454**	**0.474267591**	**0.00101160**
TXK	**ILMN_19719**	**NM_003328.1**	**-0.649402059**	**0.355423427**	**0.00273011**
PKIA	**ILMN_4343**	**NM_006823.2**	**-0.651907566**	**0.461906271**	**0.00001972**
ZBTB16	**ILMN_11903**	**NM_006006.4**	**-0.654391514**	**0.523059876**	**0.00196632**
HSPA8	**ILMN_14829**	**NM_153201.1**	**-0.659647107**	**0.627352179**	**0.00000291**
LEF1	**ILMN_30265**	**NM_016269.2**	**-0.664492864**	**0.374513301**	**0.00142701**
ABHD14B	**ILMN_24812**	**NM_032750.1**	**-0.667660274**	**0.753596144**	**0.00000440**
RPL14	**ILMN_138835**	**NM_003973.2**	**-0.671818838**	**0.42344653**	**0.00348419**
PITPNC1	**ILMN_12660**	**NM_181671.1**	**-0.675741411**	**0.763012992**	**0.00000200**
LPHN1	**ILMN_12017**	**NM_014921.3**	**-0.680224127**	**0.555516456**	**0.00003588**
MGAT4A	**ILMN_139237**	**NM_012214.1**	**-0.686439815**	**0.588282515**	**0.00020394**
GIMAP7	**ILMN_2211**	**NM_153236.3**	**-0.688384375**	**0.309418302**	**0.00108814**
GFI1	**ILMN_30079**	**NM_005263.2**	**-0.688429664**	**0.810063077**	**0.00000287**
STAT4	**ILMN_8937**	**NM_003151.2**	**-0.69335148**	**0.741700081**	**0.00001454**

TGFBR3	**ILMN_22620**	**NM_003243.2**	**-0.695968502**	**0.697370522**	**0.00024601**
NAP1L5	**ILMN_5355**	**NM_153757.1**	**-0.696281078**	**0.482970013**	**0.00118408**
TRAT1	**ILMN_24557**	**NM_016388.2**	**-0.701865172**	**0.431978638**	**0.00022583**
PIM2	**ILMN_27932**	**NM_006875.2**	**-0.705939469**	**0.745720347**	**0.00000049**
MGC15763	**ILMN_137229**	**NM_138381.1**	**-0.707467198**	**0.452639641**	**0.00160886**
LCMT2	**ILMN_7283**	**NM_014793.3**	**-0.708548025**	**0.676237692**	**0.00000198**
PLCG1	**ILMN_3773**	**NM_002660.2**	**-0.713682121**	**0.584297133**	**0.00056091**
IL18RAP	**ILMN_16084**	**NM_003853.2**	**-0.715943068**	**0.595867225**	**0.00016263**
CD5	**ILMN_29547**	**NM_014207.2**	**-0.719666211**	**0.501385904**	**0.00212931**
FAM84B	**ILMN_7137**	**NM_174911.3**	**-0.72095523**	**0.66943369**	**0.00000022**
NCR3	**ILMN_19702**	**NM_147130.1**	**-0.724076246**	**0.486364877**	**0.00400738**
TSEN54	**ILMN_8569**	**NM_207346.1**	**-0.727498633**	**0.599435131**	**0.00170913**
FLT3LG	**ILMN_4754**	**NM_001459.2**	**-0.727594431**	**0.672271482**	**0.00038973**
TKTL1	**ILMN_23315**	**NM_012253.2**	**-0.727847582**	**0.605461651**	**0.00069483**
CTLA4	**ILMN_138103**	**NM_005214.2**	**-0.738130072**	**0.934673244**	**0.00000139**
SOCS1	**ILMN_3038**	**NM_003745.1**	**-0.739455522**	**0.502522482**	**0.00313209**
ELA1	**ILMN_24603**	**NM_001971.4**	**-0.744576877**	**0.725031145**	**0.00029205**
CD8A	**ILMN_2358**	**NM_001768.4**	**-0.744678001**	**0.594696025**	**0.00026942**
ITK	**ILMN_23317**	**NM_005546.3**	**-0.745007112**	**0.704824671**	**0.00008908**
TCEA3	**ILMN_27218**	**NM_003196.1**	**-0.750750252**	**0.592066255**	**0.00023655**
ICOS	**ILMN_9996**	**NM_012092.2**	**-0.75237042**	**0.513242042**	**0.00046944**
KLRG1	**ILMN_12613**	**NM_005810.3**	**-0.774039085**	**0.254607132**	**0.00294923**
AXIN2	**ILMN_26857**	**NM_004655.2**	**-0.805082477**	**0.436443044**	**0.00158082**
BCL9L	**ILMN_27555**	**NM_182557.1**	**-0.807656854**	**0.554059637**	**0.00141276**
CD248	**ILMN_25766**	**NM_020404.2**	**-0.812370151**	**0.463357687**	**0.00238338**
FHIT	**ILMN_15082**	**NM_002012.1**	**-0.820857634**	**0.578811154**	**0.00019084**
C10orf35	**ILMN_13661**	**NM_145306.1**	**-0.828257411**	**0.58713647**	**0.00010833**
GPR171	**ILMN_21194**	**NM_013308.2**	**-0.832290597**	**0.331305728**	**0.00290693**
PTPRM	**ILMN_19957**	**NM_002845.2**	**-0.832917155**	**0.636816195**	**0.00008494**

CD2	**ILMN_6738**	**NM_001767.2**	**-0.840438326**	**0.646691342**	**0.00000117**
PDZD4	**ILMN_3986**	**NM_032512.2**	**-0.86138807**	**0.603890033**	**0.00013770**
BAMBI	**ILMN_8469**	**NM_012342.2**	**-0.871810097**	**0.502263163**	**0.00294778**
PLEKHB1	**ILMN_2859**	**NM_021200.1**	**-0.878172562**	**0.839629344**	**0.00000692**
HOXB2	**ILMN_137588**	**NM_002145.2**	**-0.884877446**	**0.551939309**	**0.00030257**
PAFAH2	**ILMN_3410**	**NM_000437.2**	**-0.8943644**	**0.892782604**	**0.00000000**
MAL	**ILMN_3411**	**NM_002371.2**	**-0.895921565**	**0.925808311**	**0.00000271**
SERPINE2	**ILMN_1946**	**NM_006216.2**	**-0.904483902**	**0.45419718**	**0.00008303**
C6orf105	**ILMN_10287**	**NM_032744.1**	**-0.909531884**	**0.664422571**	**0.00002912**
CD3E	**ILMN_24240**	**NM_000733.2**	**-0.93235239**	**0.629082883**	**0.00000614**
CD69	**ILMN_13491**	**NM_001781.1**	**-0.942527846**	**0.457624176**	**0.00064713**
PTGDS	**ILMN_19248**	**NM_000954.5**	**-0.946494867**	**0.505533305**	**0.00175037**
GIMAP5	**ILMN_27010**	**NM_018384.3**	**-0.953022963**	**0.419538221**	**0.00201391**
HSPA1B	**ILMN_25549**	**NM_005346.3**	**-0.953328978**	**0.212241703**	**0.00269290**
PPP2R2B	**ILMN_1007**	**NM_181676.1**	**-0.965173716**	**0.615737601**	**0.00006002**
EOMES	**ILMN_19998**	**NM_005442.2**	**-0.968337892**	**0.470291119**	**0.00028010**
H2AFX	**ILMN_23585**	**NM_002105.2**	**-0.97692086**	**0.813438146**	**0.00000330**
GZMH	**ILMN_10239**	**NM_033423.2**	**-0.98083047**	**0.527411198**	**0.00060255**
CITED4	**ILMN_15271**	**NM_133467.2**	**-0.984893442**	**0.765096915**	**0.00000350**
CCDC65	**ILMN_22276**	**NM_033124.2**	**-0.990896676**	**0.575384317**	**0.00024815**
KSP37	**ILMN_16684**	**NM_031950.2**	**-0.999642264**	**0.681807509**	**0.00001688**
ZNF683	**ILMN_2307**	**NM_173574.1**	**-1.032728562**	**0.562264358**	**0.00193259**
TARP	**ILMN_25716**	**NM_001003799.1**	**-1.051625612**	**0.64274719**	**0.00000020**
ADRB2	**ILMN_2022**	**NM_000024.3**	**-1.055053118**	**0.847589262**	**0.00000011**
FEZ1	**ILMN_28992**	**NM_005103.3**	**-1.127136623**	**0.763414541**	**0.00001994**
GNLY	**ILMN_13145**	**NM_012483.1**	**-1.148412672**	**0.821905939**	**0.00000141**
BATF	**ILMN_3307**	**NM_006399.2**	**-1.174102973**	**0.519569456**	**0.00332655**
AKR1C3	**ILMN_11871**	**NM_003739.4**	**-1.189643568**	**0.627865296**	**0.00000337**
IL23A	**ILMN_20797**	**NM_016584.2**	**-1.232537149**	**0.588923763**	**0.00009415**

Supp. Table S2C. *SOS1* signature (75 probes, 73 genes)					
Symbol	**TargetID**	**Accession**	**L2R Disease/CTRL**	**ABS SNR Disease/CTRL**	**T-test p-value Disease vs Control**
RALGPS2	ILMN_701	NM_018037.1	0.887552664	0.448616072	0.00161622
PHF20L1	ILMN_25591	NM_032205.2	0.886871298	0.381517999	0.00038379
KLHL24	ILMN_26914	NM_017644.3	0.789824755	0.505242446	0.00002312
EIF2AK3	ILMN_26832	NM_004836.3	0.785432084	0.046890124	0.00339153
PTBP2	ILMN_556	NM_021190.1	0.779793993	0.183024136	0.00664570
MTMR6	ILMN_29967	NM_004685.2	0.777000277	0.232481964	0.00177702
ZNF529	ILMN_24517	NM_020951.1	0.768697038	0.137110056	0.00000472
CHD7	ILMN_29669	NM_017780.2	0.763311195	0.053506036	0.00053082
WDR33	ILMN_6704	NM_001006623.1	0.762698764	0.557560131	0.00884851
KIAA0776	ILMN_26630	NM_015323.2	0.732036421	0.464464474	0.00038782
SFRS12	ILMN_8967	NM_139168.1	0.731518633	0.184442106	0.00041407
RUNDC2A	ILMN_705	NM_032167.1	0.721018309	0.284472895	0.00366201
GABPA	ILMN_28392	NM_002040.2	0.704789114	0.592919139	0.00187652
RICTOR	ILMN_2994	NM_152756.3	0.691392413	0.120805648	0.00227054
MTSS1	ILMN_7083	NM_014751.2	0.682974828	0.717204372	0.00112968
IFT57	ILMN_21390	NM_018010.2	0.675190082	0.229633029	0.00070011
ADAM9	ILMN_922	NM_003816.2	0.666180851	0.559339882	0.00378554
FAM76B	ILMN_22478	NM_144664.3	0.66576136	0.23771187	0.00010042
N4BP2	ILMN_7118	NM_018177.2	0.655425286	0.033654735	0.00172032
RRM2B	ILMN_11053	NM_015713.3	0.646273865	0.346860048	0.00848695
PFKFB2	ILMN_12195	NM_006212.2	0.617236289	0.527917721	0.00735058
ZNF238	ILMN_5128	NM_205768.1	0.610480963	0.060455926	0.00135583
KLHL2	ILMN_24870	NM_007246.2	0.604165553	0.60291658	0.00161532

YTHDC2	**ILMN_23803**	**NM_022828.2**	**0.59555144**	**0.496064684**	**0.00614677**
POGZ	**ILMN_14081**	**NM_145796.2**	**0.583319511**	**0.614652705**	**0.00282129**
GMFB	**ILMN_14672**	**NM_004124.2**	**0.581168767**	**0.529244679**	**0.00157471**
OTUD6B	**ILMN_22397**	**NM_016023.2**	**0.56912336**	**0.304742464**	**0.00025795**
REV3L	**ILMN_17913**	**NM_002912.1**	**0.554148355**	**0.157091571**	**0.00791183**
APRIN	**ILMN_20213**	**NM_015032.1**	**0.554085012**	**0.273969544**	**0.00094423**
FBXL3	**ILMN_4998**	**NM_012158.1**	**0.551660242**	**0.218317691**	**0.00013307**
STIL	**ILMN_13235**	**NM_003035.1**	**0.545234399**	**0.287286475**	**0.00068769**
TMEM41B	**ILMN_8205**	**NM_015012.1**	**0.522333116**	**0.303516321**	**0.00269601**
CST6	**ILMN_20022**	**NM_001323.2**	**0.511932826**	**0.534088911**	**0.00921454**
GOLT1B	**ILMN_5124**	**NM_016072.2**	**0.510560422**	**0.202116925**	**0.00346801**
FUT8	**ILMN_9754**	**NM_178154.1**	**0.505064035**	**0.08981082**	**0.00698557**
NKTR	**ILMN_23378**	**NM_005385.3**	**0.50434282**	**0.294652457**	**0.00811464**
C6orf125	**ILMN_21424**	**NM_032340.1**	**-0.511492388**	**0.101057435**	**0.00762676**
MRPL34	**ILMN_5839**	**NM_023937.2**	**-0.511956713**	**0.348464173**	**0.00321254**
HSPA8	**ILMN_14829**	**NM_153201.1**	**-0.512721673**	**0.627352179**	**0.00056648**
CD2	**ILMN_6738**	**NM_001767.2**	**-0.522321422**	**0.646691342**	**0.00917697**
DOK2	**ILMN_137779**	**NM_201349.1**	**-0.523050722**	**0.190787501**	**0.00805286**
STIP1	**ILMN_28761**	**NM_006819.1**	**-0.525327079**	**0.124331572**	**0.00095539**
OAZ2	**ILMN_28141**	**NM_002537.1**	**-0.53824496**	**0.092826187**	**0.00356120**
LOC84661	**ILMN_18534**	**NM_032574.2**	**-0.548863028**	**0.216935995**	**0.00012449**
ACD	**ILMN_5907**	**NM_022914.1**	**-0.553579904**	**0.602229848**	**0.00137820**
LAX1	**ILMN_29004**	**NM_017773.2**	**-0.55474973**	**0.715075083**	**0.00188353**
IL27RA	**ILMN_9407**	**NM_004843.2**	**-0.562860221**	**0.10261292**	**0.00878351**
ARHGAP10	**ILMN_24582**	**NM_024605.3**	**-0.563466431**	**0.658071995**	**0.00152804**
TNFSF12	**ILMN_24599**	**NM_003809.2**	**-0.56770749**	**0.022913821**	**0.00272199**
PRUNE	**ILMN_27601**	**NM_021222.1**	**-0.586301157**	**0.552904262**	**0.00028104**
CTLA4	**ILMN_138103**	**NM_005214.2**	**-0.597555801**	**0.934673244**	**0.00243881**
LOC340061	**ILMN_18797**	**NM_198282.1**	**-0.598431803**	**0.147162724**	**0.00052177**

MAF	**ILMN_15072**	**NM_005360.3**	**-0.62329548**	**0.565299503**	**0.00302416**
PIP5K2A	**ILMN_6957**	**NM_005028.3**	**-0.62350074**	**0.766986504**	**0.00205711**
PSTPIP1	**ILMN_28119**	**NM_003978.2**	**-0.631863194**	**0.361537535**	**0.00139096**
ACACB	**ILMN_3318**	**NM_001093.2**	**-0.6348178**	**0.647708036**	**0.00745327**
TRAFD1	**ILMN_21539**	**NM_006700.1**	**-0.637847522**	**0.124969592**	**0.00050092**
F8A1	**ILMN_23293**	**NM_012151.3**	**-0.654659866**	**0.491539841**	**0.00294327**
CD300A	**ILMN_20704**	**NM_007261.2**	**-0.655556789**	**0.004475384**	**0.00771681**
GFI1	**ILMN_30079**	**NM_005263.2**	**-0.657538415**	**0.810063077**	**0.00106955**
DNAJB6	**ILMN_7651**	**NM_058246.3**	**-0.657540414**	**0.136315949**	**0.00094113**
CD244	**ILMN_7885**	**NM_016382.2**	**-0.678423036**	**0.064757497**	**0.00103571**
GALM	**ILMN_10698**	**NM_138801.1**	**-0.681834064**	**0.359664965**	**0.00008995**
TPST2	**ILMN_13248**	**NM_001008566.1**	**-0.769125088**	**0.407049282**	**0.00239127**
ASCL2	**ILMN_18051**	**NM_005170.2**	**-0.772775101**	**0.106077588**	**0.00417781**
GNLY	**ILMN_13145**	**NM_012483.1**	**-0.875999817**	**0.821905939**	**0.00579909**
LOC442535	**ILMN_16993**	**NM_001013738.1**	**-0.889737645**	**0.275652692**	**0.00467506**
GLRX	**ILMN_22606**	**NM_002064.1**	**-0.890483179**	**0.052715708**	**0.00059598**
APOBEC3G	**ILMN_15884**	**NM_021822.1**	**-0.893364866**	**0.380714828**	**0.00376115**
ADRB2	**ILMN_2022**	**NM_000024.3**	**-0.915472812**	**0.847589262**	**0.00010301**
ELA1	**ILMN_24603**	**NM_001971.4**	**-0.916899993**	**0.725031145**	**0.00159014**
TARP	**ILMN_25716**	**NM_001003799.1**	**-1.030821564**	**0.64274719**	**0.00032237**
EOMES	**ILMN_19998**	**NM_005442.2**	**-1.172206716**	**0.470291119**	**0.00070222**

Supp. Table S2D. *SHOC2* signature (1407 probes, 1394 genes)					
Symbol	TargetID	Accession	L2R Disease/CTRL	ABS SNR Disease/CTRL	T-test p-value Disease vs Control
P2RY13	ILMN_9350	NM_176894.1	3.230795638	2.030205509	0.00001198
NCF1	ILMN_136961	NM_000265.1	3.004866306	2.360147597	0.00000080
MS4A6A	ILMN_2009	NM_022349.2	2.944993248	1.909673758	0.00004979
PDK4	ILMN_23211	NM_002612.2	2.917049119	1.36453749	0.00000847
SLC25A20	ILMN_29792	NM_000387.3	2.777594697	1.901681385	0.00000428
TRIM5	ILMN_760	NM_033034.1	2.561102611	1.686441216	0.00002655
CD79B	ILMN_139125	NM_000626.1	2.55830839	1.080894212	0.00048045
TNFSF10	ILMN_22827	NM_003810.2	2.430831207	1.68313466	0.00000525
LTF	ILMN_20816	NM_002343.2	2.415277282	1.137858007	0.00008957
MARCH1	ILMN_30212	NM_017923.2	2.400620779	1.559775716	0.00003376
PSMB8	ILMN_12139	NM_148919.3	2.372593273	1.806981162	0.00002239
HSPA1A	ILMN_6623	NM_005345.4	2.346566122	1.635865024	0.00041219
FGL2	ILMN_19861	NM_006682.1	2.268977886	1.920709435	0.00000936
VNN1	ILMN_14011	NM_004666.1	2.257784258	1.193513682	0.00016922
ARHGAP30	ILMN_15952	NM_001025598.1	2.255861969	1.586025349	0.00002175
GCA	ILMN_25626	NM_012198.2	2.197907204	1.703770495	0.00007464
OAS1	ILMN_2958	NM_016816.2	2.160455366	1.034754352	0.00009705
SNAP23	ILMN_29211	NM_003825.2	2.159463633	2.375349613	0.00000160
NFE2	ILMN_5749	NM_006163.1	2.125813345	1.404932233	0.00024891
FLJ33641	ILMN_2666	NM_152687.1	2.117646439	1.355499921	0.00005480
CD1D	ILMN_926	NM_001766.2	2.115842557	1.398556308	0.00035065
CLEC12A	ILMN_24114	NM_201625.1	2.106645106	1.864408376	0.00000426
ECGF1	ILMN_18760	NM_001953.2	2.044651326	1.166814773	0.00008155

GRN	ILMN_18655	NM_002087.2	2.03746384	1.669620931	0.00000234
TLR5	ILMN_18399	NM_003268.3	2.030218218	1.458223711	0.00023624
C4orf18	ILMN_657	NM_016613.4	2.002013059	1.060512331	0.00086947
TSCOT	ILMN_10869	NM_033051.2	1.977658192	1.470729682	0.00000801
FZD2	ILMN_12499	NM_001466.2	1.970187777	1.39558521	0.00004423
AIM2	ILMN_10231	NM_004833.1	1.952499983	1.452545483	0.00021779
IDH1	ILMN_14217	NM_005896.2	1.939463119	2.996203368	0.00000001
CX3CR1	ILMN_8593	NM_001337.3	1.935125349	1.317200409	0.00084901
GIMAP4	ILMN_26906	NM_018326.2	1.891877366	1.236698351	0.00013957
SASH1	ILMN_22260	NM_015278.3	1.869888573	1.605883404	0.00000252
OPN3	ILMN_26329	NM_001030012.1	1.869768692	1.815957077	0.00000269
MS4A6A	ILMN_1889	NM_152851.1	1.85318862	1.571238152	0.00006337
EVA1	ILMN_23335	NM_005797.2	1.845981029	1.278843117	0.00143771
NYD-SP21	ILMN_8529	NM_032597.2	1.83140234	1.405564479	0.00001489
CACNA2D3	ILMN_1908	NM_018398.2	1.829719711	1.168758985	0.00099030
MS4A3	ILMN_12025	NM_006138.4	1.81966477	1.178663506	0.00024345
MOSC1	ILMN_12517	NM_022746.2	1.80056635	1.08435644	0.00199068
ARFIP1	ILMN_15855	NM_014447.2	1.797399489	1.367232965	0.00009893
RNASE6	ILMN_14848	NM_005615.2	1.790511733	1.572275665	0.00000278
C14orf106	ILMN_5745	NM_018353.3	1.777748886	1.422897874	0.00001448
CEBPA	ILMN_27029	NM_004364.2	1.714680868	1.690296094	0.00004032
GIYD2	ILMN_25461	NM_178044.1	1.710230986	1.724065013	0.00000013
SEPX1	ILMN_7309	NM_016332.2	1.693931767	1.463290318	0.00024722
MOSPD2	ILMN_28307	NM_152581.1	1.686127391	1.195339716	0.00096150
CPNE8	ILMN_20089	NM_153634.2	1.676253065	1.272978087	0.00015784
CGI-38	ILMN_754	NM_015964.2	1.670439728	1.419306976	0.00022466
FAM26B	ILMN_19907	NM_015916.3	1.667037179	1.502766599	0.00009401
CD1A	ILMN_21799	NM_001763.1	1.654779216	1.541206072	0.00002028
ASGR1	ILMN_17580	NM_001671.2	1.642663186	1.127094292	0.00205181
SLIC1	ILMN_511	NM_182854.1	1.636866235	2.299482343	0.00000086
RTN1	ILMN_5569	NM_206857.1	1.630076214	0.889419362	0.00527996

