

Supplementary Information

Supplemental Methods, Chemicals and reagents.

Supplementary Fig S1. PP2A activation induces cell death in AML.

Supplementary Fig S2. PP2A specificity in OSU-2S mediated cell death.

Supplementary Fig S3. PP2A modulated gene expression.

Supplementary Fig S4. PP2A mediates leukemic differentiation in AML.

Supplementary Fig S5. PP2A mediates cell cycle arrest in AML.

Supplementary Fig S6. Role of p21 and c-Myc in PP2A mediated cell death and differentiation.

Supplementary Fig S7. OSU-2S mediates therapeutic effects in AML cell line derived xenograft model.

Supplementary Fig S8. Leukemic progression in *Tet2^{-/-}/Flt3^{ITD}* murine AML engraftment model.

Supplementary Fig S9. PP2A mediates inhibition of LSCs in-vivo and in-vitro.

Supplementary Fig S10. Dephosphorylation of ERK and Kinome Screen.

Supplementary Table 1- Cytogenetic and mutational analysis of patient derived samples and cell lines used.

Supplementary Table 2- Significant (padj<0.05) DEGs (from Fig 2A) of OSU-2S treated MV4-11 cells.

Supplementary Table 3- Modulation of key genes and pathways (from Fig 2B) with OSU-2S.

Supplementary Table 4- Antibodies for Mass Cytometry.

Supplementary Table 5 (A,B)- Mass Cytometric analysis of OSU-2S treated cells.

Phosphatase assays: Non-radioactive PP2A assay was done as previously described³³. Additionally, to overcome limitations associated with of anti-PP2Ac clone 1D6 used in the assay, namely preferential binding of 1D6 to non-methylated PP2Ac⁴⁵, PP2Ac was also co-immunoprecipitated with antibody against PP2A B55α (clone 2G9, Millipore) and anti-B56α subunit (Proteintech #12675-2-AP) from treated cells (**Supplementary-Fig S1A**) followed by assessment of immunoprecipitated PP2Ac activity as above. PP4 activity assay was done as described previously⁴⁷. Briefly, PP4 catalytic subunit was immunoprecipitated from treated cells followed by Ser/Thr phosphatase assay (Millipore Sigma).

Kinome screen assays: Kinome screen assays: KINOMEscan™ kinome screen with OSU-2S were performed by DiscoverX (Freemont, CA). Percent affinity of 468 target kinases for their ligands were tested in the presence of OSU-2S and vehicle control (DMSO). Targets non-specifically bound by OSU-2S, directly or allosterically, would demonstrate lower affinity towards their ligands, as compared to control DMSO treated condition. Results for binding interactions are reported as '% Ctrl', indicating percent binding of target to its ligand in presence of OSU-2S as compared to control DMSO. Compound selectivity was quantified as Selectivity Score or S-score. It is calculated by dividing the number of kinases that compounds bind to by the total number of distinct kinases tested at a % Control= 10% [denoted as S(10)] and 35% (denoted as S(35)] threshold. Briefly, kinase-tagged T7 phage strains were grown in parallel in 24-well blocks in an E. coli host derived from the BL21 strain. The remaining kinases were produced in HEK-293 cells and subsequently tagged with DNA for qPCR detection. Streptavidin-coated magnetic beads were treated with biotinylated small molecule ligands for 30 minutes at room temperature to generate affinity resins for kinase assays. The liganded beads were blocked with excess

biotin and washed with blocking buffer SeaBlock (Pierce, 1 % BSA, 0.05 % Tween 20, 1mM DTT). Binding reactions were assembled by combining kinases, liganded affinity beads, and test compound OSU-2S (10 μ M) in 1x binding buffer (20 % SeaBlock, 0.17x PBS, 0.05 % Tween 20, 6mM DTT). The assay plates were incubated at room temperature with shaking for 1 hour and the affinity beads were washed with wash buffer (1x PBS, 0.05 % Tween 20). The beads were then re-suspended in elution buffer (1x PBS, 0.05 % Tween 20, 0.5 μ M non-biotinylated affinity ligand) and incubated at room temperature with shaking for 30 minutes. The kinase concentration in the eluates was measured by qPCR.

Bone marrow-derived mesenchymal stromal cell (MSC) expansion: Bone marrow aspirates from AML patients were cultured in DMEM (Life Technologies) with 10% FBS, 2mM L-glutamine and antibiotics penicillin (100 U/ml) and streptomycin (100 μ g/ml) for 24 hours, followed by removal of nonadherent cells and expansion of adherent spindle or stellate shaped stromal cells in DMEM as described before⁴⁶. Cells were passaged 3-4 times before labeling with Carboxyfluorescein succinimidyl ester (CFSE) and seeding in co-culture systems. Primary AML cells (1x10⁶ cells/ml) were added to the monolayer of autologous patient derived stroma. Purity of the stromal cells were determined by assessing surface expression of CD45/CD73/CD90/CD105 by flow cytometry. Stromal cells were gated out during analysis of leukemic cell viability based on CFSE staining.

RNA Seq Library Generation: RNA was isolated using TRizol® extraction from 5x10⁶ cells per sample and initial concentration and purity was assessed by NanoDrop™. To prepare strand-specific RNA-Seq libraries for mRNA sequencing, we used the Illumina TruSeq Stranded mRNA Sample Prep Kit with Oligo-dT beads to capture RNA molecules with polyA tails (catalog #RS-122-2101; Illumina, Inc., San Diego, CA). Library generation, following manufacturer protocol, starting with 600 ng of total RNA with a RNA Integrity Number (RIN) of 7 or greater. The concentration and the fragment profile of the resultant libraries were determined by Qubit dsDNA analysis (Invitrogen/Thermo Fisher Scientific, Inc., Waltham, MA) and BioAnalyzer High Sensitivity DNA chip (Agilent Technologies, Santa Clara, CA), respectively, to assess overall library quality.

RNA-Seq Library Sequencing: Individual libraries were pooled and sequenced on a HiSeq 2500 instrument (Illumina, Inc., San Diego, CA). Each library was sequenced in paired-end 50 base pair mode to an average read depth of 45.2 million reads per sample (Range: 37.8 to 61.8) and demultiplexed FASTQ files were generated with the Illumina CASAVA pipeline.

Colony Forming Assays: 10,000 primary AML cells or CD34⁺ HSPCs enriched from cord blood sample or stem cell mobilized samples (CD34 Microbead Kit, Miltenyi) were resuspended in Cell Suspension Buffer (R&D Systems) with vehicle or OSU-2S and added to methocellulose based media (HSC004 R&D Systems, H4305 or H4435 for LTC-IC assays from normal donors, Stemcell Technologies). Duplicate plates for every treatment condition were counted for colony forming units (CFU) 14 days post plating. Murine cells were plated on Mouse Methylcellulose Complete Media Without Epo (R&D Systems, HSC008).

Mass Cytometry: Cells were cultured at 1.5-2x10⁶ cells/ml and treated with Veh or OSU-2S for 48hrs. For analysis, cells incubated with 10 μ M final concentration of IdU (Sigma Aldrich) for 15 minutes at 37°C, washed and resuspended in serum free RPMI media at 10⁷ cells/ml. Cisplatin (Cell-ID™, Fluidigm) was added to a final concentration of 5 μ M and incubated for 5 minutes at room temperature before quenching with excess serum containing RPMI media. Cells were pelleted and the cell pellet was resuspended in Smart Tube Proteomic Stabilizer PROT1 (Smart Tube INC) at room temperature for 10 minutes and stored at -80°C.

Antibody staining for mass cytometry and mass cytometric analysis of cells were carried out as previously described^{40,41}. Briefly, Fc blocked fixed cells were incubated with antibodies for extracellular markers in cell

staining media (CSM) [phosphate buffered saline (PBS), 0.5% bovine serum albumin (BSA), and 0.02% sodium azide, pH 7.4] for 50 minutes at room temperature with shaking. Cells were then washed and treated with 1.5% paraformaldehyde for 15 minutes followed by resuspension in ice cold methanol to allow for intracellular staining carried out for 50 minutes at room temperature with shaking. Cells were washed with CSM and PBS and incubated with 1.5% PFA in PBS with iridium intercalator at 1:4000 and incubated overnight at 4°C. Excess intercalator was washed out before analysis on Helios™ mass cytometer (Fluidigm) at an event rate of 200-400 events per second with internally calibrated dual count detection. Visualization and data analysis was carried out on the cloud based platform Cytobank (Cytobank, Inc., CA). Spanning-tree Progression Analysis of Density-normalized Events (SPADE)⁶⁸ was carried out on Cytobank using 23 lineage markers (**Supplementary Table 4**).

Cell cycle analysis: For cell cycle analysis, cells were treated with OSU-2S and harvested at the end of desired treatment time. Briefly, cells were washed twice with PBS and fixed with ice-cold 70% ethanol overnight at 4 °C. These fixed cells were washed with PBS, treated with 2mg/ml RNase A, stained with 50 µg/ml propidium iodide (PI) for 30min at 37°C, and subjected to flow cytometry. The data was analyzed by curve fitting software Modfit.

Quantitative RT-PCR: HL-60 and MV4-11 cells were treated with OSU-2S (5µM) for 8hrs. Primary AML cells were treated with 3.5µM OSU-2S for 16hrs. Cells suspended in TRizol® (Ambion, Life Technologies) were kept at -80°C until RNA was extracted as previously described³³. cDNA was made using random primers (Invitrogen, Life Technologies) using reverse transcription reaction. Real-time PCR for CDKN1A (p21), CDKN1C (p27), CCND1, CCNE1, CDK2, CEBPA, CEBPB, KLF2,4,6, KIT, IDH2, TERT, GADD45B and GAPDH was performed using TaqMan (Life Technologies) gene expression assay probe-primer sets and ViiA™ 7 Real-Time PCR System (Applied Biosystems). The expression of target genes relative to internal control gene was calculated using the threshold cycle number (Ct). The relative target gene expression for each condition was normalized to vehicle control and fold change determined using the comparative method ($2^{-\Delta\Delta Ct}$).

siRNA and transfection: siRNAs against PP2A catalytic subunit α (PP2Ac) (ID# s10957), B56α (ID# s10982), B56γ (ID# s10988), B55α (ID# s610), PP2A catalytic subunit β (PP2Acβ) (ID# s10962), p21 (Cat# VHS40202), PPP4C (ID# s10999) and negative control RNA (Cat#AM4611, AM4613, 4390843, 4390846, 12935100) were obtained from Life Technologies. pcDNA3-c-Myc was a gift from Wafik El-Deiry⁶² (Addgene plasmid #16011). Nucleofection was used to transfet HL-60 cells using Amaxa® Cell Line Nucleofector® Kit V (program T-019), MV4-11 using Kit L (program Q-001) and U937 using Kit C (program W-001) on Nucleofector™ 2b Device according to manufacturer's instructions.

LTC-IC assays: Limiting dilution (LDA) and bulk LTC-IC assays were carried out as previously described⁶⁹. Briefly, approximately 1-2x10⁶ bone marrow cells, cord blood or AML samples were co-cultured on irradiated (8000 cGy) M2-10B4 feeder cells and treated with Veh or OSU-2S (0.5µM) for 5days (LDA) or 2 weeks (bulk assays) on co-culture followed by replating on co-culture at limiting dilution on 96-well plates from 500-50000 cells for ~5weeks with weekly ½ media changes, in human long-term culture media (Stemcell Technologies) supplemented with hydrocortisone. For bulk assays, cells were similarly replated on co-culture in bulk. Control M2-10B4 only monocultures were assessed to evaluate the effect of OSU-2S on feeder cells. No cytotoxic effect was seen on feeder cells (Veh- 98.2%, OSU-2S- 96.8% viable as assessed by trypan blue). For LDA, each well was harvested and plated on methylcellulose-based colony forming assays. For bulk LTC-IC assays, all cells were harvested and 5x10⁴ cells were plated on methylcellulose based CFU assays. Colonies were scored after two weeks and LTC-IC were calculated based on Poisson distribution using L-Calc software (Stemcell Technologies).

FACS sorting: Cell sorting was performed using a BD Bioscience BD FACSAria™ Fusion flow cytometer with a blue, red, yellow-green, violet, and UV laser (BD Biosciences, San Jose, CA, USA). Splenocytes from Tet2^{-/-}/Flt3^{ITD}

mice were selected and sorted for with the following antibody cocktail: anti-mouse CD45.1 FITC (Clone A20), anti-mouse CD45.2 PE (Clone 104), anti-mouse Mac1 APC (Clone M1/70), anti-mouse cKit PE/Cy7 (Clone 2B8) from BD Biosciences and LIVE/DEAD Fixable Near-IR Dead Cell Stain (#L10119, Invitrogen). Progenitor like cells were identified as live, CD45.2⁺, CD45.1⁻, cKit⁺, Mac1⁻ cells. Briefly, cells were stained with antibody cocktail on ice for half an hour before being washed once and resuspended in DPBS (Gibco, Grand Island, NY, USA). Cells were sorted through an 85um nozzle at a sheath pressure of 25 psi and a drop drive frequency of 60-70 kHz. 4-way purity sorting was used. Sorted purity achieved for all samples were >98.0%.

In-vivo xenograft study: MV4-11 cells stably expressing GFP and firefly luciferase (MV4-11 GFP/Luc) were engrafted in female NOD-scid IL2rynull (NSG) mice by tail vein injection and harvested from splenocytes at ERC (early removal criteria). 600,000 MV4-11 GFP/Luc cells harvested from the splenocytes of a secondary engraftment were injected in NSG mice to create an aggressive tertiary engraftment model. Bioluminescent imaging (IVIS, PerkinElmer, Waltham, MA) following administration of the luciferin substrate by i.p. was used to monitor disease burden. Treatment with either vehicle or OSU-2S was started 5 days post engraftment following the appearance of disease burden as tracked by imaging. OSU-2S were administered intraperitoneally (i.p.) at 12.5mg/kg in hydroxypropyl beta cyclodextrin (HPBCD) three times a week for four weeks or orally (p.o.) at 60mg/kg in 5% DMSO/5% Tween-20/water five times a week till ERC (higher dose to compensate for possible lower bioavailability by oral route, unpublished data) along with corresponding vehicle control cohorts. Mice dosed orally were supplied with wet mash (combining water with ground chow) in addition to regular feed. Animal groups were not blinded. One animal in i.p administered OSU-2S cohort was excluded from analysis due to death from unknown reasons, date of death not established. All animal experiments were carried out under protocols approved by OSU Institutional Animal Care and Use Committee (IACUC). Additional in-vivo studies were carried out by Charles Rivers laboratories by transplanting 1×10^7 MV4-11 cells in NCG mice (n=10 per cohort), followed by treatment 6days post engraftment with Vehicle (oral p.o), OSU-2S (12.5mg/kg i.p thrice a week), OSU-2S (oral p.o, 10, 30 and 60mg/kg three times a week) or OSU-2S (oral p.o, 10 and 30 mg/kg daily) till end of study. OSU-2S (12.5mg/kg i.p) showed modest but significant survival advantage ($p=0.028$, median survival OSU-2S vs Veh: 38 vs 36 days) compared to Vehicle (oral, p.o) cohort, but was excluded from analysis due to lack of proper Vehicle (i.p) control arm. Lower dosing of thrice a week [$p=0.74$ (10mg/kg) and 0.3 (30 and 60mg/kg)] or 10mg/kg ($p=0.4$) and 30mg/kg ($p=0.089$) daily did not show any survival benefit. Continuous higher oral doses of 60 and 120mg/kg daily was not tolerated in NCG mice (mean decrease in body weight >10% at Day 10) and was discontinued, justifying the use of 60mg/kg five times a week as an optimal oral dose.

Chemicals and reagents: OSU-2S was synthesized as described previously³³ at The Ohio State University Medicinal Chemistry shared resource and verified by Nuclear Magnetic Resonance and Mass Spectrometry. FTY720 was purchased from ChemieTek (Indianapolis, IN) and perphenazine (PPZ) was obtained from Sigma-Aldrich. DMSO (Gibco) was used to dissolve FTY720/OSU-2S for *in-vitro* studies. c-Myc, p-c-Myc, ERK, p-ERK, p21 and p-Rb antibodies (rabbit) for immunoblotting were purchased from CST. PP2Ac and PP2Ab antibodies was purchased from EMD Millipore, MA and PPP4C antibody was purchased from Bethyl Laboratories. Goat anti-PP2A B56α (Invitrogen #PA5-17983), rabbit anti-PP2A B56α (Proteintech #12675-2-AP) and rabbit anti-PP2Acβ were purchased from Proteintech. Rb and SET antibodies (mouse) were purchased from Sigma-Aldrich. Other antibodies used include CD34-FITC, CD33-PE/BV421, CD45-/FITC/APC, CD3-PE-Cy7, CD123-APC, HLA-DR-BV510, CD19-BV785, CD105-FITC, CD73-PE, CD90-APC, CD11b BV421, CD14 BV650 (Biolegend, San Diego, CA), and murine CD45-PECF594 (BD Biosciences, San Jose, CA). Anti-mouse CD45.1- FITC, CD45.2-PE, Mac1-APC, cKIT-PE-Cy7, Sca1-BV421, Ly6G-AF700 and Ly6G-PE were also purchased from BD Biosciences. Anti-mouse lineage-FITC/Isotype-FITC was purchased from Biolegend. Antibodies used for lineage markers, differentiation, signaling and

cell cycle analysis by mass cytometry are listed in **Supplementary Table 4**. Annexin V-FITC or PE, propidium iodide and 7AAD were purchased from BD Biosciences. LIVE/DEAD near-IR stain (Invitrogen) and Count Bright™ absolute counting beads (Life Technologies) were used for flow cytometry assays. Okadaic acid (EMD Millipore, MA) was used to inhibit PP2A activity. 2-hydroxypropyl-beta-cyclodextrin (HPBCD) (Sigma, #332607) was used to dissolve OSU-2S for intraperitoneal route.

Supplementary Fig S1. **A)** Fold change in PP2A activity, normalized to Vehicle (Veh) control, as detected by modified PP2A activity assay. PP2Ac was co-immunoprecipitated (co-IP) from Veh or OSU-2S treated cells with antibody against PP2A B55 α (clone 2G9) or B56 α subunit (Proteintech #12675-2-AP), followed by PP2Ac activation assay using PP2A specific phosphopeptide (Millipore) and malachite green detection of free phosphate released. OSU-2S significantly increased PP2A activity in HL-60 ($p=0.0450$) and MV4-11 ($p=0.0485$) cells. **B)** Levels of SET co-immunoprecipitation (co-IP) with PP2A in HL-60 and MV4-11 cells treated with Veh or OSU-2S (5 μ M, 4hrs) using anti-PP2A antibody, clone 1D6 (IP:PP2A). Isotype controls (IP:Iso) were used to confirm specificity of pulldown. FTY720 was used as a positive control. Numbers represent SET densitometric values normalized to PP2Ac. **C)** Levels of SET co-IP with PP2A in primary AML cells treated (5 μ M, 4hrs) with Veh, OSU-2S or FTY720. Leftover supernatant lysate (Sup) post IP was run as a reference. Numbers represent SET densitometric values normalized to PP2Ac. **D)** Reverse co-IP shows decreased levels of PP2A pulled down with SET in OSU-2S treated MV4-11 cells as compared to Veh. Numbers represent PP2Ac densitometric values normalized to SET. **E)** Successful co-IP of PP2Ac with anti- PP2A B56 α was confirmed by immunoblotting with goat anti-PP2A B56 α (Invitrogen #PA5-17983) and anti-PP2Ac antibodies. Quantification of PP2Ac densitometric values normalized to B56 α is shown below the immunoblots and in the graphs. There is a significant increase in PP2Ac levels co-IP with B56 α in HL-60 cells ($n=6$). A trend towards increased PP2Ac co-IP with B56 α was also observed in MV4-11 cells ($n=3$). **F)** Percent cell viability (measured by Annexin V/PI staining or Acridine orange/PI staining for AML 16, 20 and 26) normalized to DMSO vehicle control (Veh) in patient derived AML cells ($n=12$) treated with increasing concentrations of OSU-2S. **G)** Percent cell viability with OSU-2S in primary AML cells ($n=5$, AML1, 2, 8, 10, 22) in mono and autologous co-culture, normalized to Veh treated AML monoculture. Presence of mesenchymal stromal cells (MSCs) significantly increased viability of AML cells as compared to monoculture in the vehicle treated condition ($p=0.027$). However, OSU-2S induced significant cytotoxicity even in presence of supportive stromal cells (0 vs 2.5 μ M: $p=0.039$). **H)** Morphology and **I)** Purity of expanded patient derived MSCs before co-culture with autologous AML cells. MSCs were CD45 $^-$ CD73 $^+$ CD90 $^+$. **J)** Percent viability of MSCs in presence of OSU-2S after 120hrs ($n=3$). No significant cytotoxicity was observed. **K)** Percent cell viability (measured by Annexin V/PI staining) with OSU-2S treatment normalized to Veh in PBMCs ($n=4$, IC50: 7.33 μ M) compared to AML samples (AML1-AML13, IC50: 3.13 μ M) at 48hrs. **L)** PP2Ac expression levels in AML36-43. Numbers represent densitometric values normalized to loading control GAPDH. **M)** Fold PP2A basal activity normalized to AML36 in primary AML cells ($n=8$, AML36-43). **N)** PP2Ac expression in OSU-2S treated (5 μ M, 8hrs) primary AML, HL-60 or MV4-11 cells. Numbers represent densitometric values normalized to loading control GAPDH.

Supplementary Fig S2. **A)** OSU-2S mediated cytotoxicity is significantly rescued by Okadaic acid (5nM) in primary AML cells ($n=4$, AML17-20, $p=0.048$) and Kasumi-1 cells ($n=7$, $p=0.01$), further emphasizing PP2A dependent activity of OSU-2S. **B)** Relative PP2A B56 γ expression in cells transfected with PP2A B56 γ (50nM) siRNA, normalized to non-specific negative control (nc) siRNA transfected cells. B56 γ protein levels were measured by densitometric quantification of immunoblots and normalized to Actin loading control. Representative western blot images are shown. B56 γ siRNA significantly knocked down PP2A B56 γ protein expression. **C)** Percent cell viability in HL-60 and MV4-11 cells transfected with negative control (nc) siRNA or B56 γ siRNA, normalized to

Veh treated, nc siRNA transfected cells. Cells were treated 24hrs post transfection with Veh and 1.75 μ M OSU-2S (HL-60) or 2.5 μ M OSU-2S (MV4-11) for an additional 24hrs. No significant effect of B56 γ knockdown was seen on OSU-2S activity. **D)** Relative PP2A B55 α expression in cells transfected with PP2A B55 α (50nM) siRNA, normalized to non-specific negative control (nc) siRNA transfected cells. B55 α protein levels were measured by densitometric quantification of immunoblots and normalized to Actin loading control. Representative western blot images are shown. B55 α siRNA significantly knocked down PP2A B55 α protein expression. **E)** Percent cell viability in HL-60 and MV4-11 cells transfected with negative control (nc) siRNA or B55 α siRNA, normalized to Veh treated, nc siRNA transfected cells. Cells were treated 24hrs post transfection with Veh and 1.75 μ M OSU-2S (HL-60) or 2.5 μ M OSU-2S (MV4-11) for an additional 24hrs. No significant effect of B55 α knockdown was seen on OSU-2S activity. **F)** Relative PP2Ac β expression in cells transfected with PP2Ac β (60nM) siRNA, normalized to non-specific negative control (nc) siRNA transfected cells. PP2Ac β protein levels were measured by densitometric quantification of immunoblots and normalized to Actin loading control. Representative western blot images are shown. PP2Ac β siRNA significantly knocked down PP2Ac β protein expression. **G)** Percent cell viability in HL-60 cells transfected with negative control (nc) siRNA or PP2Ac β siRNA, normalized to Veh treated, nc siRNA transfected cells. Cells were treated 24hrs post transfection with Veh and 1.75 μ M OSU-2S (HL-60) or 2.5 μ M OSU-2S (MV4-11) for an additional 24hrs. No significant effect of PP2Ac β knockdown was seen on OSU-2S activity. **H)** PP4 activity in OSU-2S treated (5 μ M, 4hrs) HL-60 cells normalized to Veh. No significant activation was observed. **I)** Percent cell viability in HL-60 cells (n=6) transfected with negative control (nc) or PPP4C siRNA and treated 24hrs post transfection with Veh or OSU-2S (1.75 μ M for 24hrs), normalized to nc transfected Veh treated cells. PPP4C siRNA did not rescue OSU-2S mediated activity.

Supplementary Fig S3. **A)** Heatmap showing differential gene expression of significantly modulated genes in OSU-2S (5 μ M, 8hrs) treated MV4-11 cells. **B)** Predicted gene networks from RNA-Seq analysis involved in modulation of cell cycle, differentiation (increased) and maintenance of hematopoietic progenitors (decreased). **C)** Fold change (log) modulation of KLF2,4,6, IDH2, TERT, KIT and GADD45B genes in HL-60 and **D)** MV4-11 cells treated with OSU-2S (5 μ M,8hrs) normalized to Vehicle treated cells.

Supplementary Fig S4. OSU-2S (2.5 μ M, 48hrs) increased CD11b expression in **A)** HL-60 cells and **B)** U937 cells, representative histograms. **C)** Dose dependent increase in expression of CD11b in HL-60 [p (dose trend) <0.0001] and **D)** U937 cells [p (dose trend) <0.0001] over 2, 4 and 7 days of culture. **E)** OSU-2S (3.5 μ M, 48hrs) increased CD11b expression in primary AML cells (representative histogram from AML 14). **F)** Percent relative viability (dots and lines) represented on the right y-axis and fold change in CD11b $^+$ cells (bars) represented on the left y-axis of individual primary AML samples tested with OSU-2S (3.5 μ M, 48hrs). **G)** Percent CD11b $^+$ /CD14 $^+$ cells in MV4-11 cells (n=7, 2.24% mean increase in CD11b $^+$ /CD14 $^+$ cells) treated with Veh or OSU-2S (2.5 μ M, 48hrs). **H)** Relative CD11b $^+$ cells in nc and PP2Ac siRNA transfected cells. PP2Ac siRNA significantly reduces CD11b $^+$ cells 48hrs post transfection (HL-60: n=7, p=0.0385; U937: n=6, p=0.022). **I)** FTY720 (2.5 μ M, 48hrs) and PPZ (10 μ M, 48hrs) increased CD11b expression in HL-60 cells, representative histograms. **J)** Percent CD11b $^+$ /CD14 $^+$ HL-60 cells (48hrs) and CD11b $^+$ U937 cells (72hrs) with FTY720 and **K)** PPZ. **L)** Transient overexpression of PPP2CA (Origene, Cat# SC321401) in HL-60 cells (n=6) decreases viability (p=0.0028) and increases %CD11b $^+$ /CD14 $^+$ cells (p=0.0005) 48hrs post transfection. **M)** siRNA knockdown of SET (66.7nM, Invitrogen, Cat# 4392420) in HL-60 cells (n=6) decreases viability (p=0.004) and increases %CD11b $^+$ cells (p=0.0013) 48hrs post transfection.

Supplementary Fig S5. **A)** Fold increase in %cells positive for CD15, CD14, CD11b, CD66b, pH2AX, cPARP and decrease in CD34, CyclinB1, Ki67, pRb, pERK (n=7) as seen by mass cytometry of primary AML cells treated with OSU-2S (3 μ M, 48hrs) normalized to Veh. Live cells were measured by % cisplatin negative cells (Pt-ve). **B)**

Representative images of OSU-2S induced differentiation marker CD66b, DNA damage marker pH2AX and apoptotic marker cPARP in primary AML cells as seen by mass cytometry in primary AML cells. **C)** OSU-2S (5 μ M, 48hrs) increased DNA damage (pH2AX) and apoptosis (cPARP) markers in HL-60 cells as detected by mass cytometry. **D)** Percent cells in G0/G1, S and G2M phases of cell cycle in primary AML cells (representative plot, AML2) treated with Veh or OSU-2S (3 μ M, 48hrs). OSU-2S decreases cells in S-phase in primary AML cells. Gating is done based on cyclinB1, IdU and pRb expression levels as detected by mass cytometry. **E)** Representative DNA histograms as detected by PI staining and flow cytometric analysis of cell cycle in HL-60 cells.

Supplementary Fig S6. **A)** HL-60 and MV4-11 cells treated with Veh or 5 μ M OSU-2S resulted in increased p21 levels as evidenced by immunoblotting. **B)** p21 siRNA increases viability ($n=15$, $p=0.0178$) and decreases CD11b ($n=12$, $p=0.0287$) in HL-60 cells as compared to negative control (nc) 48hrs post transfection. **C)** Cells transfected with nc or p21 siRNA were treated with OSU-2S (1.75 μ M for 8hrs) 24hrs post transfection. OSU-2S treatment decreased pRb which was reversed with p21 siRNA in HL-60 cells. Total Rb levels remain unchanged. **D)** Densitometric quantifications of pRb normalized to total Rb as assessed by immunoblotting. p21 siRNA significantly reverses OSU-2S mediated decrease in pRb. **E)** OSU-2S treatment (5 μ M) results in c-Myc downmodulation in HL-60 cells. **F)** OSU-2S (5 μ M, 6hrs) in HL-60 cells at an early time point of 6hrs reduces phospho c-Myc Ser 62 (p-c-Myc) levels as seen by immunoblotting. **G)** c-Myc overexpression increases viability ($n=9$, $p<0.0001$) and decreases CD11b ($n=14$, $p=0.0243$) in HL-60 as compared to pcDNA3 empty vector 48hrs post transfection.

Supplementary Fig S7. **A)** Survival of MV4-11 xenografted mice with intraperitoneal Veh or OSU-2S treatment (days post engraftment). NSG mice were engrafted with tertiary MV4-11-GFP/Luc splenocytes and recruited into Veh (HPBCD) and OSU-2S treatment groups. OSU-2S treatment results in improvement of leukemic mice survival [$n=8$ (Veh), 10 (OSU-2S), mean survival difference OSU-2S vs Veh: 47 vs 36 days, $p=0.0089$]. **B)** Tumor burden in the mice (i.p study) was imaged by bioluminescent imaging of luciferin signal produced by transgenically expressed luciferase. **C)** Survival of mice in the above model with orally administered OSU-2S [$n=7$, mean survival OSU-2S vs Veh: 37 vs 30 days, $p=0.0099$].

Supplementary Fig S8. **A)** Immunophenotype of CD45.2 expressing AML cells from Tet2^{-/-} Flt3^{ITD} donor mice and CD45.1 support bone marrow cells (BM) from normal donor mice. Tet2^{-/-}Flt3^{ITD} murine AML show higher proportion of Lin⁻ cells compared to wild type CD45.1 cells. Both CD45.1 and CD45.2 cells had LSK (Lin⁻ Sca⁺ cKit⁺) stem cell populations. Proportion of LSK cells within the Lin⁻ compartment was similar between the two genotypes. **B)** As expected, cells from AML donor were exclusively CD45.2⁺ and normal BM was CD45.1. AML cells had a higher fraction of cKit⁺/Mac1⁻ and lower cKit⁻/Mac1⁺ cells as compared to normal donor cells, indicating the leukemic population had more immature and less mature cells. The AML and the support marrow were co-injected into lethally irradiated mice. The immunophenotype of co-injected cells demonstrated both CD45.1 and CD45.2 cells as expected, and gating on CD45.1 vs CD45.2 cells demonstrated lower cKit⁺/Mac1⁻ and higher cKit⁻/Mac1⁺ cells in CD45.1 non-leukemic cells, recapitulating the immunophenotype of individual leukemic and non-leukemic populations. **C)** Progression of CD45.1 cells over weeks in Vehicle, OSU-2S treated and normal bone marrow transplanted (BMT only) mice. No significant difference was seen indicating a lack of immunocompromising activity in OSU-2S. The yellow band represents the normal levels of CD45.1 cells seen in unengrafted control mice. **D)** Progression of CD45.2 cells over weeks in Vehicle and OSU-2S treated mice. No significant difference was seen.

Supplementary Fig S9. **A)** Histograms showing Lineage expression on BM cells from Veh, OSU-2S treated and normal BMT only mice. OSU-2S treatment brought down the levels of Lin- cells close to BMT only mice. **B)** LSK cell numbers in BM of Veh and OSU-2S treated mice. OSU-2S treatment significantly decreases leukemia initiating LSK cells (n=3, p=0.0466). **C)** Secondary replating of colony forming assays show persisting decreased CFU in cells from OSU-2S treated mice as compared to Veh treated mice. **D)** Purity testing of FACS sorted Progenitor like (cKit⁺/Mac1⁻) from untreated leukemic mice. **E)** Induced Mac1 expression (MFI) and percent cKit⁻/Mac⁺ differentiating from FACS purified cKit⁺/Mac1⁻ cells with Veh and OSU-2S treatment in vitro (n=3) OSU-2S induced increased differentiation into cKit⁻/Mac⁺ cells (p=0.0437). **F)** Colony forming units in primary AML cells treated with Veh, 0.3 (n=6, AML 28-32, 35) or 3.5 μ M OSU-2S (n=12, AML 1, 2, 5, 15, 28-35), plated on methylcellulose and counted two weeks after. OSU-2S treatment at both concentrations significantly reduced colony forming ability of primary AML cells. **G)** Colony forming units in CD34+ stem cells enriched from human cord blood or stem cell mobilization therapies (n=4). A trend towards decreased CFU-GMs were seen with 2.5 μ M (p=0.0853) but not 0.5 μ M OSU-2S. **H)** LTC-IC frequency of Veh and OSU-2S (0.5 μ M) treated primary AML and normal donor samples (n=6, AML 1,15,22,26,35,36). OSU-2S treatment significantly decreased the frequency of LTC-IC in primary AML samples. No significant difference was observed in non-leukemic samples (n=4). LTC-IC frequency is represented as 1 LTC-IC per number of cells plotted on the y-axis for each sample. **I)** Fold LTC-IC derived CFUs per 5x10⁴ test cells in individual primary AML samples (n=5, AML1,8,15,22,35) and non-leukemic normal donor bone marrow (n=6).

Supplementary Fig S10. **A)** OSU-2S treatment (5 μ M, 8hrs) results in dephosphorylation of p-ERK in HL-60 and MV4-11 cells. **B)** OSU-2S synergizes with Ara-C in-vitro in HL-60 and MV4-11 cells. Top panels show % viability normalized to vehicle control across the combinations of both drugs. Bottom panels show areas of synergy (blue) and antagonism (red) between OSU-2S and Ara-C. Drug interactions and synergy was analyzed using the software platform Combefit⁸⁵ using Loewe, Bliss and HSA models, and significance was tested using mixed effect model. **C)** siRNA mediated knockdown PRKCD (PKC) did not significantly affect OSU-2S activity. **D)** Dendrogram representing relative affinity of target kinases for their ligands in presence of OSU-2S (10 μ M) normalized to vehicle control DMSO (Percent Control). OSU-2S showed high compound selectivity against non-target kinases [S(10) score=0, S(35) score=0.002] with the exception of LKB1.

Fig S1. (A-G)

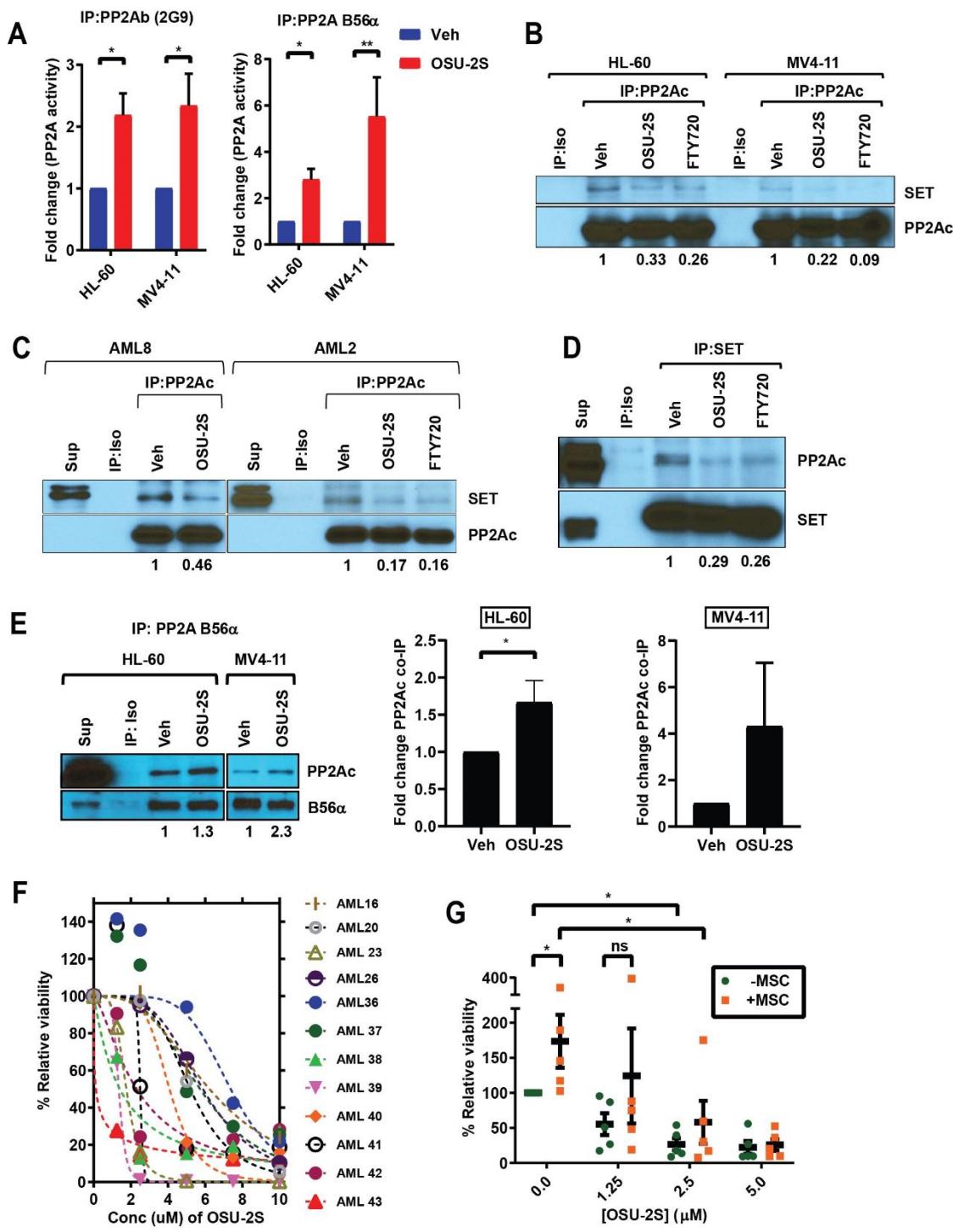


Fig S1. (H-N)

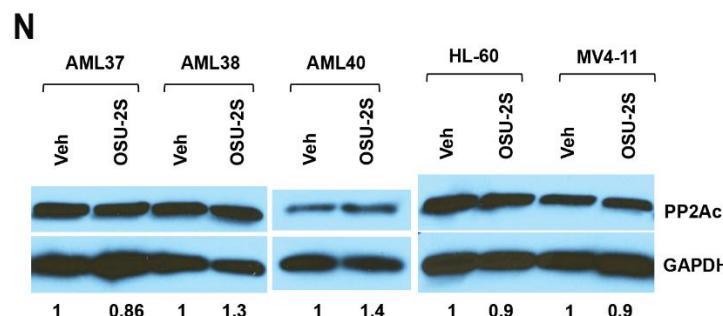
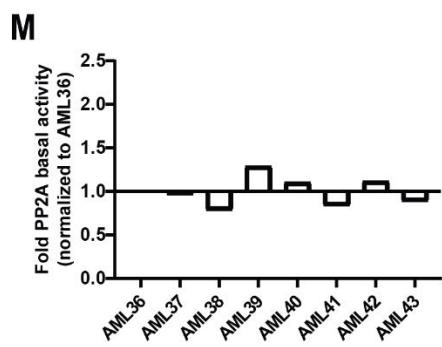
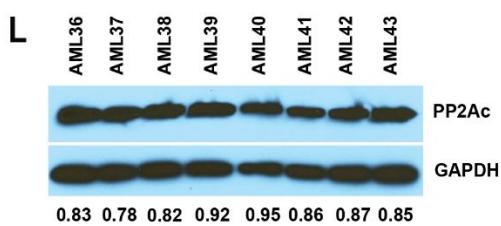
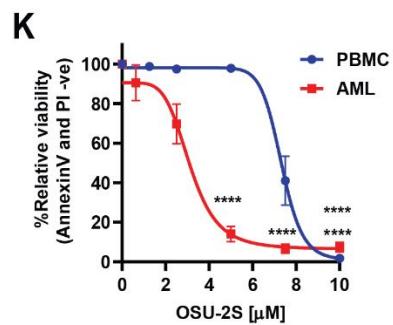
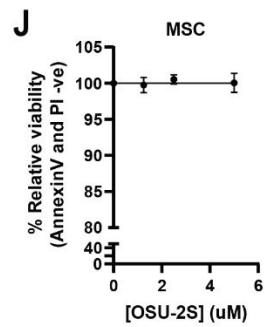
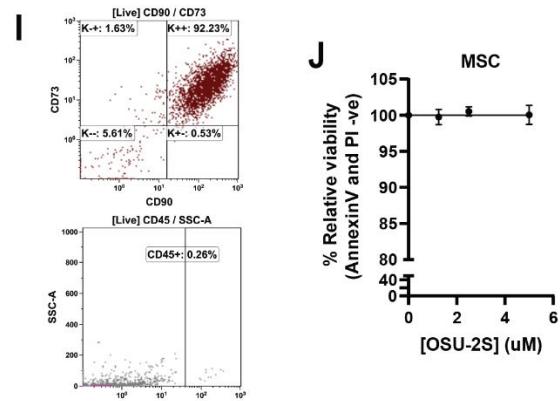
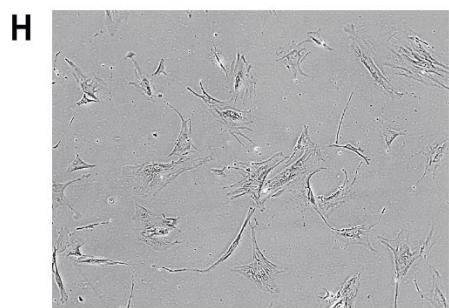


Fig S2.

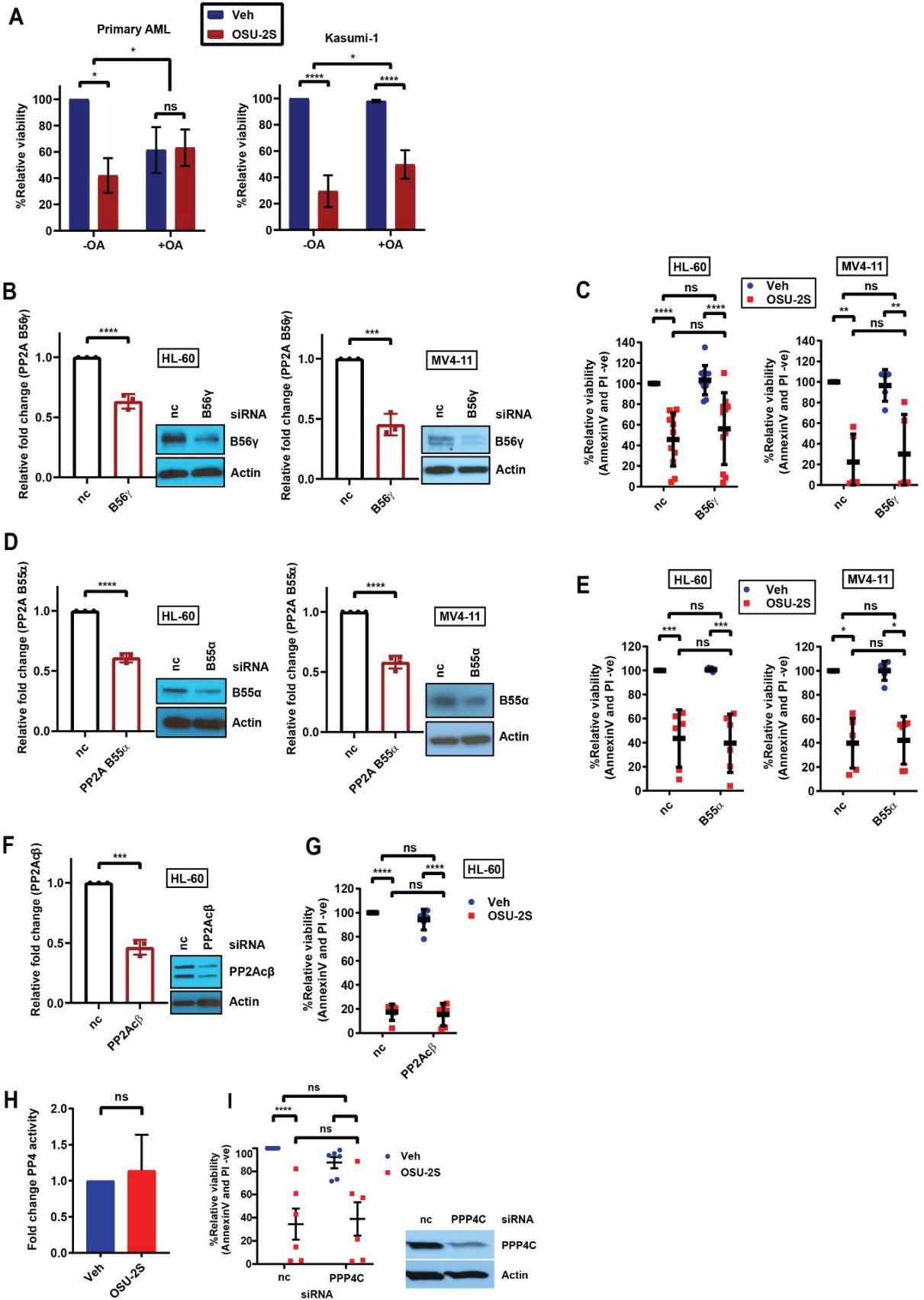


Fig S3.

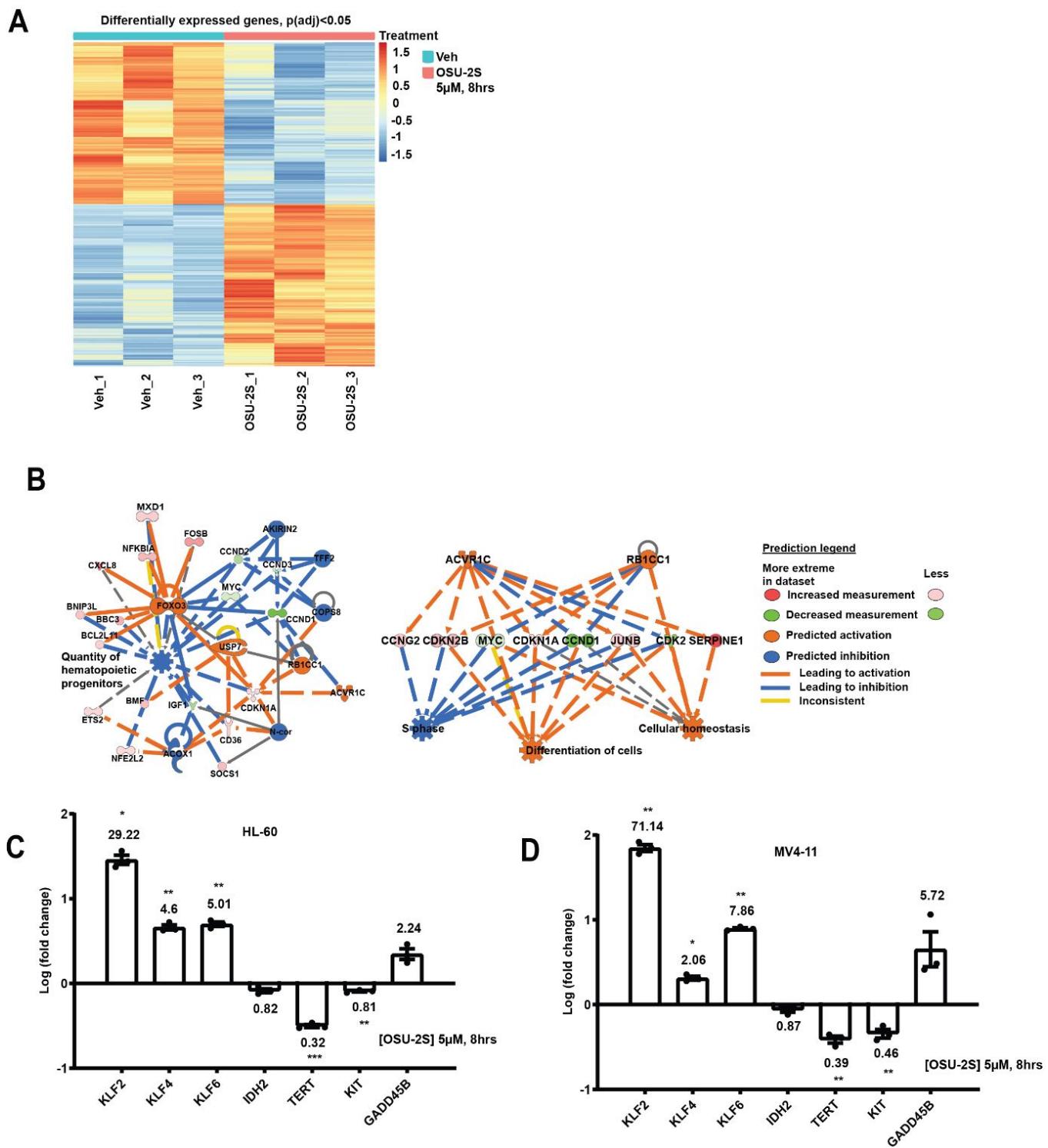


Fig S4.