APAF1	**ILMN_886**	**NM_181869.1**	**1.618807555**	**1.254949416**	**0.00092721**
M6PR	**ILMN_1682**	**NM_002355.2**	**1.618699365**	**1.266933529**	**0.00292618**
CD33	**ILMN_24441**	**NM_001772.2**	**1.617540554**	**1.279741937**	**0.00041582**
SLC25A24	**ILMN_15753**	**NM_013386.2**	**1.615632189**	**2.428121735**	**0.00000001**
CDK5RAP3	**ILMN_11403**	**NM_176095.1**	**1.615563142**	**1.296025136**	**0.00057345**
C10orf26	**ILMN_28562**	**NM_017787.3**	**1.595433956**	**1.558311538**	**0.00006121**
FN5	**ILMN_9654**	**NM_020179.1**	**1.593991929**	**1.803744426**	**0.00000975**
CYSLTR1	**ILMN_6966**	**NM_006639.2**	**1.584931332**	**1.485848853**	**0.00001350**
GPR177	**ILMN_2573**	**NM_001002292.1**	**1.562854266**	**1.082985034**	**0.00014765**
NPL	**ILMN_25291**	**NM_030769.1**	**1.562676534**	**1.43823841**	**0.00002591**
VPS35	**ILMN_21093**	**NM_018206.3**	**1.558138081**	**1.255233608**	**0.00041318**
CARD9	**ILMN_22365**	**NM_052813.2**	**1.55061094**	**0.937118385**	**0.00505249**
CASP1	**ILMN_10621**	**NM_033294.2**	**1.544866623**	**1.590869349**	**0.00000234**
SAMD9L	**ILMN_27133**	**NM_152703.2**	**1.536758823**	**1.039672893**	**0.00453992**
PRDX3	**ILMN_13029**	**NM_014098.2**	**1.530538083**	**2.621818437**	**0.00000001**
LILRA5	**ILMN_13562**	**NM_181986.1**	**1.528860757**	**0.798056866**	**0.00158893**
OSCAR	**ILMN_3784**	**NM_130771.2**	**1.518568683**	**1.005731609**	**0.00099353**
PFC	**ILMN_24742**	**NM_002621.1**	**1.501891159**	**1.020923486**	**0.00072327**
PARP9	**ILMN_12926**	**NM_031458.1**	**1.501029114**	**1.241277617**	**0.00003846**
SNX27	**ILMN_17828**	**NM_030918.5**	**1.498350472**	**1.290904726**	**0.00039031**
PRAM1	**ILMN_14804**	**NM_032152.3**	**1.495831227**	**0.983108985**	**0.00085923**
STK3	**ILMN_26935**	**NM_006281.1**	**1.487965795**	**1.169490975**	**0.00043491**
AP1S2	**ILMN_3812**	**NM_003916.3**	**1.481318788**	**1.497126236**	**0.00001992**
LACTB2	**ILMN_18082**	**NM_016027.1**	**1.478527427**	**0.919008169**	**0.00279394**
TUBB	**ILMN_23399**	**NM_178014.2**	**1.468843269**	**1.281248771**	**0.00012956**
CAMK1	**ILMN_21373**	**NM_003656.3**	**1.465942141**	**1.328031684**	**0.00004837**
TLR10	**ILMN_6615**	**NM_030956.2**	**1.465748435**	**0.652237676**	**0.00819716**
RAB37	**ILMN_8592**	**NM_001006638.1**	**1.459212098**	**1.176481542**	**0.00100970**
CYBRD1	**ILMN_4649**	**NM_024843.2**	**1.458125986**	**1.268588969**	**0.00052254**
ANP32C	**ILMN_11992**	**NM_012403.1**	**1.453611232**	**0.954665537**	**0.00066597**
NAGK	**ILMN_4544**	**NM_017567.2**	**1.451197882**	**1.58243748**	**0.00000213**

TMEM55A	**ILMN_7212**	NM_018710.1	1.444584606	0.878598912	0.00771716
CEPT1	**ILMN_14637**	NM_006090.3	1.444163158	2.02435451	0.00000063
PECAM1	**ILMN_7862**	NM_000442.2	1.438004735	1.83143722	0.00000478
CD74	**ILMN_21963**	NM_001025159.1	1.434686147	0.972479846	0.00394973
LOC201895	**ILMN_6140**	NM_174921.1	1.431649983	1.617044642	0.00005280
WDR68	**ILMN_17716**	NM_005828.2	1.429422312	1.385745393	0.00028199
METTL3	**ILMN_13907**	NM_019852.2	1.42548153	0.91222508	0.00603552
LSM12	**ILMN_1510**	NM_152344.1	1.421361357	1.494939354	0.00046771
RAB10	**ILMN_21971**	NM_016131.2	1.417506897	1.724175804	0.00004435
RAB27A	**ILMN_26122**	NM_004580.3	1.415857452	2.439981834	0.00000007
PAK1	**ILMN_3895**	NM_002576.3	1.415428263	1.303528125	0.00000166
CYBB	**ILMN_13274**	NM_000397.2	1.408817731	1.339757578	0.00001259
GLCE	**ILMN_19408**	NM_015554.1	1.404828092	1.161063267	0.00063160
DAPK1	**ILMN_138506**	NM_004938.1	1.383669259	1.109733929	0.00016452
S100Z	**ILMN_16143**	NM_130772.1	1.382269138	0.991665875	0.00036217
STX7	**ILMN_23974**	NM_003569.1	1.38222876	1.653208921	0.00002049
RNF135	**ILMN_26639**	NM_032322.3	1.38208812	1.298243602	0.00018183
GOLPH3L	**ILMN_29707**	NM_018178.3	1.370986633	1.36453176	0.00063959
TST	**ILMN_24453**	NM_003312.4	1.369690016	1.136440543	0.00095333
SNX10	**ILMN_21992**	NM_013322.2	1.367198902	1.206295261	0.00011743
ZNF537	**ILMN_19320**	NM_020856.1	1.364283648	0.983156622	0.00049673
DPYD	**ILMN_19002**	NM_000110.2	1.360575553	1.221184847	0.00020880
THOC3	**ILMN_17969**	NM_032361.1	1.337370852	1.296516098	0.00010001
JAK2	**ILMN_12566**	NM_004972.2	1.336837147	1.157759338	0.00107764
CBR4	**ILMN_15505**	NM_032783.3	1.331554916	0.924736371	0.00572523
C6orf150	**ILMN_18812**	NM_138441.1	1.328798487	1.273871485	0.00029292
CNN2	**ILMN_26898**	NM_004368.2	1.328259599	0.862321574	0.00400179
FGR	**ILMN_21930**	NM_005248.1	1.327363076	1.39145794	0.00019357
CHN2	**ILMN_16218**	NM_004067.1	1.324958877	1.614430996	0.00000029
AMICA1	**ILMN_14597**	NM_153206.1	1.319782187	1.08065251	0.00325652
ZFP106	**ILMN_6305**	NM_022473.1	1.319592806	1.607493451	0.00000090

IGSF6	**ILMN_7979**	NM_005849.1	1.319368591	1.188636367	0.00037148
AP1S1	**ILMN_21653**	NM_001283.2	1.318735553	1.576995383	0.00001459
MCTP1	**ILMN_2499**	NM_001002796.1	1.315723721	1.202471994	0.00013997
ALDH3B1	**ILMN_26797**	NM_001030010.1	1.312159263	0.893300708	0.00194706
NFE2L3	**ILMN_21009**	NM_004289.5	1.308752905	1.300277296	0.00001069
MDM4	**ILMN_137381**	NM_002393.1	1.297256916	1.26641401	0.00155630
RP2	**ILMN_28618**	NM_006915.1	1.294332883	1.424661662	0.00003362
SLC35A1	**ILMN_23284**	NM_006416.2	1.290268239	1.163704098	0.00047859
KIAA1598	**ILMN_4741**	NM_018330.3	1.288926615	0.849412435	0.00370318
IL10RB	**ILMN_26097**	NM_000628.3	1.287949998	1.719776558	0.00000093
HNRPK	**ILMN_16515**	NM_031263.1	1.282519412	1.010295796	0.00375171
NUDT16	**ILMN_16023**	NM_152395.1	1.281298901	1.154766657	0.00007469
SLC35B3	**ILMN_20545**	NM_015948.2	1.278877271	1.051639038	0.00421060
LAT2	**ILMN_137018**	NM_022040.2	1.275195973	1.42216122	0.00000064
ZNF467	**ILMN_11856**	NM_207336.1	1.270946259	0.848454305	0.00395545
SIRPB1	**ILMN_12074**	NM_006065.1	1.270200218	1.037567054	0.00175406
TUBA3	**ILMN_1089**	NM_006009.2	1.267592173	1.335001342	0.00049465
IMPA2	**ILMN_19881**	NM_014214.1	1.265450116	1.022773847	0.00125011
FLJ11151	**ILMN_19186**	NM_018340.1	1.261665971	0.765786817	0.00229595
ZDHHC1	**ILMN_29630**	NM_013304.1	1.261345131	1.08082457	0.00052442
MLKL	**ILMN_25241**	NM_152649.1	1.253941489	1.285259718	0.00022319
SLC35A5	**ILMN_26894**	NM_017945.2	1.252447978	1.715944373	0.00001005
CRLF3	**ILMN_22668**	NM_015986.2	1.248375429	1.206829585	0.00060933
LOC387921	**ILMN_1273**	NM_001017370.1	1.244008484	1.120913984	0.00296565
PPP1CA	**ILMN_26836**	NM_002708.3	1.243778007	1.055486121	0.00011791
SH2D3C	**ILMN_8703**	NM_170600.1	1.243559889	1.020589358	0.00398947
AGPAT2	**ILMN_6967**	NM_006412.3	1.241156729	1.437884834	0.00000131
PYCARD	**ILMN_1146**	NM_145183.1	1.238338965	1.182704229	0.00014653
OXR1	**ILMN_16599**	NM_181354.3	1.233515739	0.943498189	0.00535975
LOC90693	**ILMN_24365**	NM_138771.2	1.228511696	1.070906703	0.00065741
EMR1	**ILMN_12984**	NM_001974.3	1.228478331	1.205910733	0.00011219

ATG7	**ILMN_17242**	**NM_006395.1**	**1.226054413**	**1.111371355**	**0.00154238**
HSD17B4	**ILMN_23623**	**NM_000414.1**	**1.224568967**	**1.201685613**	**0.00127922**
APLP2	**ILMN_19935**	**NM_001642.1**	**1.221058814**	**0.783961377**	**0.00495608**
LYST	**ILMN_22965**	**NM_000081.2**	**1.220189239**	**0.990799094**	**0.00387086**
FKBP1A	**ILMN_29213**	**NM_054014.1**	**1.216668016**	**1.266978955**	**0.00058410**
TCHP	**ILMN_2569**	**NM_032300.2**	**1.214228384**	**0.967657406**	**0.00841717**
PTPN6	**ILMN_9886**	**NM_080549.2**	**1.213176953**	**1.147626146**	**0.00039216**
ABHD3	**ILMN_4359**	**NM_138340.3**	**1.21305899**	**1.376526741**	**0.00032576**
HS1BP3	**ILMN_1874**	**NM_022460.3**	**1.210718089**	**1.58016919**	**0.00000566**
YIPF4	**ILMN_16255**	**NM_032312.2**	**1.209690086**	**1.346340866**	**0.00002704**
MTMR11	**ILMN_137079**	**NM_181873.1**	**1.202420707**	**1.348571747**	**0.00095883**
TPARL	**ILMN_13352**	**NM_018475.2**	**1.200728921**	**1.062854741**	**0.00112553**
TRIM5	**ILMN_29177**	**NM_033092.1**	**1.19730344**	**2.098332255**	**0.00000187**
CSF1R	**ILMN_24980**	**NM_005211.2**	**1.193143878**	**1.081173199**	**0.00499259**
SLC44A1	**ILMN_22168**	**NM_022109.2**	**1.191671935**	**1.6856574**	**0.00002035**
PCMT1	**ILMN_26580**	**NM_005389.1**	**1.19084514**	**1.252373441**	**0.00023097**
C5orf14	**ILMN_16829**	**NM_024715.2**	**1.190668971**	**1.20283815**	**0.00007608**
GIT2	**ILMN_14647**	**NM_139201.1**	**1.190219346**	**2.052595042**	**0.00000291**
KIAA0513	**ILMN_21473**	**NM_014732.2**	**1.174748258**	**1.266650575**	**0.00002434**
FAF1	**ILMN_25532**	**NM_007051.2**	**1.174568781**	**1.118849274**	**0.00281882**
TSPAN3	**ILMN_10474**	**NM_005724.4**	**1.168225827**	**0.729580845**	**0.00438404**
TFCP2	**ILMN_22607**	**NM_005653.3**	**1.167647033**	**1.658661194**	**0.00005819**
TMLHE	**ILMN_29460**	**NM_018196.1**	**1.16485678**	**2.051181476**	**0.00000234**
SDHA	**ILMN_22058**	**NM_004168.1**	**1.161938606**	**1.022608707**	**0.00073498**
C14orf147	**ILMN_22701**	**NM_138288.2**	**1.160650505**	**1.112768537**	**0.00023392**
ATP6V1A	**ILMN_30226**	**NM_001690.2**	**1.15746526**	**1.754474554**	**0.00001328**
LTA4H	**ILMN_10760**	**NM_000895.1**	**1.153598722**	**1.390108277**	**0.00003130**
GIMAP2	**ILMN_20526**	**NM_015660.2**	**1.149577817**	**0.965671268**	**0.00193203**
ME2	**ILMN_2202**	**NM_002396.3**	**1.147878625**	**1.509287926**	**0.00002005**
GLB1	**ILMN_23626**	**NM_000404.1**	**1.146797283**	**1.690013295**	**0.00000041**
KIAA0859	**ILMN_17670**	**NM_015935.4**	**1.144598554**	**0.837769761**	**0.00626361**

HHEX	**ILMN_137681**	**NM_002729.2**	**1.141884003**	**0.693529229**	**0.00647935**
IL15	**ILMN_16803**	**NM_172174.1**	**1.139875458**	**0.999399656**	**0.00054676**
NUPL2	**ILMN_2154**	**NM_007342.1**	**1.139731191**	**1.168744344**	**0.00024463**
ACADM	**ILMN_16589**	**NM_000016.2**	**1.13890795**	**0.924374337**	**0.00767478**
DHRS4	**ILMN_10152**	**NM_021004.2**	**1.137404903**	**1.634207884**	**0.00000856**
GLRX	**ILMN_22606**	**NM_002064.1**	**1.133988741**	**1.803719876**	**0.00005402**
HIATL1	**ILMN_445**	**NM_032558.1**	**1.128469227**	**1.556990239**	**0.00000072**
STAT1	**ILMN_29640**	**NM_007315.2**	**1.128402116**	**1.08223707**	**0.00124515**
RB1	**ILMN_4636**	**NM_000321.1**	**1.124836729**	**1.187181876**	**0.00086606**
BTK	**ILMN_28021**	**NM_000061.1**	**1.122372599**	**1.306551293**	**0.00018635**
GBGT1	**ILMN_18833**	**NM_021996.3**	**1.120301613**	**1.09684158**	**0.00144302**
MDFIC	**ILMN_21649**	**NM_199072.2**	**1.120203591**	**1.15768588**	**0.00176315**
EVI2B	**ILMN_26505**	**NM_006495.2**	**1.114183272**	**1.318566703**	**0.00003204**
ATP6V1D	**ILMN_26737**	**NM_015994.2**	**1.113501319**	**2.043668244**	**0.00000211**
TRAPPC6B	**ILMN_28066**	**NM_177452.2**	**1.113453002**	**1.012610594**	**0.00117111**
DYNC1I2	**ILMN_26959**	**NM_001378.1**	**1.113242907**	**1.315746836**	**0.00011227**
CAT	**ILMN_13962**	**NM_001752.2**	**1.110401051**	**1.241457245**	**0.00015781**
SAP18	**ILMN_27996**	**NM_005870.3**	**1.110157199**	**1.287921816**	**0.00045564**
RASSF4	**ILMN_1013**	**NM_178145.1**	**1.106395735**	**0.702632647**	**0.00971813**
TIPRL	**ILMN_13476**	**NM_152902.3**	**1.105926761**	**0.735464056**	**0.00753054**
GNAQ	**ILMN_18320**	**NM_002072.2**	**1.102538482**	**1.09049864**	**0.00052488**
GART	**ILMN_19282**	**NM_175085.1**	**1.100182823**	**1.860993741**	**0.00000013**
RNUT1	**ILMN_3859**	**NM_005701.2**	**1.098669993**	**1.252489255**	**0.00000760**
RSHL2	**ILMN_20992**	**NM_031924.3**	**1.098121903**	**1.201616713**	**0.00061853**
STAT1	**ILMN_11054**	**NM_139266.1**	**1.092967271**	**1.242374651**	**0.00019968**
LOC147804	**ILMN_772**	**NM_001010856.1**	**1.09060459**	**0.93550762**	**0.00192963**
GBP1	**ILMN_28413**	**NM_002053.1**	**1.088077859**	**0.818098264**	**0.00455937**
P2RY5	**ILMN_1003**	**NM_005767.3**	**1.084060495**	**0.944354401**	**0.00168605**
TSNAX	**ILMN_9331**	**NM_005999.2**	**1.083748338**	**0.920206882**	**0.00344845**
MSRB2	**ILMN_1402**	**NM_012228.2**	**1.082512282**	**1.138598039**	**0.00026016**
MAX	**ILMN_1660**	**NM_197957.2**	**1.080956724**	**1.359650229**	**0.00089655**

DHRS4L2	ILMN_18916	NM_198083.1	1.0803122	1.833092933	0.00000279
CD300A	ILMN_20704	NM_007261.2	1.077905816	1.233438261	0.00011805
HPS3	ILMN_27156	NM_032383.3	1.077756305	1.166700056	0.00026715
Kua-UEV	ILMN_20084	NM_199203.1	1.077210942	0.890045394	0.00418034
VRK2	ILMN_12895	NM_006296.3	1.071093578	1.273308121	0.00006664
PIGF	ILMN_5303	NM_173074.1	1.069955594	1.32315317	0.00196465
KIAA0907	ILMN_6810	NM_014949.2	1.068392034	0.773879851	0.00546443
ITGA4	ILMN_20825	NM_000885.4	1.064564534	1.296599118	0.00066087
C14orf100	ILMN_2292	NM_016475.2	1.062074722	1.549919473	0.00005950
C20orf55	ILMN_7928	NM_031424.3	1.061601137	1.584276472	0.00005688
FLJ30655	ILMN_19208	NM_144643.1	1.060282183	0.876173172	0.00111608
PEX11B	ILMN_20603	NM_003846.1	1.06008193	1.153357146	0.00010047
RTN3	ILMN_20331	NM_006054.2	1.057527171	1.028960785	0.00040536
TRPM4	ILMN_23519	NM_017636.2	1.05591347	0.961545232	0.00029359
RHOT1	ILMN_7051	NM_001033568.1	1.053669109	1.180698251	0.00005482
STX10	ILMN_14838	NM_003765.1	1.052249524	1.128504094	0.00001413
COMMD10	ILMN_12276	NM_016144.2	1.050382398	1.495031129	0.00001106
CD1C	ILMN_25152	NM_001765.1	1.048258496	0.887735273	0.00455867
CTSS	ILMN_13149	NM_004079.3	1.045734735	0.82615845	0.00252149
WARS	ILMN_25430	NM_213646.1	1.04496961	1.189056087	0.00237587
KCNK6	ILMN_26070	NM_004823.1	1.044519702	1.771355806	0.00000007
RGS19	ILMN_137691	NM_005873.1	1.043344803	1.22908987	0.00190992
TRADD	ILMN_27933	NM_003789.2	1.04251768	1.262244624	0.00001350
CTDSP1	ILMN_13739	NM_182642.1	1.041515241	0.971166874	0.00278989
CHCHD4	ILMN_27470	NM_144636.1	1.040667368	1.271820439	0.00115294
DPYSL2	ILMN_9671	NM_001386.4	1.040441672	1.184566634	0.00043079
OSBPL11	ILMN_21883	NM_022776.3	1.040366673	0.902785221	0.00280335
PPID	ILMN_7536	NM_005038.2	1.040245336	0.920803978	0.00114088
KLRG1	ILMN_12613	NM_005810.3	1.031994693	0.951340998	0.00551552
TNRC5	ILMN_25587	NM_006586.2	1.031678935	1.226161091	0.00013477
C1orf25	ILMN_6315	NM_030934.3	1.029790058	0.922590503	0.00311092

BTN3A3	**ILMN_20620**	**NM_006994.3**	**1.02955062**	**0.986674751**	**0.00505231**
HMGCL	**ILMN_18301**	**NM_000191.2**	**1.028869289**	**0.988156967**	**0.00145224**
RNASEL	**ILMN_25186**	**NM_021133.2**	**1.028462688**	**0.908939728**	**0.00343962**
THRAP3	**ILMN_5104**	**NM_005119.2**	**1.027723448**	**1.15862836**	**0.00424330**
ERICH1	**ILMN_15474**	**NM_207332.1**	**1.02729451**	**1.505330849**	**0.00008397**
SETD3	**ILMN_27724**	**NM_199123.1**	**1.026914874**	**1.847519372**	**0.00000848**
LOC339745	**ILMN_21364**	**NM_001001664.1**	**1.025194**	**1.043785199**	**0.00044059**
SYK	**ILMN_8126**	**NM_003177.3**	**1.02306596**	**1.069140141**	**0.00058954**
LYPLAL1	**ILMN_25005**	**NM_138794.1**	**1.021749864**	**1.274393317**	**0.00017061**
CXorf38	**ILMN_24514**	**NM_144970.1**	**1.018860976**	**0.993458358**	**0.00153043**
MFSD1	**ILMN_29705**	**NM_022736.1**	**1.016547521**	**0.960614309**	**0.00809506**
COG5	**ILMN_10374**	**NM_006348.2**	**1.014274311**	**0.882601775**	**0.00214891**
CTSC	**ILMN_14007**	**NM_001814.2**	**1.01344871**	**1.853389446**	**0.00000125**
ARSD	**ILMN_23258**	**NM_001669.2**	**1.013248964**	**1.084414068**	**0.00009669**
C10orf78	**ILMN_1251**	**NM_145247.4**	**1.009571689**	**0.988084592**	**0.00097754**
IHPK2	**ILMN_4437**	**NM_001005911.1**	**1.00704733**	**0.951288743**	**0.00714339**
MGST2	**ILMN_8759**	**NM_002413.3**	**1.006871413**	**0.89556421**	**0.00323860**
PQLC3	**ILMN_138926**	**NM_152391.2**	**1.006106122**	**1.472969297**	**0.00001380**
APIP	**ILMN_15379**	**NM_015957.1**	**1.004926744**	**1.433668335**	**0.00000145**
FES	**ILMN_27340**	**NM_002005.2**	**1.002838995**	**1.0193433**	**0.00138719**
LOC51136	**ILMN_27239**	**NM_016125.2**	**1.002029878**	**1.193124036**	**0.00048848**
C1orf162	**ILMN_19455**	**NM_174896.2**	**0.99955481**	**1.402962342**	**0.00028599**
LOC441268	**ILMN_18016**	**NM_001013725.1**	**0.996288768**	**1.130499126**	**0.00002006**
GCNT1	**ILMN_28747**	**NM_001490.3**	**0.995457433**	**0.869013003**	**0.00381332**
ARL6IP6	**ILMN_11477**	**NM_152522.2**	**0.994288632**	**1.477088131**	**0.00001328**
OAZ2	**ILMN_28141**	**NM_002537.1**	**0.994156749**	**1.166412733**	**0.00001391**
FLJ40142	**ILMN_5279**	**NM_207435.1**	**0.993492071**	**1.165314596**	**0.00045441**
SP1	**ILMN_23737**	**NM_138473.2**	**0.993032055**	**1.260719548**	**0.00015175**
ATG3	**ILMN_18856**	**NM_022488.3**	**0.988228041**	**1.916410319**	**0.00000002**
LYL1	**ILMN_18317**	**NM_005583.3**	**0.987845869**	**1.06009773**	**0.00044087**
ASPHD2	**ILMN_16388**	**NM_020437.3**	**0.984948065**	**1.845832042**	**0.00000932**

DTYMK	**ILMN_13450**	NM_012145.2	0.984864928	1.210032184	0.00035093
PIGV	**ILMN_3048**	NM_017837.2	0.978814247	0.991495087	0.00284743
PROSC	**ILMN_23472**	NM_007198.2	0.977585431	1.202805016	0.00047291
CIDEB	**ILMN_11569**	NM_014430.1	0.977506182	1.25429654	0.00018715
SIRPB2	**ILMN_26592**	NM_018556.2	0.977420368	0.697565081	0.00999559
C20orf155	**ILMN_14031**	NM_019095.3	0.976876389	1.396760216	0.00013889
C3orf1	**ILMN_7612**	NM_016589.3	0.973048163	1.328604302	0.00090971
NAGA	**ILMN_21273**	NM_000262.1	0.972941111	0.743299601	0.00545547
NUP214	**ILMN_29992**	NM_005085.2	0.972928088	1.043626148	0.00010851
MTPN	**ILMN_28124**	NM_145808.1	0.967281848	1.009440702	0.00033972
SUCLA2	**ILMN_5448**	NM_003850.1	0.966750454	1.204571152	0.00003408
RNF14	**ILMN_4655**	NM_004290.3	0.965790647	1.08994806	0.00023317
SPCS3	**ILMN_14718**	NM_021928.1	0.965416591	1.255510062	0.00001553
IL17R	**ILMN_19124**	NM_014339.3	0.964912628	0.686029738	0.00622337
C7orf24	**ILMN_2391**	NM_024051.2	0.962521409	1.580715796	0.00000269
ATP8B4	**ILMN_20882**	NM_024837.2	0.960699332	1.080063592	0.00398716
CENTB2	**ILMN_8806**	NM_012287.3	0.960173513	0.856922854	0.00407885
ETNK1	**ILMN_137282**	NM_018638.3	0.960101883	1.078610828	0.00061539
C8orf70	**ILMN_13979**	NM_016010.1	0.957844064	0.932397929	0.00250075
SLC33A1	**ILMN_18559**	NM_004733.2	0.95284096	0.836978907	0.00891011
MINPP1	**ILMN_29353**	NM_004897.2	0.952445582	0.841313401	0.00437668
FLJ32028	**ILMN_2086**	NM_152680.1	0.951166051	1.157097549	0.00059476
TMEM69	**ILMN_22324**	NM_016486.2	0.94461557	1.735210786	0.00000014
TCEA1	**ILMN_15877**	NM_006756.2	0.943962517	1.032769437	0.00032666
ZFYVE21	**ILMN_1317**	NM_024071.2	0.939951758	1.266235738	0.00060070
C1GALT1C1	**ILMN_14223**	NM_001011551.1	0.939682644	1.268820331	0.00042353
MRPL18	**ILMN_14120**	NM_014161.2	0.939047175	1.211864841	0.00003859
COMMD8	**ILMN_16165**	NM_017845.2	0.938884957	1.211204735	0.00004943
SUOX	**ILMN_25326**	NM_001032386.1	0.938099751	1.116839515	0.00021507
SEC23IP	**ILMN_7522**	NM_007190.2	0.935305956	1.050976614	0.00162119
SLC27A3	**ILMN_820**	NM_024330.1	0.929556446	1.03995997	0.00420275

TRFP	ILMN_10817	NM_004275.3	0.927887255	1.031529777	0.00025827
RAB24	ILMN_21668	NM_130781.1	0.925882602	1.376496871	0.00034727
ARRB1	ILMN_7318	NM_004041.3	0.925483191	1.287394226	0.00045584
OMA1	ILMN_29719	NM_145243.3	0.923738733	1.043094562	0.00683567
MGC39633	ILMN_25725	NM_152549.1	0.922176038	0.766026212	0.00863450
NIF3L1	ILMN_20423	NM_021824.2	0.921438655	0.937519896	0.00512003
SPTLC1	ILMN_10107	NM_006415.2	0.920711882	1.135911491	0.00084213
RAB28	ILMN_13007	NM_001017979.1	0.920578297	0.870380016	0.00570634
ICAM2	ILMN_12334	NM_000873.2	0.918459715	1.379872474	0.00003721
BET1	ILMN_137098	NM_005868.3	0.915908909	1.015505469	0.00049841
DPAGT1	ILMN_10306	NM_001382.2	0.914750765	1.37671312	0.00026551
MAPK1	ILMN_1351	NM_138957.2	0.912944589	1.973641533	0.00000218
CREB1	ILMN_4653	NM_004379.2	0.912153152	1.289898949	0.00000751
FLJ11806	ILMN_22941	NM_024824.3	0.907043224	0.872607897	0.00251841
GBP4	ILMN_2749	NM_052941.2	0.906318346	0.884424018	0.00165022
UBE1C	ILMN_22726	NM_198197.1	0.906055038	1.312237849	0.00001150
HTATIP2	ILMN_16008	NM_006410.3	0.90509346	0.948238591	0.00323868
DNCL1	ILMN_137049	NM_003746.1	0.904688718	1.039220175	0.00434549
ATG16L2	ILMN_16649	NM_033388.1	0.904500406	0.687753427	0.00455909
RAB28	ILMN_23100	NM_004249.1	0.904454284	1.247203021	0.00004258
SDHD	ILMN_6353	NM_003002.1	0.903802405	0.915922902	0.00148158
CMAS	ILMN_21201	NM_018686.3	0.901806436	1.556521592	0.00002760
SLC39A3	ILMN_27676	NM_144564.4	0.899190336	1.175928733	0.00003123
GALK1	ILMN_18040	NM_000154.1	0.896328132	1.079109296	0.00381481
TMEM60	ILMN_19683	NM_032936.2	0.896262347	1.461391638	0.00006428
AHNAK	ILMN_28759	NM_001620.1	0.893847691	0.663070451	0.00502640
SNX5	ILMN_3880	NM_014426.2	0.89245185	0.888484828	0.00978382
TMED10	ILMN_4416	NM_006827.4	0.888532499	1.15987317	0.00373153
MDM1	ILMN_12153	NM_017440.2	0.885584244	1.052871085	0.00008682
LOC129531	ILMN_27516	NM_138798.1	0.884116434	1.128519561	0.00309031
MTSS1	ILMN_7083	NM_014751.2	0.882192231	0.971455139	0.00044650

FLJ20534	**ILMN_9467**	**NM_017867.1**	0.881491211	1.247739397	0.00032511
NACA	**ILMN_17162**	**NM_005594.2**	0.879209492	1.329963923	0.00013907
GDI2	**ILMN_15402**	**NM_001494.2**	0.876874596	1.421630896	0.00008006
SNX2	**ILMN_4948**	**NM_003100.2**	0.876247823	0.935068996	0.00051003
ARRDC1	**ILMN_11748**	**NM_152285.2**	0.875635011	1.073875983	0.00011921
ARV1	**ILMN_5909**	**NM_022786.1**	0.874609136	0.896227084	0.00931000
THAP1	**ILMN_15754**	**NM_018105.2**	0.871272902	0.976199365	0.00181390
REEP5	**ILMN_21319**	**NM_005669.3**	0.871021946	0.904693424	0.00161578
PHCA	**ILMN_3836**	**NM_018367.3**	0.866524089	1.002767545	0.00079992
VAMP4	**ILMN_139375**	**NM_003762.2**	0.865903861	1.174684728	0.00141188
RAB7	**ILMN_30038**	**NM_004637.5**	0.861414853	1.222343087	0.00108071
COQ5	**ILMN_6126**	**NM_032314.2**	0.859134948	0.991809815	0.00432292
TKT	**ILMN_2726**	**NM_001064.1**	0.859005488	0.916255715	0.00097002
MDS025	**ILMN_6208**	**NM_021825.3**	0.858810512	0.793814684	0.00814564
WDR40A	**ILMN_29238**	**NM_015397.1**	0.857153805	0.981080156	0.00634603
NOMO1	**ILMN_22691**	**NM_014287.3**	0.856327308	1.032285196	0.00044624
PLAC8	**ILMN_17809**	**NM_016619.1**	0.853759799	0.772570372	0.00784848
UNC50	**ILMN_19045**	**NM_014044.4**	0.853303767	1.843345515	0.00000260
TM9SF1	**ILMN_1371**	**NM_001014842.1**	0.852681312	1.044733631	0.00020166
THEM2	**ILMN_27212**	**NM_018473.2**	0.852676742	1.164355119	0.00142445
TRIP4	**ILMN_10213**	**NM_016213.3**	0.849722307	1.77715718	0.00000087
MGC15875	**ILMN_28180**	**NM_153373.1**	0.848075084	0.773122313	0.00731177
CLK3	**ILMN_1044**	**NM_003992.1**	0.845775564	0.958931247	0.00082384
CORO1A	**ILMN_6768**	**NM_007074.2**	0.844780702	1.132107408	0.00013626
CRIPT	**ILMN_12903**	**NM_014171.3**	0.844040876	1.202882939	0.00161066
SDFR1	**ILMN_138444**	**NM_012428.1**	0.842592487	0.771466242	0.00266393
ATP6V0E	**ILMN_8923**	**NM_003945.3**	0.841844604	1.529777909	0.00000753
TMCO3	**ILMN_19218**	**NM_017905.3**	0.838962707	1.176980562	0.00451413
SNAP29	**ILMN_20709**	**NM_004782.2**	0.836938792	1.255622288	0.00003215
NCK1	**ILMN_13975**	**NM_006153.3**	0.833950007	0.911191822	0.00105238
SNX1	**ILMN_924**	**NM_003099.3**	0.832963832	0.778505884	0.00455591

PRKAR1A	ILMN_18925	NM_002734.3	0.832024455	1.26445346	0.00085621
HLA-DPA1	ILMN_13606	NM_033554.2	0.830818992	1.198741802	0.00006353
FKBP1A	ILMN_1290	NM_000801.2	0.82816191	1.376397268	0.00068549
CHKB	ILMN_1067	NM_005198.3	0.827517927	1.035599235	0.00183007
MGC16385	ILMN_5329	NM_145039.2	0.8274803	0.794442997	0.00790513
ARPC4	ILMN_24112	NM_001024959.1	0.82741729	1.300843186	0.00000283
C21orf33	ILMN_28752	NM_004649.4	0.821418828	0.990826614	0.00317030
TES	ILMN_17251	NM_015641.2	0.819022224	0.734094965	0.00560739
STT3A	ILMN_17585	NM_152713.2	0.816670936	1.287957745	0.00003264
TMEM126B	ILMN_18826	NM_018480.2	0.813364425	1.16222445	0.00148392
NDUFAF1	ILMN_13182	NM_016013.2	0.810438154	1.268624194	0.00045587
WRB	ILMN_12263	NM_004627.2	0.809280188	1.063669514	0.00039734
C17orf62	ILMN_12733	NM_001033046.1	0.808445826	0.873210482	0.00057408
LOC339344	ILMN_6535	NM_001012643.2	0.80801784	0.88574801	0.00770728
UTRN	ILMN_15375	NM_007124.1	0.806804848	1.062976949	0.00038025
YIF1B	ILMN_10933	NM_001031731.1	0.805625909	0.827041041	0.00081460
WDR23	ILMN_11121	NM_025230.3	0.80464906	0.713414493	0.00387877
CG018	ILMN_24274	NM_052818.1	0.804367155	1.004875505	0.00158518
CCDC5	ILMN_18943	NM_138443.2	0.803601045	0.811374754	0.00126376
MAP3K3	ILMN_426	NM_203351.1	0.801573187	0.933775478	0.00008829
PAQR4	ILMN_20105	NM_152341.2	0.80144963	0.85738589	0.00700293
RBM4	ILMN_11057	NM_002896.1	0.800689376	1.000393552	0.00852204
FLJ10260	ILMN_454	NM_018042.2	0.799519136	1.101275589	0.00004981
C14orf159	ILMN_22928	NM_024952.4	0.79931973	1.070855583	0.00137924
CRYZL1	ILMN_5113	NM_005111.5	0.797728559	1.206417193	0.00010391
COQ9	ILMN_16451	NM_020312.1	0.795958206	1.041376851	0.00209683
PCK2	ILMN_2603	NM_004563.2	0.793276194	0.970467923	0.00068396
EXOSC3	ILMN_9043	NM_016042.2	0.790073504	1.066489341	0.00024318
RER1	ILMN_16490	NM_007033.2	0.788900128	1.091279047	0.00011252
TM9SF1	ILMN_1249	NM_006405.5	0.788259179	1.468086787	0.00004208
ACN9	ILMN_6296	NM_020186.1	0.787176157	0.883990806	0.00311959

CTSO	ILMN_22132	NM_001334.2	0.786911991	0.842038184	0.00148380
DHRS8	ILMN_12219	NM_016245.2	0.784360455	0.788762086	0.00171737
MRPL30	ILMN_137901	NM_145212.1	0.783716628	0.777905407	0.00207844
BANF1	ILMN_13154	NM_003860.2	0.781911821	0.91109998	0.00759135
C10orf6	ILMN_24540	NM_018121.2	0.78063571	0.697345556	0.00689460
HLA-F	ILMN_3012	NM_018950.1	0.778737753	0.931623998	0.00211549
C7orf28B	ILMN_8655	NM_198097.1	0.777924185	0.933647594	0.00693097
KIAA0152	ILMN_24410	NM_014730.2	0.777856443	0.76897219	0.00436356
DSCR1	ILMN_3292	NM_203417.1	0.776155691	0.909602389	0.00619489
UBE2G1	ILMN_4331	NM_003342.4	0.776077148	1.539756439	0.00012246
AKR1A1	ILMN_18164	NM_006066.2	0.775609482	1.438402297	0.00003774
RNPEP	ILMN_22895	NM_020216.3	0.773848693	0.798178296	0.00210507
PDCD10	ILMN_26567	NM_145859.1	0.773529175	0.734718047	0.00444282
TIA1	ILMN_29910	NM_022173.1	0.771619932	1.012734353	0.00088562
C17orf40	ILMN_18247	NM_018428.2	0.770526096	1.085875486	0.00034219
GABPA	ILMN_28392	NM_002040.2	0.769932318	0.918905978	0.00099307
TADA3L	ILMN_7198	NM_006354.2	0.76569954	1.159110327	0.00058551
GNPAT	ILMN_15390	NM_014236.1	0.765579192	1.098910095	0.00028603
IIP45	ILMN_12607	NM_001025374.1	0.763584039	1.107873404	0.00010382
PSMA5	ILMN_15259	NM_002790.2	0.762135923	1.581564317	0.00011433
SUMF1	ILMN_15497	NM_182760.2	0.759267277	0.823262053	0.00496238
PDCD8	ILMN_20381	NM_004208.2	0.757914227	1.319956996	0.00015773
SCO1	ILMN_14321	NM_004589.1	0.757545888	1.364663218	0.00000441
DUSP18	ILMN_9044	NM_152511.3	0.756268314	0.953020427	0.00032814
RAB24	ILMN_25731	NM_001031677.1	0.754549224	0.988549939	0.00110535
DUSP3	ILMN_14523	NM_004090.2	0.753530167	0.950437848	0.00581700
EPS15	ILMN_8810	NM_001981.2	0.752852195	0.971791525	0.00324139
CCDC53	ILMN_25394	NM_016053.1	0.752132981	1.108722086	0.00761538
RHBDD1	ILMN_13013	NM_032276.2	0.749264488	1.440263385	0.00014650
UTP14A	ILMN_3222	NM_006649.2	0.746978261	0.722920018	0.00572518
APOL3	ILMN_8572	NM_030644.1	0.745532666	0.774795383	0.00253167

AHCYL1	**ILMN_21551**	**NM_006621.3**	**0.743721598**	**1.182785059**	**0.00012557**
D15Wsu75e	**ILMN_13640**	**NM_015704.1**	**0.743698121**	**1.437551529**	**0.00004606**
FAM45A	**ILMN_28113**	**NM_207009.2**	**0.739449537**	**0.80784723**	**0.00076796**
WDR58	**ILMN_25260**	**NM_024339.2**	**0.739211399**	**0.855804331**	**0.00209070**
LMBRD1	**ILMN_6684**	**NM_018368.2**	**0.737434728**	**1.633121026**	**0.00000048**
GMPR2	**ILMN_15872**	**NM_001002002.1**	**0.736748124**	**1.047904062**	**0.00098527**
ACTL6A	**ILMN_3186**	**NM_177989.1**	**0.736251612**	**0.955844795**	**0.00063734**
TP53I3	**ILMN_2007**	**NM_147184.1**	**0.735509717**	**0.697604939**	**0.00877149**
BRD8	**ILMN_10431**	**NM_183359.1**	**0.735297102**	**0.808354111**	**0.00087882**
LIPT1	**ILMN_5728**	**NM_145197.1**	**0.734857538**	**0.949720387**	**0.00015131**
TMBIM4	**ILMN_22938**	**NM_016056.1**	**0.734512096**	**1.354611683**	**0.00113048**
RSU1	**ILMN_21628**	**NM_012425.3**	**0.734466102**	**0.776631195**	**0.00791837**
HLA-DMB	**ILMN_2252**	**NM_002118.3**	**0.73405362**	**1.234805982**	**0.00059628**
C14orf142	**ILMN_28666**	**NM_032490.3**	**0.731225916**	**1.03362714**	**0.00244109**
BCKDK	**ILMN_13829**	**NM_005881.1**	**0.729788087**	**0.823487241**	**0.00620961**
ARHGAP25	**ILMN_1674**	**NM_001007231.1**	**0.728785554**	**1.031541589**	**0.00812840**
NDUFB5	**ILMN_20286**	**NM_002492.2**	**0.727040149**	**0.978032175**	**0.00114697**
GEMIN6	**ILMN_23187**	**NM_024775.9**	**0.726343401**	**0.982878344**	**0.00246154**
ATP6V0A1	**ILMN_138088**	**NM_005177.2**	**0.725439284**	**1.1407963**	**0.00647840**
GLT25D1	**ILMN_15022**	**NM_024656.2**	**0.725314591**	**1.067096598**	**0.00025548**
BCL2L2	**ILMN_9171**	**NM_004050.2**	**0.724745898**	**1.030677194**	**0.00170958**
YIPF6	**ILMN_8545**	**NM_173834.2**	**0.724660912**	**1.28290882**	**0.00004430**
WDR71	**ILMN_13656**	**NM_025155.1**	**0.724614947**	**1.053661809**	**0.00164536**
GNS	**ILMN_6937**	**NM_002076.2**	**0.723930284**	**1.641619517**	**0.00011972**
P2RX7	**ILMN_26570**	**NM_002562.4**	**0.718844427**	**0.869779162**	**0.00359117**
C2orf18	**ILMN_138677**	**NM_017877.2**	**0.716007244**	**0.736293165**	**0.00574343**
TTL	**ILMN_14027**	**NM_153712.3**	**0.715465204**	**1.444770368**	**0.00007258**
FRAT1	**ILMN_29787**	**NM_181355.1**	**0.714693512**	**0.885429679**	**0.00187052**
HTLF	**ILMN_10159**	**NM_002158.2**	**0.711836675**	**0.847706272**	**0.00958303**
MT	**ILMN_5185**	**NM_173467.3**	**0.71124282**	**1.539123007**	**0.00000114**
SELL	**ILMN_6951**	**NM_000655.2**	**0.709452209**	**0.745836628**	**0.00525236**

OSTF1	**ILMN_30131**	**NM_012383.3**	**0.707754417**	**2.255587056**	**0.00000318**
NARS	**ILMN_6062**	**NM_004539.2**	**0.706148703**	**0.738215334**	**0.00558703**
PIGM	**ILMN_19117**	**NM_145167.1**	**0.705962924**	**0.835125048**	**0.00054362**
PANK2	**ILMN_137507**	**NM_153640.1**	**0.705179063**	**1.272416067**	**0.00005978**
NOD9	**ILMN_16473**	**NM_024618.2**	**0.705010782**	**0.955293557**	**0.00679340**
SLC36A1	**ILMN_22384**	**NM_078483.2**	**0.701269954**	**1.12297335**	**0.00552217**
LYSMD2	**ILMN_19682**	**NM_153374.1**	**0.699845822**	**1.003581606**	**0.00039068**
NUP37	**ILMN_4147**	**NM_024057.2**	**0.69729722**	**1.115484685**	**0.00107876**
WDFY2	**ILMN_14243**	**NM_052950.2**	**0.696920753**	**1.270865789**	**0.00000365**
MAT2B	**ILMN_18923**	**NM_013283.3**	**0.694070182**	**0.921791826**	**0.00150174**
GSR	**ILMN_14467**	**NM_000637.2**	**0.693682753**	**1.446611933**	**0.00002356**
ING1	**ILMN_2492**	**NM_198219.1**	**0.691970285**	**1.062073688**	**0.00034920**
UBE2L6	**ILMN_7531**	**NM_004223.3**	**0.690995994**	**1.221401827**	**0.00442322**
DUSP22	**ILMN_15436**	**NM_020185.3**	**0.689864834**	**1.207246339**	**0.00007646**
DERA	**ILMN_16833**	**NM_015954.1**	**0.688508854**	**0.82267023**	**0.00331905**
FLJ39370	**ILMN_18245**	**NM_152400.1**	**0.68769568**	**0.751426804**	**0.00347573**
CNDP2	**ILMN_4139**	**NM_018235.1**	**0.687168603**	**1.093880054**	**0.00422201**
DNTTIP1	**ILMN_17783**	**NM_052951.2**	**0.683667693**	**0.854101583**	**0.00079144**
PSMB9	**ILMN_12611**	**NM_002800.4**	**0.67953923**	**0.73246271**	**0.00985021**
FAM96A	**ILMN_13416**	**NM_032231.4**	**0.675960026**	**1.07088344**	**0.00104755**
COPS7A	**ILMN_13902**	**NM_016319.1**	**0.675795633**	**1.141314182**	**0.00345432**
COMT	**ILMN_2463**	**NM_000754.2**	**0.675541976**	**0.859080355**	**0.00648443**
SPAST	**ILMN_15461**	**NM_199436.1**	**0.67529387**	**0.997006821**	**0.00142484**
RNF34	**ILMN_16571**	**NM_025126.2**	**0.673203274**	**0.704105246**	**0.00841035**
YIPF1	**ILMN_19321**	**NM_018982.3**	**0.670580284**	**2.072819422**	**0.00000023**
NEDD8	**ILMN_21274**	**NM_006156.1**	**0.669855809**	**0.674729549**	**0.00308767**
MINA	**ILMN_18661**	**NM_153182.1**	**0.668899752**	**1.787534969**	**0.00001651**
MGC40405	**ILMN_1247**	**NM_152789.1**	**0.66835355**	**0.65432264**	**0.00533856**
STX12	**ILMN_18776**	**NM_177424.1**	**0.667206523**	**0.672081087**	**0.00821280**
VPS41	**ILMN_2386**	**NM_014396.2**	**0.665669394**	**1.039923735**	**0.00131977**
C14orf133	**ILMN_19051**	**NM_022067.2**	**0.66448481**	**1.064551011**	**0.00005755**

ALDH3A2	**ILMN_15293**	**NM_001031806.1**	**0.663494351**	**1.225806952**	**0.00114718**
PHKB	**ILMN_18544**	**NM_001031835.1**	**0.663202945**	**0.828357174**	**0.00199503**
PINK1	**ILMN_27027**	**NM_032409.1**	**0.663117176**	**1.392356599**	**0.00017973**
FLJ33814	**ILMN_21814**	**NM_173510.1**	**0.662289635**	**0.786509978**	**0.00310654**
PCCA	**ILMN_6045**	**NM_000282.2**	**0.662170417**	**0.875641136**	**0.00671001**
PYCR2	**ILMN_18209**	**NM_013328.2**	**0.662158353**	**0.778688542**	**0.00586486**
CPSF2	**ILMN_12041**	**NM_017437.1**	**0.661956716**	**0.678957119**	**0.00474164**
UBE2E2	**ILMN_29196**	**NM_152653.1**	**0.6614415**	**1.189101101**	**0.00016503**
TAF12	**ILMN_3797**	**NM_005644.2**	**0.661208219**	**1.538640535**	**0.00001332**
SLC25A1	**ILMN_28181**	**NM_005984.1**	**0.659489816**	**0.636752915**	**0.00404682**
SEC11L1	**ILMN_12976**	**NM_014300.2**	**0.65876876**	**1.279650634**	**0.00001105**
DNAJB6	**ILMN_7651**	**NM_058246.3**	**0.655667179**	**1.054957112**	**0.00048058**
KLHL8	**ILMN_19798**	**NM_020803.3**	**0.654892324**	**0.9023516**	**0.00179519**
ACO1	**ILMN_9544**	**NM_002197.1**	**0.653596004**	**1.252199889**	**0.00025310**
GTF2H3	**ILMN_9713**	**NM_001516.3**	**0.652562825**	**0.762186527**	**0.00523155**
LSM10	**ILMN_14450**	**NM_032881.1**	**0.652247983**	**0.934453562**	**0.00090340**
NAG8	**ILMN_21136**	**NM_014411.2**	**0.651659684**	**0.654467349**	**0.00549902**
ATP5F1	**ILMN_138139**	**NM_001688.3**	**0.650324011**	**1.6471075**	**0.00000221**
NSF	**ILMN_23282**	**NM_006178.1**	**0.649787429**	**0.966754147**	**0.00150748**
C14orf129	**ILMN_7725**	**NM_016472.3**	**0.649488365**	**0.845576993**	**0.00222523**
C7orf11	**ILMN_20229**	**NM_138701.1**	**0.648424024**	**1.030461324**	**0.00188419**
RAB4A	**ILMN_14453**	**NM_004578.2**	**0.645974184**	**1.119336929**	**0.00016381**
PAPSS1	**ILMN_6621**	**NM_005443.4**	**0.644433151**	**1.089439803**	**0.00684807**
RAB8A	**ILMN_8881**	**NM_005370.4**	**0.643908926**	**2.486726255**	**0.00000007**
SFT2D1	**ILMN_5727**	**NM_145169.1**	**0.643517185**	**1.381139093**	**0.00017387**
C5orf15	**ILMN_23157**	**NM_020199.1**	**0.641504014**	**1.369919922**	**0.00000815**
STIP1	**ILMN_28761**	**NM_006819.1**	**0.639747132**	**0.914075119**	**0.00037943**
TRIM22	**ILMN_532**	**NM_006074.2**	**0.639603182**	**1.16001109**	**0.00076658**
CD84	**ILMN_16790**	**NM_003874.1**	**0.637727242**	**0.674191429**	**0.00524555**
CCT7	**ILMN_22959**	**NM_006429.2**	**0.630546718**	**1.001568609**	**0.00117525**
TXNDC	**ILMN_13849**	**NM_030755.3**	**0.629887162**	**0.839765388**	**0.00214526**