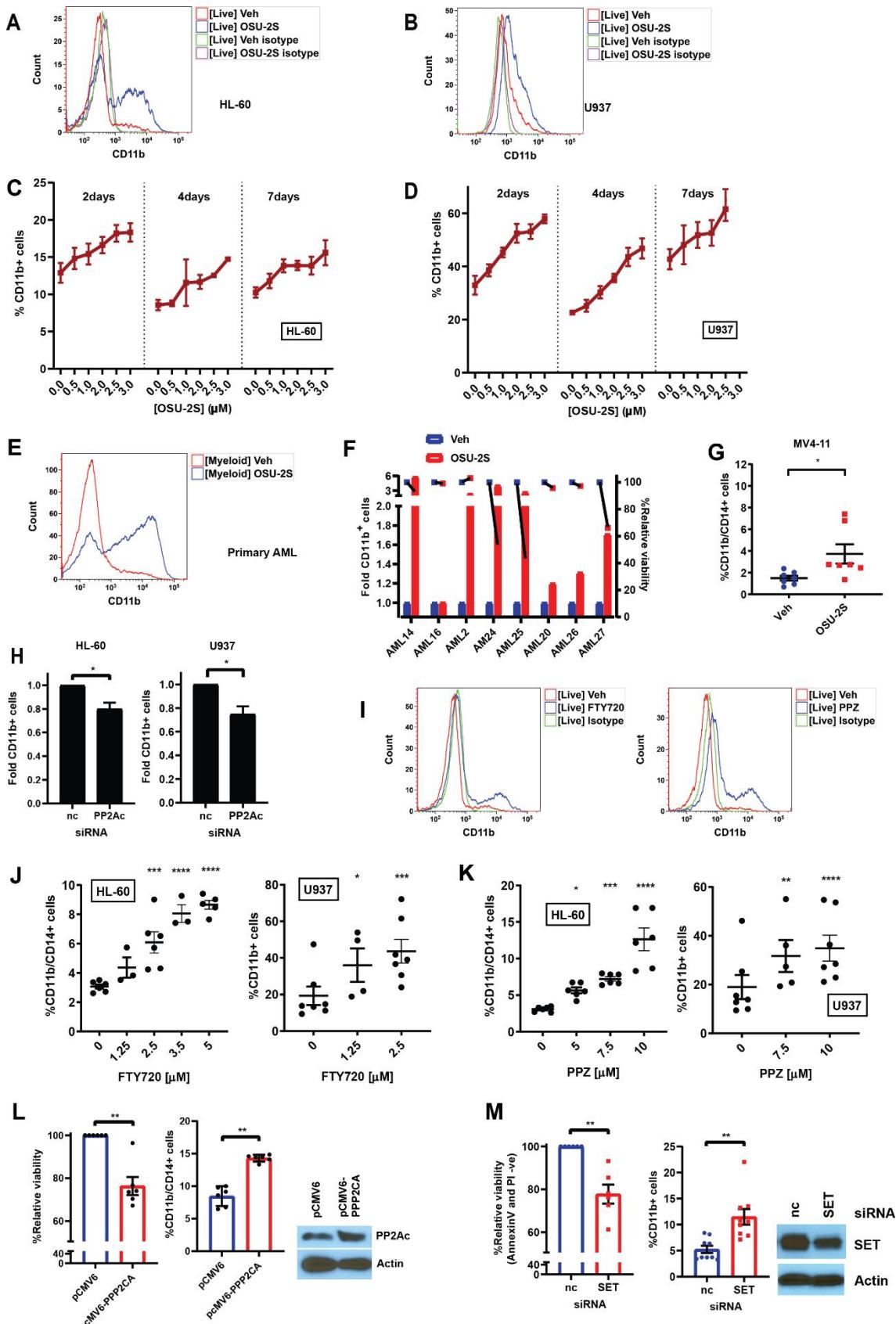


Fig S5.

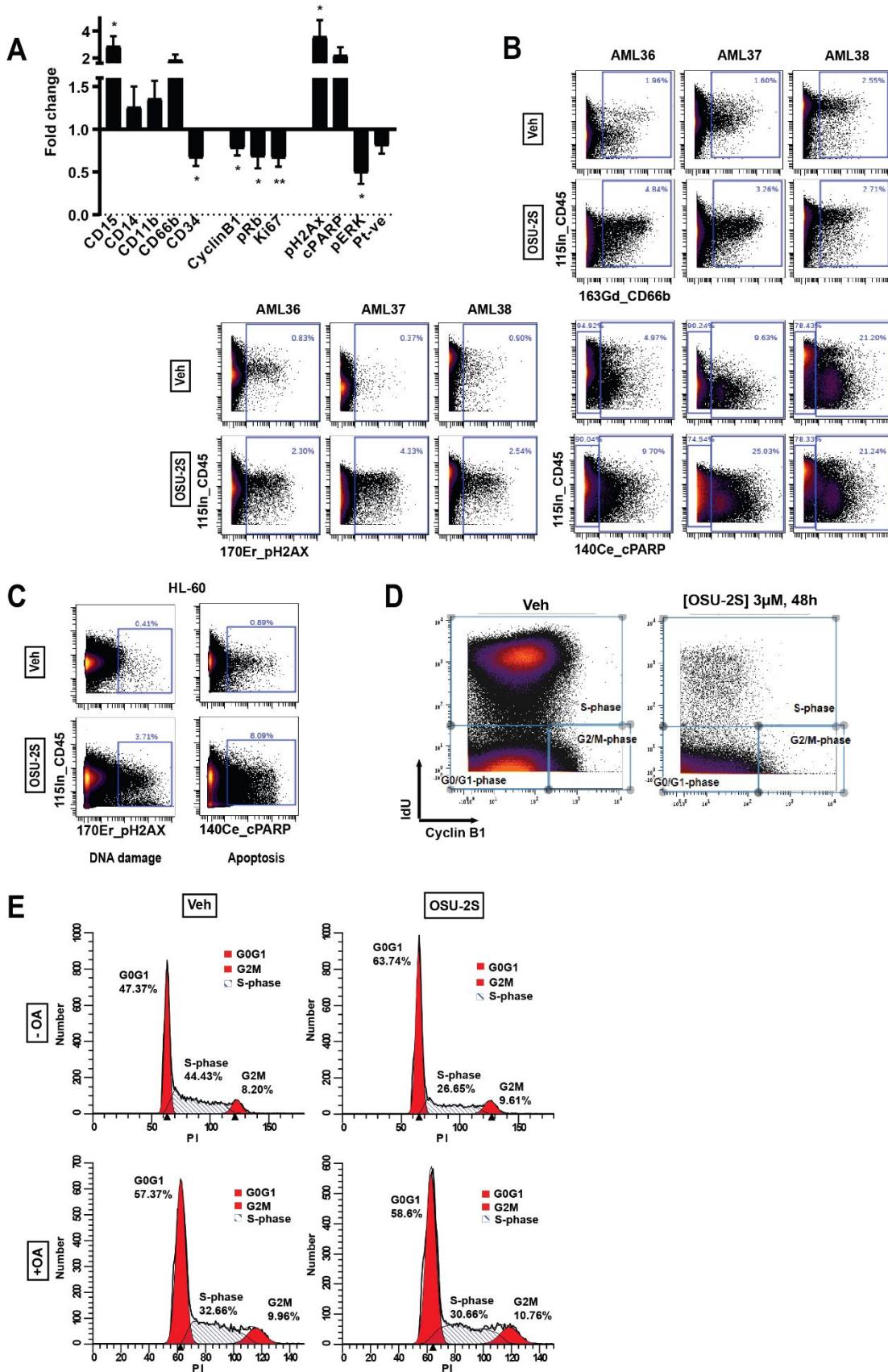


Fig S6.

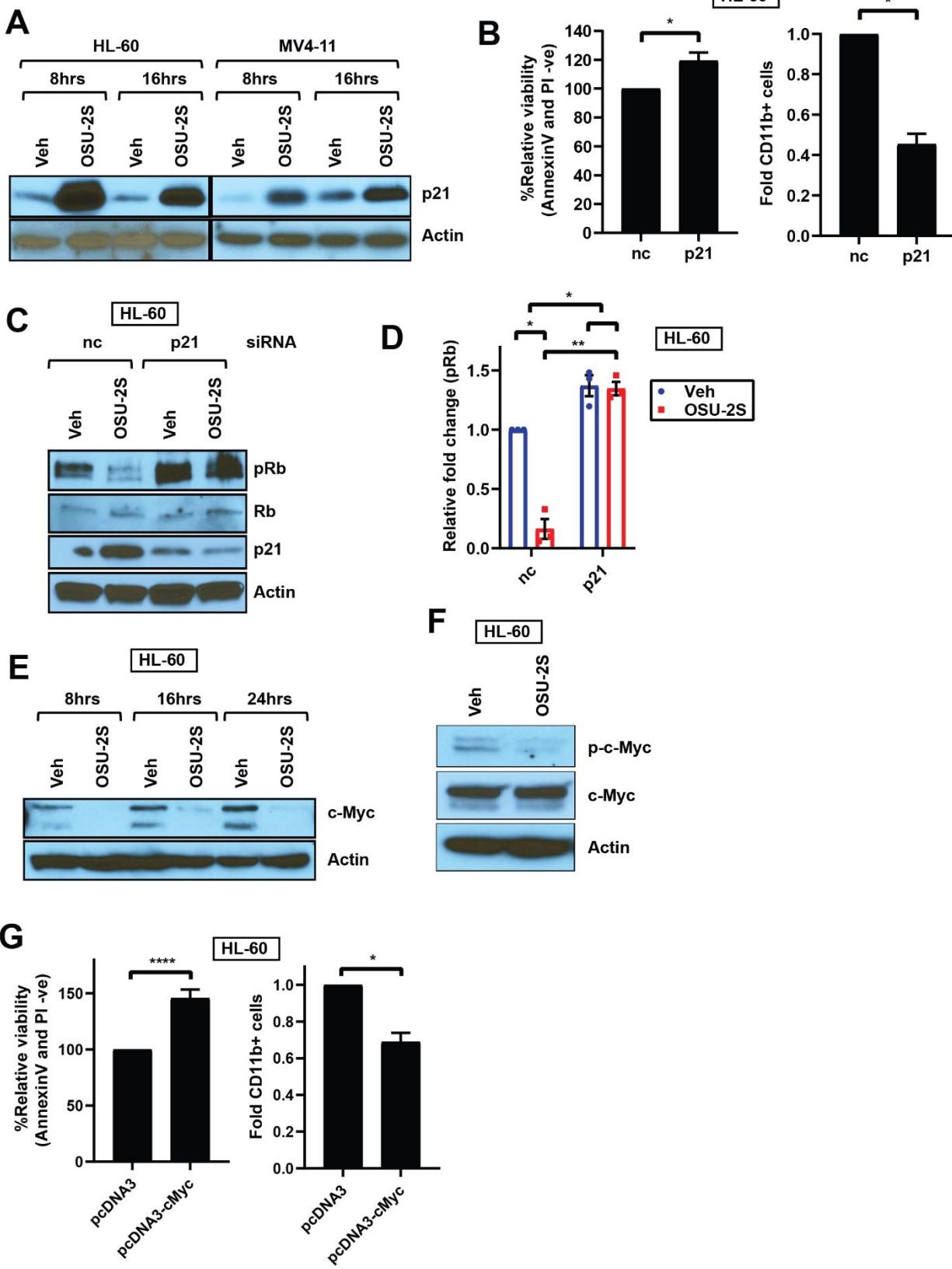


Fig S7.

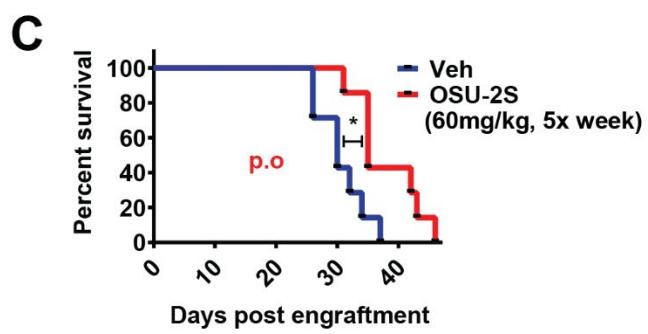
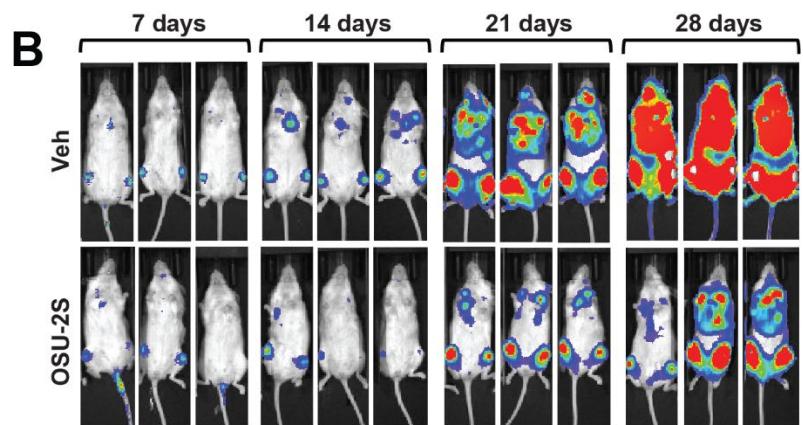
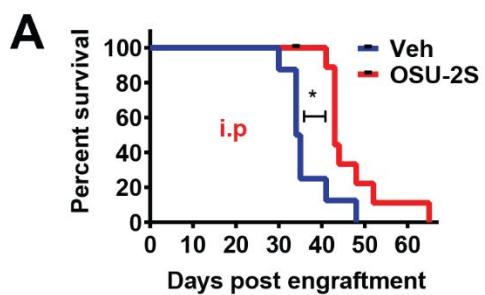


Fig S8.

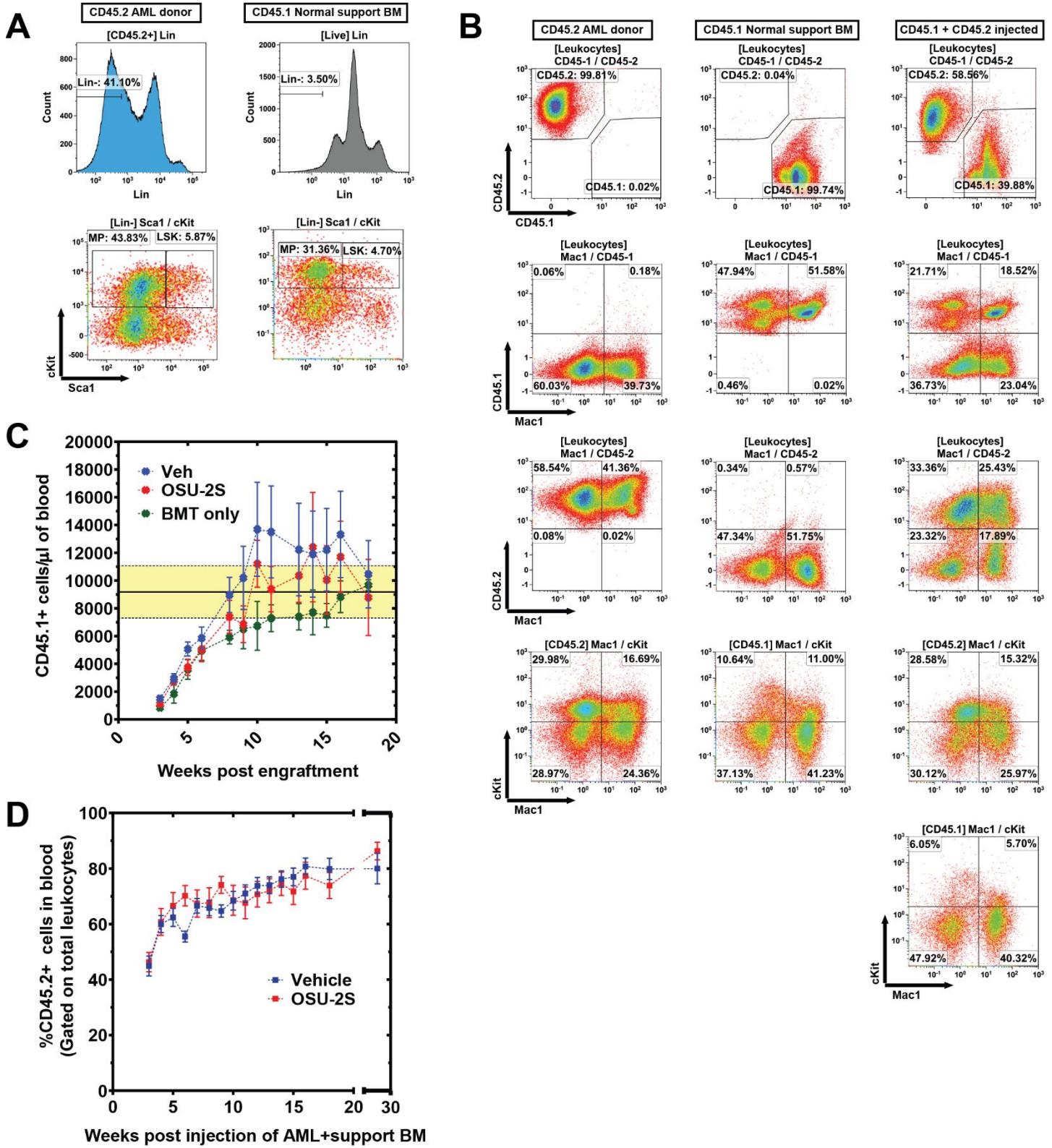


Fig S9.

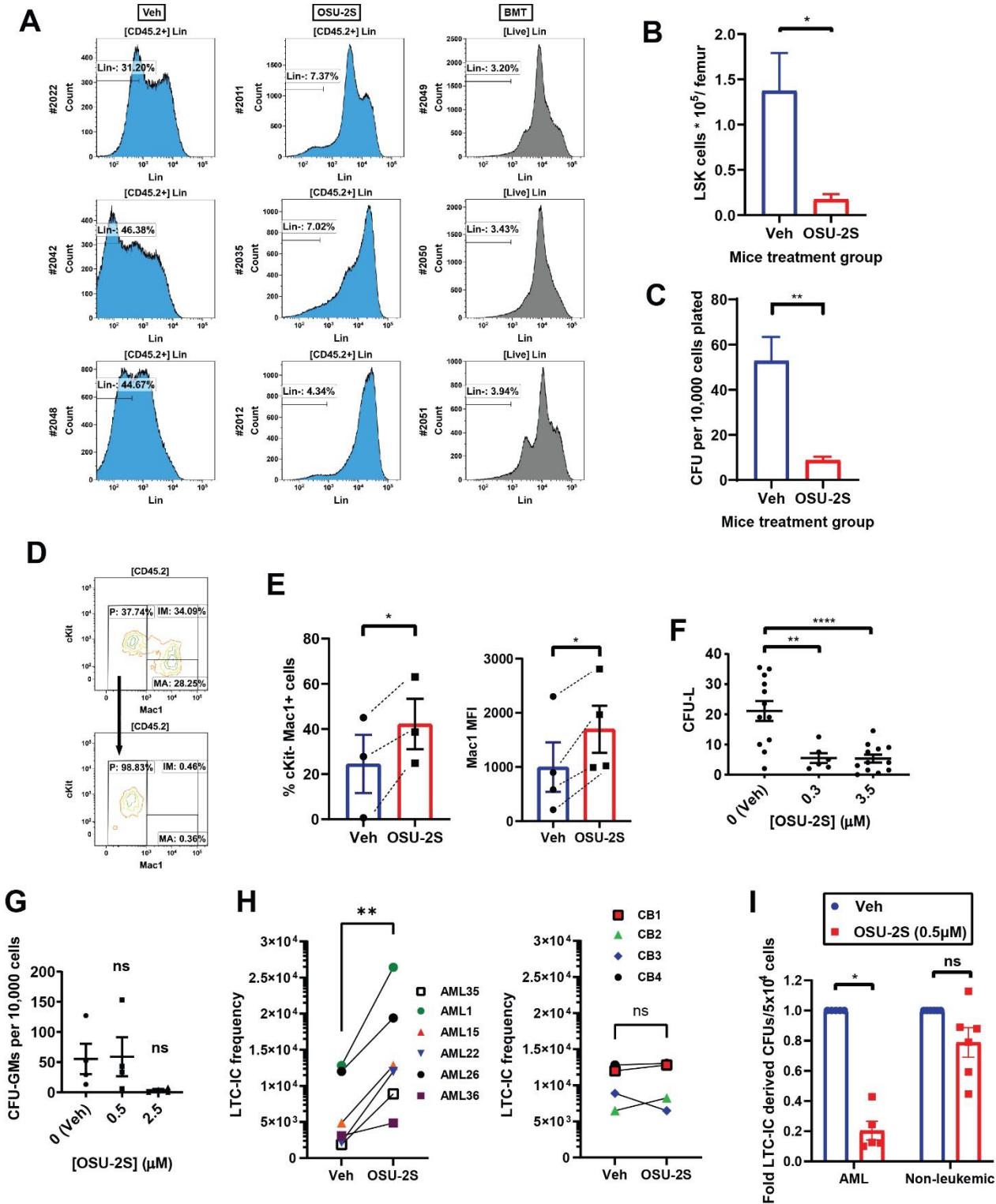
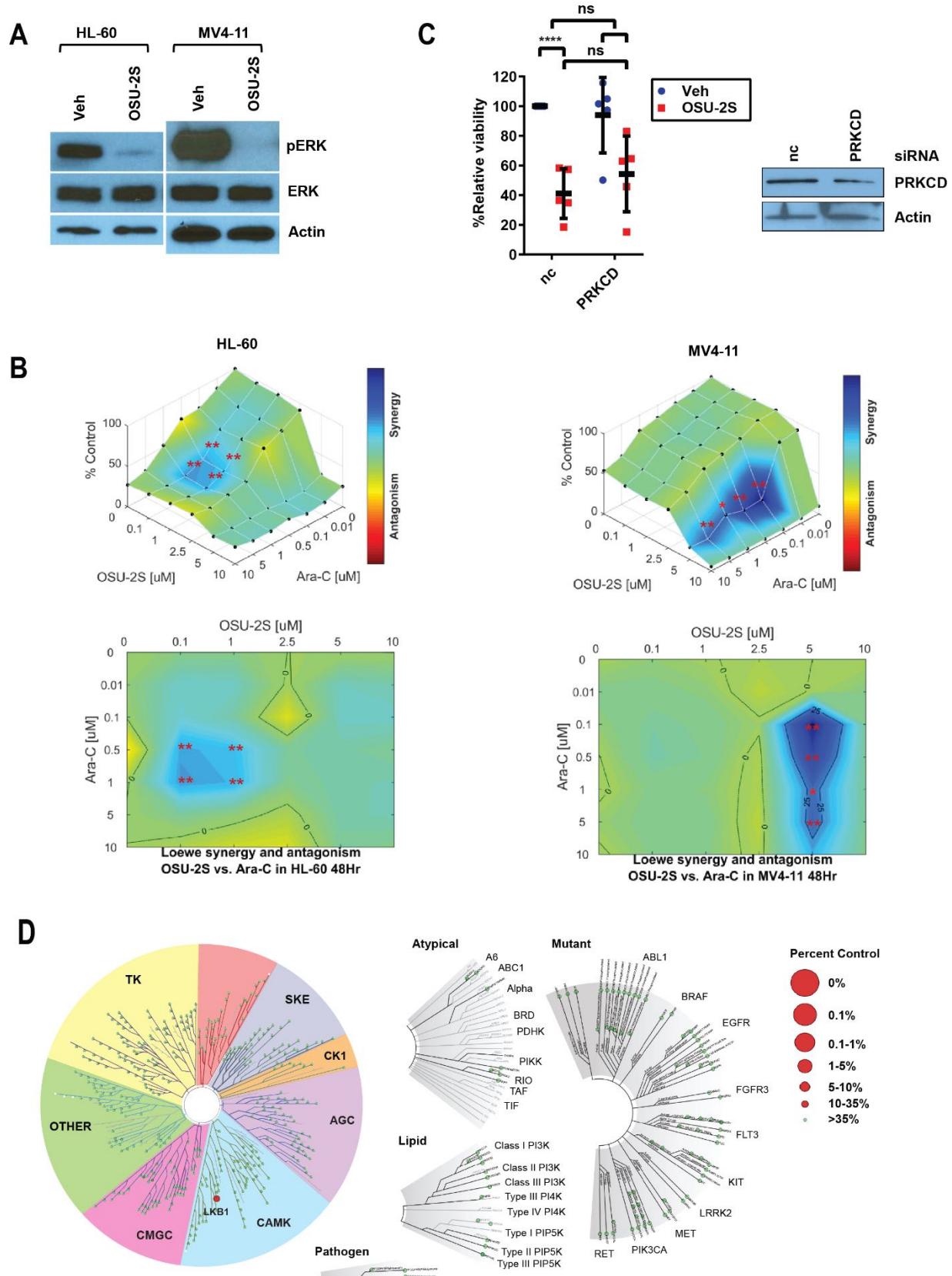


Fig S10.



Supplementary Table 1. Cytogenetic and mutational analysis of patient derived samples and cell lines used

Sample ID	Leukemia Tissue Bank (LTB) Identifier	Mutations detected	Karyotype	FAB classification	Treatment status
AML 1	U-09-1713	KRAS, NOTCH1	46,XX,der(9)add(9)(p22)t(9;11)(q22;q23),der(11)t(9;11)(q22;p1?5)add(11)(q23)[8].ish der(9)(MLL+),der(11)(MLL-)	FAB-M5	Never Treated
AML 2	U-11-1361	IDH1, DNMT3, NPM1	46,XY[20]	FAB-M5	Never treated
AML 3	U-12-0130		46,XX,inv(16)(p13q22)[20]	FAB-M6	Never treated
AML 4	U-12-1463	FLT3 ITD, NPM1	46,XY,del(18)(p11.2)[3]/46,XY[18]	FAB-M5	Never treated
AML 5	U-12-1629	NPM1	46,XY[20]	FAB-M1	Never treated
AML 6	U-13-1316	TET2, ASXL1, RUNX1	46,XX[20]	FAB-M1	Never treated
AML 7	U-10-0618	FLT3 TKD, NPM1	46,XY[20]	FAB-M1	Never treated
AML 8	U-13-1900	NA	46,XY,inv(16)(p13.1q22)[16] /nonclonal w/inv(16)[1]/46,XY[3]	FAB-M2	Never treated
AML 9	U-13-1985	FLT3 ITD	46,XY[20]	FAB-M5	Never treated
AML 10	U-14-0269		46,XY,t(6;11)(q27;q23)[19]/ nonclonal[1]	FAB-M5	Never treated
AML 11	U-14-0489	FLT3 ITD	46,XY[19]/nonclonal[1]	FAB-M1	Never treated
AML 12	U-98-203	FLT3 ITD, FLT3 TKD, PML-RAR α		FAB-M1	Never treated
AML 13	U-98-239	IDH1, NPM1		FAB-M1	Never treated
AML 14	U-08-0589	IDH2, RUNX1, KRAS, AXL, EZH2, NOTCH1		Not defined	Never treated
AML 15	U-12-1361	IDH2, DNMT3A, SRSF2, JAK2	46,XX,t(12;22)(p13;q12)[1]/ 46,sl,del(20)(q11.2)[14]/47, sdl1,+8[1]/nonclonal w/clonal abnormalities[1]/46,XX[3].n uc ish(ETV6x2)(5' ETV6 sep 3' ETV6x1)[163/211]	FAB-M1	Never treated
AML 16	U-09-0096	TET2, NRAS, SRSF2, KRAS, NPM1	Insufficient Metaphases(46,XY[3])	FAB-M1	Never treated

AML 17	U-03-217	WT1, NPM1		Not defined	Never treated
AML 18	U-98-240	IDH2, FLT3 ITD, NPM1		FAB-M1	Never treated
AML 19	U-07-0466	SRSF2, ASXL1, RUNX1, GATA2		Not defined	Never treated
AML 20	U-07-1177	TET2, ASXL1, NPM1		Not defined	Never treated
AML 21	U-18-0334	MPL, DNMT3A, GATA2	46,XY,del(13)(q12q22)[20]	Not defined,	Not on treatment
AML 22	U-14-1077	Ph+, NPM1	46,XY,t(9;22)(q34;q11.2)[18]/nonclonal w/clonal[2]	FAB-M1	Never treated
AML 23	U-14-1295	RUNX1T1-RUNX1, NPM1			Never treated
AML 24	U-04-370	IDH1, FLT3 ITD, NPM1		Not defined	Never treated
AML 25	U-05-0471	NRAS, WT1, SF1, GATA2, SETBP1, SYK, FLT3 ITD, FLT3 TKD, NPM1		Not defined	Never treated
AML 26	U-06-0597	ASXL1, JAK2		Not defined	Never treated
AML 27	U-06-0881	IDH1, DNMT3A, TET2, NPM1		Not defined	Never treated
AML28	U-08-0189	NA	46,XY,inv(16)(p13.1q22)[19]/47,idem,+22[2]	FAB-M2	Never treated
AML29	U-08-0398	NA	73-87<4n>,XXXX,-7,-7,t(8;21)(q22;q22)x2,-11,-14,-16,-20[cp20]	FAB-M2	On treatment
AML30	U-11-1866	NA	45,X,-Y,t(8;21)(q22;q22),del(9)(q13q22)[17]/46,XY[3]	FAB-M2	Never treated
AML31	U-12-2232	RUNX1	46,XY,t(8;21)(q22;q22)[20]	FAB-M1	Never treated
AML32	U-11-0164	NA	46,XY,inv(16)(p13.1q22)[19]/46,XY[1]	FAB-M2	Never treated
AML33	U-05-0420	NA	46,X,-Y,t(1;19)(p13;q13.3),+8,t(8;21)(q22;q22)[1]/46,XY[15]/nonclonal[5]	FAB-M1	On treatment

AML34	U-08-1350	NA	46,XY,inv(2)(p13q13),del(3)(q21q23),t(8;21)(q22q22)[cp9]/48,sl,+2,-inv(2),+3,-del(3),+4,+6[9]/46,sl,+2,-inv(2),+del(3)(p21.3),-del(3)(q21q23),add(11)(p11.4),del(13)(q14q22),add(14)(p11.2)[5]/46,XY[3]	FAB-M2	On treatment
AML35	U-12-0126	NA	46,XX,inv(16)(p13q22)[20]	FAB-M6	Never treated
AML36	U-19-1415	FLT3-ITD	46,XX[20]	FAB-M1	Never treated
AML37	U-19-0937	ASXL1, NPM1			Never treated
AML38	U-18-4143	TET2, NPM1, FLT3-ITD	46,XX[20]	FAB-M1	Never treated
AML39	U-19-5500	SRSF2, RUNX1, TET2	47,XY,+13[18]/46,XY[2]	FAB-M0	Never treated
AML40	U-18-7566	FLT3-ITD, RUNX1, PHF6, WT1	46,XY[19]/nonclonal[1]	FAB-M2	On treatment
AML41	U-18-7580	FLT3-ITD, RUNX1, PHF6, WT1		FAB-M2	On treatment
AML42	U-17-1591	FLT3-ITD, NPM1, NRAS, RAD21, WT1	46,XY[20]	FAB-M5	Never treated
AML43	U-17-1592	FLT3-ITD, NPM1, NRAS, RAD21, WT1	46,XY[20]	FAB-M5	Never treated
AML44	U-13-1174		43,XX,-1,add(3)(p21),add(4)(q21),del(5)(q13q35),-6,del(9)(q22q24),add(12)(p13),-17,-17,der psudic(18;7)(q21;p11.1)del(7)(q11.2q32),-19,+mar1,+mar2,+mar3[8]/nonclonal w/clonal abnormalities[1]/46,XY[4]	FAB-M1	On Treatment/Screening

Cell lines used

Name	Source	Mutations	
HL-60	(ATCC® CCL-240™)	TP53, CDKN2A, NRAS. Oncogene-Myc+	Pseudodiploid
MV4-11	(DSMZ #ACC-102)	FLT3-ITD, MLL/AF4 gene fusion	48, XY, t(4;11)(q21;q23), +8, +19

MOLM-13	(DSMZ #ACC-554)	FLT3 tandem duplication	human hyperdiploid karyotype with 4% polyploidy - 51(48-52)<2n>XY, +8, +8, +8, +13, del(8)(p1?p2?), ins(11;9)(q23;p22p23) - resembles published karyotype - sideline with idem, +19 - carries occult insertion effecting KMT2A-MLLT3 (MLL-MLLT3; MLL-AF9) fusion
Kasumi-1	(ATCC® CRL-2724™)	TP53, cKIT	t(8;21) (q22;q22)
U937	(ATCC® CRL-1593.2™)	TP53, PTEN	

Supplementary Table 2. Significant ($p_{adj}<0.05$) DEGs (from Fig 2A) of OSU-2S treated MV4-11 cells.

Gene	Log2 Fold Change	p-value	padj
LSS	3.941881025	1.28E-215	2.27E-211
SCD	3.36529849	3.05E-179	2.71E-175
DHCR7	3.777426011	7.20E-143	4.26E-139
ACAT2	2.581482116	3.06E-137	1.36E-133
KLF2	5.067774521	8.32E-120	2.95E-116
HMGCS1	4.083685905	1.15E-117	3.41E-114
FADS2	2.906359396	2.75E-117	6.96E-114
MSMO1	3.43541188	6.47E-116	1.43E-112
MVK	3.235551334	1.58E-114	3.11E-111
TSC22D3	3.005059715	1.52E-113	2.69E-110
FDFT1	2.448729304	1.98E-107	3.19E-104
C6orf223	4.341732922	1.31E-102	1.93E-99
MVD	3.481870626	4.70E-101	6.42E-98
IL4I1	3.440797385	2.92E-99	3.69E-96
ACSS2	2.678962019	8.76E-99	1.04E-95
FADS1	2.699770203	2.20E-94	2.44E-91
RHOB	3.532285315	3.19E-92	3.33E-89
SPON2	2.574138848	3.26E-80	3.22E-77
HSD17B7	2.447038419	5.75E-74	5.37E-71
SLCO4C1	3.817360803	6.75E-72	5.99E-69
C14orf1	2.281567899	1.17E-71	9.92E-69
IDI1	2.289878156	3.24E-70	2.62E-67
LINC00263	2.29529019	1.21E-68	9.35E-66
INSIG1	2.829905168	3.09E-68	2.29E-65
DHCR24	2.184589887	7.17E-68	5.09E-65
WIP1	3.020609159	1.63E-66	1.11E-63
MS4A14	1.961641326	5.95E-66	3.91E-63
AACS	2.029476457	8.78E-66	5.56E-63
TRIB3	2.727203452	2.28E-62	1.40E-59
JUN	2.597003569	2.52E-62	1.49E-59
ATF3	2.77599063	1.70E-61	9.71E-59
HMOX1	2.057537368	2.88E-61	1.60E-58

UNG	-2.280478722	6.02E-61	3.23E-58
METTL7B	2.150747209	8.38E-60	4.37E-57
SQLE	2.696010612	2.49E-59	1.26E-56
TM7SF2	2.369239179	1.39E-55	6.85E-53
LDLR	2.816968248	1.79E-55	8.58E-53
BHLHE40	1.942230528	2.49E-54	1.16E-51
MT1H	3.090479895	2.68E-54	1.22E-51
PFKFB4	1.814456311	5.41E-52	2.40E-49
KLF6	2.625290674	9.14E-50	3.96E-47
UAP1L1	1.989780812	1.08E-48	4.55E-46
HMGCR	2.685614543	1.43E-48	5.89E-46
DDIT4	2.107648358	3.81E-48	1.54E-45
LGALS3	2.011053701	3.08E-47	1.22E-44
TMEM97	1.821636438	4.61E-47	1.78E-44
RGCC	2.800832485	6.26E-46	2.36E-43
HTR2B	3.47436491	5.39E-45	1.99E-42
SQSTM1	1.60709689	7.42E-44	2.69E-41
PNPLA3	2.7690083	1.43E-43	5.07E-41
RELB	2.200161936	1.19E-42	4.13E-40
GPNMB	2.965044415	2.47E-42	8.43E-40
PDGFA	2.030743467	3.48E-40	1.17E-37
MMAB	1.983033069	1.48E-39	4.86E-37
RNF19B	1.656873056	2.57E-39	8.31E-37
RP11-660L16.2	2.836094785	3.19E-39	1.01E-36
FASN	1.908627577	4.04E-39	1.26E-36
IFIT3	2.70411013	7.48E-39	2.29E-36
AP001468.1	3.660105	8.60E-39	2.59E-36
H1F0	1.794164102	9.39E-39	2.78E-36
SLC26A11	2.869684061	3.92E-38	1.14E-35
PIK3IP1	2.01767652	4.79E-38	1.37E-35
BCL3	1.979804628	9.16E-38	2.58E-35
PPARD	1.939584196	2.78E-37	7.71E-35
RAB33A	1.875655504	3.40E-37	9.28E-35
ADM2	2.682730025	3.70E-37	9.94E-35
ARMC9	1.742676725	5.27E-37	1.40E-34
CLCN6	2.162046758	5.64E-37	1.47E-34
DDIT3	1.956820081	1.17E-36	3.02E-34
OPTN	1.807967664	1.87E-36	4.74E-34
PLA2G4C	2.331248104	1.25E-35	3.13E-33
DUSP10	1.875061803	1.37E-35	3.36E-33
NFKB2	1.884957345	2.08E-35	5.05E-33
PPP1R15A	1.792271984	2.48E-35	5.94E-33
ATF5	1.815950762	3.94E-35	9.31E-33
AARS	1.451796171	5.72E-35	1.34E-32
HSD17B7P2	2.42011213	1.04E-34	2.38E-32
SAT1	1.400160858	5.22E-34	1.19E-31

CD83	1.816516585	5.32E-34	1.19E-31
ICAM1	2.318962488	5.85E-34	1.30E-31
CXCL10	3.693627299	6.31E-34	1.38E-31
SGSH	2.376643295	6.42E-34	1.39E-31
CCL3	2.891412015	1.19E-33	2.55E-31
FDPS	1.674477886	2.15E-33	4.54E-31
SERPINI1	1.718423014	3.95E-33	8.24E-31
NPPA-AS1	2.52514198	2.45E-32	5.06E-30
DUSP8	3.228014882	3.50E-32	7.14E-30
MCM4	-1.455273393	4.11E-32	8.30E-30
PLIN2	1.441370554	4.46E-32	8.89E-30
KCNE1	2.668395125	6.79E-32	1.34E-29
IL2RA	2.009707646	8.77E-32	1.71E-29
TMPRSS9	2.893077056	2.73E-31	5.26E-29
ACLY	1.691260648	5.47E-31	1.04E-28
MCM2	-1.23225495	1.11E-30	2.10E-28
PLEKHF1	1.765516332	2.21E-30	4.13E-28
LYZ	-1.608277799	7.75E-30	1.43E-27
HIST2H2BE	1.924051951	1.95E-29	3.55E-27
COL6A1	1.62768028	1.96E-29	3.55E-27
STXBP1	1.697969145	3.04E-29	5.44E-27
BIRC3	2.868615659	3.35E-29	5.95E-27
IFIT2	2.390546296	1.50E-28	2.64E-26
AXL	1.666082351	1.52E-28	2.64E-26
HABP4	1.951058267	5.35E-28	9.21E-26
STARD4	2.419633974	9.74E-28	1.66E-25
SREBF2	1.443049755	9.83E-28	1.66E-25
SNAI3-AS1	2.055565304	1.57E-27	2.62E-25
LPIN1	1.794578693	3.53E-27	5.85E-25
MTHFR	1.682993295	4.96E-27	8.14E-25
ALAS1	1.349501675	5.28E-27	8.59E-25
TYMS	-1.094152637	5.59E-27	9.02E-25
MCM6	-1.216087297	6.42E-27	1.03E-24
IL21R	1.710960068	1.10E-26	1.75E-24
RP11-439L8.4	1.790139863	1.69E-26	2.65E-24
TBC1D17	1.552491735	4.34E-26	6.76E-24
CHAF1B	-1.529490628	5.48E-26	8.45E-24
SLC44A2	1.776216265	6.33E-26	9.69E-24
NEU1	1.464727972	1.26E-25	1.92E-23
RP11-465B22.3	2.268600824	1.77E-25	2.66E-23
HAL	-1.644770947	6.57E-25	9.80E-23
ST6GALNAC2	2.355435909	1.35E-24	1.99E-22
CALHM2	1.218716622	1.90E-24	2.78E-22
CYP51A1	2.678978322	3.34E-24	4.86E-22
RP11-340F14.5	2.444969325	4.77E-24	6.87E-22
SDC3	2.234380055	6.69E-24	9.57E-22

NSDHL	1.444033991	1.20E-23	1.70E-21
PCYT2	1.340143201	1.92E-23	2.70E-21
GIMAP8	1.273990015	2.41E-23	3.37E-21
OAS2	1.326130394	2.53E-23	3.51E-21
FGF18	2.559396042	2.77E-23	3.82E-21
MAP3K12	1.990708532	5.11E-23	6.98E-21
ITGA7	1.321111702	2.68E-22	3.63E-20
PITPNC1	1.054350371	3.93E-22	5.28E-20
SLC2A6	1.931739077	4.99E-22	6.65E-20
FABP3	2.675674874	5.64E-22	7.46E-20
SH3BP5	1.636223788	5.96E-22	7.83E-20
IFITM10	1.964211959	7.30E-22	9.53E-20
FUT1	3.027447501	8.22E-22	1.07E-19
P2RX7	2.429506763	1.75E-21	2.26E-19
SLC29A1	-1.18838089	1.79E-21	2.29E-19
IRAK2	2.436191617	1.85E-21	2.34E-19
CD72	1.606853116	2.21E-21	2.79E-19
MAP1A	1.973952978	2.63E-21	3.29E-19
SH2D3C	1.398933566	5.11E-21	6.34E-19
MS4A3	-1.134304237	5.86E-21	7.22E-19
CD109	2.150905166	7.28E-21	8.91E-19
NEUROG3	1.522853097	9.13E-21	1.11E-18
EBP	1.595086462	1.08E-20	1.31E-18
CDC25A	-1.248086135	1.46E-20	1.75E-18
TUBA1A	1.080529059	1.62E-20	1.93E-18
SLC7A11	1.97973289	1.74E-20	2.06E-18
SERPINE1	2.62252236	1.83E-20	2.16E-18
MAFF	2.204553875	2.16E-20	2.52E-18
GABARAPL1	1.203952755	2.58E-20	2.99E-18
DNASE2	1.278115021	2.83E-20	3.26E-18
CDHR1	2.778757672	2.84E-20	3.26E-18
HVCN1	1.040659483	3.25E-20	3.70E-18
MX1	1.82470497	5.00E-20	5.65E-18
MTHFD1	-0.942260897	6.80E-20	7.63E-18
CYP51P2	2.520263755	9.14E-20	1.02E-17
RENBP	1.778137934	9.44E-20	1.05E-17
MGLL	1.383477844	1.20E-19	1.32E-17
CCNE1	-1.23925357	1.65E-19	1.80E-17
CCNA1	1.007387663	1.71E-19	1.86E-17
KIAA1683	1.417528784	2.21E-19	2.39E-17
SC5D	1.923744792	3.08E-19	3.31E-17
MCM10	-1.419900087	4.11E-19	4.39E-17
PI4K2A	1.280873692	4.22E-19	4.48E-17
TRIM16	1.061229726	4.51E-19	4.76E-17
MISP	2.746851597	4.81E-19	5.05E-17
TTC28	1.100482994	5.77E-19	6.03E-17

MNDA	-1.602913247	6.20E-19	6.44E-17
CCNE2	-2.067267023	9.30E-19	9.60E-17
ACACA	1.190194168	1.82E-18	1.87E-16
SIGLEC6	2.165583666	2.26E-18	2.31E-16
KLHDC8B	2.001535664	2.59E-18	2.62E-16
ACSL3	1.389422068	3.25E-18	3.28E-16
DENND5A	1.307162952	4.07E-18	4.08E-16
DTL	-1.306768883	5.14E-18	5.13E-16
ATP6V0A1	1.142641789	5.25E-18	5.21E-16
POLE2	-1.220084062	5.47E-18	5.39E-16
C1orf106	-1.654201477	6.98E-18	6.84E-16
SORL1	-1.455202693	8.50E-18	8.28E-16
SLC16A13	1.440995182	9.25E-18	8.97E-16
RNASE2	-1.322103898	1.04E-17	1.00E-15
PLAC8	-1.106027332	1.07E-17	1.02E-15
CCR2	-1.123060703	1.21E-17	1.15E-15
GADD45B	1.437361491	1.34E-17	1.27E-15
STRIP2	1.339299766	1.47E-17	1.39E-15
LGALS2	2.12503897	3.68E-17	3.45E-15
WDR76	-1.251481167	4.19E-17	3.91E-15
PRPSAP2	1.016617251	4.29E-17	3.99E-15
MCM5	-1.030247137	4.43E-17	4.10E-15
INO80C	1.183508971	4.77E-17	4.38E-15
GDF11	1.065347323	5.23E-17	4.79E-15
PLCXD1	-0.997527134	5.34E-17	4.86E-15
IFIT1	2.302582858	5.48E-17	4.96E-15
ADC	1.518256774	5.57E-17	5.02E-15
EMP3	1.355343862	5.68E-17	5.09E-15
TRIM14	-0.979413666	7.15E-17	6.38E-15
RP11-157D23.2	2.638070024	8.78E-17	7.79E-15
VWA5A	1.233676256	1.15E-16	1.02E-14
NEAT1	1.066260063	1.17E-16	1.03E-14
ORC1	-0.911387914	1.32E-16	1.16E-14
TMEM246	-1.338093941	1.45E-16	1.25E-14
IFIH1	1.221600062	1.45E-16	1.25E-14
CTD-2235C13.3	2.570601974	1.46E-16	1.26E-14
NFKBIA	0.964884941	1.67E-16	1.43E-14
FAM213A	1.406185367	1.81E-16	1.54E-14
KCTD7	1.970948021	1.87E-16	1.59E-14
C3AR1	2.371469186	1.91E-16	1.61E-14
AGPAT4	1.457954412	1.91E-16	1.61E-14
TRIM16L	1.061578777	2.03E-16	1.70E-14
WBP2	1.098390261	2.07E-16	1.72E-14
ME1	1.944494675	2.08E-16	1.73E-14
DVL2	1.197698668	2.15E-16	1.77E-14
PALD1	-1.163425372	2.27E-16	1.86E-14