GALM	**ILMN_10698**	**NM_138801.1**	**0.629606832**	**1.079055934**	**0.00020824**
AP3B1	**ILMN_4527**	**NM_003664.3**	**0.628411492**	**0.774722262**	**0.00530390**
YBX1	**ILMN_2951**	**NM_004559.2**	**0.626746918**	**0.799211438**	**0.00576257**
CPOX	**ILMN_28523**	**NM_000097.4**	**0.62547916**	**0.888055102**	**0.00258340**
SNTB1	**ILMN_23979**	**NM_021021.2**	**0.625010436**	**0.894065332**	**0.00935770**
VPS72	**ILMN_17901**	**NM_005997.1**	**0.62278748**	**1.26711063**	**0.00030014**
ATP6V0D1	**ILMN_139373**	**NM_004691.3**	**0.62147397**	**0.730172626**	**0.00229783**
SUMF2	**ILMN_9757**	**NM_015411.1**	**0.617287604**	**0.874405945**	**0.00843465**
MR1	**ILMN_10108**	**NM_001531.1**	**0.615780365**	**0.968113548**	**0.00993067**
TRAFD1	**ILMN_21539**	**NM_006700.1**	**0.613875843**	**0.571258077**	**0.00960467**
HK1	**ILMN_23877**	**NM_033500.1**	**0.612449234**	**1.011322954**	**0.00092195**
P4HA1	**ILMN_8003**	**NM_000917.2**	**0.611236652**	**0.72707231**	**0.00625872**
FLJ14466	**ILMN_29870**	**NM_032790.2**	**0.61089811**	**0.830612766**	**0.00172031**
PSMD4	**ILMN_137384**	**NM_002810.1**	**0.610740993**	**0.757697935**	**0.00101724**
C10orf61	**ILMN_24822**	**NM_001013840.1**	**0.610458973**	**1.081393619**	**0.00013008**
FKBP4	**ILMN_9429**	**NM_002014.2**	**0.609790605**	**0.822235317**	**0.00292538**
CDK2AP1	**ILMN_19522**	**NM_004642.2**	**0.608899789**	**0.746051772**	**0.00607617**
PBX3	**ILMN_23493**	**NM_006195.4**	**0.608542479**	**1.042523333**	**0.00033834**
CCNC	**ILMN_11667**	**NM_005190.3**	**0.60615937**	**0.773035605**	**0.00270549**
PRCP	**ILMN_2019**	**NM_199418.1**	**0.605288708**	**1.075108698**	**0.00129425**
GBE1	**ILMN_2925**	**NM_000158.1**	**0.605174564**	**1.414871406**	**0.00066951**
LRCH3	**ILMN_14018**	**NM_032773.2**	**0.603643585**	**0.813171638**	**0.00619821**
POLR2E	**ILMN_21511**	**NM_002695.2**	**0.603012311**	**0.990775486**	**0.00027094**
PGM2	**ILMN_6226**	**NM_018290.2**	**0.601475444**	**0.722208068**	**0.00527047**
NCOA4	**ILMN_24328**	**NM_005437.1**	**0.600193396**	**1.108888989**	**0.00054757**
CD37	**ILMN_20101**	**NM_001774.1**	**0.600048449**	**0.728222604**	**0.00438458**
GGPS1	**ILMN_137664**	**NM_004837.2**	**0.599117516**	**0.84254707**	**0.00184079**
CCT6A	**ILMN_3686**	**NM_001009186.1**	**0.598843562**	**0.840343858**	**0.00148873**
HP1BP3	**ILMN_29502**	**NM_016287.2**	**0.598707576**	**0.947341533**	**0.00169712**
TRA16	**ILMN_20587**	**NM_176880.4**	**0.598636525**	**0.823603103**	**0.00530158**
ETFA	**ILMN_138729**	**NM_000126.1**	**0.597849505**	**1.12408418**	**0.00015177**

VAMP5	**ILMN_20179**	**NM_006634.2**	**0.597238144**	**0.71886071**	**0.00463721**
TSEN34	**ILMN_5948**	**NM_024075.1**	**0.597201061**	**1.116530396**	**0.00036174**
C9orf23	**ILMN_3926**	**NM_148178.1**	**0.595942735**	**0.846713274**	**0.00534341**
ACAT1	**ILMN_29522**	**NM_000019.2**	**0.594932008**	**0.719532236**	**0.00305532**
MRPL48	**ILMN_24933**	**NM_016055.4**	**0.594853628**	**1.268606525**	**0.00031550**
GOSR2	**ILMN_4229**	**NM_054022.2**	**0.593957326**	**1.346384331**	**0.00004694**
PSME2	**ILMN_19572**	**NM_002818.2**	**0.591841903**	**1.139840032**	**0.00020595**
TMEM77	**ILMN_30117**	**NM_178454.2**	**0.591390405**	**0.901345416**	**0.00467419**
PSMC6	**ILMN_3800**	**NM_002806.2**	**0.584372895**	**0.861482699**	**0.00052608**
CBX1	**ILMN_6262**	**NM_006807.3**	**0.575442923**	**1.182977034**	**0.00251133**
FLJ13614	**ILMN_12182**	**NM_139076.1**	**0.575017217**	**0.696881716**	**0.00797877**
C9orf19	**ILMN_12810**	**NM_022343.2**	**0.574894314**	**1.050523704**	**0.00532794**
CDA08	**ILMN_10328**	**NM_030790.2**	**0.574488481**	**0.835644003**	**0.00224865**
LOC84661	**ILMN_18534**	**NM_032574.2**	**0.569701867**	**0.981231913**	**0.00016403**
BCCIP	**ILMN_26223**	**NM_016567.2**	**0.569086006**	**0.844403344**	**0.00325171**
NFYC	**ILMN_5936**	**NM_014223.2**	**0.568640405**	**0.868762425**	**0.00404212**
MRE11A	**ILMN_6718**	**NM_005590.3**	**0.568494718**	**1.529673741**	**0.00001696**
OSBPL1A	**ILMN_662**	**NM_018030.3**	**0.568215143**	**0.926351958**	**0.00047778**
LOC340061	**ILMN_18797**	**NM_198282.1**	**0.567618043**	**0.689243491**	**0.00474147**
BCKDHA	**ILMN_13270**	**NM_000709.2**	**0.566591781**	**1.179166285**	**0.00005504**
VBP1	**ILMN_9083**	**NM_003372.4**	**0.565843822**	**1.066690264**	**0.00041695**
TERF2	**ILMN_21134**	**NM_005652.2**	**0.564508109**	**0.831878711**	**0.00245700**
C2orf7	**ILMN_24250**	**NM_032319.1**	**0.563716251**	**1.367309251**	**0.00042654**
CEP63	**ILMN_1690**	**NM_025180.2**	**0.558482462**	**0.742866444**	**0.00729568**
OACT5	**ILMN_22717**	**NM_005768.5**	**0.557772544**	**1.167585684**	**0.00017228**
ARF3	**ILMN_6605**	**NM_001659.1**	**0.556975803**	**0.902342007**	**0.00136220**
SLC38A6	**ILMN_7226**	**NM_153811.1**	**0.556810899**	**0.810893343**	**0.00283712**
PFN1	**ILMN_2354**	**NM_005022.2**	**0.556212216**	**0.840582789**	**0.00181308**
MANEA	**ILMN_6991**	**NM_024641.2**	**0.555690029**	**0.765970605**	**0.00902237**
ALG8	**ILMN_24209**	**NM_001007027.1**	**0.551946917**	**0.739794606**	**0.00810565**
TMEM14C	**ILMN_12206**	**NM_016462.2**	**0.551640294**	**0.959306211**	**0.00374177**

PXMP4	**ILMN_4808**	**NM_007238.3**	**0.549666885**	**0.885829412**	**0.00252578**
ACTR10	**ILMN_18205**	**NM_018477.1**	**0.548316623**	**1.387712534**	**0.00001911**
C11orf17	**ILMN_9655**	**NM_020642.2**	**0.547234077**	**0.980450203**	**0.00333597**
ACTR2	**ILMN_2152**	**NM_001005386.1**	**0.546355357**	**0.812154576**	**0.00608161**
RSNL2	**ILMN_17216**	**NM_024692.3**	**0.545946152**	**0.829756456**	**0.00805801**
COPZ1	**ILMN_4037**	**NM_016057.1**	**0.545520981**	**0.799296562**	**0.00395313**
CAPNS1	**ILMN_6617**	**NM_001003962.1**	**0.54537447**	**0.669326948**	**0.00573710**
STUB1	**ILMN_22822**	**NM_005861.2**	**0.542125275**	**0.698526637**	**0.00491662**
PSMB5	**ILMN_29312**	**NM_002797.2**	**0.541998408**	**1.055086186**	**0.00029673**
DYM	**ILMN_6843**	**NM_017653.2**	**0.541041599**	**0.9654535**	**0.00428592**
AGPS	**ILMN_138634**	**NM_003659.1**	**0.540726523**	**1.18173707**	**0.00074260**
CLCN3	**ILMN_15279**	**NM_001829.2**	**0.540459483**	**0.692590724**	**0.00838864**
ARL5	**ILMN_137185**	**NM_012097.2**	**0.539235483**	**0.946302784**	**0.00202584**
C4orf13	**ILMN_11413**	**NM_001029998.1**	**0.538921014**	**1.019956729**	**0.00184603**
CD244	**ILMN_7885**	**NM_016382.2**	**0.537414131**	**0.706077057**	**0.00822767**
MRPS28	**ILMN_16611**	**NM_014018.2**	**0.533530893**	**0.932362259**	**0.00474327**
SCCPDH	**ILMN_30353**	**NM_016002.2**	**0.53299596**	**0.874953099**	**0.00267603**
CSNK1A1	**ILMN_24977**	**NM_001892.4**	**0.532411953**	**0.950426926**	**0.00968292**
VPS29	**ILMN_14188**	**NM_016226.2**	**0.529279832**	**1.141988392**	**0.00123260**
C10orf7	**ILMN_11650**	**NM_006023.1**	**0.529032709**	**1.472693353**	**0.00005202**
INPP5B	**ILMN_6646**	**NM_005540.1**	**0.528913697**	**0.676301308**	**0.00964580**
ZMPSTE24	**ILMN_13713**	**NM_005857.2**	**0.526380447**	**0.915873674**	**0.00174190**
GALNT4	**ILMN_15303**	**NM_003774.3**	**0.52596861**	**0.692989685**	**0.00942236**
GOLGA5	**ILMN_20157**	**NM_005113.2**	**0.52402571**	**0.855780518**	**0.00358645**
GLE1L	**ILMN_19199**	**NM_001003722.1**	**0.522235331**	**0.816909203**	**0.00632145**
OGFOD1	**ILMN_16561**	**NM_001031707.1**	**0.518441492**	**0.794727583**	**0.00303007**
RBM18	**ILMN_8277**	**NM_033117.2**	**0.51592074**	**1.116793418**	**0.00560431**
NS4ATP2	**ILMN_18384**	**NM_024632.3**	**0.515324206**	**0.691190711**	**0.00994818**
PDCD6	**ILMN_15265**	**NM_013232.2**	**0.514233262**	**1.102864386**	**0.00112019**
GABARAPL2	**ILMN_9805**	**NM_007285.6**	**0.513667927**	**1.671080501**	**0.00019022**
BTF3L4	**ILMN_3105**	**NM_152265.1**	**0.513640416**	**1.15768482**	**0.00001829**

WIBG	**ILMN_19902**	**NM_032345.1**	**0.513365324**	**0.802261004**	**0.00264002**
NFE2L1	**ILMN_13955**	**NM_003204.1**	**0.513152066**	**0.91593502**	**0.00041556**
C7orf28A	**ILMN_2087**	**NM_015622.5**	**0.509415546**	**0.604216727**	**0.00817957**
C15orf17	**ILMN_13536**	**NM_020447.2**	**0.507043484**	**1.129601563**	**0.00279722**
TPK1	**ILMN_6467**	**NM_022445.2**	**0.507032195**	**0.967616723**	**0.00125616**
RHOA	**ILMN_6247**	**NM_001664.2**	**0.506140959**	**0.748492876**	**0.00098190**
WAS	**ILMN_1668**	**NM_000377.1**	**0.504612066**	**1.161072475**	**0.00088430**
LOC285636	**ILMN_8228**	**NM_175921.4**	**0.503547058**	**0.796804283**	**0.00655570**
TMCO1	**ILMN_8084**	**NM_019026.2**	**0.502782404**	**0.920191132**	**0.00070381**
TM2D1	**ILMN_9063**	**NM_032027.2**	**0.502048373**	**0.925561389**	**0.00162488**
RCN1	**ILMN_8159**	**NM_002901.1**	**0.501933318**	**0.87855392**	**0.00039560**
SFRS2	**ILMN_26358**	**NM_003016.2**	**-0.501101485**	**0.751488215**	**0.00771185**
NCLN	**ILMN_29505**	**NM_020170.3**	**-0.50139972**	**1.156881313**	**0.00344346**
MTMR2	**ILMN_24002**	**NM_201281.1**	**-0.501808986**	**0.965612981**	**0.00278489**
OSBPL7	**ILMN_4611**	**NM_145798.2**	**-0.506236884**	**0.692412796**	**0.00713701**
RIPK5	**ILMN_1333**	**NM_199462.1**	**-0.506241651**	**1.10939465**	**0.00094333**
ELK1	**ILMN_14942**	**NM_005229.2**	**-0.506595063**	**1.06771036**	**0.00253708**
ILKAP	**ILMN_12973**	**NM_030768.2**	**-0.507099782**	**1.203991038**	**0.00132750**
FBL	**ILMN_14351**	**NM_001436.2**	**-0.508152926**	**0.93084529**	**0.00616627**
RAFTLIN	**ILMN_29470**	**NM_015150.1**	**-0.509860651**	**0.691386978**	**0.00867436**
FEM1A	**ILMN_2838**	**NM_018708.1**	**-0.51131736**	**0.952052307**	**0.00125013**
PSCD2	**ILMN_16003**	**NM_017457.3**	**-0.511819719**	**0.700114811**	**0.00583446**
CCDC16	**ILMN_23839**	**NM_052857.2**	**-0.512078285**	**1.0515164**	**0.00018637**
RPL37	**ILMN_138392**	**NM_000997.3**	**-0.512921504**	**1.018252708**	**0.00011698**
WDR19	**ILMN_11749**	**NM_025132.3**	**-0.513291141**	**0.791396744**	**0.00223438**
ZCCHC3	**ILMN_28604**	**NM_033089.6**	**-0.51345165**	**1.029007424**	**0.00137729**
COG1	**ILMN_137022**	**NM_018714.1**	**-0.513593241**	**0.857290291**	**0.00279936**
MXD4	**ILMN_26701**	**NM_006454.2**	**-0.513605477**	**0.955769313**	**0.00302540**
WBP1	**ILMN_20957**	**NM_012477.2**	**-0.514893469**	**0.923870702**	**0.00079940**
LIMD2	**ILMN_25849**	**NM_030576.2**	**-0.515598945**	**0.917797589**	**0.00442454**
ZFYVE20	**ILMN_15619**	**NM_022340.2**	**-0.517706349**	**1.009276209**	**0.00012700**

MRPL2	**ILMN_4811**	**NM_015950.3**	**-0.518147351**	**1.087524189**	**0.00269727**
EDG4	**ILMN_4660**	**NM_004720.4**	**-0.518490806**	**0.84209368**	**0.00080746**
RINT-1	**ILMN_23747**	**NM_021930.3**	**-0.51926901**	**0.819352789**	**0.00654352**
COX6C	**ILMN_6419**	**NM_004374.2**	**-0.519912949**	**0.799991141**	**0.00073464**
2'-PDE	**ILMN_16583**	**NM_177966.4**	**-0.521811264**	**1.020236026**	**0.00115644**
SIAHBP1	**ILMN_14897**	**NM_014281.3**	**-0.521985439**	**1.165205236**	**0.00404616**
FLJ13149	**ILMN_10466**	**NM_021826.4**	**-0.522670012**	**0.899495902**	**0.00365177**
RPA3	**ILMN_29134**	**NM_002947.3**	**-0.523175111**	**0.784664531**	**0.00127759**
FLJ20186	**ILMN_2786**	**NM_017702.2**	**-0.525049178**	**0.640859744**	**0.00639750**
C14orf156	**ILMN_6302**	**NM_031210.3**	**-0.525876549**	**0.695348323**	**0.00156890**
YARS	**ILMN_13503**	**NM_003680.2**	**-0.526900543**	**0.781042911**	**0.00307002**
C10orf28	**ILMN_989**	**NM_014472.3**	**-0.528865117**	**0.666665125**	**0.00893320**
GNL3	**ILMN_18645**	**NM_014366.4**	**-0.529243563**	**1.027555574**	**0.00638245**
CIRH1A	**ILMN_2574**	**NM_032830.1**	**-0.52990755**	**1.010140713**	**0.00537304**
C14orf43	**ILMN_22813**	**NM_194278.2**	**-0.530803886**	**0.832143247**	**0.00164632**
PRPS1	**ILMN_6887**	**NM_002764.2**	**-0.531046429**	**1.110198744**	**0.00014613**
PUSL1	**ILMN_8805**	**NM_153339.1**	**-0.53137201**	**0.983409622**	**0.00171481**
PARP6	**ILMN_5118**	**NM_020213.1**	**-0.532217352**	**1.786552893**	**0.00004720**
NIFUN	**ILMN_1909**	**NM_014301.2**	**-0.532831492**	**0.855300668**	**0.00545087**
EDEM1	**ILMN_9408**	**NM_014674.1**	**-0.534159313**	**0.899573452**	**0.00834955**
RPL23A	**ILMN_137509**	**NM_000984.4**	**-0.534879307**	**1.085682379**	**0.00146829**
CCNB1IP1	**ILMN_16420**	**NM_021178.2**	**-0.534921378**	**1.211904411**	**0.00007463**
BMS1L	**ILMN_4307**	**NM_014753.2**	**-0.535113173**	**0.735214469**	**0.00860805**
MRPS24	**ILMN_17184**	**NM_032014.1**	**-0.535266097**	**0.647342605**	**0.00313202**
ZCCHC11	**ILMN_4936**	**NM_001009881.1**	**-0.53789923**	**0.680978374**	**0.00392385**
GLCCI1	**ILMN_22544**	**NM_138426.1**	**-0.538041773**	**0.782651606**	**0.00866811**
ZNF211	**ILMN_8413**	**NM_006385.2**	**-0.538417821**	**0.939940258**	**0.00064505**
TIMM22	**ILMN_29380**	**NM_013337.2**	**-0.541037298**	**0.849931579**	**0.00247792**
SLC41A3	**ILMN_19829**	**NM_001008485.1**	**-0.541342697**	**0.866825731**	**0.00238013**
SSSCA1	**ILMN_7443**	**NM_006396.1**	**-0.542120495**	**0.791636209**	**0.00711843**
NUP205	**ILMN_11753**	**NM_015135.1**	**-0.542554722**	**0.903764833**	**0.00077945**

IFT122	**ILMN_21045**	**NM_018262.2**	**-0.54286388**	**1.090504474**	**0.00207521**
LOC113444	**ILMN_15613**	**NM_138428.2**	**-0.544285305**	**0.982416486**	**0.00067315**
DNAJB6	**ILMN_26714**	**NM_005494.2**	**-0.545564895**	**0.793932289**	**0.00764188**
SLC25A17	**ILMN_21822**	**NM_006358.2**	**-0.545698652**	**0.777571931**	**0.00476313**
ZNF350	**ILMN_20125**	**NM_021632.3**	**-0.550047933**	**0.783806276**	**0.00107854**
RRAS2	**ILMN_30083**	**NM_012250.3**	**-0.550217999**	**0.683428196**	**0.00715362**
ARHGAP4	**ILMN_2811**	**NM_001666.2**	**-0.551004947**	**0.785065836**	**0.00558225**
PHLPPL	**ILMN_10066**	**NM_015020.2**	**-0.553043887**	**0.955468838**	**0.00637876**
NOL8	**ILMN_25734**	**NM_017948.4**	**-0.553410288**	**0.6366454**	**0.00843367**
CHD6	**ILMN_28663**	**NM_032221.3**	**-0.553971876**	**1.023392347**	**0.00198387**
CERK	**ILMN_2275**	**NM_182661.1**	**-0.555520585**	**0.893010898**	**0.00316698**
NEIL2	**ILMN_11540**	**NM_145043.1**	**-0.555531793**	**0.732799123**	**0.00484798**
ASCC3	**ILMN_5802**	**NM_022091.3**	**-0.555810381**	**1.059056206**	**0.00552599**
HECA	**ILMN_3008**	**NM_016217.2**	**-0.556347682**	**0.858807643**	**0.00114314**
TNRC6B	**ILMN_901**	**NM_001024843.1**	**-0.556756071**	**0.808217912**	**0.00212181**
ATP5I	**ILMN_14284**	**NM_007100.2**	**-0.558678699**	**0.581710782**	**0.00508938**
NIP7	**ILMN_28300**	**NM_016101.3**	**-0.559420708**	**0.931442207**	**0.00178296**
SSR4	**ILMN_3302**	**NM_006280.1**	**-0.560086611**	**0.812498017**	**0.00075741**
KCTD9	**ILMN_1204**	**NM_017634.2**	**-0.56103139**	**0.901177541**	**0.00096362**
C8orf38	**ILMN_13088**	**NM_152416.1**	**-0.561399528**	**0.986388729**	**0.00117088**
UBN1	**ILMN_15680**	**NM_016936.2**	**-0.561640796**	**1.047767493**	**0.00032824**
LOC91689	**ILMN_9476**	**NM_033318.3**	**-0.562517452**	**1.023424687**	**0.00103510**
C9orf156	**ILMN_12842**	**NM_016481.2**	**-0.563566234**	**0.721816847**	**0.00861659**
HPS1	**ILMN_2724**	**NM_182639.1**	**-0.564267898**	**0.809408141**	**0.00092401**
POLR2I	**ILMN_17223**	**NM_006233.4**	**-0.564447269**	**0.610663494**	**0.00922027**
IMMP2L	**ILMN_30049**	**NM_032549.1**	**-0.564730086**	**0.802043738**	**0.00460118**
LOC168850	**ILMN_24570**	**NM_176814.3**	**-0.56555576**	**0.788592126**	**0.00749700**
DDA1	**ILMN_29105**	**NM_024050.4**	**-0.565916143**	**0.900027059**	**0.00038974**
MED9	**ILMN_19228**	**NM_018019.2**	**-0.569409453**	**0.708003815**	**0.00188291**
WDR75	**ILMN_14393**	**NM_032168.1**	**-0.5700052**	**0.7651042**	**0.00359337**
MRPL11	**ILMN_1149**	**NM_016050.2**	**-0.570694775**	**0.865336827**	**0.00253789**

LRP5L	**ILMN_650**	**NM_182492.1**	**-0.571430915**	**0.921914449**	**0.00039107**
PIK4CB	**ILMN_21393**	**NM_002651.1**	**-0.571689076**	**0.741826102**	**0.00464515**
KRT10	**ILMN_1890**	**NM_000421.2**	**-0.572172093**	**0.728055479**	**0.00436014**
ZNF263	**ILMN_13327**	**NM_005741.3**	**-0.575435129**	**0.969416741**	**0.00028422**
BCL2	**ILMN_3868**	**NM_000633.2**	**-0.575548572**	**0.844473447**	**0.00325378**
PIGT	**ILMN_19969**	**NM_015937.2**	**-0.576433969**	**1.161501121**	**0.00048774**
INOC1	**ILMN_5093**	**NM_032196.3**	**-0.576917795**	**0.755514595**	**0.00583012**
SFRS12	**ILMN_8967**	**NM_139168.1**	**-0.580161358**	**0.658939464**	**0.00926378**
IXL	**ILMN_10710**	**NM_017592.1**	**-0.580304926**	**0.950420241**	**0.00014253**
C14orf138	**ILMN_29130**	**NM_024558.1**	**-0.582713642**	**0.960895284**	**0.00335093**
SFRS8	**ILMN_9797**	**NM_004592.2**	**-0.585074071**	**1.347585696**	**0.00022540**
SYNCRIP	**ILMN_28470**	**NM_006372.3**	**-0.585172097**	**1.087116066**	**0.00311096**
RPS19BP1	**ILMN_8107**	**NM_194326.2**	**-0.585338721**	**0.845933847**	**0.00365128**
MAP4K5	**ILMN_10246**	**NM_006575.3**	**-0.58540163**	**0.829097844**	**0.00757634**
SUV420H1	**ILMN_29861**	**NM_016028.4**	**-0.58748649**	**1.378314577**	**0.00035114**
C1orf35	**ILMN_28904**	**NM_024319.2**	**-0.587897505**	**0.957215804**	**0.00130979**
ZBTB20	**ILMN_27339**	**NM_015642.2**	**-0.588916852**	**0.772194348**	**0.00270763**
GATS	**ILMN_18755**	**NM_178831.4**	**-0.589908263**	**0.711683709**	**0.00449993**
PMPCA	**ILMN_21420**	**NM_015160.1**	**-0.590865296**	**1.347090479**	**0.00013962**
DDX27	**ILMN_20732**	**NM_017895.6**	**-0.590934524**	**0.712906638**	**0.00573165**
KPNA4	**ILMN_21107**	**NM_002268.3**	**-0.591097414**	**0.764231033**	**0.00709542**
LRIG2	**ILMN_7215**	**NM_014813.1**	**-0.591763549**	**1.000300389**	**0.00098919**
ADNP	**ILMN_19803**	**NM_181442.1**	**-0.593035819**	**1.062015792**	**0.00007631**
ZDHHC5	**ILMN_28354**	**NM_015457.2**	**-0.594136352**	**0.973921694**	**0.00091996**
BAP1	**ILMN_17024**	**NM_004656.2**	**-0.594422282**	**1.015586606**	**0.00133679**
TATDN2	**ILMN_8206**	**NM_014760.2**	**-0.594767207**	**1.201800357**	**0.00004238**
AZIN1	**ILMN_4825**	**NM_015878.4**	**-0.595459472**	**0.919861629**	**0.00489867**
RPS6KB1	**ILMN_1872**	**NM_003161.2**	**-0.595631327**	**1.004764715**	**0.00628176**
AZI1	**ILMN_3856**	**NM_014984.1**	**-0.596227296**	**1.182177661**	**0.00048784**
LRRC8A	**ILMN_18635**	**NM_019594.2**	**-0.596405887**	**0.885748941**	**0.00277366**
RBM13	**ILMN_18111**	**NM_032509.2**	**-0.596437358**	**0.973597748**	**0.00014306**

ZNF26	**ILMN_3233**	**NM_019591.2**	**-0.59830862**	**0.853992606**	**0.00339823**
KDELC2	**ILMN_23677**	**NM_153705.2**	**-0.600616412**	**1.052805945**	**0.00022644**
KIAA1530	**ILMN_958**	**NM_020894.1**	**-0.602437968**	**1.261110975**	**0.00010936**
FAU	**ILMN_3073**	**NM_001997.3**	**-0.602457622**	**1.036010219**	**0.00001407**
C8orf33	**ILMN_15901**	**NM_023080.1**	**-0.603252646**	**1.414514982**	**0.00026532**
SEMA4D	**ILMN_24615**	**NM_006378.2**	**-0.603394443**	**0.861269484**	**0.00139078**
DKFZp761I2123	**ILMN_4684**	**NM_031449.3**	**-0.604000476**	**0.903562568**	**0.00721373**
KIAA1542	**ILMN_22314**	**NM_020901.1**	**-0.604016318**	**0.830834961**	**0.00079312**
NARF	**ILMN_138328**	**NM_031968.1**	**-0.60417202**	**0.883103921**	**0.00757037**
CRAMP1L	**ILMN_12672**	**NM_020825.2**	**-0.604341887**	**1.164221816**	**0.00019481**
RASA2	**ILMN_15489**	**NM_006506.2**	**-0.605237893**	**0.88103833**	**0.00727633**
IL12A	**ILMN_28240**	**NM_000882.2**	**-0.605767267**	**0.706673327**	**0.00764865**
RNPEPL1	**ILMN_18851**	**NM_018226.3**	**-0.605977149**	**0.907204305**	**0.00144612**
C3orf19	**ILMN_13337**	**NM_016474.3**	**-0.606982737**	**0.935698555**	**0.00150798**
TSSC4	**ILMN_17177**	**NM_005706.2**	**-0.607164855**	**1.028524623**	**0.00063006**
DOCK10	**ILMN_15188**	**NM_014689.1**	**-0.610185033**	**0.927657427**	**0.00070649**
QRICH1	**ILMN_22436**	**NM_017730.2**	**-0.611913915**	**1.527494986**	**0.00015097**
ZNF622	**ILMN_1143**	**NM_033414.2**	**-0.613218062**	**1.414248597**	**0.00002261**
ZNF416	**ILMN_13535**	**NM_017879.1**	**-0.613628233**	**0.700755649**	**0.00915879**
PDRG1	**ILMN_20546**	**NM_030815.2**	**-0.614441842**	**1.064193414**	**0.00435025**
C20orf3	**ILMN_2205**	**NM_020531.2**	**-0.614571123**	**0.768684462**	**0.00967519**
ZNF529	**ILMN_24517**	**NM_020951.1**	**-0.614692228**	**0.785446095**	**0.00106414**
TP53I13	**ILMN_23391**	**NM_138349.2**	**-0.616381148**	**0.729544257**	**0.00769178**
MBTPS1	**ILMN_5443**	**NM_201268.1**	**-0.617123097**	**0.888166037**	**0.00240723**
TROVE2	**ILMN_4319**	**NM_004600.3**	**-0.617753128**	**0.673186701**	**0.00774056**
TUBGCP5	**ILMN_25939**	**NM_052903.2**	**-0.617898874**	**0.889360861**	**0.00042017**
MRPL55	**ILMN_467**	**NM_181464.1**	**-0.618983592**	**0.811107318**	**0.00119417**
CUL2	**ILMN_26940**	**NM_003591.2**	**-0.61974505**	**1.127957039**	**0.00054435**
ZNF76	**ILMN_6486**	**NM_003427.3**	**-0.620226015**	**1.171212418**	**0.00092501**
C4orf9	**ILMN_10925**	**NM_003703.1**	**-0.620535032**	**1.215629606**	**0.00038208**
KIAA1958	**ILMN_17353**	**NM_133465.1**	**-0.621349152**	**0.972702081**	**0.00872690**

TAF1C	**ILMN_4122**	**NM_139353.1**	**-0.622990892**	**1.445562625**	**0.00002040**
IDS	**ILMN_2023**	**NM_000202.2**	**-0.62329983**	**0.900843185**	**0.00072718**
PRAF1	**ILMN_2978**	**NM_022490.1**	**-0.623820785**	**1.032997273**	**0.00096113**
C20orf29	**ILMN_7561**	**NM_018347.1**	**-0.624761404**	**1.125534915**	**0.00062872**
GATAD2A	**ILMN_1801**	**NM_017660.2**	**-0.625589049**	**1.147481763**	**0.00011571**
ACACB	**ILMN_3318**	**NM_001093.2**	**-0.626024408**	**1.038757802**	**0.00759206**
ARHGDIA	**ILMN_15874**	**NM_004309.3**	**-0.628056706**	**0.95971498**	**0.00078607**
RBKS	**ILMN_21205**	**NM_022128.1**	**-0.629280777**	**1.243196703**	**0.00029184**
GMEB1	**ILMN_14071**	**NM_006582.2**	**-0.630458154**	**1.010146742**	**0.00544840**
KIAA0179	**ILMN_14288**	**NM_015056.1**	**-0.631285034**	**0.926908086**	**0.00071174**
C17orf48	**ILMN_6506**	**NM_020233.3**	**-0.631507612**	**1.435374244**	**0.00003101**
HNRPL	**ILMN_5928**	**NM_001533.2**	**-0.631636976**	**0.705438767**	**0.00325831**
PTPN1	**ILMN_5417**	**NM_002827.2**	**-0.633813993**	**0.776627472**	**0.00670939**
IRF2BP1	**ILMN_6522**	**NM_015649.1**	**-0.635292951**	**0.890038121**	**0.00457907**
WBSCR22	**ILMN_26330**	**NM_017528.2**	**-0.636188587**	**0.878022756**	**0.00081436**
LOC91431	**ILMN_26207**	**NM_138698.2**	**-0.63820878**	**0.657348609**	**0.00926809**
PAQR3	**ILMN_20371**	**NM_177453.2**	**-0.640215369**	**0.683823498**	**0.00569143**
HSF2	**ILMN_3760**	**NM_004506.2**	**-0.640864075**	**0.758861543**	**0.00229860**
GUK1	**ILMN_18191**	**NM_000858.4**	**-0.640890663**	**1.421767573**	**0.00002100**
BRF2	**ILMN_2966**	**NM_018310.2**	**-0.641792347**	**0.712970641**	**0.00941033**
LOC440348	**ILMN_12371**	**NM_001018059.1**	**-0.643288377**	**0.836871612**	**0.00364941**
PRRT3	**ILMN_19313**	**NM_207351.2**	**-0.644537989**	**0.90258133**	**0.00073831**
H1FX	**ILMN_26614**	**NM_006026.2**	**-0.645743275**	**0.726455223**	**0.00562703**
HSPA5	**ILMN_16546**	**NM_005347.2**	**-0.645854429**	**1.044504608**	**0.00076007**
USP7	**ILMN_3791**	**NM_003470.1**	**-0.645861103**	**0.765032434**	**0.00861637**
RAGE	**ILMN_5109**	**NM_014226.1**	**-0.646248862**	**0.816833521**	**0.00096010**
HEAB	**ILMN_17235**	**NM_006831.1**	**-0.647356002**	**0.95592989**	**0.00728557**
CCDC59	**ILMN_12564**	**NM_014167.1**	**-0.649844073**	**0.844038281**	**0.00199060**
UBE2B	**ILMN_19013**	**NM_003337.2**	**-0.650171493**	**0.856337935**	**0.00054149**
TMEM1	**ILMN_9744**	**NM_003274.3**	**-0.650272701**	**1.006083249**	**0.00003470**
CXXC5	**ILMN_10449**	**NM_016463.5**	**-0.650664893**	**0.600426859**	**0.00854733**

SRRM1	**ILMN_2484**	**NM_005839.2**	**-0.650793883**	**1.344938502**	**0.00013658**
SFRS3	**ILMN_29649**	**NM_003017.3**	**-0.653578545**	**0.999498208**	**0.00997300**
PDCL3	**ILMN_30010**	**NM_024065.3**	**-0.654245679**	**0.941531099**	**0.00056039**
PRR3	**ILMN_21022**	**NM_025263.1**	**-0.654275478**	**1.237039594**	**0.00302803**
BTAF1	**ILMN_8616**	**NM_003972.2**	**-0.655041764**	**2.000675247**	**0.00000148**
LAS1L	**ILMN_10798**	**NM_031206.2**	**-0.655593111**	**1.230989934**	**0.00176207**
SLC6A16	**ILMN_10688**	**NM_014037.2**	**-0.656717923**	**0.83343565**	**0.00328586**
PIM2	**ILMN_27932**	**NM_006875.2**	**-0.657356732**	**0.93398096**	**0.00120534**
KIAA1600	**ILMN_8082**	**NM_020940.2**	**-0.657609423**	**0.858231585**	**0.00665377**
EXOSC2	**ILMN_11049**	**NM_014285.4**	**-0.658469055**	**0.89439764**	**0.00137281**
C6orf149	**ILMN_18141**	**NM_020408.3**	**-0.658551633**	**0.968041299**	**0.00207399**
NUDT16L1	**ILMN_20270**	**NM_032349.2**	**-0.658754939**	**1.000965634**	**0.00011280**
PQLC1	**ILMN_5626**	**NM_025078.3**	**-0.658826711**	**1.46688705**	**0.00003286**
TMC6	**ILMN_19035**	**NM_007267.5**	**-0.659317538**	**0.988841774**	**0.00146505**
SH3BP4	**ILMN_138674**	**NM_014521.1**	**-0.659423978**	**1.080747687**	**0.00307405**
C21orf66	**ILMN_15558**	**NM_013329.2**	**-0.660169817**	**1.360744855**	**0.00011543**
RPL26	**ILMN_139337**	**NM_000987.2**	**-0.660388215**	**0.838265035**	**0.00102103**
JMJD2B	**ILMN_2379**	**NM_015015.1**	**-0.660517636**	**0.764706358**	**0.00767484**
ZNF431	**ILMN_7008**	**NM_133473.1**	**-0.660741637**	**0.982149669**	**0.00093699**
DGCR14	**ILMN_694**	**NM_022719.1**	**-0.661198685**	**0.947293749**	**0.00241510**
TEF	**ILMN_7440**	**NM_003216.2**	**-0.66136378**	**1.177478992**	**0.00011265**
POLE	**ILMN_18431**	**NM_006231.2**	**-0.662672826**	**0.871053439**	**0.00362261**
CRKRS	**ILMN_9786**	**NM_016507.1**	**-0.663155806**	**1.024487964**	**0.00038030**
LMNB2	**ILMN_24712**	**NM_032737.2**	**-0.663422716**	**0.819620917**	**0.00522630**
PPAN	**ILMN_25948**	**NM_020230.4**	**-0.663459334**	**0.811996002**	**0.00656122**
TRAF6	**ILMN_8846**	**NM_004620.2**	**-0.664832171**	**1.183856973**	**0.00145782**
ZNF238	**ILMN_5128**	**NM_205768.1**	**-0.66538502**	**1.063282**	**0.00121218**
DIP13B	**ILMN_139404**	**NM_018171.2**	**-0.665918599**	**0.816448496**	**0.00182992**
C1orf122	**ILMN_26311**	**NM_198446.1**	**-0.667704514**	**0.758544159**	**0.00554261**
WDR79	**ILMN_1814**	**NM_018081.1**	**-0.66887631**	**1.103656742**	**0.00682748**
ZNF75A	**ILMN_3468**	**NM_153028.1**	**-0.668953048**	**0.77004373**	**0.00387346**

EBPL	**ILMN_18169**	**NM_032565.1**	**-0.669087401**	**0.948622616**	**0.00047601**
SUV39H1	**ILMN_6133**	**NM_003173.1**	**-0.670194855**	**0.975895869**	**0.00028897**
MORC4	**ILMN_5233**	**NM_024657.2**	**-0.670720191**	**1.081812244**	**0.00034502**
RHOT2	**ILMN_21353**	**NM_138769.1**	**-0.67287188**	**0.718635543**	**0.00588322**
LSM5	**ILMN_17896**	**NM_012322.1**	**-0.673056964**	**1.1919698**	**0.00001152**
ZNF35	**ILMN_15315**	**NM_003420.2**	**-0.676575556**	**1.219238883**	**0.00088914**
IHPK1	**ILMN_1661**	**NM_153273.3**	**-0.677703526**	**0.844737234**	**0.00342912**
NOLA1	**ILMN_137056**	**NM_032993.1**	**-0.677952037**	**1.201625866**	**0.00010415**
ZNF545	**ILMN_15084**	**NM_133466.1**	**-0.678360671**	**0.857507765**	**0.00077872**
SCMH1	**ILMN_5778**	**NM_001031694.1**	**-0.678476927**	**1.088681731**	**0.00117579**
XPO4	**ILMN_11492**	**NM_022459.3**	**-0.678501648**	**1.075202138**	**0.00048775**
CCDC69	**ILMN_12667**	**NM_015621.2**	**-0.680078881**	**0.782969982**	**0.00618847**
CALM1	**ILMN_137303**	**NM_006888.2**	**-0.680552658**	**0.845807834**	**0.00246513**
C21orf57	**ILMN_21121**	**NM_058181.1**	**-0.683310928**	**0.78631219**	**0.00469043**
RANBP3	**ILMN_27457**	**NM_003624.1**	**-0.683827258**	**0.90891312**	**0.00063720**
ZNF142	**ILMN_11618**	**NM_005081.2**	**-0.684025915**	**1.286496115**	**0.00001617**
CBLL1	**ILMN_24021**	**NM_024814.1**	**-0.68419063**	**0.883478823**	**0.00615600**
OTUD5	**ILMN_8231**	**NM_017602.2**	**-0.684681416**	**0.824341727**	**0.00517850**
C14orf4	**ILMN_23475**	**NM_024496.2**	**-0.684736533**	**1.011836565**	**0.00048207**
PP2447	**ILMN_25172**	**NM_025204.2**	**-0.684755437**	**1.569550738**	**0.00005516**
USP14	**ILMN_137727**	**NM_005151.2**	**-0.684905707**	**0.865550813**	**0.00568072**
SEC61B	**ILMN_446**	**NM_006808.2**	**-0.687486258**	**0.670776632**	**0.00406423**
RNF126	**ILMN_5287**	**NM_194460.1**	**-0.68765419**	**1.014174257**	**0.00203408**
OFD1	**ILMN_10088**	**NM_003611.1**	**-0.687787909**	**0.825117046**	**0.00356926**
RENT1	**ILMN_138046**	**NM_002911.2**	**-0.687855528**	**0.699664811**	**0.00739681**
ZNF17	**ILMN_13772**	**NM_006959.1**	**-0.688040083**	**0.670592008**	**0.00734045**
UBR1	**ILMN_137462**	**NM_174916.1**	**-0.688734037**	**1.016853169**	**0.00193488**
LTBP4	**ILMN_21051**	**NM_003573.1**	**-0.690128055**	**0.744259013**	**0.00665099**
DNMT3A	**ILMN_26218**	**NM_175630.1**	**-0.690260033**	**1.570643653**	**0.00000747**
GNL1	**ILMN_3133**	**NM_005275.2**	**-0.691657668**	**1.02612133**	**0.00132046**
ARID3B	**ILMN_4032**	**NM_006465.1**	**-0.691793692**	**0.977354302**	**0.00033123**

LEPROTL1	**ILMN_4515**	**NM_015344.1**	**-0.691937884**	**0.806940218**	**0.00299727**
GRPEL1	**ILMN_7749**	**NM_025196.2**	**-0.692082354**	**1.001336975**	**0.00070527**
CSGlcA-T	**ILMN_21838**	**NM_019015.1**	**-0.694221557**	**1.127669784**	**0.00026213**
GCC1	**ILMN_21168**	**NM_024523.5**	**-0.6951262**	**1.366586368**	**0.00003783**
RAD23B	**ILMN_19346**	**NM_002874.3**	**-0.695226728**	**1.102097779**	**0.00406715**
LOC93081	**ILMN_8559**	**NM_138779.2**	**-0.695301754**	**0.760850692**	**0.00280824**
FLJ10374	**ILMN_3627**	**NM_018074.3**	**-0.695464213**	**1.079974637**	**0.00457030**
C17orf53	**ILMN_17950**	**NM_024032.2**	**-0.696635685**	**1.255525354**	**0.00366275**
NCK2	**ILMN_8369**	**NM_003581.2**	**-0.696808439**	**0.886780127**	**0.00135857**
C20orf52	**ILMN_15797**	**NM_080748.1**	**-0.699212306**	**0.622463785**	**0.00379560**
MLF1IP	**ILMN_16700**	**NM_024629.2**	**-0.699384768**	**0.862592142**	**0.00813547**
ZNF549	**ILMN_12970**	**NM_153263.1**	**-0.699401199**	**0.741164155**	**0.00389691**
CLYBL	**ILMN_27821**	**NM_206808.1**	**-0.699524111**	**1.250909264**	**0.00053328**
ZNF136	**ILMN_7813**	**NM_003437.2**	**-0.700419265**	**0.833346179**	**0.00189626**
STXBP5	**ILMN_3767**	**NM_139244.2**	**-0.704314781**	**1.232465712**	**0.00019410**
ALG9	**ILMN_22873**	**NM_024740.1**	**-0.70462799**	**0.927910229**	**0.00503792**
ZNF426	**ILMN_13082**	**NM_024106.1**	**-0.705339858**	**0.961994526**	**0.00367733**
DENND4C	**ILMN_2455**	**NM_017925.3**	**-0.705529703**	**1.146949146**	**0.00115710**
EIF1	**ILMN_3037**	**NM_005801.3**	**-0.70553125**	**0.947529023**	**0.00032097**
KLHL21	**ILMN_14418**	**NM_014851.2**	**-0.706027126**	**0.898564478**	**0.00204385**
ANK3	**ILMN_2714**	**NM_001149.2**	**-0.706311526**	**0.911010591**	**0.00141958**
MPP6	**ILMN_28432**	**NM_016447.2**	**-0.707177805**	**0.740970318**	**0.00083022**
CCL28	**ILMN_1615**	**NM_019846.3**	**-0.708252508**	**1.273210594**	**0.00046153**
SNTA1	**ILMN_4031**	**NM_003098.2**	**-0.708334717**	**0.978312341**	**0.00055783**
TARBP1	**ILMN_14414**	**NM_005646.2**	**-0.709611231**	**0.976054013**	**0.00211269**
JARID1A	**ILMN_12150**	**NM_005056.1**	**-0.711271184**	**1.01467053**	**0.00143321**
C20orf149	**ILMN_21879**	**NM_024299.2**	**-0.711320456**	**0.814646204**	**0.00387198**
PILRB	**ILMN_1984**	**NM_175047.2**	**-0.712138848**	**0.731016965**	**0.00355462**
TERF1	**ILMN_11986**	**NM_017489.1**	**-0.712178428**	**0.990225787**	**0.00113241**
MSI2	**ILMN_525**	**NM_138962.2**	**-0.712606214**	**1.035281345**	**0.00176819**
MRPS18A	**ILMN_2508**	**NM_018135.2**	**-0.714481425**	**1.271085307**	**0.00053144**

C3orf39	**ILMN_2070**	NM_032806.4	-0.714496822	1.136707686	0.00013448
PCSK5	**ILMN_6597**	NM_006200.2	-0.715939114	1.036876117	0.00035864
DPP9	**ILMN_26244**	NM_139159.3	-0.716419901	0.912894052	0.00060259
EDD1	**ILMN_11309**	NM_015902.4	-0.716696292	2.001580199	0.00003324
C16orf7	**ILMN_693**	NM_004913.1	-0.717368103	0.922793072	0.00483044
SLC2A4RG	**ILMN_11640**	NM_020062.3	-0.717939345	0.844967139	0.00210980
SBF1	**ILMN_22729**	NM_002972.1	-0.719573729	0.872216344	0.00261564
N4BP2	**ILMN_7118**	NM_018177.2	-0.720407286	0.643502768	0.00329044
CCNK	**ILMN_4502**	NM_003858.2	-0.72058077	1.458689467	0.00010225
EHD1	**ILMN_17263**	NM_006795.2	-0.720719364	0.766609451	0.00483019
BANP	**ILMN_8638**	NM_079837.1	-0.722372231	0.865374603	0.00546821
TNIP2	**ILMN_6730**	NM_024309.2	-0.72274032	1.019287814	0.00361216
ZNF274	**ILMN_6185**	NM_016324.2	-0.723234244	1.165667625	0.00001985
STAT5B	**ILMN_16004**	NM_012448.3	-0.724319615	0.858281253	0.00926193
ASB6	**ILMN_13316**	NM_177999.1	-0.72611613	0.921960087	0.00553967
NY-SAR-48	**ILMN_2230**	NM_001011699.1	-0.727033786	1.317919304	0.00086801
U2AF1L3	**ILMN_8757**	NM_144987.1	-0.72871967	1.092424247	0.00016495
CEBPZ	**ILMN_10421**	NM_005760.2	-0.72887728	0.967945932	0.00257282
SNRPA1	**ILMN_1523**	NM_003090.2	-0.729357658	1.157672317	0.00072721
ZNF593	**ILMN_20499**	NM_015871.2	-0.729711215	0.870749371	0.00144956
DLNB14	**ILMN_6803**	NM_198489.1	-0.7305056	1.233687869	0.00130973
ACOT4	**ILMN_5812**	NM_152331.2	-0.730543719	0.709395594	0.00449761
PARC	**ILMN_14183**	NM_015089.2	-0.730864807	0.732382684	0.00622436
AYTL2	**ILMN_15076**	NM_024830.3	-0.731746218	1.019606414	0.00177154
MLL4	**ILMN_28047**	NM_014727.1	-0.732461775	0.926478158	0.00075914
ABCF1	**ILMN_6938**	NM_001090.2	-0.732508988	1.080306669	0.00095497
ATG9A	**ILMN_24497**	NM_024085.2	-0.733386266	0.893550371	0.00569509
C1orf33	**ILMN_1930**	NM_016183.2	-0.735053733	1.273787628	0.00058830
PLEKHG4	**ILMN_11658**	NM_015432.2	-0.735675634	0.781101106	0.00809126
CYLD	**ILMN_28818**	NM_015247.1	-0.735700277	0.925754857	0.00099722
ACRC	**ILMN_21976**	NM_052957.2	-0.736674197	0.993429353	0.00204543