TACC2	1.186339542	2.56E-16	2.09E-14
VEGFA	1.251588971	2.61E-16	2.13E-14
PTP4A3	1.200699663	2.88E-16	2.33E-14
CDK2	-1.041771281	3.08E-16	2.48E-14
MCM3	-1.105690812	3.09E-16	2.48E-14
MT2A	1.499766012	3.10E-16	2.48E-14
RP11-254F7.2	1.366352823	3.20E-16	2.54E-14
ZNF425	1.442872199	3.24E-16	2.56E-14
OAS1	1.501187542	3.65E-16	2.88E-14
SKP2	-1.21930654	4.54E-16	3.56E-14
LFNG	1.252438364	6.91E-16	5.40E-14
GPR124	0.987606959	7.41E-16	5.77E-14
COL6A2	1.565480359	7.52E-16	5.82E-14
IL15RA	1.397117898	8.39E-16	6.47E-14
CSF1	2.227878521	9.83E-16	7.55E-14
ARL4A	1.047172413	1.02E-15	7.77E-14
MID1IP1	1.022558249	1.12E-15	8.50E-14
RARG	1.283795401	1.17E-15	8.87E-14
GINS2	-1.30833611	1.34E-15	1.01E-13
RABGAP1L	0.865866655	1.34E-15	1.01E-13
SLA	-1.208684402	1.39E-15	1.04E-13
IL8	2.026927813	1.70E-15	1.27E-13
CTSD	1.215697826	1.72E-15	1.28E-13
PEA15	0.79722927	1.80E-15	1.33E-13
LRMP	1.269524405	1.98E-15	1.46E-13
STAG3	1.421602664	2.16E-15	1.59E-13
C1orf127	1.437093601	2.30E-15	1.68E-13
CD97	0.991527621	2.97E-15	2.16E-13
BBC3	1.07785076	3.49E-15	2.53E-13
NPC1	1.295449445	4.58E-15	3.31E-13
COL4A2	1.205635427	4.84E-15	3.48E-13
PCNA	-0.864149483	5.04E-15	3.61E-13
MIR146A	1.529856746	6.42E-15	4.58E-13
F13A1	-1.59731416	7.09E-15	5.03E-13
MT1X	1.245059062	8.29E-15	5.86E-13
CDC45	-1.103692291	9.12E-15	6.42E-13
RP11-167N4.2	1.927089647	1.07E-14	7.54E-13
PLD4	-0.996529271	1.08E-14	7.54E-13
LONRF1	1.601829331	1.09E-14	7.57E-13
CDKN1C	1.395482465	1.34E-14	9.28E-13
KCTD21	0.994408875	1.43E-14	9.90E-13
CD3EAP	-1.075599385	1.58E-14	1.08E-12
GAB2	1.12229928	1.84E-14	1.26E-12
CDRT1	1.749732853	2.13E-14	1.45E-12
PCK2	0.992380099	2.42E-14	1.65E-12
E2F2	-1.259615116	2.46E-14	1.66E-12

MANBA	0.858970179	2.59E-14	1.74E-12
ZWINT	-0.830581956	2.59E-14	1.74E-12
ZNF286B	1.087878156	2.67E-14	1.78E-12
PHF1	1.089360748	2.87E-14	1.91E-12
SPATC1L	1.28674535	3.00E-14	2.00E-12
RNF135	1.268052191	3.32E-14	2.19E-12
CLN8	0.981484052	3.35E-14	2.21E-12
TMEM106C	-0.945785807	3.68E-14	2.42E-12
TP53INP2	1.321575737	4.33E-14	2.83E-12
TIPIN	-1.180165834	4.43E-14	2.89E-12
ATF4	1.144958978	4.52E-14	2.94E-12
FYN	1.360719854	4.68E-14	3.03E-12
DPYSL3	1.396806645	4.75E-14	3.06E-12
VIT	-1.623713058	5.35E-14	3.44E-12
PLXNA3	1.216620591	6.02E-14	3.85E-12
CTH	1.63852683	6.31E-14	4.02E-12
MYO7A	-1.20311721	6.80E-14	4.33E-12
TMEM135	1.532351054	8.25E-14	5.23E-12
PIM1	0.833251766	8.84E-14	5.58E-12
BTG2	1.106494264	1.36E-13	8.53E-12
MT1G	1.216064859	1.44E-13	9.06E-12
MMP19	1.273173713	1.49E-13	9.31E-12
LTK	1.527197074	1.57E-13	9.78E-12
RFC5	-1.007915551	1.73E-13	1.07E-11
RGAG4	1.038813246	1.87E-13	1.16E-11
THRA	-1.030713468	1.91E-13	1.17E-11
MT1M	2.105995995	2.00E-13	1.23E-11
RNASE3	-1.159387714	2.15E-13	1.32E-11
FOSB	1.352738721	2.18E-13	1.33E-11
AHNAK	0.992350196	2.30E-13	1.40E-11
MT1F	1.097785736	2.57E-13	1.55E-11
SLC50A1	0.895463195	2.59E-13	1.56E-11
SLC38A5	-1.125669867	2.67E-13	1.60E-11
MYBL2	-1.020273876	2.86E-13	1.71E-11
FTH1P7	1.005564872	3.07E-13	1.83E-11
TMEM86A	1.926490714	3.48E-13	2.07E-11
TESK1	1.101520309	3.68E-13	2.18E-11
FABP5P7	-1.06636526	3.69E-13	2.18E-11
ARHGEF40	0.964951005	4.03E-13	2.37E-11
FAM117A	0.941302335	4.32E-13	2.54E-11
ABHD4	1.253370593	4.49E-13	2.63E-11
IGLC2	1.927925541	4.73E-13	2.76E-11
TLR2	-0.960488633	4.94E-13	2.87E-11
MAP1LC3B	0.845144491	5.46E-13	3.16E-11
HES1	2.23186863	5.87E-13	3.40E-11
VWF	1.994804229	6.03E-13	3.48E-11

MYCBP	-0.840289931	6.06E-13	3.48E-11
SREBF1	0.920177963	6.33E-13	3.63E-11
SOCS3	1.042321933	7.15E-13	4.08E-11
TESK2	1.288413512	7.67E-13	4.36E-11
JUP	1.388325348	7.92E-13	4.49E-11
TRPM8	2.182704734	8.69E-13	4.91E-11
FOXRED2	-0.789911385	9.31E-13	5.24E-11
EMP1	1.815173026	9.35E-13	5.25E-11
JDP2	1.107820879	9.95E-13	5.57E-11
CXCR2	-0.982678574	1.11E-12	6.21E-11
AC096579.7	1.549189374	1.15E-12	6.40E-11
NUPR1	2.204677749	1.15E-12	6.40E-11
SDS	2.217912106	1.17E-12	6.44E-11
CTNS	0.990560506	1.23E-12	6.77E-11
STAT2	0.832516898	1.29E-12	7.07E-11
CBX2	-1.011911018	1.34E-12	7.34E-11
HLX	1.008379506	1.40E-12	7.65E-11
DSCC1	-1.133425787	1.43E-12	7.78E-11
IL3RA	0.964421495	1.43E-12	7.78E-11
MS4A6A	-0.778976962	1.48E-12	8.03E-11
DUSP5	1.315944284	1.51E-12	8.13E-11
H2AFZ	-0.783154153	1.59E-12	8.55E-11
ULBP1	2.170132837	1.82E-12	9.76E-11
ABCA6	1.395828839	1.83E-12	9.80E-11
JUND	1.016829132	2.10E-12	1.12E-10
KCNK5	-1.28275939	2.11E-12	1.12E-10
TNFAIP3	1.188785111	2.14E-12	1.13E-10
RNF213	0.797077624	2.20E-12	1.16E-10
CACNA2D3	-1.566570217	2.84E-12	1.50E-10
KIF3C	1.293504186	2.86E-12	1.50E-10
LILRB4	0.84593222	2.88E-12	1.51E-10
PLAU	0.822672687	3.21E-12	1.67E-10
CDC6	-0.884752971	3.42E-12	1.78E-10
PTGER4	1.235769288	3.50E-12	1.82E-10
VPS9D1	0.991406087	3.59E-12	1.86E-10
ASF1B	-0.842183278	4.03E-12	2.08E-10
ABCA1	-1.908100352	4.51E-12	2.32E-10
MS4A4A	-0.969722958	4.51E-12	2.32E-10
ARHGAP21	1.27445711	4.55E-12	2.33E-10
FTH1	1.089658436	4.98E-12	2.54E-10
ENPP2	1.226997684	5.11E-12	2.60E-10
ITGA8	2.212919155	5.25E-12	2.66E-10
DIRAS1	0.995621045	5.26E-12	2.66E-10
PIM2	1.083072771	5.78E-12	2.91E-10
TNFAIP8L3	2.180785405	6.55E-12	3.29E-10
HPDL	-1.416183149	6.67E-12	3.34E-10

TXK	1.263425367	6.76E-12	3.38E-10
SLC29A2	1.945832795	6.79E-12	3.38E-10
DHFR	-0.895769272	7.41E-12	3.68E-10
FADS3	1.147411916	8.58E-12	4.25E-10
GAPT	-1.622948538	9.06E-12	4.48E-10
MLLT4	1.117858948	9.69E-12	4.78E-10
ITGAX	0.996943019	1.03E-11	5.06E-10
POLA2	-0.808336378	1.07E-11	5.25E-10
TSPAN2	2.213413176	1.08E-11	5.27E-10
GINS4	-0.918547117	1.25E-11	6.10E-10
WARS	0.824383558	1.48E-11	7.17E-10
GINS3	-0.88456331	1.53E-11	7.44E-10
INPP5F	0.833583567	1.75E-11	8.46E-10
MT1E	1.168315427	1.77E-11	8.52E-10
CYTIP	0.979675497	1.77E-11	8.53E-10
NXN	1.67365892	1.88E-11	9.01E-10
MAP3K7CL	1.23679285	2.09E-11	9.98E-10
PTK6	1.268152878	2.09E-11	9.98E-10
FTH1P20	1.113278107	2.12E-11	1.01E-09
PDE4A	1.067541049	2.27E-11	1.08E-09
UPP1	1.156899233	2.38E-11	1.13E-09
FCER1A	-1.427189874	2.62E-11	1.23E-09
IFI44	1.626526974	2.62E-11	1.23E-09
RRM1	-0.859394106	2.97E-11	1.39E-09
SLC25A1	0.873794325	3.02E-11	1.41E-09
IRF7	0.998590528	3.05E-11	1.42E-09
TLR1	-1.285090604	3.10E-11	1.44E-09
SLC2A3	1.032958073	3.19E-11	1.48E-09
PM20D2	-1.373351592	3.22E-11	1.49E-09
ALDH18A1	-0.765642905	3.48E-11	1.61E-09
PFAS	-0.901023434	3.73E-11	1.72E-09
ARHGAP31	1.840338898	3.75E-11	1.72E-09
KLF7	1.257755987	3.85E-11	1.76E-09
OASL	1.472638946	3.93E-11	1.80E-09
SLC43A2	0.978750738	4.00E-11	1.82E-09
TK1	-0.858707887	4.14E-11	1.88E-09
RIBC2	-1.570203642	4.15E-11	1.88E-09
PYCRL	-1.065149033	4.39E-11	1.99E-09
BRI3	1.009216532	4.41E-11	1.99E-09
NSMAF	0.904905387	4.54E-11	2.05E-09
PLEKHO1	1.142098899	4.80E-11	2.15E-09
SLC6A9	1.365482966	5.60E-11	2.51E-09
KANK1	-1.584517636	5.85E-11	2.61E-09
CX3CR1	-1.070794231	6.01E-11	2.68E-09
CEP78	-0.911998417	6.72E-11	2.99E-09
COL8A2	-1.131719135	6.89E-11	3.06E-09

NPAS1	1.218695946	6.95E-11	3.08E-09
AC147651.3	1.344085868	7.31E-11	3.23E-09
SPECC1	-0.821190708	7.43E-11	3.27E-09
RHBDF1	1.327595626	7.67E-11	3.37E-09
AGRN	0.900902728	7.89E-11	3.46E-09
GAS7	1.024770099	8.65E-11	3.78E-09
MUC1	1.351269875	9.60E-11	4.18E-09
HCN3	1.392877486	1.04E-10	4.51E-09
NRARP	-1.005295804	1.06E-10	4.61E-09
CSPG5	-1.411916378	1.07E-10	4.63E-09
STEAP3	-0.925315095	1.09E-10	4.69E-09
ASIC1	-1.085294177	1.14E-10	4.92E-09
RDH11	0.908632289	1.15E-10	4.92E-09
TONSL	-0.898217677	1.15E-10	4.93E-09
LRP3	-0.864349102	1.19E-10	5.09E-09
RP11-301G19.1	1.157984884	1.24E-10	5.28E-09
RAB20	0.931517981	1.24E-10	5.28E-09
CARS	0.848500479	1.27E-10	5.38E-09
CLSPN	-0.984561258	1.36E-10	5.77E-09
CD99P1	0.960193083	1.46E-10	6.18E-09
EPSTI1	1.864203441	1.48E-10	6.23E-09
FLRT1	1.934773771	1.62E-10	6.82E-09
DUSP6	-1.129411459	1.62E-10	6.82E-09
RPS6KA2	1.015119965	1.75E-10	7.32E-09
CD300A	1.116205688	1.75E-10	7.32E-09
CHEK1	-0.925769019	1.94E-10	8.08E-09
ACOT11	-0.91193241	2.00E-10	8.30E-09
RP11-423H2.1	-0.75070038	2.24E-10	9.29E-09
CLCN4	1.194925884	2.30E-10	9.51E-09
MCM3AP-AS1	1.382471696	2.55E-10	1.05E-08
BMF	0.886508865	2.55E-10	1.05E-08
CEBPB	0.897234551	2.58E-10	1.06E-08
FKBP4	-0.962114935	2.61E-10	1.07E-08
TEC	0.791823253	2.64E-10	1.08E-08
EXO1	-0.939378111	3.05E-10	1.24E-08
LPAR5	1.335089275	3.16E-10	1.28E-08
P2RX4	0.901672908	3.26E-10	1.32E-08
RP11-1260E13.4	1.716778973	3.30E-10	1.34E-08
TMPO-AS1	-0.828735519	3.54E-10	1.43E-08
PODXL2	-0.966552001	3.58E-10	1.45E-08
PIGB	-0.877096187	3.71E-10	1.49E-08
RHOC	1.11095125	3.88E-10	1.56E-08
SMAD3	0.670080158	4.02E-10	1.60E-08
DUSP16	1.961069064	4.02E-10	1.60E-08
TCF19	-0.916244882	4.04E-10	1.61E-08
ZDHHC14	0.828174147	4.24E-10	1.69E-08

GINS1	-1.055446752	4.26E-10	1.69E-08
RP11-385D13.1	1.55532593	4.28E-10	1.70E-08
CCDC64	0.849648944	4.67E-10	1.85E-08
HSPA1A	-1.225142668	4.69E-10	1.85E-08
HIP1	0.958548515	4.98E-10	1.96E-08
XAF1	0.729828517	5.19E-10	2.04E-08
KIF17	-1.120741676	5.32E-10	2.08E-08
EPHA1	-1.148152356	5.38E-10	2.10E-08
SCML1	1.614880144	5.44E-10	2.12E-08
DUSP1	1.642426669	5.62E-10	2.19E-08
RP11-334C17.5	1.941669443	5.63E-10	2.19E-08
LMTK3	1.152932487	5.65E-10	2.19E-08
UBC	0.836769794	5.67E-10	2.19E-08
SEC61A2	0.83546239	5.75E-10	2.22E-08
GOT1	0.796376486	5.84E-10	2.25E-08
PTPN3	0.792515259	6.17E-10	2.37E-08
PTPLAD1	-0.858245944	6.55E-10	2.51E-08
NR4A1	1.418283585	6.57E-10	2.51E-08
FTH1P10	1.002809247	6.58E-10	2.51E-08
FBXW10	1.440923403	6.64E-10	2.53E-08
ARHGEF9	1.070160768	6.73E-10	2.56E-08
SLC30A3	1.346057417	6.81E-10	2.58E-08
PHLDA2	1.112212137	6.98E-10	2.64E-08
RP11-424C20.2	-0.940214927	7.72E-10	2.91E-08
HNRNPAB	-0.688554078	7.79E-10	2.93E-08
TIMP2	0.949074587	7.87E-10	2.96E-08
SRSF1	-0.730392571	8.09E-10	3.03E-08
HIST3H2A	1.044353979	8.43E-10	3.15E-08
SFXN2	-0.948581121	8.56E-10	3.20E-08
XBP1	0.697865437	8.60E-10	3.21E-08
JMJD1C-AS1	0.913014587	8.72E-10	3.25E-08
FAM129A	1.230839089	8.77E-10	3.26E-08
CD9	1.312497673	8.81E-10	3.26E-08
SH3TC1	0.86700809	9.18E-10	3.39E-08
IER3	1.852566567	9.19E-10	3.39E-08
SCDP1	2.029034284	9.20E-10	3.39E-08
SIRPB1	-0.928481013	1.03E-09	3.79E-08
MYLIP	-0.877496941	1.08E-09	3.95E-08
NTN1	1.812203827	1.09E-09	3.98E-08
PLA2G6	0.991770328	1.16E-09	4.22E-08
FBXO32	0.880503133	1.19E-09	4.34E-08
LDLRAD3	-1.150524983	1.22E-09	4.43E-08
IMPA2	-0.743612035	1.22E-09	4.44E-08
EIF1	0.857520508	1.24E-09	4.51E-08
PLXNC1	-1.020387868	1.29E-09	4.64E-08
CAMKK1	0.801257999	1.35E-09	4.87E-08

CYTH2	0.802144732	1.36E-09	4.90E-08
MIR22HG	1.081201498	1.39E-09	4.98E-08
HSPA8	-0.913681527	1.41E-09	5.06E-08
PGK1	-0.642101452	1.41E-09	5.06E-08
TUBA4A	-1.229862145	1.42E-09	5.08E-08
NCALD	-0.930863753	1.52E-09	5.43E-08
WWC3	0.952810553	1.54E-09	5.49E-08
UHRF1	-0.92094713	1.59E-09	5.65E-08
WDR77	-0.712822886	1.61E-09	5.69E-08
HSP90AA1	-0.814922773	1.62E-09	5.72E-08
HPSE	-1.089506722	1.66E-09	5.85E-08
DDAH2	0.935730661	1.66E-09	5.85E-08
PRPS1	-0.679839373	1.69E-09	5.94E-08
ANXA5	0.670713071	1.69E-09	5.94E-08
CHAF1A	-0.725116296	1.70E-09	5.96E-08
GPC1	1.017900439	1.72E-09	6.02E-08
SMKR1	0.998737451	1.76E-09	6.15E-08
ASAHI	0.999912232	1.82E-09	6.34E-08
GLIPR1	-0.743769862	1.83E-09	6.36E-08
GABRE	-1.658111697	2.01E-09	6.97E-08
MSH6	-0.806186373	2.04E-09	7.06E-08
BRCA1	-0.789009471	2.06E-09	7.11E-08
RBL1	-0.875265976	2.12E-09	7.29E-08
RPA1	-0.65051927	2.21E-09	7.58E-08
HIST1H2AC	1.126553218	2.34E-09	8.02E-08
TOMM5	-0.825049823	2.34E-09	8.03E-08
P2RY2	-0.703380157	2.50E-09	8.54E-08
POLA1	-0.733425176	2.52E-09	8.60E-08
WDR4	-0.775804047	2.54E-09	8.65E-08
CABLES1	0.704253331	2.55E-09	8.67E-08
NOLC1	-0.715503573	2.68E-09	9.10E-08
CENPM	-0.893592729	2.82E-09	9.54E-08
SOWAHD	0.92525426	2.83E-09	9.56E-08
E2F1	-0.872714279	2.85E-09	9.60E-08
P2RY6	-0.930675339	2.85E-09	9.60E-08
CSTB	0.841029726	2.94E-09	9.88E-08
AMOTL1	-0.885059478	3.05E-09	1.02E-07
MTSS1	1.908641167	3.08E-09	1.03E-07
REC8	1.119162155	3.14E-09	1.05E-07
SEC22C	0.926017088	3.25E-09	1.08E-07
COX20	-0.922050072	3.27E-09	1.09E-07
EGR2	2.023978767	3.39E-09	1.13E-07
BSPRY	1.470743518	3.58E-09	1.19E-07
OLR1	1.712589296	3.59E-09	1.19E-07
CDC42BPB	0.862868849	3.75E-09	1.24E-07
RP11-171I2.2	-1.007653617	3.82E-09	1.26E-07

RP11-497H16.6	0.987742836	3.95E-09	1.30E-07
GOT2	-0.680219505	3.96E-09	1.30E-07
SLC19A1	-0.878054826	3.97E-09	1.30E-07
KLHDC7B	1.999172703	4.01E-09	1.31E-07
KSR1	0.980786875	4.22E-09	1.38E-07
GAS2L1	0.994241433	4.23E-09	1.38E-07
FAM111B	-1.663906882	4.37E-09	1.42E-07
FANCL	-0.8457188	4.44E-09	1.44E-07
FTH1P2	0.988928312	4.48E-09	1.45E-07
MTHFD2	0.999605313	4.59E-09	1.49E-07
HSPE1	-0.910918656	4.63E-09	1.50E-07
CDC42EP1	1.585412182	4.87E-09	1.57E-07
WDHD1	-0.988025505	4.90E-09	1.58E-07
TUBGCP4	-0.69344232	5.06E-09	1.63E-07
C2orf72	0.935324717	5.09E-09	1.63E-07
PGAM5	-0.806579658	5.27E-09	1.69E-07
CTC-378H22.2	1.325452105	5.28E-09	1.69E-07
SLC12A8	1.237671586	5.29E-09	1.69E-07
SLC25A23	0.797593641	5.40E-09	1.72E-07
RIN3	0.788443541	5.42E-09	1.72E-07
DLGAP3	-1.344522731	5.51E-09	1.75E-07
ICAM5	1.458966295	5.52E-09	1.75E-07
RAD54L	-0.72317676	5.79E-09	1.83E-07
GEMIN4	-0.679665918	5.87E-09	1.85E-07
AC079466.1	-0.665630137	5.88E-09	1.85E-07
MB21D2	1.542552581	5.96E-09	1.88E-07
CCDC92	0.932830311	6.01E-09	1.89E-07
SLC39A11	-0.659239948	6.16E-09	1.93E-07
POU2F2	0.80552026	6.51E-09	2.04E-07
STK40	0.704068299	6.62E-09	2.07E-07
OPLAH	0.817542463	6.71E-09	2.09E-07
CSF2RA	0.671829872	6.97E-09	2.17E-07
LBX2-AS1	1.124991524	7.11E-09	2.21E-07
MYO15A	1.629870394	7.17E-09	2.22E-07
RMI2	-0.725118181	7.62E-09	2.36E-07
MCM8	-0.793149803	8.04E-09	2.48E-07
FAM71F2	1.392989253	8.16E-09	2.52E-07
THBS4	-1.019125417	8.47E-09	2.61E-07
SRGN	-0.957841561	8.72E-09	2.68E-07
FTH1P16	0.974630633	8.73E-09	2.68E-07
RFC2	-0.735156561	9.16E-09	2.81E-07
SIRPB2	-0.94145799	9.20E-09	2.81E-07
NPC2	0.794938408	9.34E-09	2.85E-07
ALCAM	-0.952032555	9.63E-09	2.94E-07
AC008060.7	-1.499998429	1.01E-08	3.07E-07
SLC25A10	-0.903440978	1.02E-08	3.09E-07

ORAI2	0.709643021	1.04E-08	3.15E-07
SLC3A2	0.759722407	1.06E-08	3.22E-07
YPEL3	1.003039048	1.07E-08	3.25E-07
BEX1	-0.819406687	1.10E-08	3.31E-07
GPR85	0.99963933	1.10E-08	3.33E-07
MYBBP1A	-0.762167794	1.11E-08	3.33E-07
ELOVL3	-1.148747575	1.12E-08	3.36E-07
GGT7	0.846161634	1.19E-08	3.58E-07
FTH1P12	0.923784268	1.26E-08	3.77E-07
CCDC74A	1.191323489	1.27E-08	3.79E-07
CRIP2	1.631489929	1.32E-08	3.93E-07
FBP1	-0.760706439	1.35E-08	4.03E-07
LMBR1L	0.774841219	1.36E-08	4.04E-07
C6orf1	1.024101385	1.37E-08	4.07E-07
RAP1GAP	0.927699321	1.38E-08	4.10E-07
MIR24-2	0.790213031	1.43E-08	4.23E-07
PCSK4	1.019867398	1.45E-08	4.27E-07
ZCCHC14	0.923682069	1.50E-08	4.42E-07
SHB	1.075050126	1.59E-08	4.66E-07
CDS2	0.64273174	1.59E-08	4.66E-07
POLD3	-0.682949133	1.60E-08	4.68E-07
KCTD12	-1.71134626	1.60E-08	4.69E-07
SERPINB8	-0.718586784	1.61E-08	4.69E-07
TMEM136	1.328181631	1.70E-08	4.96E-07
RAB11FIP4	1.182567037	1.70E-08	4.96E-07
GOLGA2	0.768175949	1.71E-08	4.96E-07
RHOBTB2	0.784022477	1.71E-08	4.96E-07
TTI1	-0.650764079	1.72E-08	5.00E-07
HSPA4L	-1.1265087	1.73E-08	5.01E-07
NEIL3	-0.948822847	1.73E-08	5.01E-07
ZFP28	0.993195011	1.76E-08	5.08E-07
RP11-84C10.2	-0.991456658	1.76E-08	5.08E-07
HELLS	-1.138319146	1.77E-08	5.10E-07
USP35	0.879513564	1.84E-08	5.28E-07
PSME3	-0.608237226	1.90E-08	5.45E-07
GEMIN5	-0.710561515	1.97E-08	5.63E-07
MLC1	-0.608947493	1.97E-08	5.63E-07
MVB12B	-0.73031464	1.97E-08	5.63E-07
TMEM229B	-1.116546995	1.98E-08	5.64E-07
CACYBP	-0.736191094	2.07E-08	5.90E-07
RGL1	1.240619158	2.11E-08	6.00E-07
FAM167A	1.452353333	2.12E-08	6.02E-07
XRCC2	-1.116854646	2.13E-08	6.02E-07
GPCPD1	0.841532379	2.21E-08	6.24E-07
PPP2R5B	0.811863007	2.22E-08	6.25E-07
TEX15	-1.412667484	2.26E-08	6.36E-07

FAM21C	0.713218434	2.31E-08	6.48E-07
MTAP	-0.875172254	2.38E-08	6.69E-07
GRB10	0.912318923	2.43E-08	6.81E-07
CSE1L	-0.71660858	2.44E-08	6.83E-07
CTD-2369P2.2	1.473352192	2.52E-08	7.05E-07
NAV3	-1.084474295	2.53E-08	7.05E-07
EFCAB2	0.622827128	2.60E-08	7.24E-07
FTH1P8	0.905011478	2.63E-08	7.31E-07
TMEM41B	0.92193867	2.66E-08	7.38E-07
TRPV2	0.656729061	2.72E-08	7.55E-07
PTAFR	-0.915332483	2.73E-08	7.55E-07
ALDH1B1	-0.66180268	2.77E-08	7.66E-07
ABCF2	-0.638852183	2.79E-08	7.69E-07
HDAC5	0.684554174	2.79E-08	7.69E-07
NAT10	-0.599002332	2.90E-08	7.97E-07
RP11-887P2.3	-0.62224742	2.97E-08	8.15E-07
FABP5	-0.927938594	2.99E-08	8.19E-07
IGFBP7	-0.682946863	3.03E-08	8.30E-07
POP1	-0.792245631	3.04E-08	8.31E-07
LDHA	-0.735436453	3.11E-08	8.48E-07
DSN1	-0.678662936	3.21E-08	8.73E-07
CTPS1	-0.619538458	3.21E-08	8.73E-07
IRF9	1.008309324	3.25E-08	8.83E-07
CLIP3	1.184061074	3.28E-08	8.89E-07
TMEM55B	0.712731374	3.30E-08	8.94E-07
CBS	0.848460015	3.43E-08	9.27E-07
SLC25A29	0.77412011	3.54E-08	9.57E-07
CHD2	0.729606137	3.62E-08	9.77E-07
STMN1	-0.60952658	3.67E-08	9.87E-07
TMEM231	1.221233276	3.75E-08	1.01E-06
COQ2	-0.671191878	3.79E-08	1.02E-06
TMEM109	-0.612124837	3.90E-08	1.04E-06
TMEM177	-0.943918666	4.03E-08	1.08E-06
NTSR1	0.784732261	4.06E-08	1.08E-06
UMPS	-0.683664207	4.36E-08	1.16E-06
SORD	-0.679019791	4.52E-08	1.20E-06
ODF3B	1.023195617	4.53E-08	1.21E-06
MARS2	-0.949927384	4.62E-08	1.23E-06
GPD1L	-0.905342376	4.71E-08	1.25E-06
CDCA7L	-0.583324419	4.81E-08	1.27E-06
TNFAIP2	0.684010277	4.98E-08	1.32E-06
ERH	-0.667519474	4.99E-08	1.32E-06
AC017104.6	1.347992637	5.16E-08	1.36E-06
RP11-499E18.1	1.891639224	5.29E-08	1.39E-06
RNF130	0.59874078	5.37E-08	1.41E-06
SFXN1	-0.936117344	5.51E-08	1.45E-06

NEFH	-0.892875122	5.52E-08	1.45E-06
TOM1	0.791509203	5.87E-08	1.54E-06
APOBEC3B	-0.739371133	5.91E-08	1.54E-06
SYT2	-0.972349248	5.92E-08	1.54E-06
SLC26A6	0.86903937	6.14E-08	1.60E-06
HERPUD1	0.639400902	6.27E-08	1.63E-06
FBXL12	0.646460972	6.45E-08	1.67E-06
BEX4	1.832503473	6.61E-08	1.72E-06
IL10RA	0.673062759	6.63E-08	1.72E-06
PIGW	-0.905314502	6.82E-08	1.76E-06
ABHD12	0.750699857	6.96E-08	1.80E-06
CDKN2D	0.797500292	7.04E-08	1.81E-06
TMBIM1	0.59848884	7.19E-08	1.85E-06
RAB40B	0.787854566	7.39E-08	1.90E-06
DACT3	0.810096361	8.54E-08	2.19E-06
EFCAB4B	-0.786032762	8.74E-08	2.24E-06
TYMP	0.796452233	8.76E-08	2.24E-06
RNASEH2A	-0.787004949	9.08E-08	2.32E-06
CHST4	-1.655722449	9.10E-08	2.32E-06
ARID3B	0.701412008	9.20E-08	2.34E-06
C19orf38	1.159541038	9.21E-08	2.34E-06
GRWD1	-0.707942169	9.38E-08	2.38E-06
SPTAN1	0.6129063	9.57E-08	2.43E-06
CCND1	-1.48130396	9.69E-08	2.46E-06
C20orf27	-0.890294954	1.00E-07	2.54E-06
RGS18	-1.226521707	1.01E-07	2.56E-06
IFITM1	0.760336784	1.02E-07	2.57E-06
LZTFL1	0.885921714	1.03E-07	2.59E-06
NOG	1.129256337	1.04E-07	2.63E-06
KLF11	0.908311004	1.05E-07	2.63E-06
AP001007.1	0.840659658	1.05E-07	2.64E-06
NETO2	-0.792778006	1.07E-07	2.68E-06
MLXIPL	1.385831306	1.07E-07	2.68E-06
ATF4P3	1.032479189	1.09E-07	2.71E-06
LIG1	-0.631005218	1.09E-07	2.71E-06
NOV	1.408969612	1.10E-07	2.74E-06
PUS7	-0.928513478	1.10E-07	2.74E-06
DHFRP1	-0.911459418	1.11E-07	2.75E-06
FEN1	-0.912200222	1.12E-07	2.78E-06
AFMID	-0.894589821	1.13E-07	2.79E-06
SUMO3	-0.558271209	1.13E-07	2.79E-06
ICMT	-0.734831887	1.14E-07	2.81E-06
CENPJ	0.622711872	1.15E-07	2.84E-06
RHBDF2	0.717824757	1.15E-07	2.84E-06
TOMM34	-0.642718526	1.20E-07	2.94E-06
FCER2	0.842014833	1.21E-07	2.96E-06

FTH1P11	1.002709106	1.23E-07	3.03E-06
FKBP1A	-0.583812167	1.29E-07	3.15E-06
L1CAM	1.813903506	1.31E-07	3.20E-06
DNAJA1	-0.826038158	1.33E-07	3.25E-06
C16orf59	-0.941940502	1.34E-07	3.28E-06
CCDC86	-0.744001199	1.35E-07	3.29E-06
MS4A4E	-0.86211354	1.37E-07	3.33E-06
C17orf59	0.857556468	1.40E-07	3.40E-06
BOLA3	-0.770459725	1.40E-07	3.40E-06
MGST1	-0.720414774	1.43E-07	3.45E-06
RHOQ	0.974997358	1.43E-07	3.47E-06
GPR162	1.221930898	1.49E-07	3.59E-06
RP11-65L3.2	-1.168908286	1.49E-07	3.60E-06
CYP51P1	1.783443507	1.49E-07	3.60E-06
AC013394.2	0.589043072	1.51E-07	3.64E-06
CACNB1	1.169053529	1.54E-07	3.69E-06
HAT1	-0.686946372	1.57E-07	3.77E-06
KLHL5	1.232315217	1.64E-07	3.94E-06
NLN	-0.736806123	1.66E-07	3.99E-06
DUSP3	0.540811069	1.69E-07	4.04E-06
MS4A7	1.069300141	1.74E-07	4.15E-06
URAD	1.315539869	1.76E-07	4.19E-06
BAIAP2	0.826514107	1.77E-07	4.23E-06
DCPS	-0.764354166	1.78E-07	4.24E-06
SIGLEC7	-1.27234462	1.91E-07	4.53E-06
SHQ1	-0.737958867	1.91E-07	4.53E-06
TGFB1	-0.774766633	1.93E-07	4.58E-06
RFC4	-0.644921039	1.96E-07	4.64E-06
ENC1	-1.00248291	1.97E-07	4.66E-06
KCNE1L	-0.697887191	1.99E-07	4.68E-06
FABP5P1	-1.03691633	1.99E-07	4.69E-06
DNHD1	0.780807628	2.01E-07	4.74E-06
POLR3G	-0.980969936	2.02E-07	4.75E-06
IGLC3	1.576006788	2.14E-07	5.02E-06
TLR7	1.665973236	2.15E-07	5.05E-06
SV2B	-0.992130175	2.19E-07	5.12E-06
PAICS	-0.674652064	2.22E-07	5.18E-06
ADCY6	1.069262273	2.22E-07	5.18E-06
QPCTL	0.711553057	2.23E-07	5.20E-06
PLK2	-0.681887951	2.25E-07	5.23E-06
CLIP2	0.795096223	2.28E-07	5.30E-06
BRIP1	-1.12595676	2.33E-07	5.42E-06
ZBTB47	-0.712169207	2.34E-07	5.42E-06
PGAM1	-0.546355	2.39E-07	5.53E-06
CELSR3	0.894581864	2.44E-07	5.64E-06
SLC2A9	-0.689103689	2.47E-07	5.71E-06

TRIP13	-0.638932513	2.50E-07	5.76E-06
SLC25A25	0.768423199	2.51E-07	5.77E-06
KIFC3	1.505887079	2.54E-07	5.84E-06
CASP1	-0.621509286	2.55E-07	5.85E-06
SEPT5	0.940309191	2.56E-07	5.86E-06
ZNF470	1.113397838	2.65E-07	6.08E-06
AC018766.5	0.836317993	2.67E-07	6.12E-06
GUCY1A2	1.787973562	2.70E-07	6.17E-06
CD300C	-0.89794143	2.72E-07	6.22E-06
HDAC6	0.701026536	2.82E-07	6.44E-06
RGS1	1.374255573	2.87E-07	6.54E-06
EXOSC2	-0.672369999	2.91E-07	6.62E-06
ATF4P4	1.020483278	2.92E-07	6.64E-06
NLRP12	1.661097356	2.94E-07	6.66E-06
GAL	-0.88025245	2.95E-07	6.69E-06
PNO1	-0.685273331	2.97E-07	6.72E-06
UXS1	-0.732707787	3.06E-07	6.92E-06
AHSA1	-0.698267482	3.39E-07	7.65E-06
RP11-54O7.18	1.579480768	3.45E-07	7.78E-06
CTD-2231E14.8	-0.716014492	3.46E-07	7.80E-06
ERCC6L	-0.886077114	3.53E-07	7.93E-06
IER2	0.661879293	3.57E-07	8.01E-06
EXOSC3	-0.625463995	3.60E-07	8.08E-06
POLR1A	-0.558709193	3.70E-07	8.28E-06
ECE1	-0.81444215	3.74E-07	8.37E-06
APLF	0.93374893	3.75E-07	8.37E-06
CHAC1	1.147913163	3.79E-07	8.45E-06
CTD-2201E18.3	0.895751872	3.82E-07	8.52E-06
SLC17A5	0.925890703	3.83E-07	8.52E-06
P2RX1	0.767361385	3.83E-07	8.52E-06
GSN	-0.681255195	3.92E-07	8.70E-06
HN1L	-0.54543798	3.93E-07	8.71E-06
PPP4R1L	1.285029973	3.95E-07	8.74E-06
C20orf197	-1.087296115	3.96E-07	8.76E-06
TINAGL1	1.610854787	4.09E-07	9.04E-06
CLUH	-0.627485873	4.17E-07	9.20E-06
CTD-2587H19.1	0.758254043	4.22E-07	9.31E-06
ST18	1.579042564	4.26E-07	9.37E-06
RRM2	-0.635698001	4.28E-07	9.41E-06
ZNRF3	-1.128441723	4.28E-07	9.41E-06
KLC4	0.713048857	4.31E-07	9.46E-06
WIBG	0.739609353	4.35E-07	9.53E-06
TM4SF19	1.74900022	4.35E-07	9.53E-06
THOC3	-0.672068976	4.45E-07	9.71E-06
APOL4	0.649094826	4.51E-07	9.83E-06
CMAHP	0.824427062	4.55E-07	9.93E-06

RP11-352D3.2	1.18443303	4.59E-07	9.98E-06
CSTF2	-0.603954045	4.61E-07	1.00E-05
ANXA2	0.704936965	4.66E-07	1.01E-05
PKMYT1	-0.695794682	4.70E-07	1.02E-05
RRS1	-0.702500508	4.89E-07	1.06E-05
TYSND1	-0.64824992	4.91E-07	1.06E-05
RP11-98D18.9	1.214206337	4.95E-07	1.07E-05
SPR	-0.890796179	5.01E-07	1.08E-05
KIAA1614	1.09239885	5.07E-07	1.09E-05
PRKAR2B	-1.429372684	5.14E-07	1.11E-05
NKX3-2	1.61089801	5.14E-07	1.11E-05
TTLL12	-0.570957096	5.38E-07	1.16E-05
CIC	0.73760896	5.45E-07	1.17E-05
HSPD1P1	-0.697312834	5.57E-07	1.19E-05
RANBP1	-0.720218531	5.66E-07	1.21E-05
PRDX4	-0.881836896	5.67E-07	1.21E-05
NR4A3	1.735832082	5.75E-07	1.23E-05
HS1BP3	0.699538129	5.82E-07	1.24E-05
ZCCHC7	0.612061829	5.84E-07	1.24E-05
RFT1	-0.565414674	5.84E-07	1.24E-05
CES1	-0.835400563	5.94E-07	1.26E-05
DKC1	-0.538856875	6.00E-07	1.27E-05
GALNT18	-1.301339405	6.28E-07	1.33E-05
HIST1H2BD	0.921951478	6.32E-07	1.34E-05
PRKDC	-0.760856776	6.44E-07	1.36E-05
ARHGEF3	0.69685401	6.50E-07	1.37E-05
IQCG	0.712264228	6.61E-07	1.39E-05
MLLT4-AS1	1.516690089	6.65E-07	1.40E-05
PARP1	-0.526305258	6.69E-07	1.41E-05
MXRA8	1.390230012	6.79E-07	1.43E-05
USP32	0.588450978	6.93E-07	1.45E-05
NEK6	0.516137065	6.97E-07	1.46E-05
JUNB	0.644714972	7.02E-07	1.47E-05
IFI30	1.627972473	7.12E-07	1.49E-05
MMD	-0.925741259	7.25E-07	1.52E-05
MIR210HG	1.59015895	7.26E-07	1.52E-05
MAP2K6	-1.144198814	7.30E-07	1.52E-05
CISH	0.58657358	7.41E-07	1.54E-05
GOLGB1	0.525894303	7.46E-07	1.55E-05
ENO2	0.852253543	7.56E-07	1.57E-05
NCDN	-0.74728035	7.60E-07	1.58E-05
VPS9D1-AS1	-0.824067014	7.84E-07	1.63E-05
TBCE	0.588062385	7.90E-07	1.63E-05
SAMD9L	0.868316682	7.90E-07	1.63E-05
CCDC138	-0.957139062	8.13E-07	1.68E-05
SNN	0.662487412	8.28E-07	1.71E-05

TRIB1	0.900394683	8.35E-07	1.72E-05
PRRG4	-0.993757583	8.43E-07	1.73E-05
SCFD2	-0.576884309	8.50E-07	1.75E-05
FANCG	-0.577439026	8.51E-07	1.75E-05
LAPTM4B	-0.861659555	8.67E-07	1.78E-05
MX2	0.731076525	8.81E-07	1.81E-05
TIMM21	-0.73923162	9.08E-07	1.86E-05
CD44	0.632311117	9.09E-07	1.86E-05
PTPRG-AS1	-1.038749985	9.11E-07	1.86E-05
OAS3	1.388216855	9.12E-07	1.86E-05
PHYHIP	1.034796785	9.16E-07	1.87E-05
TSR1	-0.56427225	9.30E-07	1.89E-05
CTD-2008A1.2	-0.748905754	9.76E-07	1.98E-05
DPH2	-0.591592581	9.77E-07	1.98E-05
RP11-490H24.5	-0.692357063	9.94E-07	2.02E-05
PPP5C	-0.560003318	9.96E-07	2.02E-05
TP53I13	0.699500725	1.01E-06	2.04E-05
DLGAP4	0.67795759	1.01E-06	2.04E-05
ACTL6A	-0.629621237	1.01E-06	2.04E-05
C10orf2	-0.642075693	1.02E-06	2.05E-05
SCO1	-0.664262204	1.02E-06	2.05E-05
CCT6A	-0.614407438	1.02E-06	2.05E-05
FMNL1	0.625028386	1.02E-06	2.05E-05
HIVEP1	1.019427816	1.04E-06	2.08E-05
IKBIP	-0.867274767	1.04E-06	2.09E-05
EEPD1	0.627465407	1.04E-06	2.09E-05
RP11-345M22.1	1.240904758	1.06E-06	2.13E-05
HHEX	-0.703031306	1.07E-06	2.13E-05
SLC46A1	-1.272123304	1.07E-06	2.14E-05
RBM12	-0.833119508	1.08E-06	2.14E-05
H1FX	0.722949366	1.09E-06	2.18E-05
RBM17	0.502223833	1.11E-06	2.20E-05
SLC43A3	-0.713502502	1.12E-06	2.23E-05
STARD9	0.904026544	1.13E-06	2.24E-05
URB1	-0.645863489	1.14E-06	2.26E-05
GTF2A2	-0.632596906	1.15E-06	2.27E-05
PGD	0.571217777	1.15E-06	2.28E-05
HSPD1	-0.662457377	1.15E-06	2.28E-05
C3	0.799157734	1.16E-06	2.29E-05
FAM214B	0.76939001	1.16E-06	2.30E-05
ADRA2C	0.950721191	1.17E-06	2.30E-05
TXNDC12	-0.497182006	1.18E-06	2.33E-05
TJP3	1.666480301	1.18E-06	2.33E-05
RP11-4C20.4	-1.616252383	1.19E-06	2.33E-05
LRRC45	-0.901991231	1.20E-06	2.35E-05
RP11-1033A18.1	-0.841096662	1.25E-06	2.44E-05

CTNNA1	0.487862999	1.26E-06	2.46E-05
MMP17	0.875517873	1.27E-06	2.48E-05
GPRC5C	0.967242511	1.27E-06	2.48E-05
PVRL1	-0.634954281	1.27E-06	2.48E-05
SLBP	-0.612679174	1.29E-06	2.50E-05
FTH1P5	0.920031551	1.29E-06	2.52E-05
TSPAN10	1.496387874	1.30E-06	2.53E-05
LINC00900	0.800813814	1.31E-06	2.54E-05
MSH2	-0.810404621	1.31E-06	2.55E-05
EDA2R	-0.774787104	1.31E-06	2.55E-05
CHST10	-0.618722256	1.33E-06	2.57E-05
EXO5	-0.667166121	1.33E-06	2.57E-05
ST14	-0.795851965	1.35E-06	2.60E-05
ZFAND3	0.640305148	1.36E-06	2.63E-05
TRIAP1	-0.712648705	1.37E-06	2.64E-05
TIFA	-0.749725361	1.38E-06	2.65E-05
IDH3A	-0.66038879	1.39E-06	2.67E-05
NOL6	-0.543488059	1.41E-06	2.71E-05
RRAS	0.966884771	1.42E-06	2.72E-05
COL7A1	0.890967164	1.46E-06	2.79E-05
PLEKHM2	0.654747387	1.46E-06	2.80E-05
APOA1BP	-0.789443603	1.50E-06	2.86E-05
PPT1	-0.508264129	1.59E-06	3.03E-05
RP1-239B22.5	0.660164679	1.60E-06	3.05E-05
ALDH1L2	0.858070924	1.63E-06	3.10E-05
FLOT1	0.808058106	1.64E-06	3.12E-05
SNRNP40	-0.586921985	1.67E-06	3.19E-05
KDM6B	0.703545816	1.77E-06	3.36E-05
GPRIN3	1.659971539	1.78E-06	3.37E-05
MIPEP	-0.72718047	1.82E-06	3.44E-05
GLUL	0.509729237	1.82E-06	3.45E-05
SESN2	0.720013477	1.82E-06	3.45E-05
THAP8	0.746509369	1.85E-06	3.49E-05
HTRA3	0.768461389	1.86E-06	3.51E-05
FAM111A	-0.588287936	1.90E-06	3.58E-05
GARS	0.483954557	1.94E-06	3.65E-05
PROK2	-1.196002746	1.95E-06	3.67E-05
ANKS6	-0.787309773	1.97E-06	3.70E-05
SERBP1	-0.634351405	1.99E-06	3.74E-05
CTD-2227E11.1	1.268234188	1.99E-06	3.74E-05
TRAC	1.471796459	2.03E-06	3.80E-05
LYSMD4	0.664424	2.04E-06	3.83E-05
RFC3	-0.892001899	2.07E-06	3.87E-05
TUBG1	-0.662957683	2.13E-06	3.98E-05
NIP7	-0.699452173	2.14E-06	3.99E-05
RP11-568K15.1	-0.675452689	2.19E-06	4.09E-05

BCCIP	-0.633864217	2.22E-06	4.13E-05
HIBCH	-0.777517496	2.23E-06	4.14E-05
GNE	0.794619012	2.25E-06	4.18E-05
HELZ2	0.686604193	2.26E-06	4.20E-05
SAMD1	-0.665561068	2.36E-06	4.38E-05
NAGA	-0.500302657	2.37E-06	4.38E-05
NFIL3	0.614907282	2.38E-06	4.40E-05
NLRP4	1.432202798	2.41E-06	4.45E-05
GPR125	-0.782935838	2.42E-06	4.46E-05
RP11-6D1.3	1.634723586	2.42E-06	4.47E-05
URB2	-0.706869788	2.46E-06	4.52E-05
RP11-676J12.7	1.317355709	2.50E-06	4.61E-05
NOXA1	0.895993272	2.51E-06	4.62E-05
KLHL38	1.614400295	2.55E-06	4.68E-05
IGFBP4	-1.027792493	2.58E-06	4.73E-05
ABCA7	0.778882449	2.59E-06	4.74E-05
KDEL2C	-0.862908807	2.59E-06	4.74E-05
SIGLEC12	-1.063134133	2.59E-06	4.74E-05
EBNA1BP2	-0.720200836	2.63E-06	4.81E-05
ATP6AP1	0.605130475	2.64E-06	4.81E-05
RP11-326C3.11	1.463532897	2.66E-06	4.85E-05
ABCB4	1.499624237	2.67E-06	4.86E-05
IL2RB	0.977635096	2.74E-06	4.98E-05
FAM98A	-0.74195683	2.74E-06	4.99E-05
TMEM2	1.102062067	2.76E-06	5.02E-05
CPM	-0.586037551	2.80E-06	5.08E-05
HSPA2	-0.776741977	2.80E-06	5.08E-05
AC079767.4	1.488812229	2.86E-06	5.18E-05
WNT10A	1.611920187	2.87E-06	5.20E-05
NMNAT3	-0.674365798	2.88E-06	5.20E-05
BPGM	-0.778160322	2.88E-06	5.20E-05
NFE2L3	0.738716582	2.88E-06	5.20E-05
CCL4	1.61971811	2.96E-06	5.33E-05
MMACHC	-0.657481321	2.97E-06	5.35E-05
ABHD17A	0.641857039	3.02E-06	5.43E-05
LYNX1	0.749204758	3.03E-06	5.44E-05
ATP5G3	-0.575590107	3.06E-06	5.49E-05
SERBP1P1	-0.578399761	3.06E-06	5.49E-05
CTD-2047H16.4	1.159782505	3.13E-06	5.60E-05
FXN	-0.605862005	3.23E-06	5.78E-05
CAD	-0.559862787	3.24E-06	5.79E-05
WWC1	-0.669600241	3.30E-06	5.88E-05
EPAS1	1.102510026	3.37E-06	6.01E-05
IGSF10	-1.02241946	3.46E-06	6.15E-05
NT5DC3	-0.700141572	3.46E-06	6.15E-05
TBC1D2	0.78653684	3.51E-06	6.23E-05