UXT	**ILMN_2795**	**NM_004182.2**	**-0.736776229**	**1.01746461**	**0.00008724**
MYH3	**ILMN_20953**	**NM_002470.1**	**-0.737874135**	**1.01897372**	**0.00311632**
DDX39	**ILMN_19976**	**NM_005804.2**	**-0.738861267**	**1.494534945**	**0.00001645**
PRKCA	**ILMN_24085**	**NM_002737.2**	**-0.74026775**	**1.830687543**	**0.00002155**
LOC55565	**ILMN_22894**	**NM_017530.1**	**-0.740330872**	**1.103927452**	**0.00127144**
PARP15	**ILMN_3312**	**NM_152615.1**	**-0.740519502**	**0.59182088**	**0.00922714**
UBE2J1	**ILMN_12301**	**NM_016021.2**	**-0.741117847**	**1.006081046**	**0.00022877**
LCMT2	**ILMN_7283**	**NM_014793.3**	**-0.74274383**	**0.744741119**	**0.00146696**
bA16L21.2.1	**ILMN_13855**	**NM_001015882.1**	**-0.742794207**	**0.714961107**	**0.00950935**
ELL	**ILMN_23957**	**NM_006532.2**	**-0.742801328**	**0.941853782**	**0.00238549**
NARG1	**ILMN_16240**	**NM_057175.3**	**-0.743022897**	**0.99023172**	**0.00691777**
NELF	**ILMN_28709**	**NM_015537.3**	**-0.743522541**	**0.667130343**	**0.00722468**
FOXP1	**ILMN_20586**	**NM_032682.4**	**-0.744323801**	**1.338638759**	**0.00012440**
KBTBD2	**ILMN_2507**	**NM_015483.1**	**-0.745628316**	**1.151680836**	**0.00011902**
HMGCS1	**ILMN_18980**	**NM_002130.4**	**-0.748106632**	**1.188287026**	**0.00046412**
TAF5L	**ILMN_6872**	**NM_014409.3**	**-0.749085176**	**0.868547839**	**0.00092389**
RNF138	**ILMN_587**	**NM_016271.3**	**-0.752277852**	**1.235057135**	**0.00009252**
EID3	**ILMN_22737**	**NM_001008394.1**	**-0.753211703**	**0.983834177**	**0.00177572**
BTBD6	**ILMN_28665**	**NM_033271.1**	**-0.753404502**	**1.357730493**	**0.00020193**
ELK4	**ILMN_16457**	**NM_021795.2**	**-0.755005589**	**0.67188118**	**0.00715763**
TPST1	**ILMN_2477**	**NM_003596.2**	**-0.755507792**	**1.228445923**	**0.00011312**
RG9MTD1	**ILMN_26970**	**NM_017819.1**	**-0.756251186**	**0.997215873**	**0.00046399**
HYPE	**ILMN_24815**	**NM_007076.2**	**-0.756371069**	**1.076873012**	**0.00190176**
SNX26	**ILMN_12508**	**NM_052948.2**	**-0.758065079**	**0.8931702**	**0.00074244**
CAMK1G	**ILMN_28359**	**NM_020439.2**	**-0.758706082**	**0.831151411**	**0.00712541**
TOPORS	**ILMN_20252**	**NM_005802.2**	**-0.759046826**	**1.053204205**	**0.00024076**
PRSS15	**ILMN_5804**	**NM_004793.2**	**-0.759266614**	**0.907428592**	**0.00120227**
TUBA1	**ILMN_20363**	**NM_006000.1**	**-0.760742973**	**0.712101421**	**0.00570485**
RPL37A	**ILMN_137134**	**NM_000998.3**	**-0.760816832**	**0.867875221**	**0.00096298**
MADD	**ILMN_9428**	**NM_130471.1**	**-0.763259324**	**0.924374443**	**0.00427367**
MIF	**ILMN_26688**	**NM_002415.1**	**-0.763324033**	**0.748772869**	**0.00266627**

UBE2O	**ILMN_17049**	**NM_022066.2**	**-0.763507156**	**1.161334399**	**0.00644586**
FLJ44216	**ILMN_16903**	**NM_198567.1**	**-0.764370213**	**0.90170466**	**0.00705292**
RBJ	**ILMN_30155**	**NM_016544.1**	**-0.76469689**	**0.978556237**	**0.00239779**
STAT4	**ILMN_8937**	**NM_003151.2**	**-0.765414901**	**0.907546517**	**0.00158587**
ELK4	**ILMN_7899**	**NM_001973.2**	**-0.765582106**	**1.085812566**	**0.00565791**
YPEL5	**ILMN_8828**	**NM_016061.1**	**-0.765651622**	**0.877344177**	**0.00894663**
ZNF548	**ILMN_16141**	**NM_152909.2**	**-0.766023955**	**0.9212858**	**0.00022428**
VPS11	**ILMN_13229**	**NM_021729.4**	**-0.766315738**	**1.106426752**	**0.00010581**
SAV1	**ILMN_15731**	**NM_021818.2**	**-0.767096079**	**0.888541282**	**0.00128585**
ZNF447	**ILMN_16020**	**NM_023926.3**	**-0.768713349**	**0.826659263**	**0.00080815**
EYA3	**ILMN_23590**	**NM_172098.1**	**-0.769040512**	**0.942443665**	**0.00038469**
MESDC1	**ILMN_18570**	**NM_022566.1**	**-0.770159479**	**1.08221592**	**0.00685104**
EML4	**ILMN_21821**	**NM_019063.2**	**-0.771210818**	**0.785648246**	**0.00704352**
RBM12	**ILMN_3104**	**NM_006047.4**	**-0.773445395**	**1.256818095**	**0.00004835**
SUPT3H	**ILMN_4557**	**NM_003599.1**	**-0.775989516**	**0.790995011**	**0.00654034**
PELO	**ILMN_19741**	**NM_015946.4**	**-0.777913817**	**0.828611002**	**0.00586600**
C17orf63	**ILMN_5219**	**NM_018182.1**	**-0.779026498**	**1.527509018**	**0.00000522**
NFKBIA	**ILMN_6745**	**NM_020529.1**	**-0.780491608**	**0.650591266**	**0.00530786**
SLC20A2	**ILMN_29659**	**NM_006749.3**	**-0.782979975**	**1.033443966**	**0.00285246**
TDP1	**ILMN_12296**	**NM_018319.3**	**-0.783501996**	**1.750778225**	**0.00003375**
ZBTB25	**ILMN_7193**	**NM_006977.2**	**-0.783772367**	**1.293682365**	**0.00001214**
TRAPPC6A	**ILMN_1174**	**NM_024108.1**	**-0.783976007**	**0.952296907**	**0.00066233**
PPIE	**ILMN_13734**	**NM_203456.1**	**-0.784546972**	**0.738368064**	**0.00695734**
RAD54L2	**ILMN_30244**	**NM_015106.1**	**-0.785402093**	**1.01822683**	**0.00082883**
DKFZp434K1815	**ILMN_12314**	**NM_152892.1**	**-0.786393593**	**1.017330098**	**0.00076794**
SFI1	**ILMN_23938**	**NM_014775.2**	**-0.786495819**	**1.077617495**	**0.00192246**
GPATC4	**ILMN_839**	**NM_182679.1**	**-0.787986184**	**1.138781761**	**0.00084221**
SKIV2L	**ILMN_646**	**NM_006929.4**	**-0.789248907**	**1.727502765**	**0.00001265**
LUZP1	**ILMN_2667**	**NM_033631.2**	**-0.796097071**	**0.967871182**	**0.00268820**
MNT	**ILMN_21283**	**NM_020310.2**	**-0.7978727**	**1.20884313**	**0.00070966**
BRPF3	**ILMN_8164**	**NM_015695.1**	**-0.798153286**	**1.272715574**	**0.00000760**

PRDM4	**ILMN_1579**	NM_012406.3	-0.79826194	1.253362778	0.00020244
NFKBIZ	**ILMN_16362**	NM_001005474.1	-0.800584648	0.745885878	0.00925134
STAG3	**ILMN_28713**	NM_012447.2	-0.801293102	0.803248924	0.00395595
SFPQ	**ILMN_5703**	NM_005066.1	-0.802153677	0.928784898	0.00036238
TWISTNB	**ILMN_24604**	NM_001002926.1	-0.802196716	1.019362059	0.00157788
CITED4	**ILMN_15271**	NM_133467.2	-0.803333157	0.992074124	0.00086738
DOCK9	**ILMN_12914**	NM_015296.1	-0.805523629	1.147821312	0.00005151
CTRL	**ILMN_21415**	NM_001907.1	-0.806071732	0.807620012	0.00331623
UBXD4	**ILMN_23019**	NM_181713.3	-0.807345562	0.860528095	0.00123436
RALGDS	**ILMN_9432**	NM_006266.2	-0.807833401	0.996741813	0.00054221
DKFZp686L1814	**ILMN_26192**	NM_194282.1	-0.808475893	1.037713738	0.00023363
PXN	**ILMN_14932**	NM_002859.1	-0.809403238	0.809655666	0.00041816
C9orf28	**ILMN_20760**	NM_033446.1	-0.809751743	0.803182923	0.00936620
IL4R	**ILMN_17789**	NM_000418.2	-0.810302045	0.973385568	0.00071234
RPL13	**ILMN_2271**	NM_033251.1	-0.810746203	1.137734142	0.00006465
TXNDC11	**ILMN_17937**	NM_015914.5	-0.810961885	1.01531958	0.00912042
ZXDB	**ILMN_4827**	NM_007157.3	-0.812239002	1.025037862	0.00016710
ABCB1	**ILMN_7395**	NM_000927.3	-0.813841941	0.830184605	0.00187186
SLC10A3	**ILMN_4203**	NM_019848.2	-0.814201516	0.77976641	0.00419819
GFPT1	**ILMN_5797**	NM_002056.1	-0.815838939	1.010349776	0.00913416
YAF2	**ILMN_19509**	NM_001012424.1	-0.817039087	1.544588783	0.00007635
CRTC2	**ILMN_28825**	NM_181715.1	-0.819154628	1.149987942	0.00102618
GSPT1	**ILMN_5039**	NM_002094.1	-0.819395045	1.123312625	0.00198255
FLJ31204	**ILMN_14285**	NM_174912.2	-0.82136343	1.204204377	0.00070829
POMT1	**ILMN_18145**	NM_007171.2	-0.821400025	0.961685443	0.00626720
FLJ38964	**ILMN_22580**	NM_173527.1	-0.821475189	1.096974111	0.00212659
TBC1D15	**ILMN_20610**	NM_022771.3	-0.821648635	1.158524645	0.00067360
AXIN1	**ILMN_6274**	NM_181050.1	-0.822583751	0.790015272	0.00511492
FKBP11	**ILMN_14765**	NM_016594.1	-0.823000352	0.74672709	0.00267008
KIAA0961	**ILMN_26156**	NM_014898.1	-0.824726521	1.080504235	0.00146065
PLEKHG2	**ILMN_4000**	NM_022835.1	-0.825611045	1.267875781	0.00079500

C20orf11	**ILMN_27220**	**NM_017896.2**	**-0.827007513**	**1.128744745**	**0.00003984**
PIAS2	**ILMN_11074**	**NM_173206.2**	**-0.830152143**	**1.456467935**	**0.00131011**
RUNX3	**ILMN_16236**	**NM_004350.1**	**-0.830408072**	**1.178110719**	**0.00021931**
RAPGEF6	**ILMN_6036**	**NM_016340.3**	**-0.830860715**	**0.719502179**	**0.00450501**
HPS4	**ILMN_5996**	**NM_152843.1**	**-0.831101249**	**1.850462398**	**0.00002616**
ATP2C1	**ILMN_16216**	**NM_014382.2**	**-0.8314472**	**1.496804384**	**0.00032372**
MPP5	**ILMN_21733**	**NM_022474.2**	**-0.831785694**	**1.231105814**	**0.00021771**
EBI2	**ILMN_5986**	**NM_004951.3**	**-0.832449329**	**0.736312502**	**0.00715280**
CCDC58	**ILMN_27140**	**NM_001017928.2**	**-0.833159452**	**1.090267998**	**0.00039098**
ZNF101	**ILMN_10157**	**NM_033204.2**	**-0.835053726**	**0.883406529**	**0.00125971**
CCDC45	**ILMN_24620**	**NM_138363.1**	**-0.83514053**	**1.715922417**	**0.00000317**
DGKD	**ILMN_2079**	**NM_152879.2**	**-0.837081703**	**1.214349576**	**0.00006287**
JUND	**ILMN_29325**	**NM_005354.2**	**-0.839529854**	**1.44576351**	**0.00000068**
CALR	**ILMN_18909**	**NM_004343.2**	**-0.840122952**	**0.980075778**	**0.00025069**
ASNS	**ILMN_14195**	**NM_133436.1**	**-0.840850315**	**1.139496001**	**0.00001648**
IPO4	**ILMN_26191**	**NM_024658.3**	**-0.841511864**	**1.222419638**	**0.00002488**
MOAP1	**ILMN_10935**	**NM_022151.4**	**-0.841645123**	**1.343199607**	**0.00008726**
MGC40579	**ILMN_6451**	**NM_152776.1**	**-0.842645626**	**0.934865684**	**0.00247629**
ERCC5	**ILMN_13388**	**NM_000123.2**	**-0.843937201**	**1.129758717**	**0.00031986**
CIB1	**ILMN_11794**	**NM_006384.2**	**-0.844079627**	**1.058491226**	**0.00150153**
C14orf169	**ILMN_4108**	**NM_024644.1**	**-0.845960892**	**1.269502867**	**0.00002600**
ALDOC	**ILMN_15767**	**NM_005165.2**	**-0.845999485**	**1.06749991**	**0.00086194**
LOC56902	**ILMN_26243**	**NM_020143.2**	**-0.846100126**	**0.754187475**	**0.00240439**
RRM1	**ILMN_14789**	**NM_001033.2**	**-0.846190811**	**0.88356385**	**0.00601741**
C14orf32	**ILMN_24999**	**NM_144578.2**	**-0.8467791**	**1.110496493**	**0.00648758**
ZNF484	**ILMN_2513**	**NM_031486.1**	**-0.847260349**	**0.983148562**	**0.00087595**
DNAJB2	**ILMN_137328**	**NM_006736.4**	**-0.847437659**	**1.454772657**	**0.00000649**
SBDS	**ILMN_15766**	**NM_016038.2**	**-0.847947777**	**0.599100733**	**0.00910234**
LITAF	**ILMN_7898**	**NM_004862.2**	**-0.848079954**	**1.064922674**	**0.00250002**
SNRK	**ILMN_5234**	**NM_017719.3**	**-0.849034935**	**1.225928527**	**0.00032831**
DPP4	**ILMN_20248**	**NM_001935.3**	**-0.849217133**	**0.77184925**	**0.00411250**

TFRC	**ILMN_12909**	**NM_003234.1**	**-0.84942199**	**1.14393614**	**0.00014138**
CACNA2D2	**ILMN_15989**	**NM_001005505.1**	**-0.849869058**	**0.79755057**	**0.00438546**
MAP6D1	**ILMN_7455**	**NM_024871.1**	**-0.85096354**	**1.037983445**	**0.00367303**
MGC4728	**ILMN_1981**	**NM_198542.1**	**-0.851368338**	**1.04653516**	**0.00004789**
HSPC176	**ILMN_26849**	**NM_016209.1**	**-0.852041704**	**1.178838591**	**0.00001505**
DNAJB1	**ILMN_19740**	**NM_006145.1**	**-0.852508634**	**0.85068799**	**0.00581678**
COCH	**ILMN_7401**	**NM_004086.1**	**-0.853301185**	**1.006291485**	**0.00224105**
ST6GALNAC4	**ILMN_137977**	**NM_175040.1**	**-0.854315521**	**1.779605121**	**0.00000418**
FOXP1	**ILMN_21389**	**NM_001012505.1**	**-0.854606153**	**1.423320073**	**0.00019417**
ZNF324	**ILMN_29920**	**NM_014347.1**	**-0.856946591**	**0.781397595**	**0.00557212**
RPS7	**ILMN_10275**	**NM_001011.3**	**-0.856988557**	**0.802701927**	**0.00150351**
ZBED4	**ILMN_8641**	**NM_014838.1**	**-0.859713393**	**1.523638248**	**0.00003818**
ZFP42	**ILMN_137432**	**NM_174900.2**	**-0.859725141**	**1.19719526**	**0.00295165**
POLR1C	**ILMN_26638**	**NM_203290.1**	**-0.860212976**	**1.192204871**	**0.00013691**
GARNL1	**ILMN_2823**	**NM_194301.2**	**-0.861956735**	**1.353019331**	**0.00032433**
LANCL2	**ILMN_920**	**NM_018697.3**	**-0.862500848**	**1.173455357**	**0.00105055**
TPM2	**ILMN_22618**	**NM_213674.1**	**-0.862570029**	**0.757707188**	**0.00573649**
LGMN	**ILMN_20242**	**NM_005606.5**	**-0.863810044**	**0.698299435**	**0.00748695**
RAB11FIP3	**ILMN_7754**	**NM_014700.2**	**-0.864253745**	**1.039540889**	**0.00011007**
PWP2H	**ILMN_28098**	**NM_005049.2**	**-0.864825833**	**1.15514266**	**0.00041590**
JAM3	**ILMN_25295**	**NM_032801.3**	**-0.866648014**	**0.642975938**	**0.00684587**
SRRM2	**ILMN_21088**	**NM_016333.2**	**-0.866980414**	**0.656284143**	**0.00615188**
CHD1	**ILMN_27142**	**NM_001270.2**	**-0.867782711**	**0.915916348**	**0.00428004**
DRD3	**ILMN_137372**	**NM_033663.2**	**-0.868703905**	**0.749723692**	**0.00579986**
ASCC3L1	**ILMN_18834**	**NM_014014.2**	**-0.868807333**	**1.377643623**	**0.00001703**
MGMT	**ILMN_18705**	**NM_002412.2**	**-0.869575292**	**0.843019505**	**0.00366941**
NFKBIB	**ILMN_8370**	**NM_001001716.1**	**-0.871643725**	**1.022728781**	**0.00128423**
TCP11L2	**ILMN_21615**	**NM_152772.1**	**-0.872360842**	**0.87759018**	**0.00602482**
MARCH6	**ILMN_2629**	**NM_005885.2**	**-0.874989813**	**0.996225291**	**0.00361251**
NARG1L	**ILMN_9228**	**NM_018527.2**	**-0.875950484**	**1.25430275**	**0.00011058**
FYN	**ILMN_5919**	**NM_002037.3**	**-0.877027664**	**1.138050737**	**0.00037810**

ZNF250	**ILMN_25690**	**NM_021061.1**	**-0.877490052**	**0.971425594**	**0.00079302**
SESN3	**ILMN_11604**	**NM_144665.2**	**-0.879944442**	**1.134947842**	**0.00164548**
RIMS3	**ILMN_21581**	**NM_014747.2**	**-0.886401668**	**1.720794738**	**0.00002887**
SNX25	**ILMN_8556**	**NM_031953.2**	**-0.886699432**	**1.255349214**	**0.00001795**
JARID1B	**ILMN_14812**	**NM_006618.3**	**-0.886935531**	**1.409279841**	**0.00008858**
PITPNC1	**ILMN_12660**	**NM_181671.1**	**-0.888673165**	**1.417624087**	**0.00006531**
B4GALT1	**ILMN_20711**	**NM_001497.2**	**-0.888931145**	**0.715047063**	**0.00673477**
POLS	**ILMN_866**	**NM_006999.3**	**-0.890007455**	**1.414254344**	**0.00001205**
SLC22A17	**ILMN_10076**	**NM_016609.3**	**-0.891041878**	**0.812773625**	**0.00232667**
CABLES2	**ILMN_28000**	**NM_031215.1**	**-0.891745112**	**1.363327575**	**0.00049764**
PTPRM	**ILMN_19957**	**NM_002845.2**	**-0.892112842**	**1.097184571**	**0.00293499**
ABHD14B	**ILMN_24812**	**NM_032750.1**	**-0.892326662**	**1.44224977**	**0.00004053**
EBP	**ILMN_12837**	**NM_006579.1**	**-0.896139529**	**0.795734565**	**0.00203677**
PLCG1	**ILMN_3773**	**NM_002660.2**	**-0.896364198**	**0.806098446**	**0.00364560**
MGC11257	**ILMN_22349**	**NM_032350.3**	**-0.898197114**	**1.023241639**	**0.00025317**
THUMPD2	**ILMN_25512**	**NM_025264.2**	**-0.90015255**	**1.328191704**	**0.00000093**
CD28	**ILMN_5437**	**NM_006139.1**	**-0.901792636**	**0.970867535**	**0.00007722**
NUP155	**ILMN_1051**	**NM_004298.2**	**-0.904508354**	**1.137552613**	**0.00027759**
MASTL	**ILMN_7073**	**NM_032844.1**	**-0.906272759**	**1.009884304**	**0.00188459**
VIL2	**ILMN_2940**	**NM_003379.3**	**-0.90719828**	**0.809621514**	**0.00631678**
CDR2	**ILMN_10283**	**NM_001802.1**	**-0.907555245**	**0.920461232**	**0.00017280**
AHCTF1	**ILMN_28711**	**NM_015446.3**	**-0.907937518**	**1.662012186**	**0.00005143**
ITK	**ILMN_23317**	**NM_005546.3**	**-0.909896826**	**0.956548738**	**0.00023181**
NDST2	**ILMN_21220**	**NM_003635.2**	**-0.910459655**	**1.365135533**	**0.00022155**
ZNF317	**ILMN_22884**	**NM_020933.2**	**-0.910607633**	**1.561177388**	**0.00000864**
PAG1	**ILMN_20316**	**NM_018440.3**	**-0.914077327**	**1.177056311**	**0.00039575**
SLC25A26	**ILMN_21381**	**NM_173471.1**	**-0.914244004**	**1.329568646**	**0.00099660**
CIC	**ILMN_14588**	**NM_015125.2**	**-0.914603265**	**0.98731765**	**0.00130412**
PELP1	**ILMN_15422**	**NM_014389.1**	**-0.91485887**	**1.461682055**	**0.00004063**
KIAA1285	**ILMN_8883**	**NM_015694.1**	**-0.916008576**	**0.757897482**	**0.00508342**
LOC130074	**ILMN_26225**	**NM_001009993.1**	**-0.916194238**	**1.275412306**	**0.00013399**