SLFN5	0.925553056	3.53E-06	6.26E-05
WDR91	0.603770833	3.54E-06	6.28E-05
ERN1	0.908296537	3.61E-06	6.39E-05
MAD2L1	-0.79883114	3.61E-06	6.39E-05
CPAMD8	1.363975915	3.64E-06	6.45E-05
POLR2D	-0.55216821	3.67E-06	6.48E-05
HIST1H1C	0.846842789	3.69E-06	6.51E-05
SVIP	-0.824056413	3.70E-06	6.52E-05
SRD5A1	0.956727821	3.70E-06	6.52E-05
CACYBPP2	-0.745322889	3.71E-06	6.52E-05
ATP6V1H	0.52145504	3.71E-06	6.52E-05
C11orf45	1.105283052	3.71E-06	6.52E-05
HSPH1	-0.809681013	3.74E-06	6.57E-05
CMSS1	-0.554706549	3.88E-06	6.81E-05
CD4	-0.483389571	3.93E-06	6.89E-05
PLEKHH3	0.929214765	3.99E-06	6.99E-05
LRRC37A3	0.697252149	4.01E-06	7.01E-05
ARFGAP3	0.611543261	4.04E-06	7.05E-05
ITGB7	-0.594856249	4.09E-06	7.14E-05
GPC3	-0.844204085	4.22E-06	7.35E-05
ICA1	0.663236224	4.22E-06	7.35E-05
CYTH3	0.645437773	4.23E-06	7.36E-05
LINC00278	1.584637215	4.23E-06	7.36E-05
ARRDC3	1.204994207	4.27E-06	7.41E-05
UBAC2	0.507791176	4.31E-06	7.48E-05
DNAJB2	0.745844047	4.33E-06	7.50E-05
B4GALT2	-0.722101974	4.33E-06	7.50E-05
S100A10	0.612279531	4.35E-06	7.52E-05
TMCC1-AS1	-0.651631575	4.36E-06	7.54E-05
IFI16	0.715700965	4.38E-06	7.56E-05
SLAMF7	1.532113068	4.42E-06	7.63E-05
RHEBL1	1.08937095	4.47E-06	7.71E-05
IKBKE	-0.643208258	4.50E-06	7.74E-05
MOB3B	0.83532172	4.51E-06	7.75E-05
FLVCR1	0.820069206	4.51E-06	7.75E-05
STRAL13	-0.902366907	4.55E-06	7.80E-05
GGCT	-0.589010695	4.55E-06	7.81E-05
RP1-193H18.2	-1.395142428	4.64E-06	7.95E-05
RRP7B	-0.684219761	4.66E-06	7.97E-05
AC084125.4	1.15636609	4.71E-06	8.04E-05
RP11-420A23.1	0.791411749	4.71E-06	8.04E-05
ASNSD1	-0.6839067	4.73E-06	8.07E-05
DAPK1	1.384697953	4.81E-06	8.19E-05
CHRNA5	-1.557926598	4.81E-06	8.19E-05
TLR4	-0.912621308	4.88E-06	8.31E-05
CCT5	-0.515676058	4.91E-06	8.34E-05

RRAGD	0.782935113	4.98E-06	8.46E-05
C1GALT1C1	-0.628528753	5.00E-06	8.48E-05
SLC37A4	-0.737318559	5.02E-06	8.50E-05
PAK1	-0.48067094	5.03E-06	8.51E-05
SESN3	-0.969043983	5.04E-06	8.53E-05
ALOX5AP	-0.639079857	5.06E-06	8.54E-05
SPC25	-0.771191209	5.08E-06	8.58E-05
VIMP	0.600965652	5.20E-06	8.77E-05
PNPO	-0.561537997	5.33E-06	8.98E-05
PKIG	0.912629903	5.36E-06	9.03E-05
BRIX1	-0.6057036	5.42E-06	9.12E-05
PSMG1	-0.498560191	5.44E-06	9.13E-05
CCRL2	0.907147152	5.47E-06	9.18E-05
LINC00996	0.545577846	5.49E-06	9.21E-05
STON1	0.773044815	5.52E-06	9.24E-05
TERT	-0.986316449	5.52E-06	9.24E-05
GLB1L2	-0.808444874	5.53E-06	9.24E-05
CSF1R	-0.57744161	5.67E-06	9.48E-05
UBE2N	-0.610978793	5.76E-06	9.61E-05
EXOSC9	-0.573166303	5.85E-06	9.75E-05
RAB44	-0.680391807	5.87E-06	9.79E-05
GDF15	1.571462898	5.90E-06	9.81E-05
NLRC3	-1.124561664	6.05E-06	0.000100601
PSMC3IP	-0.719440127	6.16E-06	0.000102306
TREM2	-0.776333303	6.20E-06	0.000102876
SLC15A3	0.807976376	6.24E-06	0.00010343
SETD6	-0.595911437	6.27E-06	0.00010392
CAST	0.600994448	6.31E-06	0.000104447
ABCA10	1.318837678	6.38E-06	0.000105526
GBGT1	-0.667827065	6.39E-06	0.000105526
SCIN	1.56886645	6.40E-06	0.00010559
TRAK2	0.869067721	6.44E-06	0.000106242
GIMAP6	-0.757819782	6.46E-06	0.00010645
ST6GALNAC6	0.672198385	6.47E-06	0.00010645
TMEM39A	0.61994848	6.51E-06	0.000107065
MPO	-0.84926742	6.61E-06	0.000108536
CHAC2	-0.91650566	6.61E-06	0.000108541
NUP35	-0.698273496	6.69E-06	0.000109694
FAM20C	0.640838889	6.71E-06	0.000109997
RP11-137H2.6	1.151843305	6.74E-06	0.000110258
DYRK1B	0.679805893	6.74E-06	0.000110258
PPP2R1B	-0.739183166	6.83E-06	0.000111597
ANKRD10	0.481659801	6.86E-06	0.000112031
MBNL1-AS1	0.682131445	6.99E-06	0.000113913
HES2	1.546522942	7.02E-06	0.000114349
IPO11	-0.67547573	7.15E-06	0.000116374

C4orf27	-0.634175118	7.29E-06	0.000118569
CTD-2020K17.1	0.749098549	7.30E-06	0.000118569
SUV39H2	-0.74203697	7.35E-06	0.000119324
ABHD15	0.443181215	7.46E-06	0.000120916
CDKN2B	0.907412965	7.56E-06	0.000122568
SAT2	0.900652149	7.58E-06	0.000122602
NRP2	1.490726653	7.58E-06	0.000122602
ABR	0.561996718	7.59E-06	0.000122602
ADORA2B	0.753866395	7.72E-06	0.000124546
FAM162A	-0.595389778	7.73E-06	0.000124546
POR	0.536091034	7.73E-06	0.000124546
LRRC37A	0.623438716	7.74E-06	0.000124546
MEX3A	-0.696322477	7.74E-06	0.000124546
PRRT4	-1.261411377	7.79E-06	0.000125143
OPN3	0.618311883	7.82E-06	0.000125537
NUP155	-0.744501618	7.83E-06	0.000125543
ECE2	-0.770315271	7.84E-06	0.00012564
FGL2	-0.901121642	8.16E-06	0.000130735
CIDE�	-0.68996551	8.20E-06	0.000131209
PLB1	-0.630876133	8.22E-06	0.000131411
NID1	1.448217787	8.45E-06	0.000134941
A4GALT	0.820617655	8.58E-06	0.000136911
FAM114A1	1.02244238	8.63E-06	0.000137581
NEK8	0.800644672	8.65E-06	0.00013784
SLC37A2	0.743753809	8.70E-06	0.000138403
CNTNAP1	1.20863869	8.93E-06	0.000141873
PPM1K	0.70407714	8.93E-06	0.000141873
TKT	0.583352261	9.01E-06	0.000142974
RP11-589N15.2	1.323119154	9.16E-06	0.000145305
ZSWIM8	0.614088914	9.25E-06	0.000146586
SGK1	1.32382235	9.34E-06	0.0001478
SLC14A1	0.882105835	9.37E-06	0.000148147
TIMM8A	-1.019447629	9.41E-06	0.000148643
OVGP1	0.916363429	9.49E-06	0.000149683
DCAF13	-0.610174605	9.49E-06	0.000149683
CCT2	-0.480390309	9.55E-06	0.000150544
ITPKA	1.349111921	9.61E-06	0.000151345
B3GNT7	-0.499211118	9.64E-06	0.000151645
MTERFD1	-0.553051586	9.67E-06	0.000151949
PAQR4	-0.682979138	9.75E-06	0.000153127
VAC14	0.57289739	9.86E-06	0.000154681
CTD-2162K18.4	-1.034617742	9.89E-06	0.00015507
FBXO10	0.821116478	9.96E-06	0.000155958
RETSAT	0.571914381	9.99E-06	0.000156175
PEAR1	1.263308668	9.99E-06	0.000156175
ANPEP	0.822563631	1.00E-05	0.000156595

FAM81A	-0.868863496	1.01E-05	0.00015701
TREM1	1.141041812	1.01E-05	0.000157897
PPM1M	0.677642102	1.01E-05	0.000157897
HSPA8P1	-0.783711645	1.01E-05	0.000157939
ANKLE1	-0.578289949	1.02E-05	0.000158815
NAB2	0.681858975	1.03E-05	0.000159867
MINOS1	-0.588250013	1.03E-05	0.000159889
DHX9	-0.529831576	1.04E-05	0.000161115
ETS2	0.543489774	1.07E-05	0.000165056
RRP7A	-0.716575918	1.08E-05	0.000167166
PRMT3	-0.760243035	1.08E-05	0.000167678
MEST	-0.758483349	1.09E-05	0.000167678
LDLRAD4	0.588554451	1.09E-05	0.000167678
CDC7	-0.613109434	1.09E-05	0.000167678
PDSS1	-0.564458526	1.09E-05	0.000167678
AP5Z1	0.626579126	1.09E-05	0.000167748
RAD51	-0.587237622	1.10E-05	0.000168506
ZCWPW1	0.806074195	1.10E-05	0.000169712
FAM203A	-0.634535224	1.11E-05	0.000171016
DNA2	-0.938859219	1.12E-05	0.000171858
RAD54B	-0.767746878	1.14E-05	0.000174601
AHNAK2	1.271710155	1.14E-05	0.000175131
RPIA	-0.53213332	1.15E-05	0.000176737
TTC27	-0.578109624	1.16E-05	0.000176805
NUDT15	-0.599729041	1.16E-05	0.000176905
CAT	-0.540877622	1.17E-05	0.000178842
MPP2	-1.070834823	1.18E-05	0.000180535
FAM124A	-1.241858188	1.21E-05	0.000184335
ALDH8A1	1.15362146	1.21E-05	0.000184454
MCM7	-0.556727908	1.23E-05	0.000186952
UBE2R2	0.468758528	1.24E-05	0.000188057
TARS	0.494230953	1.24E-05	0.000188172
KNOP1	-0.612839633	1.24E-05	0.000188514
MPP6	-0.975953558	1.24E-05	0.000188523
TMEM221	1.144111194	1.25E-05	0.000188924
AUNIP	-0.687681737	1.25E-05	0.000189676
ATP6V0E2	-0.723961336	1.25E-05	0.000189676
GNB5	-0.703366767	1.26E-05	0.000189676
RP11-809O17.1	0.746092228	1.27E-05	0.000191682
ZNF749	-0.718853207	1.29E-05	0.00019406
TDRD7	-0.567961703	1.30E-05	0.000195802
PRKCQ	-0.680258167	1.31E-05	0.000196905
EDEM1	0.715078658	1.32E-05	0.000199393
TDRKH	0.803716584	1.33E-05	0.000200633
JAK3	0.813630154	1.34E-05	0.000201349
PPAP2A	1.255405924	1.35E-05	0.000202193

PRDM15	-0.545751289	1.35E-05	0.000202504
XIRP1	1.512492148	1.36E-05	0.000203559
TPI1P1	-0.530299611	1.37E-05	0.000204441
CD36	0.713480431	1.38E-05	0.000206174
WDR3	-0.714090882	1.38E-05	0.000206906
AFF3	-0.776185821	1.42E-05	0.000211569
PNPT1	-0.525597003	1.42E-05	0.000212428
SERBP1P5	-0.58059334	1.44E-05	0.000214546
SCXA	1.149521092	1.44E-05	0.000214926
C4orf3	-0.56176137	1.45E-05	0.000215655
DCTPP1	-0.712168737	1.48E-05	0.000219417
RP11-553L6.5	1.328023458	1.49E-05	0.000220696
AVIL	0.961745338	1.49E-05	0.000221727
FLCN	0.592670036	1.53E-05	0.000226259
RCC2	-0.467574309	1.56E-05	0.000231364
TMTC1	1.355358929	1.58E-05	0.000233787
STARD13	0.899656121	1.59E-05	0.000234427
C20orf194	0.658633291	1.59E-05	0.000234427
ZNF846	0.696894563	1.59E-05	0.000234427
SPC24	-0.76476332	1.60E-05	0.000235552
KCNQ1OT1	0.715452792	1.60E-05	0.000235552
ELOVL1	0.552180389	1.60E-05	0.000235552
SLC12A7	0.613845714	1.60E-05	0.000235998
NFATC2	0.643830897	1.61E-05	0.000237312
NEXN	-1.060032673	1.64E-05	0.000241027
KAZN	-0.568550077	1.64E-05	0.000241425
C18orf8	0.524674063	1.67E-05	0.000244293
MTFR2	-0.532254705	1.67E-05	0.000244293
RRAGC	0.680666629	1.67E-05	0.000244836
KM-PA-2	-0.703511088	1.69E-05	0.000247543
BNIP3L	0.780648672	1.70E-05	0.000249034
DHODH	-0.687154609	1.73E-05	0.000252242
PARD6G	-1.276266907	1.74E-05	0.000253952
TMEM14B	-0.557279829	1.76E-05	0.000256905
ARL8A	0.64833595	1.76E-05	0.000257077
CAPG	0.724032394	1.80E-05	0.00026218
SOCS1	0.873057532	1.85E-05	0.00026955
EPB41L1	1.405045091	1.87E-05	0.000271308
MRPS25	-0.581177417	1.90E-05	0.00027654
KIAA0930	-0.500047721	1.91E-05	0.000276869
ZMYND19	-0.709864137	1.93E-05	0.000279569
XYLB	-0.740878483	1.94E-05	0.000280872
AP001372.2	0.844155881	1.95E-05	0.000282262
PGAM4	-0.532298618	1.96E-05	0.000283852
FAM21B	0.520426443	1.97E-05	0.000284409
ABTB1	0.698678922	1.97E-05	0.000285045

TXNDC17	-0.680107638	1.98E-05	0.000285897
POLQ	-0.639459583	1.99E-05	0.000287762
TFAM	-0.869169712	2.00E-05	0.000288107
RBBP8	-0.571561702	2.01E-05	0.000290056
GATAD2B	0.662085599	2.07E-05	0.000297654
MDN1	-0.563160178	2.08E-05	0.00029877
ZNF703	1.165478498	2.09E-05	0.000299745
R3HDM2	0.495023562	2.09E-05	0.000299898
EPHA1-AS1	-0.800398834	2.11E-05	0.000302297
ATP5G1	-0.718949609	2.12E-05	0.000303449
SSRP1	-0.515873561	2.12E-05	0.000303849
ZFP36	0.617702889	2.17E-05	0.000310473
ACPP	-0.707180752	2.17E-05	0.000310473
RAB27A	-0.66156094	2.19E-05	0.000313318
SLC27A1	0.603928269	2.23E-05	0.000317675
DBI	0.615558876	2.24E-05	0.000319536
SEC24D	0.720885209	2.25E-05	0.00032026
PIGU	-0.528865852	2.26E-05	0.000321874
GMNN	-0.514852167	2.26E-05	0.000321874
NUP210	-0.52741401	2.26E-05	0.000321874
RP4-607J23.2	1.214498959	2.27E-05	0.000322344
DDX18	-0.649561457	2.32E-05	0.000329311
RASSF2	-0.573541779	2.34E-05	0.000332412
OSER1-AS1	0.94614587	2.35E-05	0.000333235
MAP3K8	0.679998335	2.36E-05	0.000333767
FKBP3	-0.523580825	2.41E-05	0.000341028
CTC-340A15.2	0.937634418	2.41E-05	0.000341028
WDR92	-0.639744733	2.42E-05	0.000342345
METRNL	0.684414445	2.44E-05	0.000343803
C8orf33	-0.47628861	2.44E-05	0.000344438
RPS6KA4	-0.500452222	2.47E-05	0.000348291
SPIB	1.09944936	2.47E-05	0.000348291
BST1	-0.680659263	2.50E-05	0.00035173
MAPK11	0.746463887	2.51E-05	0.000352672
C9orf41	-0.872797347	2.51E-05	0.000353063
C6orf48	0.553786706	2.52E-05	0.000353265
IL23A	0.852470971	2.52E-05	0.000353278
WDR12	-0.526521776	2.52E-05	0.000353432
NCKAP5L	0.547944368	2.54E-05	0.000355688
NEIL2	-0.634812758	2.55E-05	0.000357486
BCL11A	-0.658748114	2.60E-05	0.000364103
CYTH1	0.486075111	2.64E-05	0.000369185
UGDH-AS1	0.974095746	2.70E-05	0.000376564
ZNF286A	0.637765548	2.73E-05	0.000380363
TFDP1	-0.600155925	2.75E-05	0.000382929
IGF1	-0.686147658	2.75E-05	0.000383207

LINC00888	0.927954175	2.76E-05	0.000384533
AP003068.12	1.439825374	2.77E-05	0.000384686
UCP2	0.566268747	2.78E-05	0.000386263
PDLIM2	-0.599944409	2.80E-05	0.00038907
SWT1	0.849664294	2.82E-05	0.000391759
RP11-298O21.5	1.091058382	2.83E-05	0.000391832
PARP6	0.537958881	2.84E-05	0.000393943
AGMAT	-0.812648188	2.85E-05	0.000394005
CRAMP1L	0.521107773	2.86E-05	0.000394712
CREB3L3	1.433529155	2.86E-05	0.000394712
EAF2	-0.575799892	2.88E-05	0.000397964
BTBD19	0.929918814	2.90E-05	0.000399453
GALK1	-0.668119443	2.90E-05	0.000399487
TRMT6	-0.585901914	2.91E-05	0.000401484
HAVCR2	0.951265177	2.92E-05	0.000402586
HIPK2	0.660674751	2.95E-05	0.00040621
HIST1H2BJ	0.950924442	2.96E-05	0.000406472
PRPS2	-0.738515448	2.98E-05	0.00040975
RP11-504P24.8	0.767788086	3.01E-05	0.000412693
RAB11FIP1	0.593657027	3.08E-05	0.000421903
CD63	0.660695455	3.15E-05	0.000431717
CLEC12A	-0.782048974	3.19E-05	0.000436942
RUSC2	0.956516097	3.21E-05	0.000439774
MARK4	0.526050577	3.23E-05	0.000441753
MEGF9	-0.770961645	3.28E-05	0.000448226
NASP	-0.598080238	3.29E-05	0.000449665
TMEM198	0.775700229	3.30E-05	0.000449665
MARS	0.46325646	3.33E-05	0.000453675
FTCD	1.409175051	3.36E-05	0.000456951
MMS22L	-0.849716361	3.39E-05	0.00046194
HNRNPA0	-0.497578823	3.44E-05	0.000468048
PTMS	0.730117791	3.48E-05	0.000473082
REEP1	1.12135777	3.49E-05	0.000474424
FUBP1	-0.538057521	3.52E-05	0.000477181
INHBE	1.415819853	3.52E-05	0.000477193
RP11-244H18.1	1.437019486	3.54E-05	0.000480119
NDC1	-0.599649979	3.55E-05	0.000480804
NCS1	-0.541439731	3.56E-05	0.000481311
RP11-342K6.1	-0.708817827	3.60E-05	0.000485776
DARS2	-0.552768	3.60E-05	0.000485776
CABLES2	-0.597198591	3.64E-05	0.000490626
NFKB1	0.524918786	3.65E-05	0.000492368
FAM213B	-0.63686431	3.68E-05	0.000495116
PRMT2	0.473229299	3.69E-05	0.000496377
ASB2	0.810065147	3.69E-05	0.000496377
KIT	-0.85979242	3.74E-05	0.000502705

DNAJC9	-0.512468998	3.77E-05	0.000506692
C1QBP	-0.513622802	3.79E-05	0.000508925
AL357673.1	-0.68622007	3.80E-05	0.000509852
MRI1	-0.460298772	3.85E-05	0.000516288
GGT5	0.696609927	3.86E-05	0.000516729
TNK2	0.587065611	3.88E-05	0.000519592
CCNB1IP1	0.465892836	3.89E-05	0.000519639
SLC16A1	-0.836331118	3.93E-05	0.000525165
RP11-638I8.1	0.908341762	3.95E-05	0.000527194
NOC3L	-0.674992095	3.96E-05	0.000527665
C3orf18	0.954557898	3.97E-05	0.000528821
TELO2	-0.604803972	3.98E-05	0.000530494
NRROS	0.4748081	4.00E-05	0.000531769
COLGALT1	-0.470322063	4.00E-05	0.00053194
ZC3H12C	1.424849278	4.01E-05	0.000532524
NDUFB6	-0.566061324	4.04E-05	0.000536085
RP11-511H9.4	-0.94434165	4.04E-05	0.000536085
TIMELESS	-0.456386191	4.04E-05	0.000536222
RAB4B	0.579471047	4.07E-05	0.00053907
RNF175	-0.881330554	4.08E-05	0.000540471
ANKRD28	0.804552596	4.09E-05	0.000540737
NOP16	-0.68108652	4.11E-05	0.00054328
LRR1	-0.612861251	4.14E-05	0.00054617
GBP2	0.612150794	4.14E-05	0.00054617
SYF2	0.449490879	4.15E-05	0.000547132
TULP3	0.704685107	4.16E-05	0.000548309
SUPT16H	-0.440561083	4.18E-05	0.000550259
APBB3	0.611078185	4.25E-05	0.000558753
AMPD2	-0.523625716	4.29E-05	0.000563815
QDPR	-0.566384134	4.29E-05	0.000563968
CD84	-0.667180466	4.35E-05	0.000571658
SPTBN1	0.789892485	4.40E-05	0.000577888
WDR5	-0.468787851	4.52E-05	0.000592134
FDXR	-0.669509044	4.52E-05	0.000592821
NRG4	-0.596500107	4.55E-05	0.000595488
AC141928.1	1.265283133	4.56E-05	0.00059707
MARCH9	0.642882084	4.60E-05	0.000601784
FAM98B	-0.687498858	4.61E-05	0.000601784
ACADSB	-0.634665682	4.62E-05	0.000603213
CD320	-0.729231668	4.62E-05	0.000603213
TOMM40	-0.637090689	4.65E-05	0.0006064
CDKN2AIPNL	-0.568008566	4.75E-05	0.000619169
KCNK10	-0.49017907	4.79E-05	0.000623053
METRN	-0.648758305	4.79E-05	0.000623053
SYVN1	0.503410193	4.80E-05	0.000623393
FAM173B	-0.714660347	4.80E-05	0.0006238

ENO3	0.659936892	4.82E-05	0.000625266
CLK1	0.566172644	4.83E-05	0.000626493
ZNF367	-1.035422605	4.88E-05	0.000632206
PIWIL4	0.4811691	4.89E-05	0.000632849
SNRNP25	-0.674137056	4.89E-05	0.000632849
RP11-246K15.1	-1.292094894	4.92E-05	0.000636604
PRX	0.843248152	5.00E-05	0.000645985
LPCAT2	-0.714433832	5.12E-05	0.000660841
NFS1	-0.460218358	5.13E-05	0.000661099
ZNF467	0.963054193	5.13E-05	0.000661099
SNRPE	-0.515014705	5.13E-05	0.000661099
MAP6D1	-0.78262158	5.30E-05	0.000682147
MFSD11	0.562627914	5.31E-05	0.000683259
NFE2L1	0.45749541	5.36E-05	0.000689598
AC079922.3	0.865033831	5.37E-05	0.000689598
SLC27A2	-0.719376428	5.40E-05	0.000693567
XRCC3	-0.544389283	5.44E-05	0.000698382
RP11-443P15.2	1.206697566	5.47E-05	0.000701774
PNMA1	0.522314308	5.48E-05	0.000701774
FAM21A	0.474025634	5.50E-05	0.000704223
VPS8	0.508038446	5.53E-05	0.000707201
DHRSX	0.554243389	5.54E-05	0.000708264
VDAC1	-0.409518755	5.55E-05	0.000708713
POPDC2	0.997978671	5.59E-05	0.000713518
AK7	1.380405913	5.61E-05	0.000715468
SLC16A5	0.598206629	5.63E-05	0.000717793
LGALS3BP	-0.76461881	5.64E-05	0.000718255
RP11-500C11.3	0.864010316	5.64E-05	0.000718319
NUDT16	0.465294138	5.66E-05	0.00071948
POLR1B	-0.583398161	5.66E-05	0.000719495
RAD51AP1	-0.773355154	5.71E-05	0.000724795
CAMK2D	0.767437096	5.71E-05	0.000724851
IGF2R	0.592120668	5.74E-05	0.000727849
RP11-274B21.9	1.102862721	5.77E-05	0.000730743
HS3ST3B1	-0.799915412	5.78E-05	0.000731865
HEATR1	-0.557105468	5.78E-05	0.000731865
EIF4G1	-0.414820254	5.81E-05	0.000734711
C22orf29	-0.48296184	5.82E-05	0.000735198
CLDND2	0.942265865	5.83E-05	0.000735874
SRRD	-0.563565833	5.86E-05	0.000739514
HNRNPR	-0.63556513	5.88E-05	0.00074146
TAP1	0.535957412	5.88E-05	0.00074146
NOL3	1.057833007	5.89E-05	0.000741856
ZFAND2A	0.668800742	5.90E-05	0.000742061
LRRFIP2	0.483532	5.92E-05	0.000744886
ANXA2P2	0.68119942	6.00E-05	0.00075387

ZNF480	-0.493688163	6.02E-05	0.000755591
ALG6	-0.752576411	6.05E-05	0.000758689
SNORD3B-2	1.056151606	6.07E-05	0.000760616
VOPP1	-0.494218288	6.21E-05	0.000778289
SF3B3	-0.421953087	6.24E-05	0.000781175
CMTM4	-0.655394574	6.26E-05	0.000783039
TRAF1	0.637439427	6.28E-05	0.000785264
RP11-848G14.5	0.615723637	6.35E-05	0.000793241
PHF21A	0.507464343	6.35E-05	0.000793241
MEIOB	-0.765811751	6.36E-05	0.000793241
GGH	-0.584733574	6.38E-05	0.000795594
LILRA1	-1.083362903	6.43E-05	0.00080143
TLR6	-0.719401743	6.46E-05	0.00080383
RP11-398K22.12	-0.909013704	6.47E-05	0.000805178
FANCI	-0.558000272	6.51E-05	0.000809133
NDEL1	0.445093909	6.51E-05	0.000809392
STK10	0.430614321	6.54E-05	0.00081122
PPIL1	-0.543340591	6.54E-05	0.00081122
PHACTR3	-0.636199176	6.59E-05	0.000816348
TRIM45	-0.874116125	6.59E-05	0.000816348
SYTL1	0.553338999	6.59E-05	0.000816348
ANKRD22	-1.28292275	6.64E-05	0.000821313
METTL13	-0.439338916	6.67E-05	0.000824613
RBBP9	-0.800130049	6.70E-05	0.000827427
SIRT2	0.483033598	6.70E-05	0.000827427
FERMT1	-1.098313372	6.71E-05	0.000827427
VAT1L	-0.627976342	6.72E-05	0.000827993
FASTKD1	-0.517305246	6.78E-05	0.000834891
PLD2	0.742159721	6.80E-05	0.000837335
RP11-863K10.7	0.809382562	6.81E-05	0.000837412
UBALD2	0.639753719	6.85E-05	0.000841977
TUBE1	0.747560571	6.95E-05	0.000854126
DHX33	-0.562903941	7.00E-05	0.000859444
EI24	-0.417062249	7.02E-05	0.000861093
GTF2IRD2P1	0.693440473	7.02E-05	0.000861093
GTF2IRD2	0.564300956	7.03E-05	0.000861093
C10orf35	0.850140932	7.08E-05	0.000866816
FAM222A	-0.933410725	7.10E-05	0.000867815
PINK1-AS	-0.592677444	7.10E-05	0.000867815
SNORD3C	1.020790904	7.15E-05	0.000873787
ST3GAL1	0.552273611	7.16E-05	0.00087383
AC011899.9	-0.737829273	7.17E-05	0.000875298
DUT	-0.502027812	7.21E-05	0.000879376
INTS5	-0.482247193	7.22E-05	0.000879958
RP11-97C16.1	-0.681700391	7.24E-05	0.000881819
PDE1B	0.602454886	7.28E-05	0.000886282

KIF13B	0.529139069	7.29E-05	0.000886282
RP11-815I9.4	0.946165572	7.29E-05	0.000886282
CTD-3193O13.9	1.099700895	7.30E-05	0.000886368
C20orf195	1.285901326	7.31E-05	0.000886583
AC003665.1	-0.866139912	7.33E-05	0.000889506
ICAM2	0.671866363	7.34E-05	0.000889785
TAP2	-0.557163781	7.38E-05	0.00089368
SNX10	-0.98928876	7.43E-05	0.000899098
ABCC13	-1.086045443	7.44E-05	0.000899098
HIST2H4B	0.768307778	7.44E-05	0.000899098
RASGEF1A	1.257182256	7.48E-05	0.000903899
LRRC37A2	0.605275967	7.51E-05	0.000906909
PMP22	0.674519025	7.55E-05	0.000910746
FAM105A	-0.550087664	7.58E-05	0.000913455
TTN-AS1	-0.520018132	7.59E-05	0.000914086
DFFA	-0.439042744	7.62E-05	0.00091708
NFAM1	-0.583776776	7.63E-05	0.000917512
GPR153	-0.628166897	7.64E-05	0.000918366
RP11-53B2.6	-1.227008282	7.65E-05	0.00091846
LRRC59	-0.403558722	7.65E-05	0.00091846
PICK1	0.614178962	7.74E-05	0.00092897
RP11-440L14.1	0.631051116	7.78E-05	0.00093222
STX3	0.503661433	7.78E-05	0.00093222
ARID5A	0.603534653	7.82E-05	0.00093661
TCP1	-0.41817728	7.89E-05	0.000943735
THBD	-0.57635932	7.91E-05	0.000945882
AP001063.1	-1.12269117	7.92E-05	0.000945886
COL24A1	0.729331073	7.97E-05	0.000951774
PTPMT1	-0.518143901	8.00E-05	0.000954007
PXMP2	-0.787910847	8.07E-05	0.000961854
NUP37	-0.43591431	8.08E-05	0.000962353
MPP3	0.661539454	8.15E-05	0.000971013
ATAD3A	-0.578324362	8.43E-05	0.001002953
HNRNPD	-0.431373162	8.51E-05	0.001011922
JHDM1D	1.130891204	8.59E-05	0.001020328
CDCA4	-0.450237438	8.59E-05	0.001020328
SNORD3D	1.004878435	8.68E-05	0.001029806
AC007246.3	0.695385254	8.73E-05	0.001035515
ZMAT1	0.648274238	8.76E-05	0.001037793
HNRNPM	-0.418858691	8.79E-05	0.001041669
SHMT1	-0.52476395	8.87E-05	0.00104977
POLR3E	-0.414835217	8.91E-05	0.001054376
LIMA1	-0.692861972	8.94E-05	0.00105647
LGALS12	-0.794999943	8.96E-05	0.001057995
ZNF575	0.639961124	8.98E-05	0.001059107
SLC6A13	1.199755613	8.98E-05	0.001059107

DTX4	0.65560025	9.00E-05	0.001060531
PPA2	-0.476961208	9.02E-05	0.001062432
ARIH2OS	0.932625821	9.10E-05	0.001071699
KCNN2	0.410208568	9.22E-05	0.001084871
SEPHS1	-0.421431648	9.24E-05	0.001086239
EMG1	-0.603731595	9.35E-05	0.001098732
GDAP1L1	1.32315185	9.39E-05	0.001102235
EZH1	0.471753122	9.42E-05	0.001104355
SDF2L1	-0.663250207	9.42E-05	0.001104355
PLCB4	-1.280009668	9.42E-05	0.001104355
TBC1D14	0.54901113	9.46E-05	0.001107901
C12orf52	-0.553695764	9.57E-05	0.001120163
PLK1S1	0.566694534	9.61E-05	0.001124388
C2orf44	-0.603758724	9.68E-05	0.001131133
SEMA4C	-0.566476867	9.70E-05	0.001133388
POLD1	-0.515116225	9.74E-05	0.001136526
RALGDS	0.488556838	9.78E-05	0.001140448
RP4-647J21.1	0.475887864	9.84E-05	0.001145908
LRP10	0.454591201	9.84E-05	0.001145908
H3F3AP4	-0.454048787	9.85E-05	0.001146854
FAM21D	0.596374815	9.88E-05	0.00114961
TNFSF14	-0.591115399	9.92E-05	0.00115327
TSC22D1	0.769104229	0.00010016	0.001163815
PLEK	0.529283272	0.000100682	0.001169105
RPA3	-0.54929745	0.000102088	0.001184667
NME1	-0.72619412	0.000103166	0.001196384
PAC SIN3	-0.910771094	0.000105256	0.001219823
LILRP1	1.347533068	0.000105537	0.001222285
FLAD1	-0.559130694	0.000106102	0.001228031
ACSF2	0.63845922	0.000108266	0.001252259
PDCD11	-0.457002944	0.000108938	0.001259149
PWP2	-0.560151582	0.000109004	0.001259149
SPIRE1	0.722042356	0.000109578	0.001264957
NDN	-0.509634078	0.000109857	0.00126665
DNPH1	-0.711582029	0.000109867	0.00126665
SLC25A15	-0.94451034	0.000110203	0.001269694
GNPNAT1	-0.647278701	0.000110577	0.001273177
FTLP3	0.557815534	0.000112187	0.001290882
MARCKSL1	-0.525878398	0.000112638	0.001295225
SCAMP4	0.595995488	0.000113679	0.001306348
MAPRE2	-0.547153252	0.00011444	0.001314247
NMRK1	0.558056321	0.00011489	0.001318557
NFKBIE	0.619292863	0.00011556	0.001325387
XYLT2	-0.556868326	0.000116303	0.001332356
ZMIZ1-AS1	1.06302947	0.000116317	0.001332356
FMNL3	0.521008415	0.000116515	0.001333759

PKP4	-0.475145705	0.000116625	0.001333798
GAR1	-0.622220009	0.000116669	0.001333798
GART	-0.416600544	0.00011747	0.00134209
DYNLL2	-0.442349656	0.000117874	0.001345847
ZNF587B	-0.61806103	0.000118489	0.00135199
SLC25A17	-0.540263719	0.000119675	0.001364652
CCND2	-0.62103485	0.000119802	0.001365076
RP11-343J3.2	0.736421878	0.000119866	0.001365076
MRPL3	-0.47711236	0.000121371	0.00138079
FAM46A	-0.57482648	0.000121402	0.00138079
DHX58	0.931382359	0.000122114	0.001387998
ABCA9	1.252559976	0.000122235	0.001388492
HIST1H2AG	0.764378738	0.000122419	0.001389684
CTD-2162K18.5	0.690338122	0.000123023	0.001395653
PRMT6	-0.630528218	0.000123916	0.00140488
CEP63	0.41628771	0.000124269	0.001407991
FAM149B1	0.558195967	0.000124796	0.001411711
E2F8	-0.767576766	0.000124816	0.001411711
ALDH5A1	-0.646449258	0.000124837	0.001411711
DOK4	0.788126505	0.000125553	0.00141891
EARS2	-0.455767899	0.00012592	0.001422062
RP11-15H20.5	-0.793536589	0.000125992	0.001422062
RP1-99E18.2	0.913359583	0.000126437	0.001426172
ANO8	0.681544003	0.000127091	0.001432646
BOP1	-0.666048297	0.00012744	0.001435025
AVPI1	0.750186263	0.000127464	0.001435025
ASRGL1	-0.577356099	0.000127583	0.001435454
DCUN1D5	-0.463242824	0.000127664	0.001435454
MRTO4	-0.608080554	0.00012845	0.001443376
ITPR3	-0.814261639	0.000129089	0.001449373
MYO19	-0.463001308	0.000129147	0.001449373
MAT2A	-0.483215307	0.000129911	0.001457021
DLX1	-0.551663221	0.000130018	0.001457306
CHRDL2	1.301935624	0.000130826	0.001463978
COL26A1	1.136408614	0.000130852	0.001463978
PSMD11	-0.416828104	0.000130861	0.001463978
LINC00847	0.574875712	0.000130964	0.001464209
ZFYVE26	0.444859014	0.000131773	0.001472324
MKKS	-0.467221213	0.000133592	0.001491142
TGFBRAP1	-0.522719059	0.000133625	0.001491142
RP11-298C3.2	-0.631672468	0.00013417	0.00149628
PDCD6	-0.387366245	0.000134382	0.001497704
DGCR8	-0.43992734	0.000134498	0.00149805
RP11-804H8.6	0.624660954	0.000134841	0.001500935
ZNF552	-0.563616021	0.000136027	0.001512672
LMLN	0.693453811	0.000136066	0.001512672

RNF185	0.454367983	0.00013627	0.001513993
MRPS16	-0.452397725	0.000138173	0.001534168
CENPK	-0.724103646	0.000138898	0.001541255
NAA40	-0.494998397	0.000139653	0.001548669
MLEC	-0.4107725	0.000139892	0.001550349
UNC5B	0.848162921	0.000140446	0.001555514
LYL1	0.588015227	0.0001419	0.001570634
HMGN2P3	-0.542773548	0.000142845	0.00158011
SCRIB	-0.486465937	0.000143606	0.001587492
TEX10	-0.46085049	0.000143691	0.001587492
GRINA	0.49462133	0.000144115	0.001591178
DCAF16	-0.673320912	0.000144208	0.00159122
IKZF1	-0.528795109	0.000144534	0.001593826
PEX3	-0.622525762	0.000144809	0.001595863
HPCAL1	0.484141336	0.000146664	0.001615309
DCLRE1B	-0.538954253	0.000147162	0.001619782
TEX30	-0.561024948	0.000148393	0.001632323
CTSG	-0.602283365	0.000148726	0.001634975
CTD-2044J15.2	1.133091222	0.000151052	0.001659512
DNAJA4	-0.470620149	0.000151166	0.001659736
APOBEC3C	-0.457662235	0.000151882	0.001666574
FARSB	-0.421983796	0.000152686	0.001674355
CPSF6	-0.50841735	0.00015313	0.001678182
PANK3	0.896601507	0.000153798	0.001684465
AC005306.3	0.770232576	0.000154518	0.001691306
RAB37	0.525289577	0.000155709	0.001703294
IER5L	0.687347424	0.000156152	0.001707093
C1QTNF6	0.646807848	0.000157587	0.001721714
KB-1460A1.5	0.590456324	0.00015813	0.00172659
TMPO	-0.705766968	0.000158674	0.001731462
RP11-417L19.2	1.255163472	0.000159123	0.001734348
MEX3D	-0.598553418	0.000159134	0.001734348
PLEKHH2	-0.739313374	0.000160271	0.001745579
YPEL5	0.514257797	0.000160361	0.001745579
DNAJC1	0.51963673	0.000161623	0.001758231
PQLC2	0.573977408	0.000162712	0.001768991
SLC39A14	-0.575448425	0.000162917	0.001770142
ASB13	-0.606087166	0.000163062	0.001770631
CAMK1	-0.605717703	0.000164074	0.001780531
FKBP1C	-0.583713488	0.000164282	0.001781695
BAZ1A	-0.537502089	0.000165883	0.001797637
LBX2	0.866519656	0.000165954	0.001797637
ZNF850	-0.72433984	0.000166673	0.001804322
F3	-0.641989116	0.000168387	0.001821764
SUV39H1	-0.447796073	0.000168691	0.001823944
RAD51D	-0.640576404	0.000169991	0.001836876

ZNF185	-0.417712197	0.000171518	0.001852248
FANCC	-0.596490914	0.000171933	0.001855596
DPY19L2P2	-0.71102088	0.000173279	0.001868991
DNAJB5	0.731650211	0.000173572	0.00187101
HSD11B1	-1.290476886	0.000173694	0.001871192
TUBGCP5	-0.453042572	0.00017461	0.001879913
DAGLB	0.548967713	0.000175749	0.001891035
PSMB2	-0.459146563	0.000176252	0.001895298
PTDSS1	-0.372263944	0.000176626	0.001898164
RP11-521I2.3	1.214469618	0.000176809	0.001898979
TMEM173	0.470706956	0.000177535	0.001904671
NCAM2	-0.698466157	0.000177747	0.001904671
FYB	-0.579648069	0.00017785	0.001904671
TXNIP	-0.541874214	0.000177874	0.001904671
DPYSL2	0.701388028	0.000177875	0.001904671
FAM92A1	-0.66654542	0.000178279	0.001907846
MRPL17	-0.690755579	0.000179013	0.001914542
ZNF692	-0.623575687	0.00017989	0.001922047
RALGAPA2	-0.486798093	0.000179931	0.001922047
ZFYVE1	0.503828784	0.000180278	0.001923665
LARS2	-0.488934215	0.0001803	0.001923665
TPSAB1	1.169763393	0.000181082	0.001930849
EIF1AX	-0.713618219	0.000181459	0.001933711
RNASE6	-0.571053437	0.000182723	0.001946014
CDKN1A	0.494322236	0.00018452	0.001963975
THBS3	0.614027831	0.000185557	0.001973827
ZNF789	0.410944873	0.000186366	0.001981239
TANGO6	-0.547825073	0.000188134	0.00199884
LRRC20	-0.935878406	0.000188673	0.00200337
ABCC1	-0.454375482	0.000188942	0.002005026
RFWD3	-0.543671904	0.000189552	0.002010294
CHST14	-0.511813126	0.000189988	0.002013711
FOXO3	0.654309211	0.000191978	0.002033587
SMPD3	0.842286855	0.00019214	0.002034094
HCCS	-0.427561259	0.000193673	0.002049103
MXD1	0.646690606	0.000194541	0.002057061
MOSPD3	-0.567972145	0.000195882	0.002070004
SUMO1	-0.423881782	0.000197537	0.00208625
CBX1	-0.483624291	0.000198718	0.002097473
TSPYL2	0.515567563	0.000199319	0.002102563
CCDC24	0.721021769	0.000199459	0.002102794
UBE2G2	-0.495097699	0.000202867	0.002136356
ABHD10	-0.464807867	0.00020291	0.002136356
SPAG4	0.983258184	0.000203004	0.002136356
SIRPG	-1.187824802	0.000205166	0.002157832
RP11-800A3.4	-0.545314606	0.00020688	0.002174354

NAP1L4	-0.39036152	0.000206982	0.002174354
POFUT1	-0.427599962	0.000207209	0.002175453
TMEM184B	0.478302598	0.000207612	0.002178387
NDUFA4	-0.465741529	0.000208411	0.002184587
PELI3	0.623307623	0.000208449	0.002184587
MRPL39	-0.4316316	0.000208917	0.002186914
XRCC5	-0.369424635	0.000208971	0.002186914
CRISPLD2	-1.210415966	0.000209041	0.002186914
ARPC1A	-0.495447916	0.000210755	0.002203555
RP11-1081L13.4	1.275501831	0.000211283	0.002207767
PMEPA1	0.540213623	0.000211969	0.002212596
SMIM14	0.73944152	0.000211994	0.002212596
NUP107	-0.49417591	0.000212223	0.00221351
TM7SF3	-0.459410298	0.000212331	0.00221351
RRAD	1.201929315	0.000212786	0.002216944
STX5	0.53702573	0.000213043	0.002217673
CCHCR1	-0.605895269	0.000213106	0.002217673
TPMT	-0.604284225	0.000213867	0.002224288
GMPS	-0.406740771	0.000214308	0.002227573
TIMM22	-0.633567062	0.0002157	0.002240726
LAS1L	-0.489582697	0.000216122	0.002243796
TMCO6	-0.528815193	0.000216732	0.002248821
CD244	0.447029055	0.000217349	0.002253901
QRTD1	-0.546828381	0.000217617	0.002255361
AK2	-0.358740485	0.000218433	0.0022625
BCL2L11	0.635530734	0.00021924	0.002268598
NR2C2AP	-0.636829187	0.000219278	0.002268598
MEFV	-0.639520061	0.000219953	0.002273927
SPOCK2	1.250010086	0.000220049	0.002273927
HEATR2	-0.438820972	0.000220608	0.002278379
RP11-439L8.3	1.185101641	0.000221312	0.002284315
SERPINF2	0.863403169	0.000222312	0.002293247
RBM14	-0.435347638	0.000222436	0.002293247
MEIS3	1.08186979	0.000222969	0.002297408
ST8SIA4	-0.752884183	0.000223284	0.002299321
BAG2	-0.614246081	0.000224341	0.002308869
LINC00339	0.482583887	0.000224595	0.002310141
ZNF394	0.462515775	0.000224902	0.002311951
AC068282.3	0.948883415	0.000225101	0.00231266
RECQL4	-0.608735322	0.000225992	0.002319966
DDX31	-0.43789278	0.000226073	0.002319966
MCOLN2	0.556488939	0.000227089	0.002329037
RUVBL1	-0.491207678	0.000230538	0.002363048
NEK3	0.472428248	0.000233384	0.002390836
CCDC34	-0.589032789	0.000234061	0.002396386
IDH2	-0.432399802	0.000234773	0.002402298

CCT3	-0.47514652	0.000235131	0.002404573
ACVR1	0.664878853	0.000236775	0.002419868
ABRACL	-0.491848261	0.0002369	0.002419868
SLC41A1	0.576106465	0.000237344	0.002423011
LACTB	0.487423358	0.000238336	0.002431267
PTGFRN	-0.473418166	0.000238427	0.002431267
GNA12	0.429339703	0.000239006	0.002435773
S1PR2	1.214422237	0.000239446	0.002438858
TRMT10B	0.517770282	0.000240544	0.002448638
RP5-935K16.1	-0.631365439	0.000242543	0.00246757
TOE1	-0.475804544	0.00024365	0.002477415
CBR1	-0.588606925	0.000244875	0.002488442
MFSD3	-0.613843697	0.000245044	0.002488736
HIGD1A	-0.57121421	0.000245934	0.002496344
PRPF4	-0.427302602	0.000246237	0.002497992
HCK	0.409770667	0.000248333	0.002517816
ATIC	-0.430893844	0.000248798	0.002521084
SOCS2-AS1	0.644633527	0.000251168	0.002543645
C20orf24	-0.502245189	0.000251909	0.002549701
MIOX	1.272436879	0.0002523	0.0025522
CAMK2G	0.435392988	0.000253813	0.002565903
ZER1	0.434191904	0.00025402	0.002565903
RP11-497H16.2	0.790068463	0.000254088	0.002565903
GLRX5	-0.43485334	0.000254374	0.002567322
FLOT2	-0.475125445	0.000255031	0.00257249
SRPK1	-0.600613884	0.000255705	0.002577831
SAMD11	0.769459449	0.000258264	0.002602143
RMI1	-0.795228167	0.000258848	0.002606547
PPP1R10	0.605343661	0.000261108	0.002627812
ABTB2	-0.651428429	0.000261276	0.002628015
HRSP12	-0.635000734	0.0002635	0.002647892
C12orf5	-0.61352578	0.000263551	0.002647892
LMCD1	-0.89296685	0.000264894	0.002659882
TCTA	0.440823595	0.000265447	0.002663925
STAT3	0.468893574	0.000266371	0.002670928
STARD10	0.98135401	0.000266445	0.002670928
RP5-821D11.7	1.160571424	0.000267787	0.002682855
BMP8B	-0.570826281	0.000268419	0.002687676
CYTH4	0.484410946	0.000270209	0.002704072
HSP90AB1	-0.390663054	0.000271119	0.002711648
UBE2T	-0.517172535	0.000271369	0.00271262
CLDND1	0.549226693	0.000272226	0.002718054
PRPF19	-0.444986026	0.000272324	0.002718054
TPSB2	0.974725259	0.000272372	0.002718054
SLC1A4	0.440911802	0.000275387	0.002746178
WDR31	0.698645009	0.000275636	0.002746178

RP11-110A12.2	1.208948694	0.000275655	0.002746178
COX11	-0.550782014	0.000276092	0.002748986
TCOF1	-0.572539957	0.000276661	0.002753106
RSPO1	1.126170098	0.000277084	0.002755778
COQ3	-0.581430557	0.000282188	0.002801873
FGR	0.578058414	0.000282231	0.002801873
ZNF385A	0.557957579	0.000282273	0.002801873
TNFAIP8L1	0.511774804	0.000282351	0.002801873
SLC25A43	0.677986634	0.000283614	0.002811649
TRPM4	0.563510076	0.000283653	0.002811649
SNHG7	0.527691369	0.00028402	0.002813721
SMC2	-0.605213772	0.000284978	0.002821628
RNF144A	0.593537242	0.000285449	0.002824235
NLRC4	0.670919874	0.000285559	0.002824235
NCL	-0.420020398	0.00028652	0.002832163
MSC	1.25061186	0.0002879	0.00284421
ERGIC1	-0.437898301	0.00028822	0.002845791
LINC00174	0.562171953	0.000289197	0.002853848
CDK1	-0.587385512	0.000292478	0.002884627
RP11-717A5.2	1.173641693	0.000293446	0.002892561
SLC25A22	-0.528883614	0.00029399	0.002896319
RP11-400F19.18	1.243996431	0.000296098	0.00291546
LINC00926	0.497102398	0.000298479	0.002937278
ENDOV	0.498335497	0.000299277	0.002943499
TPD52	-0.703359174	0.000299746	0.00294433
MEI1	0.730680288	0.000299763	0.00294433
CIRH1A	-0.399931481	0.000299859	0.00294433
SYNE1	0.572233464	0.000300934	0.002953244
PET117	-0.74620907	0.000303112	0.002972977
GPX7	-0.789662657	0.000305142	0.002991236
CEBPG	0.409812169	0.000305881	0.002996819
GCSHP5	-0.675549451	0.000306895	0.003005102
EIF5A	-0.491075559	0.000308391	0.003018082
IFIT5	1.253977378	0.00030967	0.003028609
PANK1	0.67144096	0.000309808	0.003028609
KLF4	0.719159815	0.000310431	0.003033031
MRPL50	-0.483160995	0.00031145	0.003041305
GNL3	-0.408554687	0.000312092	0.0030459
ALG8	-0.389229985	0.000312433	0.003047554
CTC-205M6.5	0.902504687	0.000313148	0.003052849
NCF1C	0.614808184	0.000314528	0.003064619
LPCAT3	0.417482128	0.000314741	0.003065016
C9orf116	-0.827574356	0.000318959	0.003104383
G6PD	0.457400336	0.000321536	0.003127752
VMA21	-0.539726217	0.000323021	0.003140471
CD93	-1.077556453	0.000325656	0.003164359

PEX26	-0.424685783	0.000326139	0.003167315
DFNB31	1.174581414	0.000327475	0.003178551
TNFRSF21	-0.966979145	0.000328557	0.003187305
HILPDA	-0.42962025	0.000329757	0.003197202
LIN7B	0.60279549	0.000330135	0.003197709
C17orf89	-0.758684135	0.000330336	0.003197709
MDGA1	0.805303662	0.00033035	0.003197709
FANCE	0.451623369	0.000332396	0.003215763
FUCA2	-0.412855146	0.000335816	0.003247078
RP11-212P7.2	0.628428946	0.000337536	0.00326141
USP2	0.517736915	0.000337666	0.00326141
RP13-977J11.2	0.625312297	0.000338189	0.003264684
METTL8	-0.630039484	0.000339767	0.003278135
ACTB	-0.44584853	0.000343897	0.003316174
AAED1	0.558537703	0.000344622	0.003321358
CLIC3	1.031247559	0.000345239	0.003325498
NDUFAF6	-0.44193928	0.000346233	0.003333263
FAM161A	-0.95581622	0.000347115	0.003339946
FCGR2A	-0.498392682	0.000347412	0.003340203
GATC	-0.514078411	0.000347518	0.003340203
SEPN1	-0.435884828	0.000347894	0.003342003
KIAA0368	0.357537635	0.000348724	0.003346101
KDM4B	0.410988728	0.000348738	0.003346101
CYLD	0.471437846	0.000348891	0.003346101
LLGL2	0.475702481	0.000349075	0.003346101
GFM2	-0.495598668	0.000349918	0.003351643
SAMM50	-0.458610606	0.000350031	0.003351643
LSM6	-0.508401266	0.000350416	0.003352981
SLC41A2	1.204483121	0.000350548	0.003352981
ABHD17AP1	0.552554362	0.000351929	0.00336437
ST3GAL3	0.498294957	0.000353913	0.00338152
METTL21A	-0.526571779	0.000354708	0.003387291
KIAA0922	-0.398450023	0.00035671	0.003404571
ZNF540	-1.118823564	0.000357505	0.003410329
SPCS3	-0.547089671	0.000361814	0.003449581
COPG1	0.387885589	0.000362165	0.003451071
B3GNT9	0.789606083	0.000363848	0.003465247
RP11-89K11.1	0.939539379	0.000364918	0.003473574
FTH1P3	0.736901636	0.000365732	0.003479458
RBBP5	-0.496253066	0.000365974	0.003479892
ABCA3	0.811982477	0.000366488	0.003482913
XPO5	-0.388350453	0.000367528	0.003490929
PRIM2	-0.549898887	0.000368425	0.003497571
AC011515.2	1.095986943	0.000368903	0.003500241
PTGIR	0.702403649	0.000369585	0.003504838
CECR2	0.764553407	0.000371202	0.003516415

GFPT1	0.617128621	0.000371203	0.003516415
CES1P1	-0.825413032	0.000371752	0.003519743
AC074389.9	-0.965541991	0.000373102	0.003529345
EXOSC5	-0.534967225	0.000373237	0.003529345
TIAM2	0.739297002	0.000373363	0.003529345
RASA3	0.443227467	0.000373866	0.003532221
HLA-DQB1	-0.688366773	0.000374936	0.003539238
ZBTB4	0.439100516	0.000375008	0.003539238
IDH1	0.484801729	0.000376258	0.003549147
TG	1.020542066	0.000379302	0.003574475
CENPO	-0.449092603	0.000379346	0.003574475
FANCB	-0.843094926	0.00038029	0.003581472
MYO1E	0.539337714	0.000381032	0.003586556
CERK	-0.438543394	0.000381529	0.003589329
DGKG	-0.565014015	0.000383547	0.003605722
FARP2	-0.508848748	0.000383678	0.003605722
ZNF788	-1.144575587	0.000385609	0.00362195
TNK2-AS1	1.018796143	0.000385904	0.003622798
RFK	-0.758900115	0.000386374	0.003625294
TBX3	0.689680476	0.000387434	0.003632334
CHD4	0.346477025	0.000387722	0.003632334
RP11-473M20.9	0.465137562	0.000387738	0.003632334
FKBP5	0.464937051	0.000388023	0.003633087
AC135178.1	0.778142115	0.000389144	0.003641657
ADAM15	-0.48609294	0.00039048	0.003650064
MRPL19	-0.54286569	0.000390568	0.003650064
CTD-2267D19.6	-1.023679672	0.00039066	0.003650064
SAAL1	-0.4146925	0.000390932	0.003650687
WHAMM	0.424398988	0.000393405	0.003671848
CTU2	-0.496114434	0.000393934	0.00367485
PRSS27	0.906422602	0.000395013	0.003682985
ZNF576	-0.577106847	0.000398919	0.00371745
DDX19A	-0.402926411	0.000401493	0.003737171
SRC	0.492665056	0.000401667	0.003737171
NPC1L1	1.229279663	0.000401736	0.003737171
ARMCX3	0.573906219	0.000401878	0.003737171
SPNS2	0.48870028	0.000402872	0.003744455
DUSP5P1	0.618237378	0.000403143	0.003745008
INTS9	-0.402733662	0.000404392	0.003754642
PCM1	0.437875446	0.000405517	0.003763121
VTI1BP2	1.14608501	0.000407227	0.003777011
AGTRAP	-0.567067208	0.000409461	0.003793973
MARCH8	0.761283173	0.000409483	0.003793973
TVP23C	0.566265802	0.000414268	0.003836151
ZNF16	0.454474478	0.000414468	0.003836151
SERF1B	-0.655421361	0.000415792	0.003846403

DONSON	-0.470246246	0.000421322	0.003895529
LRRC2	1.21887473	0.000421548	0.003895585
NCAPD3	-0.491320537	0.000422109	0.003897383
MORN2	-0.576887341	0.000422182	0.003897383
NT5DC2	-0.54712656	0.000422722	0.003900343
C19orf54	0.490025258	0.000428344	0.00395016
NHP2	-0.581437604	0.00042907	0.003954803
CCDC144B	0.81650191	0.000429322	0.003955067
HSD17B12	0.772606831	0.000429545	0.003955067
NKPD1	1.166015016	0.000436787	0.004019665
ADI1	-0.385738247	0.000437363	0.004022875
SNX8	0.574799438	0.00043821	0.004028581
ISG20	0.969525926	0.000438518	0.004029324
PIK3CG	-0.751929861	0.000440849	0.004048641
CYCS	-0.663948011	0.000441211	0.004049876
RP11-222A11.1	-0.86919884	0.000441643	0.004051306
ARHGAP33	0.68802162	0.000441824	0.004051306
OIP5	-0.516708412	0.000443167	0.004061528
RPP40	-0.469758605	0.00044479	0.00407429
GPR68	1.037674392	0.000447288	0.004095064
COX16	-0.511297698	0.000447826	0.004097876
NTAN1	0.446875121	0.000448159	0.00409881
TRMT5	-0.472424076	0.000448796	0.004101954
RPP14	-0.491252849	0.000448966	0.004101954
OSCAR	0.677754694	0.000453883	0.004144749
HMGN3	-0.466808691	0.000454538	0.00414859
KIAA0513	0.807032269	0.000456427	0.004163695
SPRYD4	-0.520167171	0.000457832	0.004174367
HPRT1	-0.587525151	0.000459673	0.004188999
DLL1	0.88311065	0.000461417	0.004202735
ZBTB9	-0.451311569	0.000463042	0.004215368
ACRC	0.593986367	0.000463778	0.0042199
PRRT2	1.216183366	0.000467409	0.004250762
CLN3	0.472956102	0.000468809	0.004261306
FTL	0.583555306	0.000469772	0.004267875
EIF4G3	-0.507166457	0.0004716	0.004282292
FARSA	-0.500789702	0.000473254	0.00429511
ESCO2	-0.799185834	0.000473612	0.004296169
ATP2A3	-0.45734658	0.000474673	0.004303584
DNAAF3	-0.65029402	0.000475836	0.004311932
MGAT4B	0.396202807	0.000478034	0.004329633
PLEKHN1	0.779011769	0.000478344	0.004330234
ELAVL1	-0.444244138	0.000478919	0.004333225
C16orf70	0.421406458	0.000482619	0.004364479
FZD3	-0.64406378	0.000487133	0.004403061
PARP2	-0.413602897	0.000487818	0.004407007

ISOC1	-0.649031533	0.000488994	0.004415376
RCSD1	-0.416904234	0.000490307	0.004424982
CALCOCO1	0.53100911	0.000492699	0.004442429
TAF5	-0.548175486	0.000492741	0.004442429
EBI3	1.088200244	0.000493015	0.004442643
RPL7L1	-0.428852771	0.00049565	0.004464119
FAXDC2	0.810257066	0.000497802	0.004481227
CD1D	-0.923078677	0.00049833	0.004483708
NFX1	0.410098047	0.000498727	0.004485002
MAST2	0.476934239	0.000499738	0.004491817
LRRC34	-0.634446607	0.00050078	0.00449891
CLEC18C	1.044053197	0.000501598	0.004503976
CBLB	0.62047739	0.000504048	0.004523687
MPV17L2	0.562041001	0.000506324	0.00454181
VIM	0.401307106	0.000507429	0.004549429
C1orf112	-0.487246556	0.000508417	0.004554275
SEMA3G	-0.85846633	0.000508483	0.004554275
TDH	1.208312785	0.000509425	0.004558186
AC007390.5	-0.541968256	0.000509434	0.004558186
PAPD7	0.466338629	0.000510778	0.004567909
TMEM176A	1.002459038	0.00051214	0.004577782
PARP12	0.743876079	0.000516078	0.004610665
TP63	1.201602237	0.000516448	0.004611645
GRPEL1	-0.43904872	0.000521871	0.004657331
ZNF726	-0.661896127	0.000522089	0.004657331
PPIL3	0.481404111	0.000522972	0.004662857
POLE	-0.483967344	0.000523305	0.004663486
GDPD3	0.84235962	0.000524017	0.004667486
ISG20L2	-0.422703668	0.000526929	0.004691072
CYB5B	0.416055008	0.000527764	0.00469427
LINC00963	0.483554649	0.000527818	0.00469427
CHST7	0.978298914	0.000530121	0.004712394
PLIN4	0.87607088	0.000539307	0.004791646
SV2A	1.198998386	0.000541812	0.004811501
TMEM164	-0.400405092	0.000543502	0.004821926
SSX2IP	-0.716049467	0.000543554	0.004821926
TSGA10	0.691686191	0.000544073	0.004821926
MCCC2	-0.394532348	0.000544073	0.004821926
AC007092.1	-1.168224324	0.000544506	0.004823354
H2AFV	-0.392379906	0.000545868	0.004832999
GNPDA1	0.368850348	0.000546516	0.00483633
RP11-1277A3.1	0.865407866	0.000546861	0.004836971
TIMM23B	-0.470150638	0.000552454	0.004883998
ATXN2L	0.485225531	0.000555255	0.004906324
C15orf65	0.936222461	0.000557915	0.004925503
SETD8	0.393701141	0.000557981	0.004925503

ZC3H3	0.502096749	0.000558519	0.004927801
ATAD5	-0.700653564	0.000561369	0.00495048
NAA50	-0.704489514	0.000562312	0.004956332
DFNA5	0.797298847	0.000565552	0.004982418
SIVA1	-0.500764281	0.000566968	0.00499241
EVA1B	0.771058528	0.000567426	0.00499397
FLVCR1-AS1	0.657768174	0.000568455	0.005000543
TTYH3	0.506115774	0.000570468	0.005015762
RAPGEF1	0.486487891	0.000575966	0.005061601
FABP5P11	-0.81507971	0.000576384	0.005062764
NCAPH	-0.388167072	0.000577934	0.00507387
VAV3	-0.571521121	0.00058044	0.005093345
TOPBP1	-0.510688503	0.000581056	0.005096227
GSDMB	0.528109198	0.000583528	0.005114058
SPSB3	0.506547124	0.000583665	0.005114058
CNNM2	0.499489399	0.000591308	0.005178471
HOMEZ	0.423485698	0.000591743	0.005179718
SERINC2	0.503915543	0.000593333	0.005191078
UBASH3B	0.606580606	0.000593695	0.005191685
SCAMP5	-0.650389099	0.00059465	0.005197473
DHX15	-0.513650013	0.000597117	0.005216467
GPRIN1	-0.618269192	0.000597432	0.005216655
EFEMP2	0.68427639	0.000598498	0.005223392
HMGB1	-0.486357293	0.000599974	0.005233694
HLTF	-0.730102816	0.000600597	0.005236558
VRK1	-0.409949587	0.000605169	0.005273826
NFIX	-0.478872749	0.000607868	0.005294749
NCAPG2	-0.523362229	0.000608397	0.005296759
TMEM169	0.939645102	0.000610803	0.005315092
XXYLT1	-0.4422782	0.000612201	0.005324644
RCL1	-0.5042711	0.000612627	0.00532574
FOXK2	0.373568743	0.000614462	0.005339081
TSEN2	-0.461842279	0.000615847	0.005345085
NTPCR	-0.403336671	0.000615939	0.005345085
PAICSP4	-0.654996101	0.000616057	0.005345085
DPEP2	0.60432167	0.00061728	0.005353078
NAE1	-0.534269765	0.000620162	0.005374518
CYFIP2	-0.484363837	0.000620358	0.005374518
LSM3	-0.431069635	0.00062106	0.005377978
TMEM52B	0.922537513	0.000623163	0.00539118
COTL1	-0.463488642	0.000623193	0.00539118
FAM46C	-0.698363493	0.000623796	0.005392262
U2AF1L4	0.563272997	0.000623926	0.005392262
AC116366.6	1.156825298	0.000628277	0.005427225
IFRD1	0.536507664	0.000628828	0.005428369
RTN4RL1	0.937333598	0.000629021	0.005428369

RP13-270P17.3	0.559830656	0.000630161	0.005435557
VDR	-0.395161741	0.000630647	0.005437107
FBXO5	-0.609647694	0.000633424	0.005458396
CIDECP	0.551271126	0.000634184	0.005462295
RP5-1028K7.2	-1.071074737	0.000634517	0.005462512
TIMM10B	0.381470229	0.000635012	0.005464122
NAA16	-0.746109881	0.000636207	0.005471746
UBIAD1	-0.411091488	0.000637824	0.005483001
UBR7	-0.398892458	0.000640807	0.005505973
ANKRD39	-0.612084135	0.00064257	0.005518451
TNFAIP8	-0.713864662	0.000643267	0.005521761
GTPBP2	0.493094951	0.000644973	0.005533732
PA2G4	-0.476115356	0.000645697	0.005537269
CENPB	-0.512514477	0.000648035	0.005554633
CCDC107	0.643804259	0.000648397	0.005555051
PER2	-0.702097691	0.00065065	0.005569133
DMTN	1.118189412	0.000650669	0.005569133
RP3-402G11.26	0.894728649	0.000651332	0.005572122
ATHL1	0.591676226	0.000655753	0.005605163
HIST1H3D	0.92976748	0.000655826	0.005605163
CCDC163P	0.665810103	0.000658935	0.005629022
ADAT2	-0.419644149	0.000662645	0.005657989
SORT1	0.686703375	0.00066383	0.005665388
TNPO2	-0.396941747	0.000664923	0.005671981
DAGLA	0.625129279	0.000670284	0.005714971
SPCS1	-0.341659168	0.000670774	0.0057164
RP5-912I13.1	-0.857953235	0.000672319	0.005726813
BCL6	0.792237247	0.000673194	0.00573152
PYURF	-0.400953418	0.000676081	0.005753337
CST3	-0.607728508	0.000678191	0.005768528
APAF1	-0.5890067	0.00068153	0.005794148
LINC00662	0.470861516	0.000681954	0.005794979
EIF5AL1	-0.551809167	0.000682288	0.005795038
RP11-157D23.1	1.173481251	0.000684145	0.005808033
BCKDHB	-0.568044473	0.000688934	0.005845891
NOP14	-0.397925597	0.00069072	0.005858247
AC018766.4	0.715794831	0.000692524	0.005870735
CABYR	1.176620042	0.000694639	0.005885857
FAM229A	0.576879264	0.000695955	0.005894193
NFKBIL1	0.584435316	0.000696959	0.005899878
TNFSF9	0.48193826	0.000700024	0.005922998
AC017099.3	0.622573785	0.000710313	0.006005755
AC016710.1	1.083424195	0.000710482	0.006005755
RRN3P2	0.536996425	0.000713949	0.006032192
NOP9	-0.423378839	0.000715524	0.006042617
KDM1A	-0.422569373	0.000721543	0.006090552

ATP5J	-0.495650949	0.000722433	0.006095165
AMER1	-0.667975269	0.000723917	0.006104781
PYGO2	-0.392543006	0.000727415	0.006131361
SRGAP2	0.398837895	0.000728267	0.006135632
RP11-297N6.4	1.154033778	0.000729204	0.006140613
KLLN	-0.832970083	0.000730383	0.006147624
GPR64	1.144980478	0.000732449	0.006162083
SNAPC2	0.464068008	0.00073498	0.006180448
AKAP1	-0.363753403	0.000736224	0.006186344
MTMR10	0.615441543	0.000736378	0.006186344
ANKDD1A	0.773267427	0.000741253	0.006224352
DEPTOR	-0.583191776	0.000743262	0.006238264
SDHD	-0.582450918	0.00074425	0.00624361
FBXO22	-0.453808145	0.00074763	0.006268998
C19orf57	-0.759350374	0.000748432	0.006272755
LINC00908	1.029462283	0.000751593	0.006296274
OGFOD1	-0.403937559	0.000752206	0.00629844
ADCK3	-0.414006108	0.000754046	0.006310865
RP11-288H12.3	0.781594497	0.000755096	0.006313974
TMEM116	0.435550664	0.000755366	0.006313974
CHCHD4	-0.414340406	0.000755485	0.006313974
TRMT61B	-0.565322209	0.000759219	0.006342191
ADA	0.45706712	0.000760737	0.006351882
CLPTM1L	-0.368831388	0.000762706	0.006365329
FLNA	0.446073015	0.000764111	0.006372591
HIST1H4C	1.074746328	0.000764294	0.006372591
DOC2GP	0.84049608	0.00076614	0.006384979
TGIF1	0.431050756	0.000767151	0.006390407
C9orf40	-0.607879736	0.000768298	0.006396956
COG8	-0.421039339	0.00076898	0.006399469
ZNF446	0.570172107	0.000769531	0.006399469
DHX37	-0.382181368	0.00076997	0.006399469
CLSTN1	0.404840705	0.000770043	0.006399469
IARS2	-0.404988367	0.000771515	0.006408707
ERAP2	-0.691369574	0.000773101	0.006418872
IMPDH1	-0.462808266	0.000775143	0.006432819
B3GALTL	-0.666153118	0.000779463	0.006465644
KBTBD6	-0.684642817	0.000781173	0.006476798
CENPP	-0.43933084	0.000782459	0.006484436
NABP1	0.533970325	0.000783393	0.006489144
PSMB8	-0.515967097	0.000785175	0.006498131
EVI2A	0.634615422	0.000785211	0.006498131
TICAM1	0.535162109	0.000794184	0.006569325
PON2	-0.620280179	0.000797831	0.006596416
FIGNL1	-0.814261451	0.000801575	0.006624288
MEF2A	0.592249547	0.000803077	0.006633614

ARHGAP30	0.396688347	0.000805009	0.006646473
CYB5D1	-0.443264983	0.000806189	0.006653121
API5	-0.50062475	0.000809366	0.006675116
APOL6	0.581609896	0.000809607	0.006675116
EHD4	-0.472450454	0.000811234	0.00668543
PLEKHO2	0.437281375	0.000811623	0.006685532
SRSF2	-0.334928549	0.000814368	0.006705028
GCDH	-0.499385875	0.000815347	0.006709971
RIMKLA	-0.631657813	0.00081858	0.006733459
DTYMK	-0.520668142	0.000820093	0.006742779
MPLKIP	-0.390930628	0.000821962	0.006755009
PAM	-0.631168546	0.000824742	0.00677472
JMJD4	-0.578158594	0.000825641	0.006778968
FAM86A	-0.521577549	0.000832229	0.006829896
SLC2A5	-0.567125295	0.000833752	0.006839236
STIP1	-0.418341796	0.000836632	0.006859684
PRMT7	-0.577420304	0.000841282	0.006894627
ERI3	-0.516615241	0.000842589	0.006902154
ESYT3	-0.981825127	0.000845388	0.006921882
TBL3	-0.50450084	0.000851299	0.006967064
PARPBP	-0.679089837	0.000851696	0.006967104
SETDB2	0.482733784	0.000854779	0.006989101
SYK	-0.343519022	0.000858552	0.007016718
DDX55	-0.382173049	0.000859282	0.00701945
CRLS1	-0.434534952	0.000860341	0.007024862
AGPAT5	-0.620671439	0.000864602	0.007052521
SMPD1	0.487990199	0.000864628	0.007052521
MAPK3	0.490232363	0.00086527	0.007052521
RRN3P1	0.519574015	0.000865318	0.007052521
TPPP	1.061684989	0.00086662	0.007059892
POMP	-0.440114217	0.000871444	0.007095931
H3F3AP6	-0.378863286	0.000877596	0.007142749
TSN	-0.437362303	0.000881168	0.00716848
NIT2	-0.428305708	0.000881566	0.00716848
NHP2L1	-0.471763527	0.000883547	0.007181299
MIS18A	-0.469891051	0.000887595	0.007210894
MAP2K5	0.429914893	0.00088863	0.007213849
UTP20	-0.480011137	0.00088914	0.007213849
GAS2L3	0.819249507	0.000889673	0.007213849
ZBTB46	0.581689563	0.000889829	0.007213849
FASTKD5	-0.419963243	0.000889991	0.007213849
PTPRU	-0.810476059	0.000894496	0.007244269
LRIG1	-0.546720904	0.000894561	0.007244269
FCAMR	-0.727148692	0.000896956	0.007260355
AMY2B	0.486660117	0.000899737	0.007279543
CACNA1A	1.08084918	0.000903567	0.007307196

CISD3	-0.583582773	0.000904998	0.007315436
IVNS1ABP	-0.42300343	0.000911392	0.007363762
FGFR1	0.42069711	0.000912288	0.007367651
MRM1	-0.520501861	0.000915167	0.007385404
RN7SK	0.746039148	0.000915319	0.007385404
SRSF9	-0.391278747	0.000921779	0.007434151
RP11-632F7.1	0.920504824	0.000925104	0.00745757
CD53	-0.352305907	0.000926183	0.007462883
RBFA	-0.486686138	0.000932512	0.007510464
HDAC2	-0.410184082	0.000934508	0.007523129
LMNB2	-0.366260657	0.00094003	0.007564152
C14orf28	0.643434318	0.000943738	0.007590547
SRRM5	0.761224714	0.000944261	0.007591309
AKAP8L	0.49594575	0.00095015	0.007635195
MIEF1	-0.437683048	0.000951724	0.007644385
DNAJB9	0.810508868	0.000954839	0.007665301
LCMT2	-0.404434823	0.000955193	0.007665301
AAMP	-0.427649077	0.000962108	0.007717309
C11orf82	-0.644983704	0.000968016	0.007761187
CYB5A	-0.442926655	0.000972757	0.007795673
IRF4	-0.653643505	0.000978567	0.007838698
TOR1A	-0.348165772	0.000979219	0.007840382
COL5A1	-0.933425899	0.000980972	0.007850872
RHOA	0.322853003	0.0009865	0.007891556
MRAS	0.358805369	0.000990732	0.007921836
SLC15A2	-0.461589991	0.001003022	0.008016496
NRBP2	0.485541012	0.001005406	0.008031929
BCL2A1	1.125659278	0.001010681	0.008070434
MAOA	1.041318628	0.001011556	0.008073791
RP11-708J19.1	0.727776638	0.001015487	0.008101524
GABARAPL2	0.350060435	0.001016917	0.008109283
TESC	-0.552252018	0.001018818	0.008120791
IZUMO4	0.618581451	0.001020732	0.008132397
CHCHD7	-0.476818766	0.001021447	0.008134438
LAIR1	0.372783659	0.001022011	0.008135277
BLM	-0.399715105	0.001032081	0.008211242
TP73	-0.650802884	0.001032479	0.008211242
GHRL	0.572010768	0.001036233	0.0082374
TAF15	-0.407987109	0.001040384	0.008266696
C1orf109	-0.413721326	0.001044287	0.008293998
ARHGEF10L	0.530287378	0.001046788	0.008310136
TNFSF13B	-0.553131867	0.001050405	0.008335123
SLC39A4	-0.61430014	0.001051733	0.00834193
MAP3K3	0.410177298	0.001054118	0.008354935
TMEM261	-0.482065307	0.001054314	0.008354935
CLEC10A	-0.560314234	0.001057974	0.00837836

KDM3A	0.466137453	0.001058215	0.00837836
IFI44L	1.063397063	0.001059316	0.008383335
RNH1	0.434218358	0.00106283	0.008407399
PSMD2	-0.342315021	0.001068835	0.008451129
C17orf49	0.623493954	0.001071649	0.00846961
HMGB1P5	-0.339075843	0.001072833	0.008471716
MYO15B	0.526331081	0.001072871	0.008471716
ITGB3BP	-0.547886576	0.00107421	0.008478516
LILRB5	1.008789312	0.001074873	0.00847998
ZC3H6	0.635193484	0.001078577	0.008505419
PDE4DIP	-0.349052105	0.001079731	0.008507559
AKAP7	-0.679809601	0.001079807	0.008507559
GP9	-0.904825314	0.001080572	0.0085098
CTD-2545M3.8	0.643244952	0.001083032	0.008525395
MAML2	1.120485194	0.001085753	0.008543021
U2AF2	-0.367922619	0.001087329	0.008551631
FABP5P2	-1.057303766	0.001096295	0.008618323
LY75	-0.739161172	0.001098883	0.008634843
DIS3L	-0.428463418	0.00110012	0.008640618
FBXO39	1.119394031	0.001100592	0.008640618
H2AFY2	-0.445596345	0.001112559	0.008730712
CHRNBT1	0.437411386	0.001113337	0.008732953
H3F3A	-0.335032224	0.00111929	0.008775771
TUBB2A	1.072757318	0.001120899	0.008784505
CTB-133G6.1	-0.664994356	0.001125903	0.008819819
ANXA2R	0.808584695	0.001127713	0.008830106
OSGIN1	0.583270692	0.001129992	0.008843726
MFSD12	0.469869855	0.00113045	0.008843726
HDAC4	-0.523895417	0.001141849	0.008928965
ZNF536	-0.950789667	0.001143028	0.00893425
RP11-95P2.1	0.53542487	0.001144097	0.008938668
CCDC174	0.367326285	0.00114492	0.008941163
RP11-1D12.2	-0.986014681	0.001146699	0.008951111
UBE4B	0.407753499	0.001149889	0.008972065
CHORDC1	-0.595000362	0.001151998	0.008981247
CD33	-0.378516675	0.001152078	0.008981247
CCDC114	0.994642194	0.001154016	0.008992407
SIGMAR1	-0.39640283	0.001163775	0.009064467
MTMR14	0.420674128	0.001165802	0.009076276
IRF8	-0.336500689	0.001166497	0.009077703
PAN2	0.476735617	0.001167803	0.009083878
PRTN3	-0.553667541	0.001168561	0.009085794
WDR52	-0.49874651	0.001169152	0.009086405
MRPL16	-0.483654127	0.001170101	0.009086999
COL9A3	0.478238999	0.001170253	0.009086999
MFNG	-0.404809122	0.001172485	0.009100349

LOXL3	0.521486631	0.001174763	0.009114041
C18orf56	-0.675355253	0.001176873	0.009122942
TIMM10	-0.618814973	0.001176938	0.009122942
BEST1	0.560694819	0.001179165	0.009136212
CD300LF	0.467825533	0.001190581	0.00922064
JAZF1	1.069456832	0.001192094	0.009228325
NFYA	-0.495108036	0.00119298	0.009231159
TDP1	-0.372473805	0.001196481	0.00925421
MAP3K10	0.495130197	0.001206912	0.009330825
AQP1	0.998685917	0.001209058	0.009343346
TFRC	0.613223929	0.001209894	0.009345737
ISCA1	-0.451178047	0.001217862	0.009403187
FAM86B3P	0.599058268	0.001219904	0.009414853
CDK5R1	-0.685049575	0.001225816	0.009456372
CCL23	-0.576352261	0.001233614	0.009510707
SARDH	-0.523996052	0.001233932	0.009510707
PSMA6	-0.378748519	0.001237581	0.009534514
CREB3L2	0.574354845	0.001238095	0.009534514
IRF1	0.381412601	0.001241612	0.009557453
FABP6	1.1149798	0.001247009	0.009594834
RPS27L	-0.466284825	0.0012503	0.009615985
PCBP1-AS1	0.410380845	0.001252683	0.009630139
INSR	0.410147285	0.00125506	0.009644231
POLDIP2	-0.387945511	0.001261309	0.009688054
RUNX3	0.373831115	0.001269222	0.009744612
HMGN2	-0.364787444	0.001273127	0.009770369
ZC3HAV1L	-0.896549314	0.001278132	0.009802756
BAZ2A	0.473648629	0.001278578	0.009802756
SESN1	-0.48349713	0.001279005	0.009802756
SRP9	-0.71062957	0.001290741	0.009888433
RHOXF1	0.942560391	0.001291299	0.009888445
ASPHD1	-0.583693101	0.001293346	0.009895683
GS1-358P8.4	-0.684472152	0.00129336	0.009895683
HMGN2P15	-0.500250558	0.001298407	0.009930012
CIB2	0.702971317	0.001304322	0.009970954
CLDN15	0.45249168	0.00130574	0.009977496
RXRA	-0.348990685	0.001306438	0.009978533
POLR3K	-0.527036186	0.001307504	0.009982376
CLEC11A	-0.511840142	0.001311749	0.010010482
SLC5A3	-0.74033326	0.001312477	0.010011731
MN1	0.881065678	0.00131535	0.010029334
RP11-632K20.2	0.898837798	0.001316126	0.010030936
ACAT1	-0.406054401	0.001323157	0.010080195
RNF32	0.801630932	0.001330521	0.010131945
ATP6V1B2	0.364984964	0.001333791	0.010152487
ARHGAP17	0.403203892	0.001335396	0.01016035

DHFRL1	-0.575508906	0.00134011	0.010191845
RP11-849H4.2	-0.701153803	0.0013462	0.01023377
LDHAP7	-0.847266373	0.001347948	0.010242671
NSMCE2	0.403728257	0.001353499	0.010280451
GEM	1.081290268	0.001358008	0.010310283
GET4	0.60584305	0.001359664	0.010318446
SNAPC5	-0.455440528	0.00136809	0.010373027
RMRP	0.801428383	0.00136811	0.010373027
TIMM23	-0.468481324	0.00136861	0.010373027
ULBP2	0.926798951	0.001373697	0.010405147
B3GALNT1	-0.888978774	0.001374021	0.010405147
SLC43A1	-0.413981465	0.001378502	0.010434626
NLGN2	0.496645211	0.001379752	0.010439633
TRIM46	0.602034854	0.001382018	0.010452319
IGSF8	0.506009974	0.001388188	0.010494512
SNRPG	-0.462900588	0.001391899	0.010518086
SLC9B2	-0.454479112	0.001392685	0.010519548
PSIP1	-0.57730315	0.001394644	0.010529857
RP11-694I15.7	0.715311276	0.001409272	0.010635779
PPA1	-0.428381203	0.001410189	0.010638169
BDH1	-0.445891558	0.001414701	0.010667672
RP11-178C3.2	0.989760402	0.001417168	0.010681738
NUFIP1	-0.485813432	0.001426405	0.010746797
GLIPR2	-0.539857291	0.001428185	0.010755641
ZNF487	0.740519775	0.001429659	0.010762176
NDUFAF4	-0.419786778	0.001431083	0.01076832
SMYD5	-0.390206135	0.001434153	0.010786851
RDH13	-0.630114674	0.001441919	0.010840668
ANKRD24	0.626645263	0.001445218	0.010860863
IL10RB	0.385307003	0.001452414	0.010910323
TRIM66	0.433842431	0.001458082	0.010948262
WDSUB1	0.439378151	0.001459287	0.010952676
ZDHHC23	-0.626056822	0.001465247	0.010992762
DICER1-AS1	0.56972374	0.001473144	0.011047338
GTPBP4	-0.371731578	0.001481772	0.011107339
FAM76A	0.556471681	0.001489948	0.011163914
TRAP1	-0.422202629	0.001498148	0.011220615
SIDT2	-0.393203465	0.001510068	0.011305124
NUAK1	0.77801569	0.001513203	0.01132381
PDK3	-0.657019823	0.001514631	0.011329722
RP11-453F18_B.1	-0.86368398	0.001516978	0.011342496
AKAP17A	0.386295316	0.001520281	0.011362405
MRPS7	-0.476959805	0.001529607	0.011427293
PSMD12	-0.502526343	0.00153179	0.01143878
SCXB	0.89009286	0.001534443	0.011453775
RP11-125B21.2	0.76006791	0.001536638	0.011465334

LDHAP4	-0.648455292	0.001539798	0.011484087
ELFN1	1.03442877	0.001540709	0.011486053
NFE2L2	0.482896814	0.00154405	0.011506125
ACAD9	-0.386944311	0.001545665	0.011513319
ICAM4	0.560455452	0.001549721	0.011538692
WEE1	-0.59104175	0.001550607	0.011540448
TRIM69	0.494837343	0.001556585	0.011580078
ADIPOR2	0.331481124	0.001561098	0.011608786
BTD	-0.471011915	0.001561854	0.011609541
MAPK8IP3	0.499778428	0.00156462	0.011625229
NUDT16L1	-0.494644157	0.001580981	0.011738895
PSMA3	-0.435749384	0.001581241	0.011738895
FOXO3B	0.866447734	0.001582725	0.011745
MST1	0.532231635	0.001584448	0.011752865
ZNF775	0.49836203	0.001587343	0.011769424
CBX3	-0.451682117	0.00158843	0.011772562
SLC13A3	0.617833687	0.001590781	0.011785062
ZNF862	0.428366476	0.001591938	0.011788714
TRUB2	-0.489004127	0.001595256	0.011808352
INCENP	-0.469740073	0.001601722	0.011851272
VEGFB	0.557473862	0.001602443	0.011851663
CATSPERG	0.649084174	0.001603333	0.011853306
F2R	0.618652794	0.001604936	0.011857183
SNRPD3	-0.413725664	0.001605194	0.011857183
ACTN1	-0.35999112	0.001608062	0.011873427
GNA15	0.444592373	0.001610754	0.011886757
PBK	-0.506837691	0.001611207	0.011886757
RP11-497G19.1	-0.351618439	0.001612387	0.011890516
POLR3B	-0.452896466	0.001623782	0.011969573
SKA3	-0.374686059	0.001627326	0.011990719
PTX3	1.053897895	0.0016373	0.012056588
RP11-1055B8.4	0.832164685	0.001637625	0.012056588
TMCO3	0.466604231	0.001638957	0.012061394
ZNF34	0.48626152	0.001643197	0.012087582
MND1	-0.417308591	0.001646851	0.012109436
PSMA4	-0.395774175	0.001649642	0.012124935
EVI2B	0.439320663	0.001651458	0.012132298
ALYREF	-0.460112042	0.001652011	0.012132298
NBPF1	0.534256521	0.001655507	0.012152943
HCN2	0.788764893	0.001661024	0.012186837
FAM122B	-0.546804021	0.001661498	0.012186837
RBM38	-0.465340389	0.001663997	0.012194869
MANEAL	-0.422339023	0.001664138	0.012194869
RP11-283C24.1	1.08294439	0.001664655	0.012194869
PTPRN2	-0.564579977	0.001667269	0.012208979
ODF3L1	1.07498027	0.001669792	0.012222413

COX10-AS1	-0.528483983	0.00167325	0.012238083
ATP6AP1L	0.466527894	0.001673313	0.012238083
TIMM50	-0.442261544	0.001675021	0.012245528
C9orf89	0.408618824	0.001689238	0.01234438
NUDT3	-0.333654904	0.001691625	0.012356731
CRIPAK	0.431738066	0.001694342	0.012370117
RP11-349N19.2	-0.39501907	0.001694852	0.012370117
HMBS	-0.407410467	0.001695655	0.012370893
VAMP5	0.670187945	0.001697002	0.012375628
TUBBP1	-0.381259124	0.001699223	0.012386733
SLC25A11	-0.440528044	0.00170477	0.012422065
SERPINB10	-1.058414315	0.001707997	0.012440472
ANP32E	-0.595036431	0.001709364	0.01244532
PAPLN	0.46845839	0.00171155	0.012451246
FAM109A	0.464584499	0.001711581	0.012451246
SMU1	-0.365719099	0.001714053	0.012464119
BASP1	0.406015081	0.001715561	0.01246997
SLC22A5	-0.59175738	0.001720093	0.012497795
SIGLEC1	0.913865821	0.001721511	0.012502979
RP11-449P15.2	0.558040138	0.001725918	0.012529856
RP11-706O15.5	-0.512485825	0.001729015	0.012547204
THTPA	-0.565994891	0.001730745	0.012554622
ATP5A1	-0.329902261	0.001733158	0.012566989
FTSJ3	-0.461091269	0.001735644	0.012579877
SRP9P1	-0.596086065	0.001737979	0.012591653
PHLDA1	0.62869776	0.00174051	0.012604845
RP11-661A12.14	0.657243466	0.001747822	0.012652633
TRMT10C	-0.502318331	0.001755385	0.012702203
ADPRH	0.411795123	0.001760843	0.012736503
MAP2K3	-0.382618757	0.001763179	0.012748202
CTBP1	0.345754666	0.001766242	0.012765145
CBX5	-0.384831683	0.001769245	0.012781642
DDB1	-0.32982833	0.001774176	0.012811432
MED9	-0.431449129	0.001775351	0.012811432
COX19	0.428172156	0.001775535	0.012811432
SEPT6	0.371789831	0.001778772	0.012829575
MRPL12	-0.6364994	0.001780794	0.012838939
OSM	0.462010833	0.001789019	0.012893002
EHBP1L1	0.400486872	0.001801579	0.012978246
RP4-806M20.5	0.491484352	0.001802779	0.012981616
ATAD3B	-0.445291207	0.001805943	0.012999129
BANK1	-0.902624788	0.00180784	0.013007504
SSB	-0.408368281	0.001813617	0.013038975
ST3GAL4	-0.400340168	0.001814158	0.013038975
ACOX3	-0.427132535	0.001814419	0.013038975
KAT5	0.418641666	0.001818556	0.01306342

ZNF485	-0.533929698	0.001822042	0.013083164
SDC2	-0.501971543	0.001830878	0.013141289
DDX24	-0.355019074	0.001833729	0.013156429
SLC31A1	0.444589575	0.001838147	0.013182797
HLA-DRA	-0.465709469	0.001839517	0.013185463
OXNAD1	-0.417987273	0.001840005	0.013185463
NKD1	-0.674579824	0.001842463	0.013197746
PSMA8	-0.648410763	0.001868099	0.013375982
FAM49B	-0.447523622	0.001868932	0.013376549
FAM21FP	0.674369054	0.001872423	0.013396128
MPV17L	-0.567300011	0.001874541	0.013405875
CISD1	-0.4903302	0.001877968	0.013424972
RAN	-0.362327596	0.001879415	0.013429905
ZC3H7B	-0.351508769	0.001886521	0.01347526
SMIM10	-0.615542528	0.001888367	0.013483019
KCNIP2	0.640208261	0.001895047	0.013525272
BUB1B	-0.468551896	0.001896958	0.013527152
LTBP4	0.412502985	0.001897331	0.013527152
TMEM30A	-0.55232037	0.001897598	0.013527152
ALG1L13P	-0.592190921	0.001899431	0.013534779
TPCN2	0.449084727	0.001903082	0.013555353
KIAA1107	0.742716036	0.001904546	0.013560335
GPR84	0.975059141	0.001908198	0.013580888
HEG1	0.701113455	0.001917455	0.013641302
RRP9	-0.505836672	0.001918427	0.013642747
SIGLEC15	1.037716584	0.001919749	0.013646677
MICA	0.7327563	0.001922225	0.013658807
SIK1	-0.601125084	0.001926982	0.013687127
DANCR	-0.433150335	0.001930459	0.013706334
NUP93	-0.3436224	0.001933022	0.013719041
MRPL42	-0.465499021	0.001947141	0.013813722
NCBP1	-0.440734009	0.001953415	0.013852695
SMIM5	0.885290282	0.001961743	0.013906197
PRKCQ-AS1	-0.489250743	0.001965909	0.013930163
CGREF1	-0.437371612	0.001969697	0.013947811
NCOA6	0.399367324	0.001969972	0.013947811
HOXA-AS4	0.553484164	0.001974793	0.013976367
HMBOX1	0.341892877	0.001975819	0.01397805
PTGES3	-0.544248989	0.001986121	0.014045338
PEX19	-0.343732924	0.002005058	0.014172119
CD302	-0.664871513	0.002005647	0.014172119
PER1	0.509607935	0.002012887	0.014217616
TOMM22	-0.42412309	0.002019236	0.014256213
RP11-212I21.4	-1.072578417	0.002019958	0.014256213
PNP	-0.454655583	0.002023036	0.014268191
SLC37A1	0.378429058	0.002023264	0.014268191

SF3A3	-0.373535308	0.002025001	0.014274769
SLC35G1	-0.587626172	0.002033681	0.014330265
NDUFC1	-0.39999518	0.002038905	0.014361373
MAK16	-0.40934123	0.002045678	0.01440336
NTRK1	1.069886928	0.002050862	0.014434132
SLMO1	0.610670396	0.002051852	0.014435371
RP5-837I24.1	0.75605471	0.002052777	0.014436155
QRICH2	0.630672155	0.002054331	0.014441362
CASP2	-0.409637834	0.002058064	0.01446187
TPM3P9	-0.462293554	0.002059728	0.014467838
RP11-16E12.1	0.695851695	0.002071673	0.014545979
SSBP1	-0.395284566	0.002074388	0.0145536
FBXO43	-0.512177552	0.002074399	0.0145536
OVCH1	1.06526101	0.002087024	0.014631909
PMS2P3	0.50994644	0.00208721	0.014631909
RP5-943J3.2	-0.505980892	0.002093267	0.014668579
THNSL2	0.809626186	0.002098079	0.014691818
USMG5	-0.403756243	0.00209824	0.014691818
PHF10	-0.320841332	0.002109934	0.014767871
LOXL2	0.784036592	0.002117701	0.01481136
RP11-285F16.1	1.043601287	0.002117817	0.01481136
ZNHIT2	-0.575728205	0.002122323	0.014837026
CSTF1	-0.387210684	0.002129446	0.014880962
ATAD2	-0.566885149	0.002131674	0.014890669
PHB	-0.519665227	0.002133854	0.014900031
G3BP1	-0.543308242	0.002138708	0.014928051
IL2RG	0.459846608	0.002150404	0.015003785
AMY1C	-0.562914742	0.002154305	0.015025094
TFAP4	-0.47510048	0.002162951	0.015075418
DBR1	-0.459991326	0.00216322	0.015075418
B9D1	-0.597069794	0.002164515	0.015078517
PHACTR4	0.582802556	0.002168493	0.015100306
MALAT1	0.486122776	0.002183053	0.015195727
DYNLL1	-0.455295824	0.00218445	0.015199486
EFHD2	-0.424592807	0.002187295	0.015213315
PPAT	-0.582512764	0.002192124	0.015240929
BIN1	0.89156181	0.002203904	0.015312711
PTPRH	0.759349993	0.002204174	0.015312711
RP11-578F21.12	0.412190151	0.0022085	0.015336757
H2AFX	-0.484620248	0.002212021	0.015352778
LIG3	-0.345157467	0.002212537	0.015352778
SEPT3	-0.763624052	0.002217381	0.015380373
RNASEK	0.485431251	0.002218365	0.015381182
BIN2	0.357996133	0.00222139	0.015396139
SIX5	0.430518352	0.00223142	0.015459617
ZNF688	0.554433817	0.002234914	0.015476336