HSPC023	ILMN_24668	NM_014047.1	-0.917531536	1.085247037	0.00017209
PPRC1	ILMN_10445	NM_015062.3	-0.918683753	1.44933188	0.00000951
TGIF2	ILMN_25134	NM_021809.4	-0.919181739	1.070845819	0.00620873
PPARD	ILMN_139271	NM_006238.2	-0.922036255	0.949581608	0.00400146
CHCHD6	ILMN_19685	NM_032343.1	-0.922760945	1.685898574	0.00001234
RPL41	ILMN_5276	NM_021104.1	-0.927604921	0.939022696	0.00014426
FAM100B	ILMN_22874	NM_182565.2	-0.927975076	1.381430879	0.00001068
C9orf111	ILMN_22221	NM_152286.2	-0.928190875	1.062704382	0.00034302
EDG1	ILMN_138993	NM_001400.2	-0.929786795	0.705014559	0.00565600
RCL1	ILMN_18208	NM_005772.2	-0.930738874	1.023725888	0.00021865
LMBR1L	ILMN_27914	NM_018113.1	-0.931048642	1.503486864	0.00025559
ZNF551	ILMN_4569	NM_138347.2	-0.932518582	1.640473641	0.00001422
TOE1	ILMN_11173	NM_025077.2	-0.934242822	1.467344759	0.00010122
PSME4	ILMN_10890	NM_014614.1	-0.934832764	1.295787201	0.00025690
ZBTB16	ILMN_11903	NM_006006.4	-0.935257759	0.713736086	0.00683700
DXYS155E	ILMN_26209	NM_005088.2	-0.937911248	1.224959495	0.00023307
LONRF1	ILMN_138605	NM_152271.2	-0.937927017	0.870537082	0.00948435
FLJ39779	ILMN_12781	NM_207442.1	-0.939277125	0.927670032	0.00924437
LSG1	ILMN_6416	NM_018385.1	-0.94456847	0.979257112	0.00061345
MYL5	ILMN_21416	NM_002477.1	-0.945374141	1.293359335	0.00008484
AHI1	ILMN_23469	NM_017651.3	-0.945865402	1.319394148	0.00013258
TIGA1	ILMN_2113	NM_053000.1	-0.948258709	1.60679229	0.00000074
ZNF707	ILMN_20149	NM_173831.2	-0.951346105	1.340592694	0.00053180
CDC37L1	ILMN_559	NM_017913.2	-0.954095558	1.157427303	0.00047442
ERN1	ILMN_20244	NM_152461.2	-0.954332751	0.889607391	0.00034558
DHRS3	ILMN_12432	NM_004753.4	-0.954439327	1.353544551	0.00003756
WRN	ILMN_3783	NM_000553.2	-0.954452783	1.021016836	0.00116067
URG4	ILMN_13027	NM_017920.2	-0.95589912	1.422396175	0.00007026
SMURF1	ILMN_10493	NM_181349.1	-0.95594376	0.879615015	0.00245662
HES6	ILMN_4854	NM_018645.3	-0.95725005	0.633823723	0.00695471
USF2	ILMN_6055	NM_207291.1	-0.959901269	1.066664218	0.00035373

HIVEP2	**ILMN_21520**	**NM_006734.2**	**-0.960694265**	**1.07910833**	**0.00266549**
CLASP1	**ILMN_14659**	**NM_015282.1**	**-0.961804572**	**1.602890635**	**0.00000137**
ZNF395	**ILMN_17231**	**NM_018660.2**	**-0.962316466**	**1.309008827**	**0.00003382**
PHF17	**ILMN_1535**	**NM_024900.2**	**-0.963425077**	**1.235639669**	**0.00006684**
NR1H2	**ILMN_137460**	**NM_007121.2**	**-0.965620392**	**1.016136008**	**0.00208002**
MGC26885	**ILMN_6572**	**NM_152339.2**	**-0.965624618**	**0.755387041**	**0.00213942**
DUSP14	**ILMN_9561**	**NM_007026.1**	**-0.96879883**	**1.261528702**	**0.00012174**
ZFP91	**ILMN_4526**	**NM_170768.1**	**-0.972236704**	**0.893726582**	**0.00243123**
MAX	**ILMN_19642**	**NM_145114.1**	**-0.972555189**	**0.706014867**	**0.00664976**
RLF	**ILMN_14015**	**NM_012421.1**	**-0.973603494**	**1.250131376**	**0.00126026**
PTGER4	**ILMN_13328**	**NM_000958.2**	**-0.974694545**	**0.840103103**	**0.00052976**
H2AFV	**ILMN_29030**	**NM_138635.2**	**-0.975093302**	**0.871705932**	**0.00441653**
JMJD1A	**ILMN_25544**	**NM_018433.3**	**-0.975719199**	**1.672444208**	**0.00000036**
CTLA4	**ILMN_138103**	**NM_005214.2**	**-0.975971478**	**1.185608797**	**0.00002484**
MGC3020	**ILMN_29369**	**NM_024048.2**	**-0.97855089**	**0.708809095**	**0.00778758**
PLXDC1	**ILMN_8865**	**NM_020405.3**	**-0.981718421**	**1.136980201**	**0.00048398**
EIF5A2	**ILMN_4591**	**NM_020390.5**	**-0.983175786**	**1.370404889**	**0.00006957**
POLR3E	**ILMN_12465**	**NM_018119.2**	**-0.983687344**	**1.022719891**	**0.00225480**
C14orf102	**ILMN_22111**	**NM_017970.2**	**-0.983885026**	**0.923757623**	**0.00012445**
SLC3A2	**ILMN_7086**	**NM_001012661.1**	**-0.984338149**	**1.129641218**	**0.00042718**
SOX8	**ILMN_30180**	**NM_014587.2**	**-0.984450805**	**0.837242057**	**0.00251059**
PDZD8	**ILMN_28006**	**NM_173791.2**	**-0.987766685**	**1.056312215**	**0.00391212**
GNLY	**ILMN_13145**	**NM_012483.1**	**-0.988780036**	**0.682561583**	**0.00361821**
KLHL15	**ILMN_4687**	**NM_030624.1**	**-0.991874786**	**0.87533629**	**0.00164519**
SREBF1	**ILMN_21143**	**NM_004176.3**	**-0.993698671**	**1.055990247**	**0.00040999**
STARD5	**ILMN_18773**	**NM_181900.2**	**-0.99655088**	**1.272232835**	**0.00057152**
NAT6	**ILMN_29898**	**NM_012191.2**	**-0.996896062**	**1.52838856**	**0.00000474**
RNMT	**ILMN_23400**	**NM_003799.1**	**-0.999891612**	**0.895566178**	**0.00800594**
RAPGEF1	**ILMN_2480**	**NM_005312.2**	**-1.000315423**	**1.638795745**	**0.00000591**
DNAH1	**ILMN_7494**	**NM_015512.3**	**-1.001506589**	**1.481165705**	**0.00001576**
KIAA1875	**ILMN_5826**	**NM_032529.1**	**-1.001629269**	**1.062064033**	**0.00062761**

DIP2A	**ILMN_26238**	**NM_206890.1**	**-1.003609357**	**1.096616183**	**0.00024842**
ILF3	**ILMN_3208**	**NM_012218.2**	**-1.004941901**	**1.13215569**	**0.00011859**
ODC1	**ILMN_21065**	**NM_002539.1**	**-1.011380594**	**1.419153265**	**0.00019692**
SCNN1D	**ILMN_8248**	**NM_002978.2**	**-1.011891425**	**1.535756779**	**0.00001507**
hCAP-H2	**ILMN_12341**	**NM_152299.1**	**-1.012825824**	**1.353763367**	**0.00005147**
DDX24	**ILMN_10146**	**NM_020414.3**	**-1.013524336**	**1.062762256**	**0.00240995**
REXO1	**ILMN_20923**	**NM_020695.2**	**-1.016680475**	**1.407635807**	**0.00002962**
NOP5/NOP58	**ILMN_4530**	**NM_015934.3**	**-1.018736595**	**1.147467699**	**0.00023180**
ABL1	**ILMN_22641**	**NM_007313.2**	**-1.018830246**	**1.330932128**	**0.00048762**
SLC11A2	**ILMN_10129**	**NM_000617.1**	**-1.019608873**	**1.246218549**	**0.00040787**
FLJ20309	**ILMN_19726**	**NM_017759.2**	**-1.020911214**	**0.942698875**	**0.00971642**
SERPINF1	**ILMN_19076**	**NM_002615.4**	**-1.021431387**	**1.036808834**	**0.00072847**
BCDIN3	**ILMN_8017**	**NM_019606.4**	**-1.022041487**	**1.291557277**	**0.00000739**
FBXO11	**ILMN_25889**	**NM_018693.2**	**-1.022222638**	**1.37168029**	**0.00002258**
COBLL1	**ILMN_12678**	**NM_014900.3**	**-1.022816897**	**0.832426581**	**0.00145449**
ARMC5	**ILMN_5121**	**NM_024742.1**	**-1.028127871**	**1.39228155**	**0.00008707**
MRPL54	**ILMN_1467**	**NM_172251.1**	**-1.029024922**	**0.906380196**	**0.00022165**
SNIP1	**ILMN_9410**	**NM_024700.2**	**-1.030911731**	**1.060761685**	**0.00006829**
Rgr	**ILMN_28738**	**NM_153615.1**	**-1.034056441**	**1.003839655**	**0.00013352**
STIM2	**ILMN_15073**	**NM_020860.1**	**-1.035049116**	**1.505310421**	**0.00000717**
TCEA3	**ILMN_27218**	**NM_003196.1**	**-1.036935308**	**1.127944699**	**0.00016303**
ZBTB32	**ILMN_2617**	**NM_014383.1**	**-1.037514656**	**1.188535314**	**0.00063147**
SPTY2D1	**ILMN_1945**	**NM_194285.2**	**-1.038141646**	**1.175704959**	**0.00631444**
ANKRD39	**ILMN_23002**	**NM_016466.4**	**-1.038769229**	**1.128394344**	**0.00022143**
ZCCHC14	**ILMN_138708**	**NM_015144.1**	**-1.040336024**	**1.291139581**	**0.00034769**
INADL	**ILMN_3904**	**NM_176878.1**	**-1.040993021**	**1.70357126**	**0.00000101**
ZBTB4	**ILMN_5011**	**NM_020899.2**	**-1.042333959**	**2.031811569**	**0.00000000**
C20orf7	**ILMN_137958**	**NM_024120.2**	**-1.045765733**	**1.57133193**	**0.00000698**
C1orf69	**ILMN_10199**	**NM_001010867.1**	**-1.048307962**	**1.041440424**	**0.00247324**
SLC9A8	**ILMN_27475**	**NM_015266.1**	**-1.049442878**	**0.779587623**	**0.00630261**
PHGDH	**ILMN_5800**	**NM_006623.2**	**-1.051702862**	**0.758381948**	**0.00287671**

ZBTB5	**ILMN_9696**	**NM_014872.1**	**-1.051925083**	**1.084009802**	**0.00020125**
SLC25A23	**ILMN_5925**	**NM_024103.2**	**-1.052611559**	**1.331925841**	**0.00000234**
SDCCAG33	**ILMN_138968**	**NM_005786.3**	**-1.053667943**	**1.43026202**	**0.00000293**
CENTD1	**ILMN_4742**	**NM_015230.2**	**-1.055518062**	**1.14550194**	**0.00194764**
NR3C1	**ILMN_21266**	**NM_001018077.1**	**-1.056201278**	**1.244978969**	**0.00045002**
IDI1	**ILMN_20349**	**NM_004508.2**	**-1.056483224**	**1.15471556**	**0.00161248**
CRY2	**ILMN_2356**	**NM_021117.1**	**-1.056792523**	**1.695128921**	**0.00001890**
AP3M2	**ILMN_568**	**NM_006803.2**	**-1.059707152**	**0.793326683**	**0.00120162**
FLJ22531	**ILMN_1491**	**NM_024650.2**	**-1.062235578**	**1.084659578**	**0.00022721**
AXIN2	**ILMN_26857**	**NM_004655.2**	**-1.063024843**	**0.656651343**	**0.00432164**
CDH23	**ILMN_16568**	**NM_022124.2**	**-1.069963463**	**1.525466254**	**0.00033029**
POFUT2	**ILMN_24199**	**NM_133635.3**	**-1.072201453**	**1.263952694**	**0.00028523**
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SUPV3L1	**ILMN_23318**	**NM_003171.2**	**-1.075228735**	**1.666073917**	**0.00002209**
TP53BP2	**ILMN_9205**	**NM_001031685.1**	**-1.078450208**	**1.196004171**	**0.00093875**
PIGA	**ILMN_4309**	**NM_020472.1**	**-1.079728767**	**0.950416392**	**0.00209788**
HOOK1	**ILMN_4311**	**NM_015888.3**	**-1.083236126**	**0.928616441**	**0.00128459**
TRIM39	**ILMN_8004**	**NM_172016.1**	**-1.083346862**	**1.564079883**	**0.00003575**
ZNF10	**ILMN_24152**	**NM_015394.4**	**-1.084199045**	**1.15199778**	**0.00100454**
TGFBR3	**ILMN_22620**	**NM_003243.2**	**-1.084226172**	**1.128488295**	**0.00005957**
EIF2AK3	**ILMN_26832**	**NM_004836.3**	**-1.085003976**	**1.637926145**	**0.00017908**
ITM2C	**ILMN_26681**	**NM_030926.4**	**-1.090792126**	**0.871247944**	**0.00032229**
BRWD1	**ILMN_28841**	**NM_001007246.1**	**-1.091496504**	**1.464860651**	**0.00017778**
UBE2L3	**ILMN_9533**	**NM_198157.1**	**-1.095698317**	**0.905055567**	**0.00036489**
SATB1	**ILMN_6836**	**NM_002971.2**	**-1.097599208**	**1.281847843**	**0.00009024**
WWP2	**ILMN_7085**	**NM_199423.1**	**-1.098543058**	**1.022921304**	**0.00013328**
ARL4C	**ILMN_15416**	**NM_005737.3**	**-1.100859167**	**1.576249216**	**0.00000041**
IER2	**ILMN_12423**	**NM_004907.2**	**-1.102360836**	**0.850031142**	**0.00439957**
MC1R	**ILMN_25536**	**NM_002386.2**	**-1.107207251**	**0.927711281**	**0.00209384**
HIPK2	**ILMN_29690**	**NM_022740.2**	**-1.109902186**	**0.848263301**	**0.00019985**
KIAA0863	**ILMN_6906**	**NM_014913.2**	**-1.110899409**	**1.338766228**	**0.00059178**

TRERF1	**ILMN_11192**	NM_033501.1	**-1.111168158**	**1.381573081**	**0.00006062**
SUSD4	**ILMN_139385**	NM_017982.1	**-1.118672404**	**1.052960579**	**0.00022936**
PDE3B	**ILMN_5085**	NM_000922.2	**-1.119749363**	**1.260525562**	**0.00003540**
SFMBT1	**ILMN_20774**	NM_001005158.1	**-1.122680128**	**1.054502396**	**0.00301102**
SUPT5H	**ILMN_15760**	NM_003169.2	**-1.123627354**	**1.099088419**	**0.00044748**
RHOF	**ILMN_1762**	NM_019034.2	**-1.126315274**	**1.375102017**	**0.00031725**
LPHN1	**ILMN_12017**	NM_014921.3	**-1.138476162**	**1.662119528**	**0.00000917**
PRR8	**ILMN_25238**	NM_053043.1	**-1.142802208**	**1.880951403**	**0.00000131**
ADORA2A	**ILMN_8227**	NM_000675.3	**-1.145913244**	**0.930252378**	**0.00199321**
FBXL11	**ILMN_12629**	NM_012308.1	**-1.148612325**	**1.152483839**	**0.00010613**
KBTBD8	**ILMN_23329**	NM_032505.1	**-1.150383237**	**0.980994072**	**0.00298577**
C16orf60	**ILMN_10665**	NM_018455.3	**-1.150703459**	**0.875738978**	**0.00533009**
ARID5A	**ILMN_12305**	NM_212481.1	**-1.153235059**	**1.005507042**	**0.00791543**
BAG3	**ILMN_9420**	NM_004281.3	**-1.155985342**	**1.051113868**	**0.00115372**
PLEKHB1	**ILMN_2859**	NM_021200.1	**-1.164061785**	**1.740371718**	**0.00000559**
TNFRSF13B	**ILMN_9141**	NM_012452.2	**-1.166101521**	**0.812444288**	**0.00410135**
SLC25A34	**ILMN_6699**	NM_207348.1	**-1.176664306**	**1.580127428**	**0.00002748**
ATHL1	**ILMN_138992**	NM_025092.1	**-1.180243174**	**0.927738706**	**0.00201768**
PCTK2	**ILMN_26008**	NM_002595.2	**-1.183475914**	**1.128966884**	**0.00538235**
RNF103	**ILMN_17861**	NM_005667.2	**-1.185091047**	**1.060017872**	**0.00079149**
RSC1A1	**ILMN_3431**	NM_006511.1	**-1.187594127**	**1.371416969**	**0.00063915**
ATP2A3	**ILMN_6507**	NM_174958.1	**-1.189495716**	**1.110979165**	**0.00436586**
PRC1	**ILMN_20465**	NM_003981.2	**-1.190523415**	**1.021719819**	**0.00448523**
DUSP10	**ILMN_14599**	NM_144728.1	**-1.195047913**	**1.017629683**	**0.00887235**
ZFAND2A	**ILMN_21900**	NM_182491.1	**-1.205318845**	**1.015840107**	**0.00003574**
LMTK2	**ILMN_18423**	NM_014916.2	**-1.206957664**	**1.253180161**	**0.00047386**
P2RY11	**ILMN_12237**	NM_002566.4	**-1.210259935**	**1.06355304**	**0.00041398**
RNF10	**ILMN_14490**	NM_014868.3	**-1.210970564**	**1.237971365**	**0.00020066**
AQP3	**ILMN_22744**	NM_004925.3	**-1.211854338**	**1.043353942**	**0.00058054**
LRIG1	**ILMN_3319**	NM_015541.2	**-1.215707138**	**0.887627098**	**0.00096494**
P2RY8	**ILMN_28691**	NM_178129.3	**-1.219269472**	**0.98848837**	**0.00126480**

MLL5	**ILMN_9061**	**NM_018682.2**	**-1.223435851**	**1.970466771**	**0.00001201**
NGFRAP1	**ILMN_7162**	**NM_014380.1**	**-1.232227015**	**1.206946971**	**0.00003357**
TKTL1	**ILMN_23315**	**NM_012253.2**	**-1.234316429**	**0.966661273**	**0.00017305**
C6orf105	**ILMN_10287**	**NM_032744.1**	**-1.239896797**	**0.885246225**	**0.00101737**
RAB33A	**ILMN_2535**	**NM_004794.2**	**-1.241055838**	**1.260240271**	**0.00047052**
SPRY2	**ILMN_19344**	**NM_005842.2**	**-1.241885867**	**1.021584875**	**0.00382667**
CXCR3	**ILMN_2029**	**NM_001504.1**	**-1.244115035**	**0.979138466**	**0.00777972**
PIM3	**ILMN_19535**	**NM_001001852.2**	**-1.246301965**	**0.788206936**	**0.00461466**
PLEKHF1	**ILMN_25787**	**NM_024310.2**	**-1.250552556**	**1.09224994**	**0.00017933**
ZNF335	**ILMN_9501**	**NM_022095.3**	**-1.251403176**	**1.416122752**	**0.00000374**
TIPARP	**ILMN_4419**	**NM_015508.2**	**-1.252940769**	**0.785601153**	**0.00628327**
PAPD5	**ILMN_11715**	**NM_022447.1**	**-1.25411808**	**1.168275365**	**0.00090546**
GJA12	**ILMN_6786**	**NM_020435.2**	**-1.257644209**	**1.320134633**	**0.00016783**
CRSP7	**ILMN_14940**	**NM_004831.3**	**-1.261907049**	**1.49395962**	**0.00002501**
C1orf21	**ILMN_26434**	**NM_030806.3**	**-1.265697427**	**1.169849**	**0.00014912**
MIDN	**ILMN_6472**	**NM_177401.4**	**-1.266404108**	**0.946703753**	**0.00048229**
PASK	**ILMN_19873**	**NM_015148.2**	**-1.276320058**	**0.912776289**	**0.00129334**
CAMK4	**ILMN_5327**	**NM_001744.3**	**-1.277241788**	**1.681851719**	**0.00001813**
LOC90826	**ILMN_17873**	**NM_138364.2**	**-1.27785886**	**1.15131075**	**0.00042332**
ATXN7L2	**ILMN_6796**	**NM_153340.2**	**-1.280663545**	**1.891153588**	**0.00000392**
PTP4A1	**ILMN_27315**	**NM_003463.3**	**-1.280755813**	**0.981037923**	**0.00088222**
OVGP1	**ILMN_7829**	**NM_002557.3**	**-1.280833537**	**2.145648028**	**0.00000006**
SMPD1	**ILMN_8257**	**NM_001007593.1**	**-1.28381406**	**1.165957203**	**0.00027206**
CHD7	**ILMN_29669**	**NM_017780.2**	**-1.285175635**	**1.611575053**	**0.00000132**
ZHX2	**ILMN_21703**	**NM_014943.3**	**-1.289399266**	**1.042646216**	**0.00479687**
TSEN54	**ILMN_8569**	**NM_207346.1**	**-1.291774**	**1.143237204**	**0.00080973**
KTN1	**ILMN_29637**	**NM_182926.1**	**-1.292563877**	**1.679784537**	**0.00002236**
RWDD1	**ILMN_29174**	**NM_016104.2**	**-1.295908497**	**1.158676772**	**0.00112686**
NXT1	**ILMN_26865**	**NM_013248.2**	**-1.303466657**	**1.103790462**	**0.00006758**
IRF4	**ILMN_12414**	**NM_002460.1**	**-1.304331316**	**2.190738858**	**0.00000044**
UAP1	**ILMN_7007**	**NM_003115.3**	**-1.304761251**	**1.006944977**	**0.00035277**

ANKRD37	ILMN_2423	NM_181726.1	-1.308150345	0.937315673	0.00117745
DDX6	ILMN_25649	NM_004397.3	-1.309650532	2.155651735	0.00000030
LOC285513	ILMN_8803	NM_198281.1	-1.313429509	1.546964677	0.00004860
TAF5L	ILMN_6399	NM_001025247.1	-1.32305886	1.278931108	0.00002693
CMTM8	ILMN_19577	NM_178868.3	-1.325376459	0.983647445	0.00014993
SLC16A10	ILMN_10556	NM_018593.3	-1.327387377	1.108265763	0.00009461
FYTTD1	ILMN_5513	NM_001011537.1	-1.329127617	1.018346452	0.00030597
PBX4	ILMN_11004	NM_025245.1	-1.333943281	0.986938102	0.00304411
PTGDS	ILMN_19248	NM_000954.5	-1.334379734	0.752694849	0.00189346
TNFSF9	ILMN_18030	NM_003811.2	-1.335068602	1.026974042	0.00016772
CNN3	ILMN_15358	NM_001839.2	-1.338292839	1.112524436	0.00048147
ZNF295	ILMN_12236	NM_020727.3	-1.353598502	1.304194049	0.00116404
CCR7	ILMN_21335	NM_001838.2	-1.359887042	0.918007418	0.00010383
BCL9L	ILMN_27555	NM_182557.1	-1.360587969	1.095800517	0.00209233
IRF2BP2	ILMN_5645	NM_182972.1	-1.370069134	0.969007786	0.00052119
RASA3	ILMN_19501	NM_007368.2	-1.3738673	1.455515605	0.00002815
ARRDC2	ILMN_7560	NM_015683.1	-1.379096994	1.114271453	0.00156368
SCML1	ILMN_138894	NM_006746.3	-1.381562596	1.167403576	0.00101569
KIAA1754	ILMN_13119	NM_033397.2	-1.38432219	1.12747861	0.00001941
MAL	ILMN_3411	NM_002371.2	-1.393195146	2.207099447	0.00000002
MCM6	ILMN_15791	NM_005915.4	-1.39751721	1.334945131	0.00049304
H2AFX	ILMN_23585	NM_002105.2	-1.40589861	1.466002611	0.00007136
ZFPM1	ILMN_15190	NM_153813.1	-1.407664057	0.875418487	0.00457871
EIF2C2	ILMN_25413	NM_012154.2	-1.417512796	1.665176969	0.00023257
BHLHB2	ILMN_24095	NM_003670.1	-1.418174041	0.889047464	0.00057911
BRD1	ILMN_19562	NM_014577.1	-1.428483553	1.226958019	0.00098546
CTH	ILMN_4045	NM_153742.3	-1.429744393	0.844427128	0.00829306
FLT3LG	ILMN_4754	NM_001459.2	-1.440491375	1.580411425	0.00003438
SLC5A6	ILMN_880	NM_021095.1	-1.45459924	1.033310371	0.00195215
DYNLL2	ILMN_28971	NM_080677.1	-1.455649083	1.2977239	0.00000465
GMEB2	ILMN_7174	NM_012384.2	-1.456946954	1.247345988	0.00010064