SIMC1	-0.392697069	0.002235577	0.015476336
HSPB11	-0.389261362	0.002239866	0.015499978
SCG5	0.559408363	0.002242348	0.015511105
CDRT15L2	0.916761063	0.002246526	0.015533608
MYL5	0.566846442	0.002247352	0.015533608
EIF2S1	-0.413375018	0.002249962	0.015545594
CHPF	0.414881531	0.002262437	0.015625698
UBTD1	0.569176441	0.002264288	0.0156324
LAMC1	-0.462394386	0.00226552	0.01563482
BLMH	0.334381609	0.00226887	0.015651362
KDM4C	0.462494406	0.002269681	0.015651362
TTPAL	-0.473872843	0.002273026	0.015668341
PIGN	-0.491020758	0.00227439	0.015670835
KANK2	-0.45567583	0.002275155	0.015670835
MRPL13	-0.438435742	0.002279399	0.015693975
SDCCAG3	-0.40221164	0.002294594	0.015792465
GUCY2F	1.05240448	0.002296847	0.015801846
RGL2	0.501398753	0.002298227	0.015805208
CCDC85B	-0.538930281	0.002306794	0.015857981
CXCR3	-0.496875155	0.002317185	0.015923246
HMOX2	-0.520033269	0.002319441	0.015932574
ANO10	0.441667812	0.002325198	0.015965939
FERMT3	0.408594835	0.002332305	0.016008543
C1R	0.866600436	0.002338697	0.016046208
NOP58	-0.364487124	0.002341129	0.016056691
ALOX12	0.45727866	0.002343507	0.016066785
YBX3	-0.349914651	0.002347513	0.016088034
SPAG7	0.455529409	0.002354611	0.016130449
TWISTNB	-0.55600689	0.002356921	0.016140041
DNAJC12	0.616391971	0.002367285	0.01620476
SPSB1	0.888026858	0.002368265	0.016205213
BMS1	-0.351928522	0.002370249	0.01621254
SELPLG	0.383471397	0.002374189	0.016233231
OAT	-0.487295517	0.002380131	0.016267587
AMD1	-0.581521293	0.002385229	0.016294696
NTHL1	-0.588744943	0.002385934	0.016294696
LETM1	-0.349375191	0.002392014	0.016329934
TSFM	-0.464285629	0.002394128	0.016338082
HINFP	0.36832922	0.002401248	0.016378533
SSBP2	0.458013278	0.002401988	0.016378533
C9orf69	-0.359571424	0.002402825	0.016378533
NAGK	0.419808686	0.002408884	0.016408876
RBM5	0.334448198	0.002409126	0.016408876
PLP2	0.422665721	0.00241306	0.016429365
ECHDC1	-0.50155266	0.002418134	0.016457594
NCKIPSD	-0.403030509	0.002422104	0.016474659

PXN	0.737131807	0.002422498	0.016474659
ME2	-0.458870708	0.00242822	0.01650107
MPHOSPH6	-0.408849565	0.002428242	0.01650107
RP1-90J20.11	0.689023676	0.002439099	0.016568504
MMP25	0.538731262	0.002442794	0.016587252
CTD-2054N24.2	0.896940335	0.00244743	0.016612378
RASL11A	-0.730388954	0.002451518	0.01663376
AF131215.9	0.433046062	0.002454146	0.016645226
EEF1E1	-0.65183865	0.002457681	0.016662831
NDUFAB1	-0.500132302	0.002460352	0.016674569
SDHDP6	-0.674078978	0.002464283	0.016694836
CTB-26E19.1	-0.632447382	0.002465337	0.016695603
PPM1F	-0.382755275	0.002470667	0.016725315
EIF2B3	-0.510759256	0.002473276	0.016734763
NUP43	-0.483530958	0.002473949	0.016734763
NABP2	-0.447180073	0.00247644	0.016745229
OGFRL1	-0.494561525	0.002479542	0.016759813
RP11-661A12.5	0.648623959	0.002486676	0.016801635
UBE3C	-0.410953772	0.002490859	0.016823492
CTNNAL1	-0.587441009	0.002493944	0.016834805
RNF145	0.390012785	0.002494432	0.016834805
TMEM33	-0.525650286	0.002497224	0.016847245
FBXO21	-0.831655215	0.002513108	0.016947956
ANAPC1	-0.375118917	0.002521355	0.01699711
WDR36	-0.577049572	0.002527092	0.017026506
YWHAG	-0.54508012	0.002527634	0.017026506
CUL7	0.436281851	0.002534957	0.017069354
POLR3H	-0.490064123	0.002538001	0.017083366
FBXO4	-0.378086143	0.002551386	0.017166946
ROM1	0.606872321	0.002552872	0.017168018
KCTD15	-0.354270732	0.00255348	0.017168018
PRKD2	-0.464376424	0.002563262	0.017227259
HDHD1	-0.401924124	0.002567803	0.017251239
TUB	-0.897802683	0.002571215	0.017267628
TBC1D10A	0.499960725	0.002579765	0.017318491
FAM219B	0.418975255	0.002582687	0.017331549
TRGC1	0.354468455	0.002587171	0.017355074
ZNF555	0.409211139	0.002594777	0.017399519
NDUFC2	-0.443489625	0.002598758	0.017419634
ATP1A1	-0.319933432	0.002602451	0.017437795
MGST3	0.397501463	0.002611981	0.01749505
OSBPL2	0.340325336	0.002614331	0.017504181
RP11-522I20.3	0.643791285	0.002639578	0.017666554
DENR	-0.452835081	0.002641704	0.017674117
LILRA2	-0.486963609	0.002643001	0.017676125
RP11-108K14.4	0.915675238	0.002650503	0.01771962

HSPD1P5	-0.621483568	0.002653973	0.017736137
TRIM11	0.373967349	0.002661932	0.017782625
PSMD1	-0.346894735	0.002678537	0.017886819
AEN	-0.434850089	0.002684657	0.017920945
TPI1	-0.446962039	0.002702713	0.018023424
UTP6	0.466145579	0.002702917	0.018023424
PARP9	0.46674854	0.002703056	0.018023424
UBE3D	-0.492033265	0.00270902	0.018056405
STXBP4	-0.684371606	0.002716264	0.018097883
C20orf201	-0.982551143	0.002717863	0.018101741
CAMKV	0.958176282	0.002719887	0.018108425
MARCH2	0.474296625	0.002725299	0.018137654
GOLGA3	0.336035391	0.002743882	0.018254482
CTA-384D8.34	0.786069742	0.002748248	0.018276674
CLASRP	0.459433026	0.002756418	0.018324016
CTC-338M12.4	0.601587331	0.002757432	0.018324016
MGAT5	-0.388418239	0.002766228	0.018375582
C17orf70	-0.442101726	0.002768404	0.018383154
UNC13A	0.948188999	0.002772839	0.018405719
SDHC	-0.311203866	0.002775571	0.018416959
RP11-673C5.1	-0.394975176	0.002798709	0.018563549
C3orf62	0.387504607	0.002814682	0.018662518
FHL3	0.468467027	0.002826231	0.018732095
WNT9A	1.037419982	0.002828009	0.018733481
RP11-87F15.2	1.0361827	0.002828552	0.018733481
CALM2	-0.352534324	0.002839346	0.018797955
RAD51C	-0.457495946	0.002840447	0.018798192
ERMN	0.808360939	0.002841501	0.018798192
CSTF3	-0.397001147	0.002845839	0.018817733
LRRC39	0.733429228	0.002846576	0.018817733
IMP4	-0.395768414	0.002849897	0.018831975
C7orf49	-0.344662848	0.002850853	0.018831975
NOP56	-0.47457735	0.002854053	0.018846098
SERPINB9	1.022966361	0.002864285	0.018906622
TSPYL1	-0.428868593	0.002865678	0.018908787
KIAA0020	-0.330982282	0.002867618	0.018914552
FLVCR2	0.414585421	0.002871684	0.018929592
FPR2	-1.036409218	0.002872032	0.018929592
PPRC1	-0.344260793	0.002876421	0.018951482
TMPPE	-0.723270604	0.002882092	0.018981799
TTC18	0.785946356	0.002888143	0.019014594
PPP6R2	0.414900875	0.002894082	0.019046621
CTB-119C2.1	0.938362878	0.002898318	0.019067427
ZNF121	-0.41204269	0.002900512	0.019074789
GAREML	-0.460688453	0.002908903	0.019122884
PRIM1	-0.39400642	0.002910938	0.019129173

DENND3	0.311033465	0.002918744	0.019166673
SEPT7P2	0.369657796	0.002918805	0.019166673
CC2D1B	0.362596174	0.002920843	0.019172959
BAI1	0.595249149	0.002923986	0.019186498
CDC23	-0.426997173	0.002935108	0.019252357
SPATA17	1.033629616	0.002940522	0.019280737
LINC00685	0.736145184	0.002947653	0.01932036
PVRL2	0.371242419	0.002956759	0.019372025
RIPK2	0.420055653	0.002957719	0.019372025
ARHGEF11	0.423062428	0.002961444	0.019389261
ESF1	-0.490174228	0.002963204	0.019393629
DERL3	0.462965121	0.002965231	0.019399739
TLN2	-0.671720968	0.002968849	0.01941625
SUPT3H	0.447778449	0.002982746	0.019493227
RP11-126L15.4	-0.967105653	0.002982816	0.019493227
SREK1IP1	-0.416335416	0.002985789	0.019505471
RUFY4	-0.890876423	0.002988946	0.019517316
GCN1L1	-0.325220543	0.002989802	0.019517316
SLC35F2	-0.591305529	0.002999723	0.019574876
POLE3	-0.449137406	0.003003438	0.019591915
RP11-171I2.5	-0.837405553	0.003008922	0.019620474
CLCN7	0.424596374	0.003015955	0.019659104
GNL3L	-0.509209787	0.003019926	0.019677764
EYA3	-0.358505723	0.003023811	0.019695843
MIR621	-0.863126711	0.003026726	0.019707599
WDR18	-0.432861909	0.003032712	0.019739326
DNAJA3	-0.341821531	0.003034271	0.019742236
HBP1	0.530615147	0.003038595	0.019763121
DCAKD	-0.34411605	0.00304078	0.019765476
MT1DP	0.987860877	0.003041185	0.019765476
REEP3	0.504102291	0.003043654	0.01977428
ALS2	0.460036496	0.003049056	0.019802126
PBX4	0.670719406	0.003063468	0.019888441
GTF3C6	-0.441917207	0.003069854	0.019922612
RAB6C	0.494051408	0.003092423	0.020059727
AL049840.1	0.867772811	0.003094165	0.020059727
MRPS34	-0.556891274	0.003094374	0.020059727
ERMAP	0.401246781	0.003105625	0.020125311
RABEP2	0.462719296	0.003111489	0.020155951
NDUFA4L2	0.568028785	0.003113438	0.020161213
WDR13	0.416749819	0.003116937	0.020176509
SNPH	0.794171638	0.003122027	0.02020209
HMGB3P32	0.975216187	0.003123578	0.020204757
MYC	-0.310232568	0.003127196	0.020220785
DLGAP1-AS3	-0.983155361	0.003132346	0.020246708
ZNF684	-0.617131126	0.003135557	0.020260085

GUF1	-0.42972416	0.003144675	0.020302745
HMGB1P10	-0.36950321	0.00314519	0.020302745
MPI	-0.397291388	0.003145592	0.020302745
NDNF	-1.004855566	0.003148157	0.02031191
C7orf73	-0.38868089	0.003166949	0.020421501
KCNQ3	0.466463641	0.003167852	0.020421501
MTFMT	-0.538488533	0.003168596	0.020421501
PCLO	0.56252362	0.003173714	0.02044288
C12orf29	-0.5449004	0.003174925	0.02044288
CRABP2	0.979398726	0.003175369	0.02044288
METTL16	-0.4270537	0.003184771	0.020495971
ARMC12	0.9826419	0.003204772	0.020617213
C1orf216	-0.403228058	0.003206842	0.020623053
C4orf46	-0.542498735	0.003210982	0.020636362
C3orf35	0.907619049	0.003211238	0.020636362
CCNG2	0.742331626	0.003218754	0.020677174
METAP1	-0.435130957	0.003238254	0.020794909
CSNK1G2	0.355105642	0.003239664	0.020796442
HTR7	0.488789287	0.003246409	0.020832198
VDAC3	-0.377234526	0.003254553	0.020876912
MRPL33	-0.422815977	0.003260971	0.020910461
LEAP2	0.645244561	0.00326214	0.020910461
MRPS6	-0.452481851	0.003265175	0.020922354
ARHGAP26	0.418214235	0.003268882	0.020938547
LYG1	0.717122466	0.003279093	0.020996374
ZNF530	-0.462351765	0.003280808	0.020999776
LIN37	0.457193696	0.003285546	0.021019317
SLCO4A1	-0.408221219	0.00328623	0.021019317
CPXM1	-0.642330806	0.00328815	0.021024017
DEPDC7	-0.595444773	0.00329048	0.021031336
LZTS3	0.72841425	0.003309379	0.021144514
LPCAT1	-0.365140826	0.003312473	0.021156662
CAB39L	0.440125503	0.003320904	0.021202881
GFM1	-0.481311926	0.003323039	0.021208131
FRMD8	-0.351619833	0.003324117	0.021208131
GPAA1	-0.38803679	0.003333504	0.021260375
SP2	0.372946653	0.003344414	0.021322294
ATAT1	-0.457066113	0.003351948	0.021361229
CCDC125	-0.464070504	0.003352929	0.021361229
ATPAF1	-0.385491844	0.003354629	0.021364385
PPP3CC	0.39898107	0.003358911	0.021383985
IFRD2	-0.497428596	0.003366598	0.021425235
TRIM27	-0.345964241	0.003367958	0.021426199
POLR2K	-0.382219637	0.003373312	0.021452572
PTPLAD2	-0.489654695	0.003380046	0.021487698
EIF1AXP1	-0.62487411	0.003410019	0.021670475

CCDC167	-0.601971451	0.00342291	0.021744606
FUT7	-0.494576715	0.003434156	0.021808242
NDST1	0.440584118	0.003435696	0.021810216
BCKDK	-0.36686504	0.003449933	0.021892761
PLAUR	-0.436669526	0.003453657	0.021908558
TMEM201	-0.377382486	0.003460511	0.021938407
ZMIZ2	0.447826485	0.003460835	0.021938407
LTV1	-0.348436854	0.003463393	0.02194678
EIF3J-AS1	0.431952155	0.003468325	0.021970187
KHK	-0.478580666	0.003470901	0.021978654
POP5	-0.442393263	0.003485142	0.022057945
L3MBTL2	-0.384515327	0.003485909	0.022057945
RP11-348N5.7	0.878932231	0.003495931	0.022113478
APBA2	-0.597459114	0.003503574	0.022153922
BUB3	-0.328001624	0.003507737	0.022165977
RP11-54O7.16	-0.794967203	0.003507979	0.022165977
S100B	-0.825799069	0.003513468	0.022192757
CDK2AP2	0.46109978	0.003516245	0.022202395
ACOT7	-0.367056921	0.003522024	0.022230973
CTD-2184D3.5	0.420585426	0.003523831	0.022234474
ZRANB2	-0.578458998	0.003542853	0.022346549
ITGA3	0.65874903	0.003545283	0.022353926
RALA	0.373710369	0.003551279	0.022383784
UQCR10	-0.505716114	0.003556364	0.022407872
HSF4	0.576450314	0.003563322	0.022443744
NOP2	-0.443343482	0.003577085	0.022522435
RP11-53B2.2	-0.802277678	0.003579203	0.022527776
RP11-363E7.4	-0.745175642	0.003587493	0.022571948
PPM1L	0.50241934	0.003595718	0.022615679
DGAT2	-0.465608441	0.003601952	0.02264686
LPIN2	0.489909233	0.003611152	0.022689667
LILRB1	-0.452988949	0.003611318	0.022689667
NAA20	-0.32478383	0.003612813	0.022691025
ANP32A	-0.343088188	0.003618631	0.022717987
AC006132.1	0.496820509	0.003620342	0.022717987
CHKB	0.614350521	0.003621274	0.022717987
SNX20	0.362894801	0.003622228	0.022717987
METTL12	-0.622899508	0.003628739	0.022750786
ZNF124	-0.55117198	0.003642557	0.022829351
RRP1	-0.515934287	0.003644147	0.022831252
SEMA3B	0.780656504	0.003650601	0.022863615
ZNF239	-0.759260625	0.003658721	0.022906244
ZNF551	-0.551569508	0.00365999	0.022906244
RP11-37B2.1	0.641839053	0.003668756	0.022953008
CSPG4P13	0.748786745	0.003677359	0.022998727
LINC00342	0.408488933	0.003683745	0.023030544

TMEM66	0.380988323	0.003685795	0.023035242
CRTC3	0.434875137	0.003687969	0.023038826
FTCDNL1	-0.491672278	0.003688965	0.023038826
ACSL5	-0.341360746	0.003695006	0.023068437
ZNF211	0.385755087	0.003697392	0.023069413
EMB	-0.519574686	0.003697763	0.023069413
ELAC2	-0.384324037	0.003700983	0.023081383
ZNF114	-0.677328493	0.003724891	0.023218155
hsa-mir-8072	0.586666323	0.003726655	0.023218155
ARMC6	-0.354737191	0.003726839	0.023218155
MBD6	0.488430265	0.003729191	0.02322226
ABCE1	-0.623353781	0.003730116	0.02322226
CHID1	-0.476617058	0.003731897	0.023225204
CLN5	-0.450418767	0.003734637	0.023234102
TEAD4	-1.002612027	0.003747531	0.023296699
GPR132	0.345950433	0.003748631	0.023296699
N4BP3	1.0074664	0.003748637	0.023296699
TTC9C	0.328680804	0.003750807	0.023302019
REM2	1.006832073	0.003755678	0.023321976
SPICE1	-0.501904623	0.003757101	0.023321976
STK17B	-0.58687672	0.003757963	0.023321976
RP11-809N8.4	0.688154854	0.003765047	0.023357772
TTC26	-0.480067055	0.003766671	0.023359679
EXD3	0.45321847	0.003776957	0.023412732
DLEU2	-0.660485502	0.003777865	0.023412732
CHCHD1	-0.439004684	0.003779453	0.023414397
WDR61	-0.340952606	0.0037843	0.023436243
EMC1	-0.341969888	0.003796596	0.023504187
RNU4-32P	1.001080976	0.003810739	0.023583514
SNHG5	0.439280078	0.003825639	0.023667476
STS	-0.488525683	0.003839144	0.023742741
DNMBP	0.393640092	0.00384252	0.023755341
PDIA6	-0.332352613	0.003852751	0.023804443
CCDC135	0.774307328	0.003853145	0.023804443
EID1	-0.718754546	0.003863996	0.023855133
WDR43	-0.41804695	0.00386404	0.023855133
THOP1	-0.44985078	0.003888116	0.023993642
HAUS5	-0.412577949	0.00388918	0.023993642
C3orf14	-0.387942326	0.003898787	0.024044553
RSAD2	0.506211645	0.003901248	0.024051373
CIAPIN1	-0.376489181	0.003907638	0.024082397
RFX8	0.359242356	0.003910185	0.024089729
RTN4	0.43688721	0.003919637	0.02413697
GCSH	-0.539269267	0.003922029	0.02413697
SLTRK4	-0.789948173	0.003922751	0.02413697
SCCPDH	-0.329037577	0.003923295	0.02413697

RRP12	-0.403136985	0.003924994	0.024139052
DEGS1	-0.361146893	0.003930924	0.024167144
GJA3	0.971473037	0.003933003	0.024171555
ACTR3B	-0.456781922	0.003956463	0.024307315
RP11-223I10.1	0.988699928	0.003974319	0.024408564
ZNF596	0.574022056	0.003985713	0.024457774
NANOS1	-0.445433432	0.003985901	0.024457774
CCNJ	-0.552976106	0.003986467	0.024457774
GNAI1	-0.929716096	0.003991299	0.024478957
GPATCH4	-0.510560505	0.004016784	0.024626742
RP11-578F21.2	0.964928813	0.004022105	0.024650852
RPA2	-0.336756763	0.004032843	0.024699976
LRP11	-0.596354162	0.004032905	0.024699976
PPHLN1	-0.322437984	0.004072754	0.024935432
RP11-632K20.6	0.719152534	0.004079531	0.024968303
CLEC12B	-0.993425247	0.004081511	0.024971813
STX4	0.449154307	0.004099827	0.025075228
DGKD	-0.334563906	0.004106368	0.025106575
CBFA2T2	0.36587568	0.004109484	0.025116973
PKD1	0.468335958	0.004114069	0.025136338
MRPS12	-0.500771066	0.004118162	0.025152682
RP11-214O1.2	-0.726127984	0.004127847	0.025203164
RP11-43F13.3	-0.523794637	0.004132119	0.025220565
CCT8	0.283110121	0.004138863	0.025253044
HSP90AB2P	-0.661931007	0.004148109	0.025300754
CCDC84	0.394079541	0.004150998	0.025309678
GSPT1	-0.348220319	0.004159809	0.025354684
SH3BP5-AS1	0.511373073	0.004186726	0.025509985
OTUB2	-0.648958146	0.004209029	0.025637073
HSBP1	-0.359082381	0.00421457	0.025654627
ECHS1	-0.455231257	0.004215224	0.025654627
SLAMF8	-0.828020153	0.004216248	0.025654627
PDIA4	-0.314554273	0.004225114	0.025699761
SPAG9	0.486921556	0.004229953	0.025720376
RNPEP	-0.316918055	0.004232679	0.025728135
L2HGDH	-0.67099427	0.004238737	0.025747299
ZNF763	0.454402094	0.004239699	0.025747299
CCDC153	0.661702553	0.004240185	0.025747299
RP11-849F2.9	-0.797267828	0.004242632	0.025753342
EXTL2	-0.563779185	0.004256407	0.025828122
ETFA	-0.311449804	0.004258489	0.025831924
ADAMDEC1	0.989868324	0.004267775	0.025879404
RNASET2	-0.489740804	0.004272932	0.025901821
YARS2	-0.353496816	0.004284421	0.025949145
AC147651.4	0.507516141	0.004284906	0.025949145
C19orf35	0.474969588	0.004285126	0.025949145

ORC6	-0.357399931	0.00429724	0.026013623
SASH3	-0.378004546	0.004308735	0.026074315
KLC1	0.369844978	0.004310354	0.026075215
LLPH	-0.432605882	0.004312588	0.026079802
YARS	0.334058563	0.004314052	0.026079802
SGCB	-0.783263757	0.004323931	0.02613062
SNTB1	0.437700472	0.004326479	0.026137117
VARS	-0.360687303	0.004331582	0.026155696
C11orf21	0.36648931	0.004332502	0.026155696
KHSRP	-0.333290712	0.004334566	0.026159255
EXOSC7	-0.480793571	0.004338087	0.026171598
LY6E	-0.43376632	0.004348657	0.026226454
ZNF436	0.517281307	0.004351024	0.026231811
AP3M2	-0.365627341	0.004356493	0.026255861
THADA	-0.319002945	0.004359611	0.026265732
DOPEY1	0.467776672	0.004366005	0.026295323
ALKBH2	-0.5423665	0.004373169	0.026329532
RP11-295D4.1	-0.488326801	0.004375988	0.026337567
SRSF7	-0.357613052	0.004381691	0.026354068
PRDX2	-0.453651868	0.0043817	0.026354068
ZNF296	0.454733865	0.004389366	0.026388774
MYO1C	0.378051362	0.00439088	0.026388774
ZFHX3	0.909104739	0.004393292	0.026388774
COA6	-0.381445328	0.004393419	0.026388774
ST20	0.474032785	0.004412188	0.026483743
AP000769.1	0.97760187	0.004412216	0.026483743
AMDHD2	0.45424688	0.004414097	0.026486076
NDUFA8	-0.42735717	0.00445829	0.026740055
OBFC1	0.36291329	0.004459439	0.026740055
ATP6V1C2	0.5347487	0.004466057	0.026766695
ABL2	0.435592418	0.004466899	0.026766695
CCNA2	-0.515276147	0.004471218	0.026776165
PDAP1	-0.377456294	0.004471527	0.026776165
TMEM159	-0.406765882	0.004474607	0.026776165
TBC1D3G	0.59207077	0.00447482	0.026776165
EBPL	-0.430448116	0.004476025	0.026776165
NCBP2	-0.354724814	0.004486364	0.026828971
MBOAT1	-0.447923694	0.004497379	0.026884225
ITGB2	-0.347792296	0.004498634	0.026884225
EXOC6	-0.537506078	0.004515678	0.026976996
FOSL2	-0.398243975	0.0045187	0.02698596
PAXIP1	-0.387096185	0.004526322	0.027022384
LRRCC1	-0.525735876	0.00453144	0.02704384
NXT2	-0.660963689	0.00453464	0.027053838
FUS	-0.288347618	0.00453984	0.027065809
NRF1	0.331226658	0.00453996	0.027065809

GFOD2	-0.365442562	0.004541223	0.027065809
POLR3A	-0.34904244	0.004563355	0.027188585
OTOA	0.968528419	0.00457264	0.027234762
RTN4R	0.511492594	0.00457812	0.027258248
MSS51	0.445988126	0.004582098	0.027272781
YWHAQ	-0.448358607	0.004588126	0.027299505
BYSL	-0.413059987	0.004598094	0.027349641
LINC00051	0.777292276	0.004613807	0.027433905
C21orf59	-0.40832572	0.004630665	0.027524924
GDPD4	0.85720459	0.004633208	0.027530811
FUT8	-0.49029053	0.004654983	0.02765094
RASSF5	-0.319454229	0.004663626	0.027693009
FTLP2	0.528824401	0.004667444	0.027706409
FASTKD2	-0.414100571	0.004693582	0.027852249
TACC3	-0.38824207	0.004696507	0.027852922
SENP3	-0.36005718	0.004696835	0.027852922
SVIL	-0.52759773	0.004703609	0.027883774
RRNAD1	0.405802021	0.004708404	0.027902879
APBA3	0.398462386	0.004711053	0.027909254
ZNF37A	-0.378928367	0.004718266	0.027942656
WASF2	0.372933017	0.004722143	0.027950243
ACTL8	-0.889797353	0.004722698	0.027950243
PPP1R37	0.389997228	0.004731479	0.027992875
AC007551.3	0.726234474	0.004740398	0.028036295
DNAAF2	-0.479069389	0.004743098	0.028039148
NIPSNAP3B	0.515722972	0.004744041	0.028039148
RP11-22N19.2	0.938994702	0.004757947	0.028104548
DPF1	0.959936218	0.004758274	0.028104548
RP4-756G23.5	0.924480275	0.004769206	0.028159741
TMEM53	0.467019717	0.004772477	0.028169681
UACA	-0.424351473	0.004775482	0.028178045
MUC20	0.655277006	0.004797992	0.028301451
PRKX	-0.338784895	0.004820062	0.028422185
CCNF	-0.352125667	0.004823486	0.028432929
OMG	0.875402071	0.004828569	0.028453438
BAK1	-0.325160619	0.004849375	0.028566556
SERPINB2	-0.97742153	0.004858521	0.02861093
FAM201A	-0.624507001	0.004865455	0.028635114
RNU7-40P	0.976823674	0.004865855	0.028635114
CENPQ	-0.663116851	0.004869953	0.028649729
BRCC3	-0.41775359	0.00488436	0.02872496
IFT74	0.447555893	0.004886044	0.028725341
MYOM1	0.583515633	0.004890671	0.028743022
CCT7	-0.369388256	0.004895672	0.028762882
ZNF771	-0.587008794	0.004901853	0.028789666
AP1M1	-0.321180268	0.004907748	0.028814747

RP11-723O4.9	0.707229066	0.004910797	0.028823113
RP11-15B24.5	-0.977476076	0.004917822	0.028854802
RASSF4	-0.37954334	0.00492518	0.028888417
RPL36A	-0.411108462	0.004940983	0.028971534
NFKBIZ	0.787338536	0.004947965	0.029002891
BATF3	-0.825620108	0.004952045	0.029017215
CCND3	-0.372738453	0.004973728	0.029124577
TMEM176B	0.534413641	0.004974937	0.029124577
ST3GAL5	0.516582877	0.004975291	0.029124577
MFAP1	-0.334006068	0.004989598	0.029198696
NUP205	-0.365505439	0.004994577	0.029218194
ABCD1	-0.384848162	0.005027854	0.029399878
PGAP2	-0.383834482	0.005028948	0.029399878
SCARB1	0.318404811	0.005071722	0.029640172
RP11-274B21.8	0.904383064	0.005073767	0.029642362
IGFALS	0.96000721	0.005096709	0.029766595
APOBEC3D	-0.695146784	0.005112419	0.029848521
NUP50	-0.320758647	0.005125212	0.029909127
THSD7A	-0.523648659	0.005126171	0.029909127
PRMT5	-0.316263634	0.005131061	0.029927818
RP11-2B6.2	-0.727658018	0.005138027	0.029958598
LAMA3	0.884170234	0.005186337	0.030230347
DPY30	-0.403566465	0.005197375	0.030284739
SLC25A32	-0.571390774	0.005200595	0.030293552
CTA-228A9.3	0.915550696	0.005215228	0.030368816
RP11-16N11.2	0.837790693	0.005221339	0.030394427
RP11-171I2.4	-0.734924832	0.005232763	0.03045094
SLC9A8	0.360707608	0.005234733	0.030452414
SAMD14	0.954726634	0.005241817	0.030479664
XKR6	0.458358803	0.005242853	0.030479664
TP53INP1	0.503151681	0.005244637	0.03048005
RP3-522J7.6	0.919551513	0.005249811	0.030495216
EIF2AK3	0.567675117	0.005250684	0.030495216
ZMAT3	-0.512507099	0.00525953	0.030530747
WDR19	0.364888342	0.005260243	0.030530747
KIAA1644	0.969492759	0.00527014	0.030578189
AURKA	-0.285098647	0.005274216	0.030591831
NLRP6	0.53554968	0.005286266	0.030651706
NMB	-0.475425738	0.005299761	0.030719913
INTS3	0.332249103	0.005304933	0.030732722
NUSAP1	-0.406903571	0.005305435	0.030732722
MIR17HG	-0.595111732	0.005309754	0.030740252
SAPCD2	-0.402659741	0.005310458	0.030740252
GOLGA1	0.371612747	0.005311932	0.030740252
EIF2B1	-0.33554698	0.00532287	0.030793506
PTPN6	0.356111165	0.00533371	0.030842707

RP11-16P6.1	-0.698727524	0.005334851	0.030842707
TTLL3	0.445711981	0.005337248	0.030846514
PDCD2	-0.313332441	0.005356185	0.030945876
CLEC18B	0.800365524	0.005370417	0.031018006
AP3D1	0.293288184	0.005373046	0.031018554
DNM1P46	0.814444279	0.005374009	0.031018554
RANGAP1	-0.408466203	0.005380345	0.031045026
WASH2P	0.485745629	0.005382138	0.031045277
GON4L	0.301501596	0.005386372	0.031059604
TPM3	-0.295226399	0.005425357	0.031274237
FAM43A	-0.395998022	0.005447455	0.031391426
DDX21	-0.552360017	0.005450257	0.031397372
KPNA2	-0.286267796	0.005456964	0.031424366
RP13-516M14.1	0.541906009	0.005458485	0.031424366
DDOST	-0.325998251	0.005484278	0.031562615
TUFT1	0.542415549	0.00548825	0.031575236
LRRC31	-0.957337703	0.005497366	0.031607681
UCHL5	-0.539049082	0.005497453	0.031607681
VMP1	0.304985833	0.005502116	0.031615119
KIF15	-0.359437363	0.00550231	0.031615119
UTP23	-0.460340205	0.005508029	0.031637736
BNIP1	0.425887986	0.005520543	0.031694471
C22orf34	-0.664441967	0.005523728	0.031694471
C5AR1	0.915119776	0.005524828	0.031694471
NRD1	0.278148403	0.005525052	0.031694471
FAS	-0.630548956	0.005535302	0.031743007
ATXN10	-0.317336015	0.005538758	0.031752563
ALDH1A3	-0.466930061	0.005545344	0.03178005
APITD1	-0.507353379	0.005559382	0.031845179
RP4-635E18.8	0.43755018	0.005560298	0.031845179
NCLN	-0.417142797	0.005588503	0.031996386
RP4-647C14.2	0.687137346	0.005607274	0.032093503
RNU1-3	0.961982185	0.005609416	0.032095408
IL11	-0.951347913	0.005632508	0.032217149
SDHAP1	0.370400465	0.005638781	0.032242635
NAA15	-0.51884394	0.005645847	0.032272636
PDE12	-0.574933424	0.005651247	0.032293099
MINPP1	-0.560664752	0.005655043	0.032304386
NCF1	0.421712053	0.005678593	0.032428477
CEBPZ	-0.355016462	0.005692742	0.032498814
SLC4A11	-0.427264273	0.005709798	0.032585703
MOCS2	-0.376750655	0.005712847	0.032592619
GPI	-0.365430171	0.00572972	0.032677179
CTC-546K23.1	-0.699966843	0.005732616	0.032677179
SMIM4	-0.465434782	0.005733194	0.032677179
REXO2	-0.408893267	0.005765882	0.032852938

RP11-195F19.9	0.529804839	0.005770929	0.032869562
C19orf81	0.550408598	0.005773001	0.032869562
SEC14L1	0.412048394	0.00577446	0.032869562
MBNL3	-0.617317354	0.005777464	0.032869562
TRIM21	-0.351129022	0.005778063	0.032869562
CCDC101	0.45648027	0.005786979	0.032909731
NKRF	-0.450002791	0.005804464	0.032998593
FAM129B	0.413356261	0.00580727	0.03300397
ZNF419	0.344007841	0.00581124	0.033015959
TARDBP	-0.318410431	0.005823553	0.033075321
FNIP1	0.600366451	0.00585483	0.033242321
TIMM8B	-0.476825539	0.00586019	0.033259675
CTB-12A17.3	0.950420298	0.005861636	0.033259675
CPNE3	0.547934565	0.005865688	0.03327203
IKZF2	0.660847007	0.005878015	0.033331296
SEH1L	-0.40611615	0.005890147	0.033389419
EVI5L	0.395822544	0.005894367	0.033402409
RP11-42O15.3	0.948864521	0.005896204	0.033402409
CAMSAP2	-0.829672587	0.005899588	0.033410915
UVRAG	0.329767014	0.005911103	0.033465444
TMEM140	0.949509383	0.005920592	0.033508475
TBX15	0.942184011	0.005928064	0.03353279
SIDT1	-0.760273485	0.005928668	0.03353279
CRTAM	0.953810221	0.005938448	0.033577398
CCDC154	0.647579686	0.005954993	0.033660224
CMC1	-0.326557291	0.005958371	0.033668593
THAP7	-0.468761786	0.005992217	0.033841249
ARHGEF39	-0.357510431	0.005992741	0.033841249
TMEM255B	0.755524274	0.00599563	0.033846791
SLC5A6	-0.317319054	0.006002353	0.033873968
LAPTM5	-0.30168462	0.006015919	0.033939728
PHF6	-0.698852388	0.006020798	0.033956456
GPR3	-0.893484733	0.006028873	0.033991196
OSBP	0.352942497	0.006041671	0.03405253
RRP1B	-0.410095908	0.006069346	0.03419765
SRGAP2C	0.619165911	0.006094245	0.034316806
ACOT13	-0.420688966	0.006094362	0.034316806
RP11-288H12.4	0.527426789	0.006109449	0.034390848
CLP1	-0.328508921	0.006114094	0.034406081
SPATA33	-0.48796944	0.006119407	0.034425061
LINC00341	0.332396463	0.006173066	0.034715914
C2CD2	-0.379218173	0.006192944	0.034812509
OR52K3P	-0.95116478	0.006194166	0.034812509
N6AMT2	-0.459781444	0.006198253	0.034819302
YWHAB	-0.324868933	0.0061993	0.034819302
ZNF273	-0.65163471	0.00623115	0.034987119

AL161626.1	0.948294667	0.006241355	0.035029913
FAM136A	-0.378229248	0.00624272	0.035029913
KCNE3	0.367388142	0.006252687	0.035074749
HSD17B14	0.948985	0.006257229	0.035089131
ARHGEF6	-0.392258956	0.006264429	0.035118408
ZNF486	-0.55316359	0.006272611	0.035148668
CANT1	-0.29626331	0.006273789	0.035148668
KAT2A	-0.367599662	0.006276316	0.035151729
AGPAT2	0.409788719	0.006279594	0.035151851
WNT5B	0.852595524	0.0062803	0.035151851
MLLT3	0.669016355	0.006293036	0.035205312
ACAD11	0.778212495	0.00629382	0.035205312
IMPAD1	-0.435152374	0.006296197	0.035207509
LPAR2	0.450984483	0.006303664	0.035234743
APBA1	-0.612291974	0.006305039	0.035234743
NMT2	0.606938303	0.006377028	0.035625819
INTS8	-0.344382268	0.006384658	0.03565722
MRPS17	-0.502385013	0.006393303	0.035694263
DDX58	0.482976916	0.006411596	0.035785134
PLEC	0.436517893	0.006432577	0.035884476
ADARB1	0.30036192	0.00643344	0.035884476
RIN2	0.893891063	0.00643817	0.035899577
ORA13	0.41146603	0.006456248	0.035989072
PI4KAP1	0.333453844	0.006461174	0.03599682
RSBN1L-AS1	0.390934285	0.006461696	0.03599682
GRIPAP1	0.330460434	0.006465261	0.036005377
URI1	-0.362427677	0.006473735	0.036041254
IQGAP3	0.414380918	0.006476016	0.036042643
TSC1	0.334791495	0.006485172	0.036082283
ENDOD1	-0.415910363	0.006491401	0.03610562
NSRP1	0.343617913	0.006499854	0.036141305
REXO4	-0.399684462	0.006525891	0.03627471
LMO4	-0.361964653	0.006557061	0.036436557
CCDC58	-0.390433045	0.006597705	0.036641228
BDNF-AS	0.529601694	0.006598023	0.036641228
TUBA4B	-0.942036115	0.006602578	0.03665505
CTD-2655K5.1	0.941400017	0.006634588	0.036821236
NPIP5	0.418586451	0.006637519	0.036825983
TFE3	0.446358885	0.00664206	0.036839661
C9orf114	-0.403480134	0.006650068	0.036872546
SPATA5	-0.596307171	0.006673203	0.036989268
PDXDC2P	0.430403402	0.006685582	0.037046309
SMIM11	-0.392064291	0.00668813	0.037048856
C4A	0.748861472	0.006690277	0.037049184
LPPR3	0.335415696	0.006693815	0.03705721
TMEM14A	-0.723523156	0.006697731	0.037067324

TRIM8	0.303867365	0.006702721	0.037083375
RBBP4	-0.393677456	0.006707839	0.037099103
TRA2B	-0.379322181	0.006709746	0.037099103
HECTD4	0.38430646	0.006712538	0.037102977
HNRNPA3	-0.339269898	0.00675148	0.037306605
C19orf66	0.372079332	0.00675442	0.03731123
SDCCAG8	0.366543589	0.006760458	0.037332961
RN7SKP255	0.700131755	0.006774117	0.037394847
KRCC1	0.386962697	0.00677588	0.037394847
ACVRL1	-0.539313531	0.006780369	0.037403527
SKOR1	0.83884644	0.006781669	0.037403527
MGAT4A	-0.766842558	0.006790919	0.037442907
CTD-2302E22.3	-0.74197908	0.006797381	0.037466895
CYP27B1	0.513833042	0.006801066	0.037473791
AGK	-0.410458251	0.006802856	0.037473791
NDRG3	-0.33952936	0.00680738	0.037477802
ZNF611	-0.410687621	0.006807809	0.037477802
PRKACB	-0.551364487	0.006811501	0.037486497
KCMF1	0.294347143	0.006827639	0.037563656
CEACAM4	-0.635989223	0.006842015	0.037622375
NUP160	-0.5423956	0.006844494	0.037622375
SYAP1	-0.384241429	0.006844673	0.037622375
LINC00936	0.873139824	0.006851278	0.037647019
SEMA6B	0.392218539	0.006855366	0.037657821
BRMS1L	-0.569561411	0.00688239	0.037794567
ZNF154	0.9047317	0.006889776	0.03781406
ZNF17	-0.452930213	0.006891916	0.03781406
KNTC1	-0.386941916	0.006892333	0.03781406
HN1	-0.433522092	0.00689656	0.037825552
BTG1	0.41774123	0.006907918	0.037873921
SNRPB	-0.402551245	0.006909648	0.037873921
AC078942.1	-0.93833681	0.006947369	0.038068922
THSD1	0.523212009	0.006955076	0.038088817
NOTCH1	0.341574198	0.006955293	0.038088817
FAM86C1	-0.40201244	0.006961833	0.038112867
TPGS2	-0.300880405	0.006996638	0.038291596
ZNF84	0.394848012	0.007005584	0.038328732
PIR	0.525702619	0.007014325	0.038359673
KCNK17	-0.92604616	0.007015563	0.038359673
WDR90	-0.433492292	0.007020542	0.038375071
SH3BP2	0.36163866	0.007050331	0.038516179
PSPC1P1	-0.565473749	0.007050699	0.038516179
RP11-529H20.6	0.634967491	0.007069979	0.038609617
TMEM230	-0.418153594	0.00707495	0.038624874
RBM47	0.911052732	0.007088046	0.038684468
DTD2	-0.534368271	0.007122438	0.038860212

RP11-324D17.1	-0.476401162	0.007136141	0.038917508
FAM217B	-0.596346129	0.007139204	0.038917508
TFB2M	-0.425893854	0.007139519	0.038917508
UBE2D4	-0.35188092	0.007149857	0.038961887
C2orf27B	0.7732233	0.007154948	0.038977659
C9orf78	-0.318155311	0.007161991	0.038995252
DNAH1	0.433755831	0.007162573	0.038995252
NDUFA5	-0.479041252	0.007188134	0.03912241
ZRANB1	0.402153099	0.007193924	0.039141919
MADCAM1	0.716666441	0.007205933	0.039195239
MRPL14	-0.509489419	0.007252257	0.039435118
DDX10	-0.328689807	0.007274012	0.039541295
RNF157	-0.806504728	0.007279631	0.039559722
SIRT3	0.398127745	0.007293723	0.039624169
TBXAS1	-0.392349837	0.0073046	0.03967111
ACOT9	0.375180369	0.007309857	0.039687511
CRTC2	0.349917774	0.007320208	0.039731554
RYK	-0.431393674	0.007328449	0.03976412
RP11-244O19.1	0.687763984	0.007347655	0.039856143
CCT4	-0.328713553	0.00736508	0.039938454
RP11-26F2.1	0.533923576	0.007382646	0.040021474
FAM134B	0.835989307	0.00738572	0.040025909
PNPLA8	0.490309554	0.007417229	0.040184395
CCDC25	-0.290686798	0.007433089	0.040258028
ARRDC2	0.363887743	0.007436014	0.04026158
TTC28-AS1	-0.405493913	0.007440425	0.040273171
RARS	-0.335697857	0.007447477	0.040299049
ATP5B	-0.296113679	0.007451236	0.040307099
RP11-274B21.3	0.426441085	0.007479253	0.040437493
NUCD1	-0.359165506	0.007479899	0.040437493
GEMIN6	-0.446659404	0.007510272	0.040589324
RP11-350F4.2	-0.489358593	0.007516619	0.040611259
SLC23A2	0.445133313	0.007533842	0.04069192
EIF3B	-0.373818328	0.007540234	0.040714049
RAB6A	0.404412558	0.007550474	0.040756938
TPRKB	-0.384418182	0.007559184	0.040791546
G3BP2	-0.585996312	0.007588732	0.040938545
POMGNT2	-0.448762531	0.007595496	0.040962579
AIF1	-0.497802968	0.007601307	0.040981459
AP001816.1	0.554709142	0.007608648	0.040996397
GTF2H5	-0.419642269	0.007608698	0.040996397
TAF4B	-0.530986479	0.007611714	0.041000196
EIF4H	-0.27957459	0.007616152	0.041011649
EPHB4	-0.432538211	0.007715418	0.041533577
NPIP83	0.469909399	0.007718652	0.041538379
UNC5CL	0.72869388	0.007723892	0.041541606

CD180	0.287851032	0.007723934	0.041541606
RP11-428J1.5	-0.618547853	0.007732926	0.041577365
DUSP7	0.352689588	0.007740874	0.041607491
ATG13	-0.276182231	0.007745637	0.041620481
RP11-345P4.9	0.453728528	0.007753194	0.041648477
AK3	-0.462250806	0.007768676	0.041719011
PSMD3	-0.324505673	0.007776697	0.041749449
SYNCRIP	-0.401928646	0.007782832	0.041769748
PKD2	0.572881674	0.007786314	0.0417758
RP11-513I15.6	0.770532382	0.007803215	0.041843904
FOCAD	-0.297304285	0.007804264	0.041843904
ATP2B1	0.513178894	0.007806083	0.041843904
RP11-299L17.4	-0.537838474	0.007820474	0.04190839
NUBPL	-0.495529409	0.007827571	0.041933753
PNPLA7	0.499847875	0.007831499	0.041942135
RAB38	0.586192749	0.007834615	0.041946161
FER1L4	0.811667483	0.007838129	0.041952314
NDUFS5	-0.485203803	0.007840679	0.041953309
APBB1	0.463546016	0.007862248	0.042056036
PPAPDC1B	0.309562902	0.007885144	0.042165795
RHBDL3	0.412725139	0.007889573	0.042176767
ZNF143	-0.491770673	0.00789998	0.042211759
ADSS	-0.474187383	0.007902147	0.042211759
GSAP	-0.449772644	0.007903256	0.042211759
CHKA	0.282236991	0.00791752	0.04227522
PIF1	0.38000274	0.007942763	0.042395052
PLCD4	0.842067015	0.007944741	0.042395052
AC005682.5	-0.484911891	0.007999243	0.042673049
RP11-706O15.3	-0.422030862	0.008007525	0.042704391
NUP88	-0.329976408	0.008012385	0.042717474
TNKS1BP1	-0.332697147	0.008016745	0.042719892
AC068580.5	0.91392075	0.008017654	0.042719892
UBE2V2	-0.466495904	0.008052239	0.042880922
RP1-159A19.4	0.708281661	0.00805328	0.042880922
PLD1	0.390252142	0.008055127	0.042880922
MTF2	-0.460569008	0.008059153	0.042889485
RP11-127B20.2	-0.89851728	0.008069051	0.042917974
UBQLN4	-0.323670112	0.008069343	0.042917974
LRRC8E	0.920089227	0.00807672	0.042944336
USP10	-0.426814518	0.008098213	0.043045712
TRIM65	-0.30839027	0.008127078	0.043174399
PAG1	0.58161832	0.008127289	0.043174399
PTCRA	0.531351544	0.008134903	0.043201908
METTL2B	-0.331475525	0.008139861	0.043215306
CASS4	-0.801191524	0.008142736	0.043217638
AGGF1	-0.415899932	0.008147479	0.043229878

GAS8	0.372505758	0.008162417	0.043296194
NOC2L	-0.402405593	0.0081925	0.043442778
PSMB10	-0.387669896	0.008214378	0.043545773
HDAC7	0.342086722	0.008221741	0.04357179
AKT1	-0.297259446	0.00822988	0.043601897
FAM96A	-0.292532214	0.008264782	0.043769371
LRRC14	-0.340069279	0.008266424	0.043769371
MSRB1	-0.402353901	0.00829592	0.043912442
TPTE2	0.630780047	0.008302876	0.043936153
PSTPIP2	-0.373134738	0.008315262	0.04398858
MATK	-0.425512545	0.008318021	0.04399006
SERF1A	-0.454519908	0.008324682	0.044001285
KIAA0100	-0.265261376	0.008325104	0.044001285
UNC93B7	-0.508104531	0.008344061	0.044088349
SNORA26	-0.870759665	0.008352008	0.044117202
PHYKPL	0.382248535	0.008357698	0.044134119
RN7SL1	0.584658005	0.008377824	0.044217573
TGS1	-0.369247925	0.008378486	0.044217573
C1orf226	0.80594476	0.008386509	0.044246753
GDF9	0.879526067	0.00841015	0.04435829
APOL1	-0.653303029	0.008420049	0.044397302
MSANTD3	-0.521188397	0.008423301	0.044401258
ADNP2	-0.441936666	0.008441227	0.044482531
CALR	-0.361105985	0.008450911	0.044512924
CLEC18A	0.836470686	0.008454834	0.044512924
NPTN	-0.485202643	0.008457289	0.044512924
NUTF2	-0.392867634	0.008458834	0.044512924
MRPS11	-0.415792355	0.008459538	0.044512924
RP11-426C22.5	0.699811228	0.008463824	0.044522273
DEK	-0.591001418	0.008480326	0.044595858
ZCCHC17	-0.360007404	0.008483287	0.044598213
RP1-64K7.4	-0.867103486	0.008487095	0.044605013
POLR2H	-0.444166021	0.008497085	0.044644296
LINC01001	0.556757956	0.008501053	0.044651917
ARHGAP1	-0.30843457	0.008511772	0.04469499
RADIL	-0.432924876	0.008530476	0.044779949
KIF20A	-0.334403027	0.008542191	0.044828183
RP11-324H6.5	0.773966458	0.008561631	0.044916917
AC093642.3	0.634141362	0.00860048	0.045107393
AP1S1	-0.40458179	0.0086325	0.04526195
WT1-AS	-0.39476291	0.008665395	0.045421005
AC006272.1	0.897094659	0.008681913	0.045494147
ASIC3	0.645836535	0.008694776	0.045548097
ULK1	0.400085057	0.008697974	0.045551403
AC098823.3	0.86978213	0.008712613	0.045613089
SYN2	-0.818167624	0.008714894	0.045613089

CCDC9	0.397782343	0.008720825	0.045630669
CTPS2	-0.401282261	0.008733623	0.045684158
ZNF544	-0.416406639	0.008745661	0.045730024
EXOSC6	-0.345491407	0.008747546	0.045730024
CECR6	0.310205939	0.00875769	0.045769572
RCN2	-0.520434916	0.008767962	0.04580976
MYO9B	0.337800021	0.008790178	0.045912316
HNRNPA2B1	-0.299586456	0.008805689	0.045979791
TMEM160	-0.463094065	0.008812319	0.045992272
SMAD9	0.903652991	0.008813263	0.045992272
C14orf142	-0.380620448	0.00882507	0.046039267
HEXB	0.308432114	0.008827458	0.046039267
INPP5B	0.323271445	0.0088365	0.046072884
GHITM	-0.30731072	0.008856995	0.046166177
SPATA1	0.774870488	0.008871032	0.046225762
NUP85	-0.374482796	0.008902444	0.046362447
APEX1	-0.303485237	0.008902489	0.046362447
GSG2	-0.420224087	0.008912377	0.046400325
CTD-2341M24.1	0.908811252	0.008926952	0.046457303
VPS13A	-0.559839861	0.008930408	0.046457303
UBA1	-0.293410638	0.008931176	0.046457303
NFIC	-0.332141515	0.008936998	0.046472388
SFT2D2	-0.441263269	0.008939315	0.046472388
CCDC71	-0.317499401	0.00894936	0.046510984
GPR137	0.439963397	0.008969685	0.046602966
FAM133B	-0.442515361	0.008982594	0.046656371
CBX7	0.463463194	0.008992799	0.046695708
RP11-498C9.15	-0.604672464	0.008999916	0.046718989
NUCB1	0.370402069	0.00902229	0.046821435
RP11-613M10.6	-0.55179101	0.009032553	0.046860992
RILPL2	0.350185416	0.009051456	0.046945331
ELF4	0.377605777	0.009068382	0.047019378
ADCY4	0.5973451	0.009075736	0.04704376
KIAA0391	-0.341774613	0.009087358	0.047090243
XPO4	-0.460598483	0.009108109	0.047183994
PATL2	0.602796476	0.009170894	0.04749538
RNASEH1	-0.315425049	0.009175695	0.047506378
SCARNA15	-0.592995189	0.009182268	0.047508676
UROS	-0.335820436	0.009182405	0.047508676
DYM	0.333573514	0.00918475	0.047508676
UGGT1	-0.337797126	0.009186849	0.047508676
RP5-892K4.1	0.904324957	0.009191875	0.047515416
KDELR2	0.297986652	0.009193509	0.047515416
DHRS13	-0.575213645	0.009203023	0.047550736
SPTSSA	-0.475518055	0.009209625	0.047561313
ISPD	-0.901261022	0.00921044	0.047561313

SETMAR	-0.407012666	0.009213111	0.047561313
ALPK1	0.342045731	0.009224116	0.047604272
TUBB3	0.531758856	0.009237443	0.047658769
SKP1	-0.310433975	0.009240048	0.047658769
OSBPL11	0.573055539	0.0092568	0.047731301
AL162151.3	0.342240574	0.009265324	0.047761374
RPP25	-0.455913969	0.00927117	0.047777626
AC007038.7	-0.718368568	0.009313408	0.04798136
SLC25A34	0.746395555	0.009353055	0.048171627
ZHX3	0.304688583	0.009355907	0.048172334
ALG10	-0.732928279	0.009363301	0.048191703
FAM50B	-0.382658713	0.009365101	0.048191703
ELOVL5	0.492765282	0.009382373	0.048266583
RP5-991G20.4	-0.559934165	0.00938783	0.048280656
MFHAS1	-0.39604887	0.009394177	0.048299301
EZR	0.271632079	0.009406299	0.048347614
SYT11	0.440300587	0.009441976	0.048516938
GS1-257G1.1	-0.547676769	0.009484466	0.048721159
DNAJC28	0.589207285	0.009506208	0.048807578
RNF141	-0.468273273	0.009506791	0.048807578
HSPBAP1	0.323731845	0.009511006	0.048815095
PFKFB2	0.451622718	0.009533821	0.048904304
ORM1	0.691196325	0.0095339	0.048904304
AC016739.2	0.603061904	0.009553368	0.048990002
RP11-867G2.5	0.770712316	0.009558834	0.04900387
LAMC3	-0.85281842	0.009573743	0.049057957
MANEA	-0.641978178	0.009574914	0.049057957
AC006129.4	0.722401237	0.009589365	0.049117813
LRRC56	0.460241325	0.009636126	0.049343083
FBXL19	-0.325121086	0.009666155	0.04948257
SYNE2	0.878866278	0.009684654	0.049551905
RN7SL2	0.553576471	0.009686094	0.049551905
RP11-177C12.1	-0.773293089	0.009688089	0.049551905
KIF2C	-0.278376719	0.00969087	0.049551905
HIATL1	-0.454171895	0.009707546	0.049622871
FBXO41	-0.333767359	0.00971413	0.049625086
ANKFY1	-0.305748621	0.009714163	0.049625086
IQCC	-0.520207049	0.009719209	0.049625086
AKR1B1	-0.342462901	0.00971925	0.049625086
SLC22A4	-0.414733431	0.009721964	0.049625086
ATP1B3	-0.291740337	0.009731024	0.049657048
C2orf76	0.417004935	0.009754786	0.049756835
TMBIM4	-0.345693836	0.009756187	0.049756835
FTSJ1	-0.345658904	0.009785723	0.049893129
DEDD2	0.365928773	0.009790317	0.049902209
NDRG2	-0.467245844	0.009795964	0.049916652

BOLA2B	-0.505306753	0.009800544	0.049925652
TYRO3	0.533804349	0.009816954	0.049994898

Supplementary Table 3. Modulation of key genes and pathways (from Fig 2B) with OSU-2S

Pathway	Gene	Exp log ratio	pvalue	padj
Proliferation of cells	KLF2	5.067774521	8.32E-120	2.95E-116
Proliferation of cells	CXCL10	3.693627299	6.31E-34	1.38E-31
Proliferation of cells	RHOB	3.532285315	3.19E-92	3.33E-89
Proliferation of cells	HTR2B	3.47436491	5.39E-45	1.99E-42
Proliferation of cells	IL4I1	3.440797385	2.92E-99	3.69E-96
Proliferation of cells	DUSP8	3.228014882	3.50E-32	7.14E-30
Proliferation of cells	TSC22D3	3.005059715	1.52E-113	2.69E-110
Proliferation of cells	GPNMB	2.965044415	2.47E-42	8.43E-40
Proliferation of cells	CCL3	2.891412015	1.19E-33	2.55E-31
Proliferation of cells	BIRC3	2.868615659	3.35E-29	5.95E-27
Proliferation of cells	INSIG1	2.829905168	3.09E-68	2.29E-65
Proliferation of cells	RGCC	2.800832485	6.26E-46	2.36E-43
Proliferation of cells	FADS1	2.699770203	2.20E-94	2.44E-91
Proliferation of cells	IFIT3	2.70411013	7.48E-39	2.29E-36
Proliferation of cells	FABP3	2.675674874	5.64E-22	7.46E-20
Proliferation of cells	KLF6	2.625290674	9.14E-50	3.96E-47
Proliferation of cells	SERPINE1	2.62252236	1.83E-20	2.16E-18
Proliferation of cells	JUN	2.597003569	2.52E-62	1.49E-59
Proliferation of cells	FGF18	2.559396042	2.77E-23	3.82E-21
Proliferation of cells	P2RX7	2.429506763	1.75E-21	2.26E-19
Proliferation of cells	C3AR1	2.371469186	1.91E-16	1.61E-14
Proliferation of cells	ST6GALNAC2	2.355435909	1.35E-24	1.99E-22
Proliferation of cells	ICAM1	2.318962488	5.85E-34	1.30E-31
Proliferation of cells	SDC3	2.234380055	6.69E-24	9.57E-22
Proliferation of cells	CSF1	2.227878521	9.83E-16	7.55E-14
Proliferation of cells	HES1	2.23186863	5.87E-13	3.40E-11
Proliferation of cells	RELB	2.200161936	1.19E-42	4.13E-40
Proliferation of cells	MAFF	2.204553875	2.16E-20	2.52E-18
Proliferation of cells	NUPR1	2.204677749	1.15E-12	6.40E-11
Proliferation of cells	SIGLEC6	2.165583666	2.26E-18	2.31E-16
Proliferation of cells	ULBP1	2.170132837	1.82E-12	9.76E-11
Proliferation of cells	CD109	2.150905166	7.28E-21	8.91E-19
Proliferation of cells	DDIT4	2.107648358	3.81E-48	1.54E-45
Proliferation of cells	HMOX1	2.057537368	2.88E-61	1.60E-58
Proliferation of cells	PDGFA	2.030743467	3.48E-40	1.17E-37
Proliferation of cells	CXCL8	2.015	1.37E-13	
Proliferation of cells	PIK3IP1	2.01767652	4.79E-38	1.37E-35
Proliferation of cells	IL2RA	2.009707646	8.77E-32	1.71E-29
Proliferation of cells	EGR2	2.023978767	3.39E-09	1.13E-07
Proliferation of cells	MAP3K12	1.990708532	5.11E-23	6.98E-21

Proliferation of cells	VWF	1.994804229	6.03E-13	3.48E-11
Proliferation of cells	BCL3	1.979804628	9.16E-38	2.58E-35
Proliferation of cells	SLC7A11	1.97973289	1.74E-20	2.06E-18
Proliferation of cells	DDIT3	1.956820081	1.17E-36	3.02E-34
Proliferation of cells	BHLHE40	1.942230528	2.49E-54	1.16E-51
Proliferation of cells	PPARD	1.939584196	2.78E-37	7.71E-35
Proliferation of cells	SLC29A2	1.945832795	6.79E-12	3.38E-10
Proliferation of cells	NFKB2	1.884957345	2.08E-35	5.05E-33
Proliferation of cells	MTSS1	1.908641167	3.08E-09	1.03E-07
Proliferation of cells	RAB33A	1.875655504	3.40E-37	9.28E-35
Proliferation of cells	DUSP10	1.875061803	1.37E-35	3.36E-33
Proliferation of cells	IER3	1.852566567	9.19E-10	3.39E-08
Proliferation of cells	MX1	1.82470497	5.00E-20	5.65E-18
Proliferation of cells	CD83	1.816516585	5.32E-34	1.19E-31
Proliferation of cells	OPTN	1.807967664	1.87E-36	4.74E-34
Proliferation of cells	EMP1	1.815173026	9.35E-13	5.25E-11
Proliferation of cells	NTN1	1.812203827	1.09E-09	3.98E-08
Proliferation of cells	LPIN1	1.794578693	3.53E-27	5.85E-25
Proliferation of cells	PPP1R15A	1.792271984	2.48E-35	5.94E-33
Proliferation of cells	L1CAM	1.813903506	1.31E-07	3.20E-06
Proliferation of cells	IL21R	1.710960068	1.10E-26	1.75E-24
Proliferation of cells	ACLY	1.691260648	5.47E-31	1.04E-28
Proliferation of cells	NR4A3	1.735832082	5.75E-07	1.23E-05
Proliferation of cells	AXL	1.666082351	1.52E-28	2.64E-26
Proliferation of cells	TLR7	1.665973236	2.15E-07	5.05E-06
Proliferation of cells	CTH	1.63852683	6.31E-14	4.02E-12
Proliferation of cells	DUSP1	1.642426669	5.62E-10	2.19E-08
Proliferation of cells	COL6A1	1.62768028	1.96E-29	3.55E-27
Proliferation of cells	TJP3	1.666480301	1.18E-06	2.33E-05
Proliferation of cells	SQSTM1	1.60709689	7.42E-44	2.69E-41
Proliferation of cells	CD72	1.606853116	2.21E-21	2.79E-19
Proliferation of cells	IFI30	1.627972473	7.12E-07	1.49E-05
Proliferation of cells	WNT10A	1.611920187	2.87E-06	5.20E-05
Proliferation of cells	CCL4	1.61971811	2.96E-06	5.33E-05
Proliferation of cells	COL6A2	1.565480359	7.52E-16	5.82E-14
Proliferation of cells	GDF15	1.571462898	5.90E-06	9.81E-05
Proliferation of cells	SCIN	1.56886645	6.40E-06	0.00010559
Proliferation of cells	mir-146	1.525	5.94E-13	
Proliferation of cells	LTK	1.527197074	1.57E-13	9.78E-12
Proliferation of cells	NEUROG3	1.522853097	9.13E-21	1.11E-18
Proliferation of cells	SLAMF7	1.532113068	4.42E-06	7.63E-05
Proliferation of cells	MT2A	1.499766012	3.10E-16	2.48E-14
Proliferation of cells	ABCB4	1.499624237	2.67E-06	4.86E-05
Proliferation of cells	XIRP1	1.512492148	1.36E-05	0.000203559
Proliferation of cells	NRP2	1.490726653	7.58E-06	0.000122602
Proliferation of cells	NEU1	1.464727972	1.26E-25	1.92E-23

Proliferation of cells	ICAM5	1.458966295	5.52E-09	1.75E-07
Proliferation of cells	PLIN2	1.441370554	4.46E-32	8.89E-30
Proliferation of cells	GADD45B	1.437361491	1.34E-17	1.27E-15
Proliferation of cells	NR4A1	1.418283585	6.57E-10	2.51E-08
Proliferation of cells	CREB3L3	1.433529155	2.86E-05	0.000394712
Proliferation of cells	SAT1	1.400160858	5.22E-34	1.19E-31
Proliferation of cells	CCN3	1.398	0.00000311	
Proliferation of cells	SH2D3C	1.398933566	5.11E-21	6.34E-19
Proliferation of cells	IL15RA	1.397117898	8.39E-16	6.47E-14
Proliferation of cells	DPYSL3	1.396806645	4.75E-14	3.06E-12
Proliferation of cells	CDKN1C	1.395482465	1.34E-14	9.28E-13
Proliferation of cells	JUP	1.388325348	7.92E-13	4.49E-11
Proliferation of cells	MLXIPL	1.385831306	1.07E-07	2.68E-06
Proliferation of cells	OAS3	1.388216855	9.12E-07	1.86E-05
Proliferation of cells	DAPK1	1.384697953	4.81E-06	8.19E-05
Proliferation of cells	FYN	1.360719854	4.68E-14	3.03E-12
Proliferation of cells	EMP3	1.355343862	5.68E-17	5.09E-15
Proliferation of cells	FOSB	1.352738721	2.18E-13	1.33E-11
Proliferation of cells	MUC1	1.351269875	9.60E-11	4.18E-09
Proliferation of cells	RHBDF1	1.327595626	7.67E-11	3.37E-09
Proliferation of cells	ITGA7	1.321111702	2.68E-22	3.63E-20
Proliferation of cells	DUSP5	1.315944284	1.51E-12	8.13E-11
Proliferation of cells	SGK1	1.32382235	9.34E-06	0.0001478
Proliferation of cells	NPC1	1.295449445	4.58E-15	3.31E-13
Proliferation of cells	KIF3C	1.293504186	2.86E-12	1.50E-10
Proliferation of cells	RARG	1.283795401	1.17E-15	8.87E-14
Proliferation of cells	MMP19	1.273173713	1.49E-13	9.31E-12
Proliferation of cells	PTK6	1.268152878	2.09E-11	9.98E-10
Proliferation of cells	TXK	1.263425367	6.76E-12	3.38E-10
Proliferation of cells	KLF7	1.257755987	3.85E-11	1.76E-09
Proliferation of cells	VEGFA	1.251588971	2.61E-16	2.13E-14
Proliferation of cells	PTGER4	1.235769288	3.50E-12	1.82E-10
Proliferation of cells	SPOCK2	1.250010086	0.000220049	0.002273927
Proliferation of cells	ENPP2	1.226997684	5.11E-12	2.60E-10
Proliferation of cells	PLXNA3	1.216620591	6.02E-14	3.85E-12
Proliferation of cells	CTSD	1.215697826	1.72E-15	1.28E-13
Proliferation of cells	COL4A2	1.205635427	4.84E-15	3.48E-13
Proliferation of cells	GABARAPL1	1.203952755	2.58E-20	2.99E-18
Proliferation of cells	PTP4A3	1.200699663	2.88E-16	2.33E-14
Proliferation of cells	ARRDC3	1.204994207	4.27E-06	7.41E-05
Proliferation of cells	DVL2	1.197698668	2.15E-16	1.77E-14
Proliferation of cells	S1PR2	1.214422237	0.000239446	0.002438858
Proliferation of cells	ACACA	1.190194168	1.82E-18	1.87E-16
Proliferation of cells	TNFAIP3	1.188785111	2.14E-12	1.13E-10
Proliferation of cells	TACC2	1.186339542	2.56E-16	2.09E-14
Proliferation of cells	RRAD	1.201929315	0.000212786	0.002216944

Proliferation of cells	CCL18	1.220635995	0.000187354	NA
Proliferation of cells	TP63	1.201602237	0.000516448	0.004611645
Proliferation of cells	ZNF703	1.165478498	2.09E-05	0.000299745
Proliferation of cells	UPP1	1.156899233	2.38E-11	1.13E-09
Proliferation of cells	FADS3	1.147411916	8.58E-12	4.25E-10
Proliferation of cells	ATF4	1.144958978	4.52E-14	2.94E-12
Proliferation of cells	PLEKHO1	1.142098899	4.80E-11	2.15E-09
Proliferation of cells	TREM1	1.141041812	1.01E-05	0.000157897
Proliferation of cells	NOG	1.129256337	1.04E-07	2.63E-06
Proliferation of cells	GAB2	1.12229928	1.84E-14	1.26E-12
Proliferation of cells	CD300A	1.116205688	1.75E-10	7.32E-09
Proliferation of cells	RSPO1	1.126170098	0.000277084	0.002755778
Proliferation of cells	PHLDA2	1.112212137	6.98E-10	2.64E-08
Proliferation of cells	RHOC	1.11095125	3.88E-10	1.56E-08
Proliferation of cells	JDP2	1.107820879	9.95E-13	5.57E-11
Proliferation of cells	BCL2A1	1.125659278	0.001010681	0.008070434
Proliferation of cells	BTG2	1.106494264	1.36E-13	8.53E-12
Proliferation of cells	TESK1	1.101520309	3.68E-13	2.18E-11
Proliferation of cells	WBP2	1.098390261	2.07E-16	1.72E-14
Proliferation of cells	EPAS1	1.102510026	3.37E-06	6.01E-05
Proliferation of cells	SPIB	1.09944936	2.47E-05	0.000348291
Proliferation of cells	FABP6	1.1149798	0.001247009	0.009594834
Proliferation of cells	FTH1	1.089658436	4.98E-12	2.54E-10
Proliferation of cells	PHF1	1.089360748	2.87E-14	1.91E-12
Proliferation of cells	PIM2	1.083072771	5.78E-12	2.91E-10
Proliferation of cells	TUBA1A	1.080529059	1.62E-20	1.93E-18
Proliferation of cells	BBC3	1.07785076	3.49E-15	2.53E-13
Proliferation of cells	EBI3	1.088200244	0.000493015	0.004442643
Proliferation of cells	SHB	1.075050126	1.59E-08	4.66E-07
Proliferation of cells	PDE4A	1.067541049	2.27E-11	1.08E-09
Proliferation of cells	ADCY6	1.069262273	2.22E-07	5.18E-06
Proliferation of cells	GDF11	1.065347323	5.23E-17	4.79E-15
Proliferation of cells	CACNA1A	1.08084918	0.000903567	0.007307196
Proliferation of cells	GEM	1.081290268	0.001358008	0.010310283
Proliferation of cells	TUBB2A	1.072757318	0.001120899	0.008784505
Proliferation of cells	NOL3	1.057833007	5.89E-05	0.000741856
Proliferation of cells	NTRK1	1.069886928	0.002050862	0.014434132
Proliferation of cells	SOCS3	1.042321933	7.15E-13	4.08E-11
Proliferation of cells	HVCN1	1.040659483	3.25E-20	3.70E-18
Proliferation of cells	PTX3	1.053897895	0.0016373	0.012056588
Proliferation of cells	MAOA	1.041318628	0.001011556	0.008073791
Proliferation of cells	GAS7	1.024770099	8.65E-11	3.78E-09
Proliferation of cells	PCSK4	1.019867398	1.45E-08	4.27E-07
Proliferation of cells	JUND	1.016829132	2.10E-12	1.12E-10
Proliferation of cells	GPC1	1.017900439	1.72E-09	6.02E-08
Proliferation of cells	RPS6KA2	1.015119965	1.75E-10	7.32E-09

Proliferation of cells	WNT9A	1.037419982	0.002828009	0.018733481
Proliferation of cells	TG	1.020542066	0.000379302	0.003574475
Proliferation of cells	HLX	1.008379506	1.40E-12	7.65E-11
Proliferation of cells	CCNA1	1.007387663	1.71E-19	1.86E-17
Proliferation of cells	YPEL3	1.003039048	1.07E-08	3.25E-07
Proliferation of cells	ASAH1	0.999912232	1.82E-09	6.34E-08
Proliferation of cells	SERPINB9	1.022966361	0.002864285	0.018906622
Proliferation of cells	ITGAX	0.996943019	1.03E-11	5.06E-10
Proliferation of cells	DIRAS1	0.995621045	5.26E-12	2.66E-10
Proliferation of cells	GAS2L1	0.994241433	4.23E-09	1.38E-07
Proliferation of cells	AHNAK	0.992350196	2.30E-13	1.40E-11
Proliferation of cells	PCK2	0.992380099	2.42E-14	1.65E-12
Proliferation of cells	PLA2G6	0.991770328	1.16E-09	4.22E-08
Proliferation of cells	AQP1	0.998685917	0.001209058	0.009343346
Proliferation of cells	REM2	1.006832073	0.003755678	0.023321976
Proliferation of cells	KSR1	0.980786875	4.22E-09	1.38E-07
Proliferation of cells	CYTIP	0.979675497	1.77E-11	8.53E-10
Proliferation of cells	STARD10	0.98135401	0.000266445	0.002670928
Proliferation of cells	IL2RB	0.977635096	2.74E-06	4.98E-05
Proliferation of cells	RHOQ	0.974997358	1.43E-07	3.47E-06
Proliferation of cells	RRAS	0.966884771	1.42E-06	2.72E-05
Proliferation of cells	GPRC5C	0.967242511	1.27E-06	2.48E-05
Proliferation of cells	NFKBIA	0.964884941	1.67E-16	1.43E-14
Proliferation of cells	IL3RA	0.964421495	1.43E-12	7.78E-11
Proliferation of cells	CRABP2	0.979398726	0.003175369	0.02044288
Proliferation of cells	ISG20	0.969525926	0.000438518	0.004029324
Proliferation of cells	HIP1	0.958548515	4.98E-10	1.96E-08
Proliferation of cells	TIMP2	0.949074587	7.87E-10	2.96E-08
Proliferation of cells	HAVCR2	0.951265177	2.92E-05	0.000402586
Proliferation of cells	CRTAM	0.953810221	0.005938448	0.033577398
Proliferation of cells	RAP1GAP	0.927699321	1.38E-08	4.10E-07
Proliferation of cells	SLFN5	0.925553056	3.53E-06	6.26E-05
Proliferation of cells	SREBF1	0.920177963	6.33E-13	3.63E-11
Proliferation of cells	ULBP2	0.926798951	0.001373697	0.010405147
Proliferation of cells	GRB10	0.912318923	2.43E-08	6.81E-07
Proliferation of cells	KLF11	0.908311004	1.05E-07	2.63E-06
Proliferation of cells	ERN1	0.908296537	3.61E-06	6.39E-05
Proliferation of cells	CDKN2B	0.907412965	7.56E-06	0.000122568
Proliferation of cells	SIGLEC1	0.913865821	0.001721511	0.012502979
Proliferation of cells	C5AR1	0.915119776	0.005524828	0.031694471
Proliferation of cells	AGRN	0.900902728	7.89E-11	3.46E-09
Proliferation of cells	TRIB1	0.900394683	8.35E-07	1.72E-05
Proliferation of cells	CEPB	0.897234551	2.58E-10	1.06E-08
Proliferation of cells	STARD13	0.899656121	1.59E-05	0.000234427
Proliferation of cells	ZFHX3	0.909104739	0.004393292	0.026388774
Proliferation of cells	BMF	0.886508865	2.55E-10	1.05E-08

Proliferation of cells	BIN1	0.89156181	0.002203904	0.015312711
Proliferation of cells	FBXO32	0.880503133	1.19E-09	4.34E-08
Proliferation of cells	DLL1	0.88311065	0.000461417	0.004202735
Proliferation of cells	MN1	0.881065678	0.00131535	0.010029334
Proliferation of cells	LAMA3	0.884170234	0.005186337	0.030230347
Proliferation of cells	SOCS1	0.873057532	1.85E-05	0.00026955
Proliferation of cells	SAMD9L	0.868316682	7.90E-07	1.63E-05
Proliferation of cells	OMG	0.875402071	0.004828569	0.028453438
Proliferation of cells	GDF9	0.879526067	0.00841015	0.04435829
Proliferation of cells	CDC42BPB	0.862868849	3.75E-09	1.24E-07
Proliferation of cells	SERPINF2	0.863403169	0.000222312	0.002293247
Proliferation of cells	EIF1	0.857520508	1.24E-09	4.51E-08
Proliferation of cells	IL23A	0.852470971	2.52E-05	0.000353278
Proliferation of cells	LILRB4	0.84593222	2.88E-12	1.51E-10
Proliferation of cells	UNC5B	0.848162921	0.000140446	0.001555514
Proliferation of cells	WNT5B	0.852595524	0.0062803	0.035151851
Proliferation of cells	FCER2	0.842014833	1.21E-07	2.96E-06
Proliferation of cells	SMPD3	0.842286855	0.00019214	0.002034094
Proliferation of cells	UBC	0.836769794	5.67E-10	2.19E-08
Proliferation of cells	INPP5F	0.833583567	1.75E-11	8.46E-10
Proliferation of cells	PIM1	0.833251766	8.84E-14	5.58E-12
Proliferation of cells	STAT2	0.832516898	1.29E-12	7.07E-11
Proliferation of cells	PLCD4	0.842067015	0.007944741	0.042395052
Proliferation of cells	BAIAP2	0.826514107	1.77E-07	4.23E-06
Proliferation of cells	PLAU	0.822672687	3.21E-12	1.67E-10
Proliferation of cells	ANPEP	0.822563631	1.00E-05	0.000156595
Proliferation of cells	JAK3	0.813630154	1.34E-05	0.000201349
Proliferation of cells	PPP2R5B	0.811863007	2.22E-08	6.25E-07
Proliferation of cells	DACT3	0.810096361	8.54E-08	2.19E-06
Proliferation of cells	ASB2	0.810065147	3.69E-05	0.000496377
Proliferation of cells	FLOT1	0.808058106	1.64E-06	3.12E-05
Proliferation of cells	POU2F2	0.80552026	6.51E-09	2.04E-07
Proliferation of cells	CAMKK1	0.801257999	1.35E-09	4.87E-08
Proliferation of cells	C3	0.799157734	1.16E-06	2.29E-05
Proliferation of cells	PEA15	0.79722927	1.80E-15	1.33E-13
Proliferation of cells	CDKN2D	0.797500292	7.04E-08	1.81E-06
Proliferation of cells	GNE	0.794619012	2.25E-06	4.18E-05
Proliferation of cells	PTPN3	0.792515259	6.17E-10	2.37E-08
Proliferation of cells	TEC	0.791823253	2.64E-10	1.08E-08
Proliferation of cells	mir-24	0.79	0.000000466	
Proliferation of cells	BCL6	0.792237247	0.000673194	0.00573152
Proliferation of cells	SPTBN1	0.789892485	4.40E-05	0.000577888
Proliferation of cells	DOK4	0.788126505	0.000125553	0.00141891
Proliferation of cells	RHOBTB2	0.784022477	1.71E-08	4.96E-07
Proliferation of cells	LOXL2	0.784036592	0.002117701	0.01481136
Proliferation of cells	NUAK1	0.77801569	0.001513203	0.01132381

Proliferation of cells	GOLGA2	0.768175949	1.71E-08	4.96E-07
Proliferation of cells	TSC22D1	0.769104229	0.00010016	0.001163815
Proliferation of cells	CAMK2D	0.767437096	5.71E-05	0.000724851
Proliferation of cells	IFITM1	0.760336784	1.02E-07	2.57E-06
Proliferation of cells	SLC3A2	0.759722407	1.06E-08	3.22E-07
Proliferation of cells	ADORA2B	0.753866395	7.72E-06	0.000124546
Proliferation of cells	MAPK11	0.746463887	2.51E-05	0.000352672
Proliferation of cells	DNAJB2	0.745844047	4.33E-06	7.50E-05
Proliferation of cells	PLD2	0.742159721	6.80E-05	0.000837335
Proliferation of cells	CCNG2	0.742331626	0.003218754	0.020677174
Proliferation of cells	TIAM2	0.739297002	0.000373363	0.003529345
Proliferation of cells	PXN	0.737131807	0.002422498	0.016474659
Proliferation of cells	MICA	0.7327563	0.001922225	0.013658807
Proliferation of cells	SESN2	0.720013477	1.82E-06	3.45E-05
Proliferation of cells	KLF4	0.719159815	0.000310431	0.003033031
Proliferation of cells	IFI16	0.715700965	4.38E-06	7.56E-05
Proliferation of cells	CD36	0.713480431	1.38E-05	0.000206174
Proliferation of cells	ANXA2	0.704936965	4.66E-07	1.01E-05
Proliferation of cells	CABLES1	0.704253331	2.55E-09	8.67E-08
Proliferation of cells	KDM6B	0.703545816	1.77E-06	3.36E-05
Proliferation of cells	ARID3B	0.701412008	9.20E-08	2.34E-06
Proliferation of cells	PTGIR	0.702403649	0.000369585	0.003504838
Proliferation of cells	HDAC6	0.701026536	2.82E-07	6.44E-06
Proliferation of cells	DPYSL2	0.701388028	0.000177875	0.001904671
Proliferation of cells	ABTB1	0.698678922	1.97E-05	0.000285045
Proliferation of cells	XBP1	0.697865437	8.60E-10	3.21E-08
Proliferation of cells	GGT5	0.696609927	3.86E-05	0.000516729
Proliferation of cells	TBX3	0.689680476	0.000387434	0.003632334
Proliferation of cells	ARHGAP33	0.68802162	0.000441824	0.004051306
Proliferation of cells	HDAC5	0.684554174	2.79E-08	7.69E-07
Proliferation of cells	EFEMP2	0.68427639	0.000598498	0.005223392
Proliferation of cells	NAB2	0.681858975	1.03E-05	0.000159867
Proliferation of cells	DYRK1B	0.679805893	6.74E-06	0.000110258
Proliferation of cells	MAP3K8	0.679998335	2.36E-05	0.000333767
Proliferation of cells	PMP22	0.674519025	7.55E-05	0.000910746
Proliferation of cells	IL10RA	0.673062759	6.63E-08	1.72E-06
Proliferation of cells	CSF2RA	0.671829872	6.97E-09	2.17E-07
Proliferation of cells	SMAD3	0.670080158	4.02E-10	1.60E-08
Proliferation of cells	NLRC4	0.670919874	0.000285559	0.002824235
Proliferation of cells	MLLT3	0.669016355	0.006293036	0.035205312
Proliferation of cells	ACVR1	0.664878853	0.000236775	0.002419868
Proliferation of cells	CD63	0.660695455	3.15E-05	0.000431717
Proliferation of cells	HIPK2	0.660674751	2.95E-05	0.00040621
Proliferation of cells	IKZF2	0.660847007	0.005878015	0.033331296
Proliferation of cells	TRPV2	0.656729061	2.72E-08	7.55E-07
Proliferation of cells	ITGA3	0.65874903	0.003545283	0.022353926

Proliferation of cells	FOXO3	0.654309211	0.000191978	0.002033587
Proliferation of cells	MXD1	0.646690606	0.000194541	0.002057061
Proliferation of cells	JUNB	0.644714972	7.02E-07	1.47E-05
Proliferation of cells	NFATC2	0.643830897	1.61E-05	0.000237312
Proliferation of cells	ZFAND3	0.640305148	1.36E-06	2.63E-05
Proliferation of cells	TRAF1	0.637439427	6.28E-05	0.000785264
Proliferation of cells	BCL2L11	0.635530734	0.00021924	0.002268598
Proliferation of cells	CD44	0.632311117	9.09E-07	1.86E-05
Proliferation of cells	TPTE2	0.630780047	0.008302876	0.043936153
Proliferation of cells	PHLDA1	0.62869776	0.00174051	0.012604845
Proliferation of cells	DAGLA	0.625129279	0.000670284	0.005714971
Proliferation of cells	CENPJ	0.622711872	1.15E-07	2.84E-06
Proliferation of cells	CBLB	0.62047739	0.000504048	0.004523687
Proliferation of cells	ZFP36	0.617702889	2.17E-05	0.000310473
Proliferation of cells	F2R	0.618652794	0.001604936	0.011857183
Proliferation of cells	DBI	0.615558876	2.24E-05	0.000319536
Proliferation of cells	SPTAN1	0.6129063	9.57E-08	2.43E-06
Proliferation of cells	TFRC	0.613223929	0.001209894	0.009345737
Proliferation of cells	S100A10	0.612279531	4.35E-06	7.52E-05
Proliferation of cells	GBP2	0.612150794	4.14E-05	0.00054617
Proliferation of cells	ARFGAP3	0.611543261	4.04E-06	7.05E-05
Proliferation of cells	PPP1R10	0.605343661	0.000261108	0.002627812
Proliferation of cells	GET4	0.60584305	0.001359664	0.010318446
Proliferation of cells	CAST	0.600994448	6.31E-06	0.000104447
Proliferation of cells	FNIP1	0.600366451	0.00585483	0.033242321
Proliferation of cells	SCAMP4	0.595995488	0.000113679	0.001306348
Proliferation of cells	RNF144A	0.593537242	0.000285449	0.002824235
Proliferation of cells	FLCN	0.592670036	1.53E-05	0.000226259
Proliferation of cells	IGF2R	0.592120668	5.74E-05	0.000727849
Proliferation of cells	LYL1	0.588015227	0.0001419	0.001570634
Proliferation of cells	TNK2	0.587065611	3.88E-05	0.000519592
Proliferation of cells	CISH	0.58657358	7.41E-07	1.54E-05
Proliferation of cells	FTL	0.583555306	0.000469772	0.004267875
Proliferation of cells	OSGIN1	0.583270692	0.001129992	0.008843726
Proliferation of cells	PAG1	0.58161832	0.008127289	0.043174399
Proliferation of cells	HSF4	0.576450314	0.003563322	0.022443744
Proliferation of cells	CREB3L2	0.574354845	0.001238095	0.009534514
Proliferation of cells	PKD2	0.572881674	0.007786314	0.0417758
Proliferation of cells	PGD	0.571217777	1.15E-06	2.28E-05
Proliferation of cells	GHRL	0.572010768	0.001036233	0.0082374
Proliferation of cells	EIF2AK3	0.567675117	0.005250684	0.030495216
Proliferation of cells	UCP2	0.566268747	2.78E-05	0.000386263
Proliferation of cells	CLK1	0.566172644	4.83E-05	0.000626493
Proliferation of cells	TRPM4	0.563510076	0.000283653	0.002811649
Proliferation of cells	VEGFB	0.557473862	0.001602443	0.011851663
Proliferation of cells	DAGLB	0.548967713	0.000175749	0.001891035

Proliferation of cells	ETS2	0.543489774	1.07E-05	0.000165056
Proliferation of cells	PMEPA1	0.540213623	0.000211969	0.002212596
Proliferation of cells	MMP25	0.538731262	0.002442794	0.016587252
Proliferation of cells	POR	0.536091034	7.73E-06	0.000124546
Proliferation of cells	TAP1	0.535957412	5.88E-05	0.00074146
Proliferation of cells	TICAM1	0.535162109	0.000794184	0.006569325
Proliferation of cells	NLRP6	0.53554968	0.005286266	0.030651706
Proliferation of cells	NABP1	0.533970325	0.000783393	0.006489144
Proliferation of cells	MST1	0.532231635	0.001584448	0.011752865
Proliferation of cells	TUBB3	0.531758856	0.009237443	0.047658769
Proliferation of cells	HBP1	0.530615147	0.003038595	0.019763121
Proliferation of cells	PTCRA	0.531351544	0.008134903	0.043201908
Proliferation of cells	GSDMB	0.528109198	0.000583528	0.005114058
Proliferation of cells	NFKB1	0.524918786	3.65E-05	0.000492368
Proliferation of cells	USP2	0.517736915	0.000337666	0.00326141
Proliferation of cells	ST3GAL5	0.516582877	0.004975291	0.029124577
Proliferation of cells	TSPYL2	0.515567563	0.000199319	0.002102563
Proliferation of cells	CYP27B1	0.513833042	0.006801066	0.037473791
Proliferation of cells	RTN4R	0.511492594	0.00457812	0.027258248
Proliferation of cells	GLUL	0.509729237	1.82E-06	3.45E-05
Proliferation of cells	PER1	0.509607935	0.002012887	0.014217616
Proliferation of cells	STX3	0.503661433	7.78E-05	0.00093222
Proliferation of cells	RBM17	0.502223833	1.11E-06	2.20E-05
Proliferation of cells	RGL2	0.501398753	0.002298227	0.015805208
Proliferation of cells	NLGN2	0.496645211	0.001379752	0.010439633
Proliferation of cells	CDKN1A	0.494322236	0.00018452	0.001963975
Proliferation of cells	SRC	0.492665056	0.000401667	0.003737171
Proliferation of cells	MAPK3	0.490232363	0.00086527	0.007052521
Proliferation of cells	RALGDS	0.488556838	9.78E-05	0.001140448
Proliferation of cells	CTNNA1	0.487862999	1.26E-06	2.46E-05
Proliferation of cells	SMPD1	0.487990199	0.000864628	0.007052521
Proliferation of cells	RAPGEF1	0.486487891	0.000575966	0.005061601
Proliferation of cells	MALAT1	0.486122776	0.002183053	0.015195727
Proliferation of cells	IDH1	0.484801729	0.000376258	0.003549147
Proliferation of cells	SIRT2	0.483033598	6.70E-05	0.000827427
Proliferation of cells	NFE2L2	0.482896814	0.00154405	0.011506125
Proliferation of cells	DDX58	0.482976916	0.006411596	0.035785134
Proliferation of cells	TNFSF9	0.48193826	0.000700024	0.005922998
Proliferation of cells	MAST2	0.476934239	0.000499738	0.004491817
Proliferation of cells	CLN3	0.472956102	0.000468809	0.004261306
Proliferation of cells	CYLD	0.471437846	0.000348891	0.003346101
Proliferation of cells	STING1	0.471	0.00196	
Proliferation of cells	MFSD12	0.469869855	0.00113045	0.008843726
Proliferation of cells	STAT3	0.468893574	0.000266371	0.002670928
Proliferation of cells	PKD1	0.468335958	0.004114069	0.025136338
Proliferation of cells	KDM3A	0.466137453	0.001058215	0.00837836

Proliferation of cells	UTP6	0.466145579	0.002702917	0.018023424
Proliferation of cells	NUDT16	0.465294138	5.66E-05	0.00071948
Proliferation of cells	FKBP5	0.464937051	0.000388023	0.003633087
Proliferation of cells	APBB1	0.463546016	0.007862248	0.042056036
Proliferation of cells	CBX7	0.463463194	0.008992799	0.046695708
Proliferation of cells	KDM4C	0.462494406	0.002269681	0.015651362
Proliferation of cells	OSM	0.462010833	0.001789019	0.012893002
Proliferation of cells	ALS2	0.460036496	0.003049056	0.019802126
Proliferation of cells	IL2RG	0.459846608	0.002150404	0.015003785
Proliferation of cells	G6PD	0.457400336	0.000321536	0.003127752
Proliferation of cells	ALOX12	0.45727866	0.002343507	0.016066785
Proliferation of cells	ADA	0.45706712	0.000760737	0.006351882
Proliferation of cells	ZNF16	0.454474478	0.000414468	0.003836151
Proliferation of cells	CLDN15	0.45249168	0.00130574	0.009977496
Proliferation of cells	LPAR2	0.450984483	0.006303664	0.035234743
Proliferation of cells	SYF2	0.449490879	4.15E-05	0.000547132
Proliferation of cells	STX4	0.449154307	0.004099827	0.025075228
Proliferation of cells	ZMIZ2	0.447826485	0.003460835	0.021938407
Proliferation of cells	IFT74	0.447555893	0.004886044	0.028725341
Proliferation of cells	CD244	0.447029055	0.000217349	0.002253901
Proliferation of cells	NTAN1	0.446875121	0.000448159	0.00409881
Proliferation of cells	FLNA	0.446073015	0.000764111	0.006372591
Proliferation of cells	TFE3	0.446358885	0.00664206	0.036839661
Proliferation of cells	NDEL1	0.445093909	6.51E-05	0.000809392
Proliferation of cells	ZFYVE26	0.444859014	0.000131773	0.001472324
Proliferation of cells	SLC23A2	0.445133313	0.007533842	0.04069192
Proliferation of cells	GNA15	0.444592373	0.001610754	0.011886757
Proliferation of cells	SLC31A1	0.444589575	0.001838147	0.013182797
Proliferation of cells	RTN4	0.43688721	0.003919637	0.02413697
Proliferation of cells	PLEC	0.436517893	0.006432577	0.035884476
Proliferation of cells	CUL7	0.436281851	0.002534957	0.017069354
Proliferation of cells	ABL2	0.435592418	0.004466899	0.026766695
Proliferation of cells	RNH1	0.434218358	0.00106283	0.008407399
Proliferation of cells	TGIF1	0.431050756	0.000767151	0.006390407
Proliferation of cells	SIX5	0.430518352	0.00223142	0.015459617
Proliferation of cells	MAP2K5	0.429914893	0.00088863	0.007213849
Proliferation of cells	GNA12	0.429339703	0.000239006	0.002435773
Proliferation of cells	CLCN7	0.424596374	0.003015955	0.019659104
Proliferation of cells	ARHGEF11	0.423062428	0.002961444	0.019389261
Proliferation of cells	NCF1	0.421712053	0.005678593	0.032428477
Proliferation of cells	FGFR1	0.42069711	0.000912288	0.007367651
Proliferation of cells	RIPK2	0.420055653	0.002957719	0.019372025
Proliferation of cells	BTG1	0.41774123	0.006907918	0.037873921
Proliferation of cells	LTBP4	0.412502985	0.001897331	0.013527152
Proliferation of cells	INSR	0.410147285	0.00125506	0.009644231
Proliferation of cells	MAP3K3	0.410177298	0.001054118	0.008354935

Proliferation of cells	HCK	0.409770667	0.000248333	0.002517816
Proliferation of cells	UBE4B	0.407753499	0.001149889	0.008972065
Proliferation of cells	BASP1	0.406015081	0.001715561	0.01246997
Proliferation of cells	CLSTN1	0.404840705	0.000770043	0.006399469
Proliferation of cells	ARHGAP17	0.403203892	0.001335396	0.01016035
Proliferation of cells	VIM	0.401307106	0.000507429	0.004549429
Proliferation of cells	ULK1	0.400085057	0.008697974	0.045551403
Proliferation of cells	SRGAP2	0.398837895	0.000728267	0.006135632
Proliferation of cells	APBA3	0.398462386	0.004711053	0.027909254
Proliferation of cells	SIRT3	0.398127745	0.007293723	0.039624169
Proliferation of cells	MGAT4B	0.396202807	0.000478034	0.004329633
Proliferation of cells	KMT5A	0.395	0.00521	
Proliferation of cells	SEMA6B	0.392218539	0.006855366	0.037657821
Proliferation of cells	PLD1	0.390252142	0.008055127	0.042880922
Proliferation of cells	TIMM10B	0.381470229	0.000635012	0.005464122
Proliferation of cells	IRF1	0.381412601	0.001241612	0.009557453
Proliferation of cells	ELF4	0.377605777	0.009068382	0.047019378
Proliferation of cells	RUNX3	0.373831115	0.001269222	0.009744612
Proliferation of cells	RALA	0.373710369	0.003551279	0.022383784
Proliferation of cells	WASF2	0.372933017	0.004722143	0.027950243
Proliferation of cells	SP2	0.372946653	0.003344414	0.021322294
Proliferation of cells	LAIR1	0.372783659	0.001022011	0.008135277
Proliferation of cells	GAS8	0.372505758	0.008162417	0.043296194
Proliferation of cells	SH3BP2	0.36163866	0.007050331	0.038516179
Proliferation of cells	MRAS	0.358805369	0.000990732	0.007921836
Proliferation of cells	PTPN6	0.356111165	0.00533371	0.030842707
Proliferation of cells	CRTC2	0.349917774	0.007320208	0.039731554
Proliferation of cells	CHD4	0.346477025	0.000387722	0.003632334
Proliferation of cells	GPR132	0.345950433	0.003748631	0.023296699
Proliferation of cells	CTBP1	0.345754666	0.001766242	0.012765145
Proliferation of cells	HDAC7	0.342086722	0.008221741	0.04357179
Proliferation of cells	NOTCH1	0.341574198	0.006955293	0.038088817
Proliferation of cells	OSBPL2	0.340325336	0.002614331	0.017504181
Proliferation of cells	TSC1	0.334791495	0.006485172	0.036082283
Proliferation of cells	RBM5	0.334448198	0.002409126	0.016408876
Proliferation of cells	ADIPOR2	0.331481124	0.001561098	0.011608786
Proliferation of cells	NRF1	0.331226658	0.00453996	0.027065809
Proliferation of cells	UVRAG	0.329767014	0.005911103	0.033465444
Proliferation of cells	RHOA	0.322853003	0.0009865	0.007891556
Proliferation of cells	SCARB1	0.318404811	0.005071722	0.029640172
Proliferation of cells	HEXB	0.308432114	0.008827458	0.046039267
Proliferation of cells	VMP1	0.304985833	0.005502116	0.031615119
Proliferation of cells	ADARB1	0.30036192	0.00643344	0.035884476
Proliferation of cells	CD180	0.287851032	0.007723934	0.041541606
Proliferation of cells	EIF4H	-0.27957459	0.007616152	0.041011649
Proliferation of cells	AURKA	-0.28509865	0.005274216	0.030591831