GADD45B	ILMN_138334	NM_015675.1	-1.45927016	0.890864982	0.00134377
PRR7	ILMN_17178	NM_030567.2	-1.459895146	1.238910411	0.00004716
NR1D2	ILMN_17981	NM_005126.2	-1.463555459	1.152704022	0.00084447
CD69	ILMN_13491	NM_001781.1	-1.467514074	0.767635098	0.00431058
FASN	ILMN_16128	NM_004104.4	-1.474522935	0.834416803	0.00868356
LOC158830	ILMN_10937	NM_001025265.1	-1.492231983	1.659484712	0.00001229
K6IRS2	ILMN_14872	NM_080747.1	-1.494649542	0.857170698	0.00873840
BTG3	ILMN_27215	NM_006806.3	-1.49479515	1.027933063	0.00054222
BZRAP1	ILMN_11647	NM_004758.1	-1.502581736	1.509465143	0.00001428
OCIAD2	ILMN_18246	NM_152398.2	-1.50757606	1.074604795	0.00011990
MN1	ILMN_3720	NM_002430.2	-1.509096037	1.199838716	0.00627720
CASZ1	ILMN_27214	NM_017766.2	-1.513362235	1.067663278	0.00068936
MGAT4A	ILMN_139237	NM_012214.1	-1.516364202	1.43878649	0.00001522
DHCR7	ILMN_2138	NM_001360.1	-1.521006311	1.09154978	0.00456684
FLJ20152	ILMN_139301	NM_019000.2	-1.529809004	1.570604078	0.00000028
VPS37B	ILMN_18457	NM_024667.1	-1.535202738	1.386660943	0.00053514
MGC17330	ILMN_15026	NM_052880.3	-1.549289306	2.615593431	0.00000000
ICOS	ILMN_9996	NM_012092.2	-1.55851009	0.844005633	0.00079917
HIVEP1	ILMN_6517	NM_002114.1	-1.565011369	1.269386062	0.00098464
DUSP5	ILMN_12928	NM_004419.3	-1.568760545	0.926620188	0.00027977
CCRN4L	ILMN_2730	NM_012118.2	-1.57585378	0.676954674	0.00941115
DDIT3	ILMN_16748	NM_004083.4	-1.580473683	0.904339432	0.00035640
SFXN1	ILMN_16398	NM_022754.4	-1.584214832	1.584567288	0.00000684
IL23A	ILMN_20797	NM_016584.2	-1.592231591	1.093073096	0.00085884
CD248	ILMN_25766	NM_020404.2	-1.593596823	1.03796568	0.00063579
TMEM119	ILMN_30233	NM_181724.1	-1.610801334	1.060679622	0.00207322
ICOSLG	ILMN_28135	NM_015259.4	-1.614784424	1.230937184	0.00073267
IL21R	ILMN_12364	NM_181078.1	-1.616207162	1.128564536	0.00074184
DDX39	ILMN_23076	NM_138998.1	-1.658427147	1.367587877	0.00016648
FHIT	ILMN_15082	NM_002012.1	-1.673448104	1.828433492	0.00000036
MTP18	ILMN_13393	NM_016498.3	-1.68269229	1.49713298	0.00000170

BRD4	**ILMN_22169**	**NM_058243.1**	**-1.683630214**	**1.449106676**	**0.00043360**
SPRY1	**ILMN_23549**	**NM_199327.1**	**-1.685777091**	**1.00030247**	**0.00128713**
PPP1R16B	**ILMN_26824**	**NM_015568.2**	**-1.718794599**	**1.300533176**	**0.00009419**
NAP1L5	**ILMN_5355**	**NM_153757.1**	**-1.728193379**	**1.563329697**	**0.00001555**
TNF	**ILMN_24087**	**NM_000594.2**	**-1.730636109**	**0.817723797**	**0.00871514**
RGC32	**ILMN_14549**	**NM_014059.1**	**-1.735045244**	**1.070386047**	**0.00010195**
ZC3H12A	**ILMN_18682**	**NM_025079.1**	**-1.735762717**	**0.908241129**	**0.00147260**
MXRA7	**ILMN_628**	**NM_001008528.1**	**-1.748431483**	**0.973613834**	**0.00291921**
SC5DL	**ILMN_24287**	**NM_006918.3**	**-1.750481592**	**1.151071938**	**0.00272999**
UBE2D2	**ILMN_27792**	**NM_181838.1**	**-1.757736084**	**1.428181422**	**0.00001760**
FGF9	**ILMN_1771**	**NM_002010.1**	**-1.760403535**	**1.428823821**	**0.00010647**
YES1	**ILMN_1505**	**NM_005433.3**	**-1.764392963**	**1.318925488**	**0.00039148**
ZNF165	**ILMN_8007**	**NM_003447.2**	**-1.773928105**	**1.218351034**	**0.00025979**
CCNT1	**ILMN_1033**	**NM_001240.2**	**-1.786747551**	**1.130941224**	**0.00097410**
PLK3	**ILMN_8968**	**NM_004073.2**	**-1.790107415**	**1.123509115**	**0.00033397**
JOSD1	**ILMN_21647**	**NM_014876.3**	**-1.797931989**	**1.466413364**	**0.00000333**
SOCS1	**ILMN_3038**	**NM_003745.1**	**-1.807780801**	**0.953587459**	**0.00028092**
AVPI1	**ILMN_9920**	**NM_021732.1**	**-1.844873323**	**0.793664838**	**0.00101944**
TSPYL2	**ILMN_26999**	**NM_022117.1**	**-1.845460576**	**1.080002715**	**0.00158472**
GPR132	**ILMN_19860**	**NM_013345.2**	**-1.858180805**	**1.009628034**	**0.00276606**
FGFRL1	**ILMN_28273**	**NM_001004358.1**	**-1.86348235**	**1.136549742**	**0.00251797**
AXUD1	**ILMN_6524**	**NM_033027.2**	**-1.865941039**	**1.074402426**	**0.00002134**
DBH	**ILMN_25962**	**NM_000787.2**	**-1.875893893**	**1.358238144**	**0.00199035**
GADD45G	**ILMN_4884**	**NM_006705.2**	**-1.883200245**	**1.092648505**	**0.00159004**
ELL2	**ILMN_15317**	**NM_012081.3**	**-1.895230568**	**1.054802224**	**0.00923017**
JUN	**ILMN_7746**	**NM_002228.3**	**-1.93716324**	**1.35200957**	**0.00128284**
CD5	**ILMN_29547**	**NM_014207.2**	**-1.969005232**	**1.472172181**	**0.00001058**
CCL4L1	**ILMN_4819**	**NM_001001435.2**	**-1.972847504**	**0.777562423**	**0.00687597**
DLL1	**ILMN_1802**	**NM_005618.2**	**-1.981683353**	**1.243856495**	**0.00029039**
TP53INP2	**ILMN_28839**	**NM_021202.1**	**-1.987037329**	**0.803135548**	**0.00674516**
GADD45A	**ILMN_17355**	**NM_001924.2**	**-2.011561809**	**1.213085063**	**0.00005108**

USP36	ILMN_23872	NM_025090.2	-2.045788282	1.389118043	0.00005194
DUSP2	ILMN_21154	NM_004418.2	-2.049331375	0.994473822	0.00002824
GRASP	ILMN_11141	NM_181711.1	-2.181045645	0.887808594	0.00177700
JMY	ILMN_18491	NM_152405.1	-2.214065556	1.559103931	0.00008945
SMAD7	ILMN_10011	NM_005904.2	-2.21499091	1.138519775	0.00041631
DUSP8	ILMN_21272	NM_004420.1	-2.243733266	1.648409441	0.00000576
K6IRS3	ILMN_13180	NM_175068.2	-2.248575123	1.805083434	0.00001610
FOSB	ILMN_13603	NM_006732.1	-2.312871227	0.610878937	0.00583158
GALR2	ILMN_4188	NM_003857.2	-2.318004128	1.295873257	0.00007526
NR4A2	ILMN_28405	NM_006186.2	-2.375127134	0.693171084	0.00105245
CXCL2	ILMN_29078	NM_002089.1	-2.384946205	0.672530598	0.00878350
SEC14L2	ILMN_9607	NM_012429.1	-2.389587687	1.369976121	0.00048088
CD83	ILMN_16705	NM_004233.2	-2.400607006	1.029167736	0.00012951
PHACTR1	ILMN_17425	NM_030948.1	-2.411791103	1.475392994	0.00001304
LYPD3	ILMN_23267	NM_014400.1	-2.421971695	1.147458967	0.00050112
GJB2	ILMN_26343	NM_004004.3	-2.549537207	0.975329581	0.00657606
ZNF331	ILMN_28697	NM_018555.4	-2.578337112	1.033044629	0.00014144
RGS16	ILMN_16445	NM_002928.2	-2.807399525	0.923543594	0.00132862
PHLDA1	ILMN_138322	NM_007350.2	-2.954967361	0.995309086	0.00237317
SLC7A5	ILMN_25446	NM_003486.5	-3.70325022	1.269118167	0.00008773

Supp. Table S2E. probe-level intersections between the *PTPN11*, *SOS1* and *SHOC2* signatures
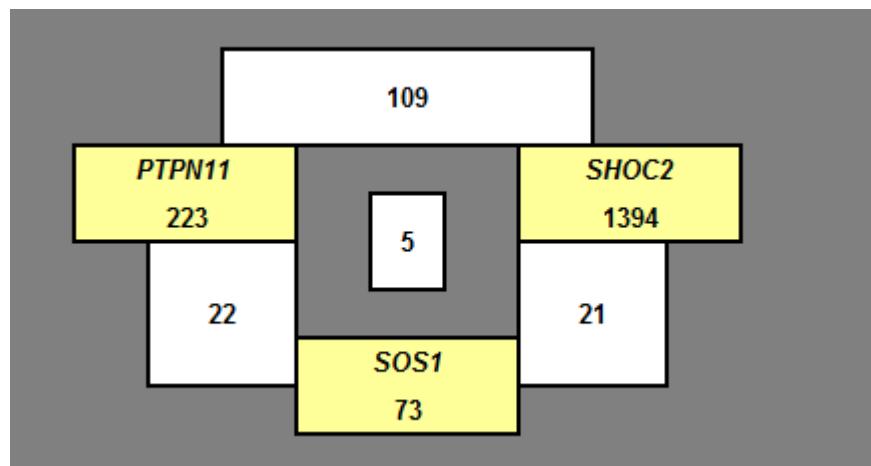
Supp. Table S3. False Discovery rate analysis				
	NS Signature	*PTPN11* Signature	*SOS1* Signature	*SHOC2* Signature
True positives	125	225	73	1407
Median false positives in 2000 permutations	0	1	4	5
FDR (Median)	0.0%	0.4%	5.5%	0.4%
Median false positives in 2000 permutations	0.227	3.203	12.082	15.514
FDR (Average)	0.2%	1.4%	16.6%	1.1%

Supp. Table S4A.
Functional annotation analysis (DAVID EASE) of the *PTPN11* Signature

PTPN11 SIGNATURE (up-regulated & downregulated genes)					
Category	**Term**	**Pvalue**	**n° of Genes**	**Fold Enrich-ment**	**Benjamini-corrected p-value**
SP_PIR_KEYWORDS	receptor	1.06E-05	24	2.805	3.97E-04
SP_PIR_KEYWORDS	SH2 domain	9.38E-06	11	5.971	4.01E-04
SP_PIR_KEYWORDS	tyrosine-specific protein kinase	2.88E-04	5	13.570	7.80E-03
SP_PIR_KEYWORDS	disulfide bond	1.22E-18	57	3.683	3.65E-16
UP_SEQ_FEATURE	disulfide bond	2.96E-18	55	3.740	2.00E-15
SP_PIR_KEYWORDS	signal	2.06E-14	58	2.958	3.09E-12
UP_SEQ_FEATURE	signal peptide	2.11E-14	58	2.956	7.12E-12
GOTERM_CC_FAT	GO:0005886~plasma membrane	5.24E-13	71	2.258	1.24E-10
SP_PIR_KEYWORDS	Secreted	3.60E-11	30	4.236	3.59E-09
UP_SEQ_FEATURE	topological domain:Extracellular	2.97E-11	45	2.993	6.69E-09
GOTERM_CC_FAT	GO:0005576~extracellular region	1.14E-10	36	3.335	1.35E-08
SP_PIR_KEYWORDS	glycoprotein	3.72E-10	61	2.275	2.78E-08
GOTERM_CC_FAT	GO:0044421~extracellular region part	1.37E-08	22	4.316	1.08E-06
GOTERM_CC_FAT	GO:0005615~extracellular space	2.03E-08	20	4.669	1.20E-06
SP_PIR_KEYWORDS	Immunoglobulin domain	5.04E-08	17	5.393	3.01E-06
GOTERM_CC_FAT	GO:0031226~intrinsic to plasma membrane	6.69E-08	29	3.106	3.17E-06
INTERPRO	IPR013783:Immunoglobulin-like fold	9.09E-09	19	5.258	4.46E-06
UP_SEQ_FEATURE	glycosylation site:N-linked (GlcNAc...)	3.81E-08	54	2.158	6.44E-06
SP_PIR_KEYWORDS	cell membrane	4.06E-07	35	2.567	2.03E-05
GOTERM_CC_FAT	GO:0005887~integral to plasma membrane	5.93E-07	27	2.959	2.34E-05

UP_SEQ_FEATURE	topological domain:Cytoplasmic	2.57E-07	51	2.099	3.47E-05
GOTERM_CC_FAT	GO:0044459~plasma membrane part	6.18E-06	41	2.045	2.09E-04
INTERPRO	IPR013106:Immunoglobulin V-set	3.28E-06	10	7.611	8.05E-04
INTERPRO	IPR000980:SH2 motif	7.60E-06	11	6.089	1.24E-03
INTERPRO	IPR003599:Immunoglobulin subtype	1.19E-05	12	5.219	1.46E-03
GOTERM_CC_FAT	GO:0009986~cell surface	5.32E-05	14	3.801	1.58E-03
INTERPRO	IPR007110:Immunoglobulin-like	2.75E-05	13	4.397	2.70E-03
GOTERM_CC_FAT	GO:0009897~external side of plasma membrane	1.03E-04	10	5.075	2.72E-03
SP_PIR_KEYWORDS	transmembrane protein	9.42E-05	17	3.099	3.13E-03
GOTERM_CC_FAT	GO:0016021~integral to membrane	2.35E-04	72	1.428	5.57E-03
GOTERM_BP_FAT	GO:0002684~positive regulation of immune system process	3.89E-06	15	4.456	6.37E-03
SP_PIR_KEYWORDS	transmembrane	2.86E-04	66	1.505	8.51E-03
SP_PIR_KEYWORDS	membrane	3.99E-04	86	1.381	9.88E-03

PTPN11 SIGNATURE (up-regulated genes)

Category	Term	Pvalue	n° Gene	Fold Enrich	Benjamini p-value
UP_SEQ_FEATURE	disulfide bond	1.72E-10	27	4.271	6.50E-08
SP_PIR_KEYWORDS	disulfide bond	5.34E-10	27	4.059	1.08E-07
GOTERM_CC_FAT	GO:0005886~plasma membrane	6.49E-09	36	2.589	1.11E-06
SP_PIR_KEYWORDS	signal	3.32E-07	26	3.084	3.37E-05
UP_SEQ_FEATURE	signal peptide	3.35E-07	26	3.083	6.32E-05
SP_PIR_KEYWORDS	glycoprotein	3.29E-06	29	2.516	2.23E-04
SP_PIR_KEYWORDS	Secreted	7.51E-06	14	4.598	3.81E-04
GOTERM_CC_FAT	GO:0005615~extracellular space	1.20E-05	11	5.806	6.83E-04
GOTERM_CC_FAT	GO:0005576~extracellular region	9.63E-06	17	3.561	8.23E-04
UP_SEQ_FEATURE	glycosylation site:N-linked (GlcNAc...)	9.17E-06	27	2.510	1.15E-03

| GOTERM_CC_FAT | GO:0044421~extracellular region part | 5.57E-05 | 11 | 4.879 | 2.38E-03 |
| GOTERM_CC_FAT | GO:0044459~plasma membrane part | 2.14E-04 | 21 | 2.368 | 7.30E-03 |

PTPN11 SIGNATURE (down-regulated genes)

Category	Term	Pvalue	n° of Genes	Fold Enrich-ment	Benjamini-corrected p-value
SP_PIR_KEYWORDS	disulfide bond	4.79E-09	30	3.400	1.01E-06
UP_SEQ_FEATURE	topological domain:Extracellular	1.07E-08	29	3.383	4.05E-06
UP_SEQ_FEATURE	disulfide bond	2.83E-08	28	3.340	5.33E-06
SP_PIR_KEYWORDS	signal	7.35E-08	32	2.862	7.71E-06
UP_SEQ_FEATURE	signal peptide	7.44E-08	32	2.860	9.35E-06
SP_PIR_KEYWORDS	Secreted	8.81E-06	16	3.962	6.17E-04
UP_SEQ_FEATURE	topological domain:Cytoplasmic	8.12E-06	32	2.311	7.65E-04
GOTERM_CC_FAT	GO:0009986~cell surface	2.60E-05	11	5.354	1.02E-03
SP_PIR_KEYWORDS	cell membrane	2.03E-05	22	2.830	1.07E-03
GOTERM_CC_FAT	GO:0005576~extracellular region	1.53E-05	19	3.156	1.20E-03
GOTERM_CC_FAT	GO:0005886~plasma membrane	2.32E-05	35	1.996	1.22E-03
GOTERM_CC_FAT	GO:0009897~external side of plasma membrane	8.74E-06	9	8.190	1.37E-03
SP_PIR_KEYWORDS	SH2 domain	6.59E-05	8	7.616	2.30E-03
SP_PIR_KEYWORDS	glycoprotein	5.89E-05	32	2.093	2.47E-03
GOTERM_CC_FAT	GO:0031226~intrinsic to plasma membrane	1.35E-04	16	3.072	4.24E-03
GOTERM_BP_FAT	GO:0042110~T cell activation	7.26E-06	10	7.115	4.31E-03
GOTERM_BP_FAT	GO:0046649~lymphocyte activation	4.17E-06	12	5.831	4.95E-03
SP_PIR_KEYWORDS	transmembrane protein	2.43E-04	12	3.837	7.27E-03
GOTERM_BP_FAT	GO:0045321~leukocyte activation	1.97E-05	12	4.980	7.77E-03
GOTERM_CC_FAT	GO:0044421~extracellular region part	4.12E-04	11	3.870	9.21E-03
SP_PIR_KEYWORDS	Immunoglobulin domain	3.64E-04	9	5.007	9.52E-03

GOTERM_CC_FAT	GO:0005887~integral to plasma membrane	3.76E-04	15	2.948	9.79E-03

Supp. Table S4B. **Functional annotation analysis (DAVID EASE) of the *SHOC2* signature**					
***SHOC2* Signature (up-regulated & downregulated genes)**					
Category	**Term**	**Pvalue**	**n° of Genes**	**Fold Enrich-ment**	**Benjamini-corrected p-value**
UP_SEQ_FEATURE	topological domain:Cytoplasmic	8.09E-07	203	1.333	2.48E-03
UP_SEQ_FEATURE	topological domain:Extracellular	2.15E-06	134	1.422	3.30E-03
GOTERM_CC_FAT	GO:0005886~plasma membrane	1.03E-05	237	1.248	5.64E-03
GOTERM_CC_FAT	GO:0044459~plasma membrane part	2.62E-05	159	1.314	7.14E-03
UP_SEQ_FEATURE	glycosylation site:N-linked (GlcNAc...)	8.53E-06	203	1.294	8.69E-03
***SHOC2* Signature (up-regulated genes)**					
Category	**Term**	**Pvalue**	**n° of Genes**	**Fold Enrich-ment**	**Benjamini-corrected p-value**
SP_PIR_KEYWORDS	transmembrane	2.16E-10	183	1.510	9.23E-08
UP_SEQ_FEATURE	transmembrane region	1.05E-10	183	1.522	1.52E-07
SP_PIR_KEYWORDS	membrane	2.30E-08	232	1.348	4.91E-06
UP_SEQ_FEATURE	topological domain:Cytoplasmic	8.36E-08	109	1.623	6.06E-05
SP_PIR_KEYWORDS	glycoprotein	1.36E-06	113	1.524	1.94E-04
UP_SEQ_FEATURE	glycosylation site:N-linked (GlcNAc...)	4.15E-07	109	1.575	2.01E-04
GOTERM_CC_FAT	GO:0031224~intrinsic to membrane	6.23E-06	197	1.280	1.23E-03
GOTERM_CC_FAT	GO:0016021~integral to membrane	4.19E-06	193	1.293	1.65E-03
SP_PIR_KEYWORDS	immune response	2.13E-05	22	2.738	2.27E-03

Category	Term	Pvalue	n° of Genes	Fold Enrichment	Benjamini-corrected p-value
SP_PIR_KEYWORDS	transport	2.81E-05	93	1.502	2.40E-03
UP_SEQ_FEATURE	topological domain:Extracellular	8.20E-06	70	1.684	2.97E-03
GOTERM_CC_FAT	GO:0005773~vacuole	6.96E-05	28	2.207	9.13E-03
UP_SEQ_FEATURE	binding site:Substrate	3.21E-05	29	2.286	9.27E-03

SHOC2 Signature (down-regulated genes)

Category	Term	Pvalue	n° of Genes	Fold Enrich-ment	Benjamini-corrected p-value
SP_PIR_KEYWORDS	Transcription	2.71E-11	168	1.592	1.18E-08
SP_PIR_KEYWORDS	transcription regulation	5.48E-11	161	1.600	1.19E-08
SP_PIR_KEYWORDS	nucleus	4.28E-10	318	1.313	6.20E-08
SP_PIR_KEYWORDS	dna-binding	1.94E-09	129	1.635	2.11E-07
GOTERM_BP_FAT	GO:0006350~transcription	1.25E-10	171	1.533	3.40E-07
GOTERM_BP_FAT	GO:0045449~regulation of transcription	1.87E-09	188	1.448	2.54E-06
SP_PIR_KEYWORDS	zinc-finger	3.15E-07	131	1.504	2.74E-05
INTERPRO	IPR007087:Zinc finger, C2H2-type	3.54E-08	65	1.969	3.92E-05
INTERPRO	IPR015880:Zinc finger, C2H2-like	2.02E-07	65	1.887	1.12E-04
UP_SEQ_FEATURE	zinc finger region:C2H2-type 2	7.01E-07	52	1.997	1.38E-03
UP_SEQ_FEATURE	zinc finger region:C2H2-type 4	3.43E-06	47	1.980	3.38E-03
UP_SEQ_FEATURE	zinc finger region:C2H2-type 3	5.81E-06	49	1.914	3.81E-03
UP_SEQ_FEATURE	zinc finger region:C2H2-type 5	2.78E-05	42	1.921	1.36E-02
UP_SEQ_FEATURE	zinc finger region:C2H2-type 1	3.68E-05	45	1.851	1.44E-02
SP_PIR_KEYWORDS	zinc	2.02E-04	140	1.316	1.46E-02
UP_SEQ_FEATURE	zinc finger region:C2H2-type 7	4.55E-05	35	2.028	1.48E-02
UP_SEQ_FEATURE	compositionally biased region:Pro-rich	6.13E-05	61	1.644	1.71E-02
GOTERM_BP_FAT	GO:0006355~regulation of transcription, DNA-dependent	2.33E-05	113	1.426	2.08E-02
GOTERM_BP_FAT	GO:0051252~regulation of RNA metabolic process	3.73E-05	114	1.409	2.50E-02

Supp. Table S5. Modulation of transcription factors and their putative target genes					
Transcription Factor (TF)	**TF Modulation**	**TF binding site enrichment**	**Opossum Z-Score**	**Opossum p-value**	**Hypergeometric analysis p-value**
GFI1	**Downregulated in *PTPN11* and *SOS1* mutation group**	**Enriched in *PTPN11*-downmodulated genes**	**5.033**	**0.0003142**	**p<0.0001**
GABPA	**Upregulated in *SOS1* and *SHOC2* mutation group**	**Enriched in *SOS1*-downmodulated genes**	**8.295**	**0.02257**	**p<0.05**
CREB1	**Upregulated in *SHOC2* mutation group**	**Enriched in *SHOC2*-downmodulated genes**	**14.32**	**0.00144**	**p<0.00001**
SP1	**Upregulated in *SHOC2* mutation group**	**Enriched in SHOC2-downmodulated genes**	**7.007**	**0.007963**	**p<0.00001**