Proliferation of cells	KPNA2	-0.2862678	0.005456964	0.031424366
Proliferation of cells	FUS	-0.28834762	0.00453984	0.027065809
Proliferation of cells	TPM3	-0.2952264	0.005425357	0.031274237
Proliferation of cells	AKT1	-0.29725945	0.00822988	0.043601897
Proliferation of cells	HNRNPA2B1	-0.29958646	0.008805689	0.045979791
Proliferation of cells	LAPTM5	-0.30168462	0.006015919	0.033939728
Proliferation of cells	APEX1	-0.30348524	0.008902489	0.046362447
Proliferation of cells	ARHGAP1	-0.30843457	0.008511772	0.04469499
Proliferation of cells	MYC	-0.31023257	0.003127196	0.020220785
Proliferation of cells	PRMT5	-0.31626363	0.005131061	0.029927818
Proliferation of cells	C9orf78	-0.31815531	0.007161991	0.038995252
Proliferation of cells	TARDBP	-0.31841043	0.005823553	0.033075321
Proliferation of cells	RASSF5	-0.31945423	0.004663626	0.027693009
Proliferation of cells	BAK1	-0.32516062	0.004849375	0.028566556
Proliferation of cells	BUB3	-0.32800162	0.003507737	0.022165977
Proliferation of cells	DDB1	-0.32982833	0.001774176	0.012811432
Proliferation of cells	NFIC	-0.33214152	0.008936998	0.046472388
Proliferation of cells	KIF20A	-0.33440303	0.008542191	0.044828183
Proliferation of cells	DGKD	-0.33456391	0.004106368	0.025106575
Proliferation of cells	SRSF2	-0.33492855	0.000814368	0.006705028
Proliferation of cells	EIF2B1	-0.33554698	0.00532287	0.030793506
Proliferation of cells	IRF8	-0.33650069	0.001166497	0.009077703
Proliferation of cells	PRKX	-0.3387849	0.004820062	0.028422185
Proliferation of cells	ACSL5	-0.34136075	0.003695006	0.023068437
Proliferation of cells	DNAJA3	-0.34182153	0.003034271	0.019742236
Proliferation of cells	PSMD2	-0.34231502	0.001068835	0.008451129
Proliferation of cells	ANP32A	-0.34308819	0.003618631	0.022717987
Proliferation of cells	SYK	-0.34351902	0.000858552	0.007016718
Proliferation of cells	PPRC1	-0.34426079	0.002876421	0.018951482
Proliferation of cells	TRIM27	-0.34596424	0.003367958	0.021426199
Proliferation of cells	ITGB2	-0.3477923	0.004498634	0.026884225
Proliferation of cells	RXRA	-0.34899068	0.001306438	0.009978533
Proliferation of cells	YBX3	-0.34991465	0.002347513	0.016088034
Proliferation of cells	TRIM21	-0.35112902	0.005778063	0.032869562
Proliferation of cells	CCNF	-0.35212567	0.004823486	0.028432929
Proliferation of cells	AK2	-0.35874049	0.000218433	0.0022625
Proliferation of cells	KIF15	-0.35943736	0.00550231	0.031615119
Proliferation of cells	ACTN1	-0.35999112	0.001608062	0.011873427
Proliferation of cells	CALR	-0.36110598	0.008450911	0.044512924
Proliferation of cells	DEGS1	-0.36114689	0.003930924	0.024167144
Proliferation of cells	RAN	-0.3623276	0.001879415	0.013429905
Proliferation of cells	URI1	-0.36242768	0.006473735	0.036041254
Proliferation of cells	NOP58	-0.36448712	0.002341129	0.016056691
Proliferation of cells	GPI	-0.36543017	0.00572972	0.032677179
Proliferation of cells	LMNB2	-0.36626066	0.00094003	0.007564152
Proliferation of cells	KAT2A	-0.36759966	0.006276316	0.035151729

Proliferation of cells	CCT7	-0.36938826	0.004895672	0.028762882
Proliferation of cells	XRCC5	-0.36942464	0.000208971	0.002186914
Proliferation of cells	GTPBP4	-0.37173158	0.001481772	0.011107339
Proliferation of cells	CCND3	-0.37273845	0.004973728	0.029124577
Proliferation of cells	SF3A3	-0.37353531	0.002025001	0.014274769
Proliferation of cells	EIF3B	-0.37381833	0.007540234	0.040714049
Proliferation of cells	VDAC3	-0.37723453	0.003254553	0.020876912
Proliferation of cells	PDAP1	-0.37745629	0.004471527	0.026776165
Proliferation of cells	SASH3	-0.37800455	0.004308735	0.026074315
Proliferation of cells	FBXO4	-0.37808614	0.002551386	0.017166946
Proliferation of cells	CD33	-0.37851668	0.001152078	0.008981247
Proliferation of cells	RASSF4	-0.37954334	0.00492518	0.028888417
Proliferation of cells	POLR2K	-0.38221964	0.003373312	0.021452572
Proliferation of cells	MAP2K3	-0.38261876	0.001763179	0.012748202
Proliferation of cells	ELAC2	-0.38432404	0.003700983	0.023081383
Proliferation of cells	PDCD6	-0.38736624	0.000134382	0.001497704
Proliferation of cells	PSMB10	-0.3876699	0.008214378	0.043545773
Proliferation of cells	TACC3	-0.38824207	0.004696507	0.027852922
Proliferation of cells	MGAT5	-0.38841824	0.002766228	0.018375582
Proliferation of cells	HSP90AB1	-0.39066305	0.000271119	0.002711648
Proliferation of cells	TBXAS1	-0.39234984	0.0073046	0.03967111
Proliferation of cells	ARHGEF6	-0.39225896	0.006264429	0.035118408
Proliferation of cells	PYGO2	-0.39254301	0.000727415	0.006131361
Proliferation of cells	RBBP4	-0.39367746	0.006707839	0.037099103
Proliferation of cells	VDR	-0.39516174	0.000630647	0.005437107
Proliferation of cells	SSBP1	-0.39528457	0.002074388	0.0145536
Proliferation of cells	PSMA4	-0.39577417	0.001649642	0.012124935
Proliferation of cells	FOSL2	-0.39824397	0.0045187	0.02698596
Proliferation of cells	BLM	-0.3997151	0.001032081	0.008211242
Proliferation of cells	DPY30	-0.40356647	0.005197375	0.030284739
Proliferation of cells	OGFOD1	-0.40393756	0.000752206	0.00629844
Proliferation of cells	MFNG	-0.40480912	0.001172485	0.009100349
Proliferation of cells	ACAT1	-0.4060544	0.001323157	0.010080195
Proliferation of cells	SETMAR	-0.40701267	0.009213111	0.047561313
Proliferation of cells	SSB	-0.40836828	0.001813617	0.013038975
Proliferation of cells	GNL3	-0.40855469	0.000312092	0.0030459
Proliferation of cells	CASP2	-0.40963783	0.002058064	0.01446187
Proliferation of cells	VDAC1	-0.40951875	5.55E-05	0.000708713
Proliferation of cells	VRK1	-0.40994959	0.000605169	0.005273826
Proliferation of cells	AGK	-0.41045825	0.006802856	0.037473791
Proliferation of cells	HDAC2	-0.41018408	0.000934508	0.007523129
Proliferation of cells	UBIAD1	-0.41109149	0.000637824	0.005483001
Proliferation of cells	BYSL	-0.41305999	0.004598094	0.027349641
Proliferation of cells	PARP2	-0.4136029	0.000487818	0.004407007
Proliferation of cells	SLC43A1	-0.41398147	0.001378502	0.010434626
Proliferation of cells	POLR3E	-0.41483522	8.91E-05	0.001054376

Proliferation of cells	EIF4G1	-0.41482025	5.81E-05	0.000734711
Proliferation of cells	AGGF1	-0.41589993	0.008147479	0.043229878
Proliferation of cells	EI24	-0.41706225	7.02E-05	0.000861093
Proliferation of cells	TCP1	-0.41817728	7.89E-05	0.000943735
Proliferation of cells	STIP1	-0.4183418	0.000836632	0.006859684
Proliferation of cells	HNRNPM	-0.41885869	8.79E-05	0.001041669
Proliferation of cells	NDUFAF4	-0.41978678	0.001431083	0.01076832
Proliferation of cells	NCL	-0.4200204	0.00028652	0.002832163
Proliferation of cells	SF3B3	-0.42195309	6.24E-05	0.000781175
Proliferation of cells	TRAP1	-0.42220263	0.001498148	0.011220615
Proliferation of cells	KDM1A	-0.42256937	0.000721543	0.006090552
Proliferation of cells	IVNS1ABP	-0.42300343	0.000911392	0.007363762
Proliferation of cells	SUMO1	-0.42388178	0.000197537	0.00208625
Proliferation of cells	MATK	-0.42551255	0.008318021	0.04399006
Proliferation of cells	USP10	-0.42681452	0.008098213	0.043045712
Proliferation of cells	DIS3L	-0.42846342	0.00110012	0.008640618
Proliferation of cells	HILPDA	-0.42962025	0.000329757	0.003197202
Proliferation of cells	ATIC	-0.43089384	0.000248798	0.002521084
Proliferation of cells	RYK	-0.43139367	0.007328449	0.03976412
Proliferation of cells	HNRNPD	-0.43137316	8.51E-05	0.001011922
Proliferation of cells	EPHB4	-0.43253821	0.007715418	0.041533577
Proliferation of cells	IDH2	-0.4323998	0.000234773	0.002402298
Proliferation of cells	CGREF1	-0.43737161	0.001969697	0.013947811
Proliferation of cells	TSN	-0.4373623	0.000881168	0.00716848
Proliferation of cells	CERK	-0.43854339	0.000381529	0.003589329
Proliferation of cells	DGCR8	-0.43992734	0.000134498	0.00149805
Proliferation of cells	NCBP1	-0.44073401	0.001953415	0.013852695
Proliferation of cells	ADNP2	-0.44193667	0.008441227	0.044482531
Proliferation of cells	NOP2	-0.44334348	0.003577085	0.022522435
Proliferation of cells	POLR2H	-0.44416602	0.008497085	0.044644296
Proliferation of cells	ELAVL1	-0.44424414	0.000478919	0.004333225
Proliferation of cells	NANOS1	-0.44543343	0.003985901	0.024457774
Proliferation of cells	PRPF19	-0.44498603	0.000272324	0.002718054
Proliferation of cells	ACTB	-0.44584853	0.000343897	0.003316174
Proliferation of cells	SUV39H1	-0.44779607	0.000168691	0.001823944
Proliferation of cells	YWHAQ	-0.44835861	0.004588126	0.027299505
Proliferation of cells	CDCA4	-0.45023744	8.59E-05	0.001020328
Proliferation of cells	LILRB1	-0.45298895	0.003611318	0.022689667
Proliferation of cells	PRDX2	-0.45365187	0.0043817	0.026354068
Proliferation of cells	ABCC1	-0.45437548	0.000188942	0.002005026
Proliferation of cells	PNP	-0.45465558	0.002023036	0.014268191
Proliferation of cells	KANK2	-0.45567583	0.002275155	0.015670835
Proliferation of cells	TIMELESS	-0.45638619	4.04E-05	0.000536222
Proliferation of cells	ATAT1	-0.45706611	0.003351948	0.021361229
Proliferation of cells	PSMB2	-0.45914656	0.000176252	0.001895298
Proliferation of cells	MTF2	-0.46056901	0.008059153	0.042889485

Proliferation of cells	NFS1	-0.46021836	5.13E-05	0.000661099
Proliferation of cells	FTSJ3	-0.46109127	0.001735644	0.012579877
Proliferation of cells	LAMC1	-0.46239439	0.00226552	0.01563482
Proliferation of cells	IMPDH1	-0.46280827	0.000775143	0.006432819
Proliferation of cells	PRKD2	-0.46437642	0.002563262	0.017227259
Proliferation of cells	RBM38	-0.46534039	0.001663997	0.012194869
Proliferation of cells	UBE2V2	-0.4664959	0.008052239	0.042880922
Proliferation of cells	BUB1B	-0.4685519	0.001896958	0.013527152
Proliferation of cells	WDR5	-0.46878785	4.52E-05	0.000592134
Proliferation of cells	EHD4	-0.47245045	0.000811234	0.00668543
Proliferation of cells	TFAP4	-0.47510048	0.002162951	0.015075418
Proliferation of cells	NMB	-0.47542574	0.005299761	0.030719913
Proliferation of cells	FLOT2	-0.47512545	0.000255031	0.00257249
Proliferation of cells	PKP4	-0.47514571	0.000116625	0.001333798
Proliferation of cells	CCT3	-0.47514652	0.000235131	0.002404573
Proliferation of cells	TOE1	-0.47580454	0.00024365	0.002477415
Proliferation of cells	PA2G4	-0.47611536	0.000645697	0.005537269
Proliferation of cells	NFIX	-0.47887275	0.000607868	0.005294749
Proliferation of cells	UTP20	-0.48001114	0.00088914	0.007213849
Proliferation of cells	CCT2	-0.48039031	9.55E-06	0.000150544
Proliferation of cells	PAK1	-0.48067094	5.03E-06	8.51E-05
Proliferation of cells	GFM1	-0.48131193	0.003323039	0.021208131
Proliferation of cells	SESN1	-0.48349713	0.001279005	0.009802756
Proliferation of cells	CD4	-0.48338957	3.93E-06	6.89E-05
Proliferation of cells	CBX1	-0.48362429	0.000198718	0.002097473
Proliferation of cells	H2AX	-0.482	0.0159	
Proliferation of cells	ADAM15	-0.48609294	0.00039048	0.003650064
Proliferation of cells	HMGB1	-0.48635729	0.000599974	0.005233694
Proliferation of cells	SCRIB	-0.48646594	0.000143606	0.001587492
Proliferation of cells	STS	-0.48852568	0.003839144	0.023742741
Proliferation of cells	LAS1L	-0.4895827	0.000216122	0.002243796
Proliferation of cells	FUT8	-0.49029053	0.004654983	0.02765094
Proliferation of cells	CISD1	-0.4903302	0.001877968	0.013424972
Proliferation of cells	PIGN	-0.49102076	0.00227439	0.015670835
Proliferation of cells	EIF5A	-0.49107556	0.000308391	0.003018082
Proliferation of cells	RUVBL1	-0.49120768	0.000230538	0.002363048
Proliferation of cells	ZNF143	-0.49177067	0.00789998	0.042211759
Proliferation of cells	NFYA	-0.49510804	0.00119298	0.009231159
Proliferation of cells	CXCR3	-0.49687516	0.002317185	0.015923246
Proliferation of cells	AIF1	-0.49780297	0.007601307	0.040981459
Proliferation of cells	HNRNPA0	-0.49757882	3.44E-05	0.000468048
Proliferation of cells	FCGR2A	-0.49839268	0.000347412	0.003340203
Proliferation of cells	NDUFAB1	-0.5001323	0.002460352	0.016674569
Proliferation of cells	NAGA	-0.50030266	2.37E-06	4.38E-05
Proliferation of cells	API5	-0.50062475	0.000809366	0.006675116
Proliferation of cells	RPS6KA4	-0.50045222	2.47E-05	0.000348291

Proliferation of cells	SDC2	-0.50197154	0.001830878	0.013141289
Proliferation of cells	RCL1	-0.5042711	0.000612627	0.00532574
Proliferation of cells	PBK	-0.50683769	0.001611207	0.011886757
Proliferation of cells	PPT1	-0.50826413	1.59E-06	3.03E-05
Proliferation of cells	NDN	-0.50963408	0.000109857	0.00126665
Proliferation of cells	TOPBP1	-0.5106885	0.000581056	0.005096227
Proliferation of cells	CLEC11A	-0.51184014	0.001311749	0.010010482
Proliferation of cells	ZMAT3	-0.5125071	0.00525953	0.030530747
Proliferation of cells	CENPB	-0.51251448	0.000648035	0.005554633
Proliferation of cells	DHX15	-0.51365001	0.000597117	0.005216467
Proliferation of cells	C1QBP	-0.5136228	3.79E-05	0.000508925
Proliferation of cells	GMNN	-0.51485217	2.26E-05	0.000321874
Proliferation of cells	CCNA2	-0.51527615	0.004471218	0.026776165
Proliferation of cells	CCT5	-0.51567606	4.91E-06	8.34E-05
Proliferation of cells	PTPMT1	-0.5181439	8.00E-05	0.000954007
Proliferation of cells	PHB	-0.51966523	0.002133854	0.014900031
Proliferation of cells	DTYMK	-0.52066814	0.000820093	0.006742779
Proliferation of cells	HDAC4	-0.52389542	0.001141849	0.008928965
Proliferation of cells	SHMT1	-0.52476395	8.87E-05	0.00104977
Proliferation of cells	PNPT1	-0.525597	1.42E-05	0.000212428
Proliferation of cells	MARCKSL1	-0.5258784	0.000112638	0.001295225
Proliferation of cells	PARP1	-0.52630526	6.69E-07	1.41E-05
Proliferation of cells	WDR12	-0.52652178	2.52E-05	0.000353432
Proliferation of cells	IKZF1	-0.52879511	0.000144534	0.001593826
Proliferation of cells	DHX9	-0.52983158	1.04E-05	0.000161115
Proliferation of cells	TAF4B	-0.53098648	0.007611714	0.041000196
Proliferation of cells	NAE1	-0.53426976	0.000620162	0.005374518
Proliferation of cells	ACVRL1	-0.53931353	0.006780369	0.037403527
Proliferation of cells	FUBP1	-0.53805752	3.52E-05	0.000477181
Proliferation of cells	CCDC85B	-0.53893028	0.002306794	0.015857981
Proliferation of cells	DKC1	-0.53885688	6.00E-07	1.27E-05
Proliferation of cells	CAT	-0.54087762	1.17E-05	0.000178842
Proliferation of cells	TXNIP	-0.54187421	0.000177874	0.001904671
Proliferation of cells	G3BP1	-0.54330824	0.002138708	0.014928051
Proliferation of cells	PPIL1	-0.54334059	6.54E-05	0.00081122
Proliferation of cells	PTGES3	-0.54424899	0.001986121	0.014045338
Proliferation of cells	YWHAG	-0.54508012	0.002527634	0.017026506
Proliferation of cells	LRIG1	-0.5467209	0.000894561	0.007244269
Proliferation of cells	MAPRE2	-0.54715325	0.00011444	0.001314247
Proliferation of cells	RPA3	-0.54929745	0.000102088	0.001184667
Proliferation of cells	PRKACB	-0.55136449	0.006811501	0.037486497
Proliferation of cells	DDX21	-0.55236002	0.005450257	0.031397372
Proliferation of cells	TESC	-0.55225202	0.001018818	0.008120791
Proliferation of cells	TNFSF13B	-0.55313187	0.001050405	0.008335123
Proliferation of cells	PRTN3	-0.55366754	0.001168561	0.009085794
Proliferation of cells	MCM7	-0.55672791	1.23E-05	0.000186952

Proliferation of cells	SUMO3	-0.55827121	1.13E-07	2.79E-06
Proliferation of cells	MINPP1	-0.56066475	0.005655043	0.032304386
Proliferation of cells	CLEC10A	-0.56031423	0.001057974	0.00837836
Proliferation of cells	PPP5C	-0.56000332	9.96E-07	2.02E-05
Proliferation of cells	SEMA4C	-0.56647687	9.70E-05	0.001133388
Proliferation of cells	ATAD2	-0.56688515	0.002131674	0.014890669
Proliferation of cells	AGTRAP	-0.56706721	0.000409461	0.003793973
Proliferation of cells	VAV3	-0.57152112	0.00058044	0.005093345
Proliferation of cells	TCOF1	-0.57253996	0.000276661	0.002753106
Proliferation of cells	EXOSC9	-0.5731663	5.85E-06	9.75E-05
Proliferation of cells	EAF2	-0.57579989	2.88E-05	0.000397964
Proliferation of cells	CCL23	-0.57635226	0.001233614	0.009510707
Proliferation of cells	THBD	-0.57635932	7.91E-05	0.000945882
Proliferation of cells	CSF1R	-0.57744161	5.67E-06	9.48E-05
Proliferation of cells	ATAD3A	-0.57832436	8.43E-05	0.001002953
Proliferation of cells	AMD1	-0.58152129	0.002385229	0.016294696
Proliferation of cells	COQ3	-0.58143056	0.000282188	0.002801873
Proliferation of cells	PPAT	-0.58251276	0.002192124	0.015240929
Proliferation of cells	DEPTOR	-0.58319178	0.000743262	0.006238264
Proliferation of cells	CDCA7L	-0.58332442	4.81E-08	1.27E-06
Proliferation of cells	FKBP1A	-0.58381217	1.29E-07	3.15E-06
Proliferation of cells	STK17B	-0.58687672	0.003757963	0.023321976
Proliferation of cells	CDK1	-0.58738551	0.000292478	0.002884627
Proliferation of cells	RAD51	-0.58723762	1.10E-05	0.000168506
Proliferation of cells	HPRT1	-0.58752515	0.000459673	0.004188999
Proliferation of cells	NTHL1	-0.58874494	0.002385934	0.016294696
Proliferation of cells	CBR1	-0.58860692	0.000244875	0.002488442
Proliferation of cells	APAF1	-0.5890067	0.00068153	0.005794148
Proliferation of cells	WEE1	-0.59104175	0.001550607	0.011540448
Proliferation of cells	TNFSF14	-0.5911154	9.92E-05	0.00115327
Proliferation of cells	MIR17HG	-0.59511173	0.005309754	0.030740252
Proliferation of cells	ITGB7	-0.59485625	4.09E-06	7.14E-05
Proliferation of cells	APBA2	-0.59745911	0.003503574	0.022153922
Proliferation of cells	FANCC	-0.59649091	0.000171933	0.001855596
Proliferation of cells	NRG4	-0.59650011	4.55E-05	0.000595488
Proliferation of cells	NASP	-0.59808024	3.29E-05	0.000449665
Proliferation of cells	NAT10	-0.59900233	2.90E-08	7.97E-07
Proliferation of cells	PDLIM2	-0.59994441	2.80E-05	0.00038907
Proliferation of cells	TFDP1	-0.60015592	2.75E-05	0.000382929
Proliferation of cells	CTSG	-0.60228336	0.000148726	0.001634975
Proliferation of cells	TPMT	-0.60428423	0.000213867	0.002224288
Proliferation of cells	CSTF2	-0.60395405	4.61E-07	1.00E-05
Proliferation of cells	CAMK1	-0.6057177	0.000164074	0.001780531
Proliferation of cells	CCHCR1	-0.60589527	0.000213106	0.002217673
Proliferation of cells	FXN	-0.60586201	3.23E-06	5.78E-05
Proliferation of cells	CST3	-0.60772851	0.000678191	0.005768528

Proliferation of cells	PSME3	-0.60823723	1.90E-08	5.45E-07
Proliferation of cells	RECQL4	-0.60873532	0.000225992	0.002319966
Proliferation of cells	STMN1	-0.60952658	3.67E-08	9.87E-07
Proliferation of cells	UBE2N	-0.61097879	5.76E-06	9.61E-05
Proliferation of cells	CDC7	-0.61310943	1.09E-05	0.000167678
Proliferation of cells	SLC39A4	-0.61430014	0.001051733	0.00834193
Proliferation of cells	GPRIN1	-0.61826919	0.000597432	0.005216655
Proliferation of cells	CTPS1	-0.61953846	3.21E-08	8.73E-07
Proliferation of cells	CCND2	-0.62103485	0.000119802	0.001365076
Proliferation of cells	CASP1	-0.62150929	2.55E-07	5.85E-06
Proliferation of cells	C1GALT1C1	-0.62852875	5.00E-06	8.48E-05
Proliferation of cells	FAS	-0.63054896	0.005535302	0.031743007
Proliferation of cells	ACTL6A	-0.62962124	1.01E-06	2.04E-05
Proliferation of cells	PRMT6	-0.63052822	0.000123916	0.00140488
Proliferation of cells	LIG1	-0.63100522	1.09E-07	2.71E-06
Proliferation of cells	BCCIP	-0.63386422	2.22E-06	4.13E-05
Proliferation of cells	HNRNPR	-0.63556513	5.88E-05	0.00074146
Proliferation of cells	RRM2	-0.635698	4.28E-07	9.41E-06
Proliferation of cells	ALOX5AP	-0.63907986	5.06E-06	8.54E-05
Proliferation of cells	F3	-0.64198912	0.000168387	0.001821764
Proliferation of cells	PGK1	-0.64210145	1.41E-09	5.06E-08
Proliferation of cells	FZD3	-0.64406378	0.000487133	0.004403061
Proliferation of cells	IKBKE	-0.64320826	4.50E-06	7.74E-05
Proliferation of cells	RFC4	-0.64492104	1.96E-07	4.64E-06
Proliferation of cells	GNPNAT1	-0.6472787	0.000110577	0.001273177
Proliferation of cells	TP73	-0.65080288	0.001032479	0.008211242
Proliferation of cells	EEF1E1	-0.65183865	0.002457681	0.016662831
Proliferation of cells	RPA1	-0.65051927	2.21E-09	7.58E-08
Proliferation of cells	IRF4	-0.6536435	0.000978567	0.007838698
Proliferation of cells	BCL11A	-0.65874811	2.60E-05	0.000364103
Proliferation of cells	RAB27A	-0.66156094	2.19E-05	0.000313318
Proliferation of cells	HSPD1	-0.66245738	1.15E-06	2.28E-05
Proliferation of cells	BOP1	-0.6660483	0.00012744	0.001435025
Proliferation of cells	CD84	-0.66718047	4.35E-05	0.000571658
Proliferation of cells	TLN2	-0.67172097	0.002968849	0.01941625
Proliferation of cells	WWC1	-0.66960024	3.30E-06	5.88E-05
Proliferation of cells	FDXR	-0.66950904	4.52E-05	0.000592821
Proliferation of cells	EXOSC2	-0.67237	2.91E-07	6.62E-06
Proliferation of cells	NOC3L	-0.6749921	3.96E-05	0.000527665
Proliferation of cells	PRKCQ	-0.68025817	1.31E-05	0.000196905
Proliferation of cells	GSN	-0.6812552	3.92E-07	8.70E-06
Proliferation of cells	STXBP4	-0.68437161	0.002716264	0.018097883
Proliferation of cells	PLK2	-0.68188795	2.25E-07	5.23E-06
Proliferation of cells	PAQR4	-0.68297914	9.75E-06	0.000153127
Proliferation of cells	IGFBP7	-0.68294686	3.03E-08	8.30E-07
Proliferation of cells	CDK5R1	-0.68504957	0.001225816	0.009456372

Proliferation of cells	IGF1	-0.68614766	2.75E-05	0.000383207
Proliferation of cells	HLA-DQB1	-0.68836677	0.000374936	0.003539238
Proliferation of cells	HAT1	-0.68694637	1.57E-07	3.77E-06
Proliferation of cells	HNRNPAB	-0.68855408	7.79E-10	2.93E-08
Proliferation of cells	LIMA1	-0.69286197	8.94E-05	0.00105647
Proliferation of cells	PHF6	-0.69885239	0.006020798	0.033956456
Proliferation of cells	NCAM2	-0.69846616	0.000177747	0.001904671
Proliferation of cells	AHSA1	-0.69826748	3.39E-07	7.65E-06
Proliferation of cells	ATAD5	-0.70065356	0.000561369	0.00495048
Proliferation of cells	TPD52	-0.70335917	0.000299746	0.00294433
Proliferation of cells	HHEX	-0.70303131	1.07E-06	2.13E-05
Proliferation of cells	P2RY2	-0.70338016	2.50E-09	8.54E-08
Proliferation of cells	TMPO	-0.70576697	0.000158674	0.001731462
Proliferation of cells	DNPH1	-0.71158203	0.000109867	0.00126665
Proliferation of cells	TNFAIP8	-0.71386466	0.000643267	0.005521761
Proliferation of cells	WDR77	-0.71282289	1.61E-09	5.69E-08
Proliferation of cells	NOLC1	-0.71550357	2.68E-09	9.10E-08
Proliferation of cells	CSE1L	-0.71660858	2.44E-08	6.83E-07
Proliferation of cells	TLR6	-0.71940174	6.46E-05	0.00080383
Proliferation of cells	EBNA1BP2	-0.72020084	2.63E-06	4.81E-05
Proliferation of cells	RANBP1	-0.72021853	5.66E-07	1.21E-05
Proliferation of cells	B4GALT2	-0.72210197	4.33E-06	7.50E-05
Proliferation of cells	ATP6VOE2	-0.72396134	1.25E-05	0.000189676
Proliferation of cells	NME1	-0.72619412	0.000103166	0.001196384
Proliferation of cells	MIPEP	-0.72718047	1.82E-06	3.44E-05
Proliferation of cells	CD320	-0.72923167	4.62E-05	0.000603213
Proliferation of cells	HLTF	-0.73010282	0.000600597	0.005236558
Proliferation of cells	SRSF1	-0.73039257	8.09E-10	3.03E-08
Proliferation of cells	POLA1	-0.73342518	2.52E-09	8.60E-08
Proliferation of cells	ICMT	-0.73483189	1.14E-07	2.81E-06
Proliferation of cells	LDHA	-0.73543645	3.11E-08	8.48E-07
Proliferation of cells	CACYBP	-0.73619109	2.07E-08	5.90E-07
Proliferation of cells	LY75	-0.73916117	0.001098883	0.008634843
Proliferation of cells	PRPS2	-0.73851545	2.98E-05	0.00040975
Proliferation of cells	PPP2R1B	-0.73918317	6.83E-06	0.000111597
Proliferation of cells	GLIPR1	-0.74376986	1.83E-09	6.36E-08
Proliferation of cells	NCDN	-0.74728035	7.60E-07	1.58E-05
Proliferation of cells	TIFA	-0.74972536	1.38E-06	2.65E-05
Proliferation of cells	PIK3CG	-0.75192986	0.000440849	0.004048641
Proliferation of cells	ST8SIA4	-0.75288418	0.000223284	0.002299321
Proliferation of cells	MEST	-0.75848335	1.09E-05	0.000167678
Proliferation of cells	FBP1	-0.76070644	1.35E-08	4.03E-07
Proliferation of cells	PRKDC	-0.76085678	6.44E-07	1.36E-05
Proliferation of cells	MYBBP1A	-0.76216779	1.11E-08	3.33E-07
Proliferation of cells	E2F8	-0.76757677	0.000124816	0.001411711
Proliferation of cells	TREM2	-0.7763333	6.20E-06	0.000102876

Proliferation of cells	BRCA1	-0.78900947	2.06E-09	7.11E-08
Proliferation of cells	MCM8	-0.7931498	8.04E-09	2.48E-07
Proliferation of cells	LGALS12	-0.79499994	8.96E-05	0.001057995
Proliferation of cells	RMI1	-0.79522817	0.000258848	0.002606547
Proliferation of cells	ST14	-0.79585196	1.35E-06	2.60E-05
Proliferation of cells	MAD2L1	-0.79883114	3.61E-06	6.39E-05
Proliferation of cells	RBBP9	-0.80013005	6.70E-05	0.000827427
Proliferation of cells	PTPRU	-0.81047606	0.000894496	0.007244269
Proliferation of cells	MSH2	-0.81040462	1.31E-06	2.55E-05
Proliferation of cells	ITPR3	-0.81426164	0.000129089	0.001449373
Proliferation of cells	FIGNL1	-0.81426145	0.000801575	0.006624288
Proliferation of cells	HSP90AA1	-0.81492277	1.62E-09	5.72E-08
Proliferation of cells	S100B	-0.82579907	0.003513468	0.022192757
Proliferation of cells	DNAJA1	-0.82603816	1.33E-07	3.25E-06
Proliferation of cells	SLC16A1	-0.83633112	3.93E-05	0.000525165
Proliferation of cells	MYCBP	-0.84028993	6.06E-13	3.48E-11
Proliferation of cells	GPC3	-0.84420408	4.22E-06	7.35E-05
Proliferation of cells	FANCL	-0.8457188	4.44E-09	1.44E-07
Proliferation of cells	KIT	-0.85979242	3.74E-05	0.000502705
Proliferation of cells	RRM1	-0.85939411	2.97E-11	1.39E-09
Proliferation of cells	LAPTM4B	-0.86165956	8.67E-07	1.78E-05
Proliferation of cells	PCNA	-0.86414948	5.04E-15	3.61E-13
Proliferation of cells	TFAM	-0.86916971	2.00E-05	0.000288107
Proliferation of cells	E2F1	-0.87271428	2.85E-09	9.60E-08
Proliferation of cells	MTAP	-0.87517225	2.38E-08	6.69E-07
Proliferation of cells	RBL1	-0.87526598	2.12E-09	7.29E-08
Proliferation of cells	MYLIP	-0.87749694	1.08E-09	3.95E-08
Proliferation of cells	SLC19A1	-0.87805483	3.97E-09	1.30E-07
Proliferation of cells	GAL	-0.88025245	2.95E-07	6.69E-06
Proliferation of cells	PRDX4	-0.8818369	5.67E-07	1.21E-05
Proliferation of cells	GPR3	-0.89348473	0.006028873	0.033991196
Proliferation of cells	CDC6	-0.88475297	3.42E-12	1.78E-10
Proliferation of cells	RFC3	-0.8920019	2.07E-06	3.87E-05
Proliferation of cells	NEFH	-0.89287512	5.52E-08	1.45E-06
Proliferation of cells	BANK1	-0.90262479	0.00180784	0.013007504
Proliferation of cells	DHFR	-0.89576927	7.41E-12	3.68E-10
Proliferation of cells	CD300C	-0.89794143	2.72E-07	6.22E-06
Proliferation of cells	FGL2	-0.90112164	8.16E-06	0.000130735
Proliferation of cells	TLR4	-0.91262131	4.88E-06	8.31E-05
Proliferation of cells	ORC1	-0.91138791	1.32E-16	1.16E-14
Proliferation of cells	FEN1	-0.91220022	1.12E-07	2.78E-06
Proliferation of cells	HSPA8	-0.91368153	1.41E-09	5.06E-08
Proliferation of cells	PTAFR	-0.91533248	2.73E-08	7.55E-07
Proliferation of cells	TCF19	-0.91624488	4.04E-10	1.61E-08
Proliferation of cells	CD1D	-0.92307868	0.00049833	0.004483708
Proliferation of cells	UHRF1	-0.92094713	1.59E-09	5.65E-08

Proliferation of cells	STEAP3	-0.92531509	1.09E-10	4.69E-09
Proliferation of cells	CHEK1	-0.92576902	1.94E-10	8.08E-09
Proliferation of cells	IL11	-0.95134791	0.005632508	0.032217149
Proliferation of cells	MTHFD1	-0.9422609	6.80E-20	7.63E-18
Proliferation of cells	NEIL3	-0.94882285	1.73E-08	5.01E-07
Proliferation of cells	SERPINB2	-0.97742153	0.004858521	0.02861093
Proliferation of cells	TNFRSF21	-0.96697914	0.000328557	0.003187305
Proliferation of cells	TLR2	-0.96048863	4.94E-13	2.87E-11
Proliferation of cells	FKBP4	-0.96211494	2.61E-10	1.07E-08
Proliferation of cells	MS4A4A	-0.96972296	4.51E-12	2.32E-10
Proliferation of cells	NDNF	-1.00485557	0.003148157	0.02031191
Proliferation of cells	CXCR2	-0.98267857	1.11E-12	6.21E-11
Proliferation of cells	TEAD4	-1.00261203	0.003747531	0.023296699
Proliferation of cells	TERT	-0.98631645	5.52E-06	9.24E-05
Proliferation of cells	CLSPN	-0.98456126	1.36E-10	5.77E-09
Proliferation of cells	ENC1	-1.00248291	1.97E-07	4.66E-06
Proliferation of cells	NRARP	-1.0052958	1.06E-10	4.61E-09
Proliferation of cells	CBX2	-1.01191102	1.34E-12	7.34E-11
Proliferation of cells	FPR2	-1.03640922	0.002872032	0.018929592
Proliferation of cells	TIMM8A	-1.01944763	9.41E-06	0.000148643
Proliferation of cells	THBS4	-1.01912542	8.47E-09	2.61E-07
Proliferation of cells	MYBL2	-1.02027388	2.86E-13	1.71E-11
Proliferation of cells	IGFBP4	-1.02779249	2.58E-06	4.73E-05
Proliferation of cells	THRA	-1.03071347	1.91E-13	1.17E-11
Proliferation of cells	MCM5	-1.03024714	4.43E-17	4.10E-15
Proliferation of cells	CDK2	-1.04177128	3.08E-16	2.48E-14
Proliferation of cells	CX3CR1	-1.07079423	6.01E-11	2.68E-09
Proliferation of cells	ASIC1	-1.08529418	1.14E-10	4.92E-09
Proliferation of cells	HPSE	-1.08950672	1.66E-09	5.85E-08
Proliferation of cells	FERMT1	-1.09831337	6.71E-05	0.000827427
Proliferation of cells	TYMS	-1.09415264	5.59E-27	9.02E-25
Proliferation of cells	CDC45	-1.10369229	9.12E-15	6.42E-13
Proliferation of cells	MCM3	-1.10569081	3.09E-16	2.48E-14
Proliferation of cells	PLAC8	-1.10602733	1.07E-17	1.02E-15
Proliferation of cells	XRCC2	-1.11685465	2.13E-08	6.02E-07
Proliferation of cells	CCR2	-1.1230607	1.21E-17	1.15E-15
Proliferation of cells	BRIP1	-1.12595676	2.33E-07	5.42E-06
Proliferation of cells	ZNRF3	-1.12844172	4.28E-07	9.41E-06
Proliferation of cells	DUSP6	-1.12941146	1.62E-10	6.82E-09
Proliferation of cells	COL8A2	-1.13171914	6.89E-11	3.06E-09
Proliferation of cells	HELLS	-1.13831915	1.77E-08	5.10E-07
Proliferation of cells	MAP2K6	-1.14419881	7.30E-07	1.52E-05
Proliferation of cells	EPHA1	-1.14815236	5.38E-10	2.10E-08
Proliferation of cells	RNASE3	-1.15938771	2.15E-13	1.32E-11
Proliferation of cells	SIRPG	-1.1878248	0.000205166	0.002157832
Proliferation of cells	TIPIN	-1.18016583	4.43E-14	2.89E-12

Proliferation of cells	SLC29A1	-1.18838089	1.79E-21	2.29E-19
Proliferation of cells	PROK2	-1.19600275	1.95E-06	3.67E-05
Proliferation of cells	SKP2	-1.21930654	4.54E-16	3.56E-14
Proliferation of cells	MCM2	-1.23225495	1.11E-30	2.10E-28
Proliferation of cells	CCNE1	-1.23925357	1.65E-19	1.80E-17
Proliferation of cells	CDC25A	-1.24808613	1.46E-20	1.75E-18
Proliferation of cells	E2F2	-1.25961512	2.46E-14	1.66E-12
Proliferation of cells	HSD11B1	-1.29047689	0.000173694	0.001871192
Proliferation of cells	SIGLEC7	-1.27234462	1.91E-07	4.53E-06
Proliferation of cells	KCNK5	-1.28275939	2.11E-12	1.12E-10
Proliferation of cells	DTL	-1.30676888	5.14E-18	5.13E-16
Proliferation of cells	CSPG5	-1.41191638	1.07E-10	4.63E-09
Proliferation of cells	MCM10	-1.41990009	4.11E-19	4.39E-17
Proliferation of cells	PRKAR2B	-1.42937268	5.14E-07	1.11E-05
Proliferation of cells	FCER1A	-1.42718987	2.62E-11	1.23E-09
Proliferation of cells	MCM4	-1.45527339	4.11E-32	8.30E-30
Proliferation of cells	CCND1	-1.48130396	9.69E-08	2.46E-06
Proliferation of cells	MNDA	-1.60291325	6.20E-19	6.44E-17
Proliferation of cells	LYZ	-1.6082778	7.75E-30	1.43E-27
Proliferation of cells	GAPT	-1.62294854	9.06E-12	4.48E-10
Proliferation of cells	KCTD12	-1.71134626	1.60E-08	4.69E-07
Proliferation of cells	CCNE2	-2.06726702	9.30E-19	9.60E-17
Cholesterol Synthesis	LSS	3.941881025	1.28E-215	2.27E-211
Cholesterol Synthesis	DHCR7	3.777426011	7.20E-143	4.26E-139
Cholesterol Synthesis	CXCL10	3.693627299	6.31E-34	1.38E-31
Cholesterol Synthesis	MVK	3.235551334	1.58E-114	3.11E-111
Cholesterol Synthesis	INSIG1	2.829905168	3.09E-68	2.29E-65
Cholesterol Synthesis	LDLR	2.816968248	1.79E-55	8.58E-53
Cholesterol Synthesis	SQLE	2.696010612	2.49E-59	1.26E-56
Cholesterol Synthesis	HMGCR	2.685614543	1.43E-48	5.89E-46
Cholesterol Synthesis	CYP51A1	2.678978322	3.34E-24	4.86E-22
Cholesterol Synthesis	FDFT1	2.448729304	1.98E-107	3.19E-104
Cholesterol Synthesis	HSD17B7	2.447038419	5.75E-74	5.37E-71
Cholesterol Synthesis	IDI1	2.289878156	3.24E-70	2.62E-67
Cholesterol Synthesis	DHCR24	2.184589887	7.17E-68	5.09E-65
Cholesterol Synthesis	ABCA1	-1.90810035	4.51E-12	2.32E-10
DNA replication and repair	JUN	2.597003569	2.52E-62	1.49E-59
DNA replication and repair	HMOX1	2.057537368	2.88E-61	1.60E-58
DNA replication and repair	IER3	1.852566567	9.19E-10	3.39E-08
DNA replication and repair	NR4A1	1.418283585	6.57E-10	2.51E-08
DNA replication and repair	BTG2	1.106494264	1.36E-13	8.53E-12
DNA replication and repair	BBC3	1.07785076	3.49E-15	2.53E-13
DNA replication and repair	APLF	0.93374893	3.75E-07	8.37E-06
DNA replication and repair	CDKN2D	0.797500292	7.04E-08	1.81E-06
DNA replication and repair	SMAD3	0.670080158	4.02E-10	1.60E-08
DNA replication and repair	FOXO3	0.654309211	0.000191978	0.002033587

DNA replication and repair	NABP1	0.533970325	0.000783393	0.006489144
DNA replication and repair	ENDOV	0.498335497	0.000299277	0.002943499
DNA replication and repair	CDKN1A	0.494322236	0.00018452	0.001963975
DNA replication and repair	PARP9	0.46674854	0.002703056	0.018023424
DNA replication and repair	APBB1	0.463546016	0.007862248	0.042056036
DNA replication and repair	NFE2L1	0.45749541	5.36E-05	0.000689598
DNA replication and repair	G6PD	0.457400336	0.000321536	0.003127752
DNA replication and repair	KAT5	0.418641666	0.001818556	0.01306342
DNA replication and repair	CEBPG	0.409812169	0.000305881	0.002996819
DNA replication and repair	IRF1	0.381412601	0.001241612	0.009557453
DNA replication and repair	HINFP	0.36832922	0.002401248	0.016378533
DNA replication and repair	INTS3	0.332249103	0.005304933	0.030732722
DNA replication and repair	UVRAG	0.329767014	0.005911103	0.033465444
DNA replication and repair	KPNA2	-0.2862678	0.005456964	0.031424366
DNA replication and repair	FUS	-0.28834762	0.00453984	0.027065809
DNA replication and repair	AKT1	-0.29725945	0.00822988	0.043601897
DNA replication and repair	APEX1	-0.30348524	0.008902489	0.046362447
DNA replication and repair	ARHGAP1	-0.30843457	0.008511772	0.04469499
DNA replication and repair	DDB1	-0.32982833	0.001774176	0.012811432
DNA replication and repair	RPA2	-0.33675676	0.004032843	0.024699976
DNA replication and repair	LIG3	-0.34515747	0.002212537	0.015352778
DNA replication and repair	EYA3	-0.35850572	0.003023811	0.019695843
DNA replication and repair	XRCC5	-0.36942464	0.000208971	0.002186914
DNA replication and repair	TDP1	-0.37247381	0.001196481	0.00925421
DNA replication and repair	VDR	-0.39516174	0.000630647	0.005437107
DNA replication and repair	BLM	-0.3997151	0.001032081	0.008211242
DNA replication and repair	SETMAR	-0.40701267	0.009213111	0.047561313
DNA replication and repair	PARP2	-0.4136029	0.000487818	0.004407007
DNA replication and repair	EIF4G1	-0.41482025	5.81E-05	0.000734711
DNA replication and repair	BRCC3	-0.41775359	0.00488436	0.02872496
DNA replication and repair	GTF2H5	-0.41964227	0.007608698	0.040996397
DNA replication and repair	SUMO1	-0.42388178	0.000197537	0.00208625
DNA replication and repair	PRPF19	-0.44498603	0.000272324	0.002718054
DNA replication and repair	NABP2	-0.44718007	0.00247644	0.016745229
DNA replication and repair	SUV39H1	-0.44779607	0.000168691	0.001823944
DNA replication and repair	PNP	-0.45465558	0.002023036	0.014268191
DNA replication and repair	RAD51C	-0.45749595	0.002840447	0.018798192
DNA replication and repair	UBE2V2	-0.4664959	0.008052239	0.042880922
DNA replication and repair	RPS27L	-0.46628483	0.0012503	0.009615985
Differentiation of cells	CXCL10	3.693627299	6.31E-34	1.38E-31
Differentiation of cells	RHOB	3.532285315	3.19E-92	3.33E-89
Differentiation of cells	HTR2B	3.47436491	5.39E-45	1.99E-42
Differentiation of cells	TSC22D3	3.005059715	1.52E-113	2.69E-110
Differentiation of cells	GPNMB	2.965044415	2.47E-42	8.43E-40
Differentiation of cells	CCL3	2.891412015	1.19E-33	2.55E-31
Differentiation of cells	INSIG1	2.829905168	3.09E-68	2.29E-65

Differentiation of cells	JUN	2.597003569	2.52E-62	1.49E-59
Differentiation of cells	FGF18	2.559396042	2.77E-23	3.82E-21
Differentiation of cells	P2RX7	2.429506763	1.75E-21	2.26E-19
Differentiation of cells	C3AR1	2.371469186	1.91E-16	1.61E-14
Differentiation of cells	ICAM1	2.318962488	5.85E-34	1.30E-31
Differentiation of cells	SDC3	2.234380055	6.69E-24	9.57E-22
Differentiation of cells	CSF1	2.227878521	9.83E-16	7.55E-14
Differentiation of cells	HES1	2.23186863	5.87E-13	3.40E-11
Differentiation of cells	RELB	2.200161936	1.19E-42	4.13E-40
Differentiation of cells	MAFF	2.204553875	2.16E-20	2.52E-18
Differentiation of cells	TSPAN2	2.213413176	1.08E-11	5.27E-10
Differentiation of cells	CD109	2.150905166	7.28E-21	8.91E-19
Differentiation of cells	DDIT4	2.107648358	3.81E-48	1.54E-45
Differentiation of cells	HMOX1	2.057537368	2.88E-61	1.60E-58
Differentiation of cells	CXCL8	2.015	1.37E-13	
Differentiation of cells	IL2RA	2.009707646	8.77E-32	1.71E-29
Differentiation of cells	EGR2	2.023978767	3.39E-09	1.13E-07
Differentiation of cells	MAP3K12	1.990708532	5.11E-23	6.98E-21
Differentiation of cells	BCL3	1.979804628	9.16E-38	2.58E-35
Differentiation of cells	DDIT3	1.956820081	1.17E-36	3.02E-34
Differentiation of cells	BHLHE40	1.942230528	2.49E-54	1.16E-51
Differentiation of cells	PPARD	1.939584196	2.78E-37	7.71E-35
Differentiation of cells	NFKB2	1.884957345	2.08E-35	5.05E-33
Differentiation of cells	DUSP10	1.875061803	1.37E-35	3.36E-33
Differentiation of cells	CD83	1.816516585	5.32E-34	1.19E-31
Differentiation of cells	OPTN	1.807967664	1.87E-36	4.74E-34
Differentiation of cells	EMP1	1.815173026	9.35E-13	5.25E-11
Differentiation of cells	NTN1	1.812203827	1.09E-09	3.98E-08
Differentiation of cells	LPIN1	1.794578693	3.53E-27	5.85E-25
Differentiation of cells	PPP1R15A	1.792271984	2.48E-35	5.94E-33
Differentiation of cells	L1CAM	1.813903506	1.31E-07	3.20E-06
Differentiation of cells	IL21R	1.710960068	1.10E-26	1.75E-24
Differentiation of cells	ACLY	1.691260648	5.47E-31	1.04E-28
Differentiation of cells	NR4A3	1.735832082	5.75E-07	1.23E-05
Differentiation of cells	AXL	1.666082351	1.52E-28	2.64E-26
Differentiation of cells	TLR7	1.665973236	2.15E-07	5.05E-06
Differentiation of cells	DUSP1	1.642426669	5.62E-10	2.19E-08
Differentiation of cells	COL6A1	1.62768028	1.96E-29	3.55E-27
Differentiation of cells	SQSTM1	1.60709689	7.42E-44	2.69E-41
Differentiation of cells	CD72	1.606853116	2.21E-21	2.79E-19
Differentiation of cells	NKX3-2	1.61089801	5.14E-07	1.11E-05
Differentiation of cells	SCIN	1.56886645	6.40E-06	0.00010559
Differentiation of cells	mir-146	1.525	5.94E-13	
Quantity of hematopoietic progenitors	KLF2	5.067774521	8.32E-120	2.95E-116

Quantity of hematopoietic progenitors	TSC22D3	3.005059715	1.52E-113	2.69E-110
Quantity of hematopoietic progenitors	ST6GALNAC2	2.355435909	1.35E-24	1.99E-22
Quantity of hematopoietic progenitors	CSF1	2.227878521	9.83E-16	7.55E-14
Quantity of hematopoietic progenitors	CXCL8	2.015	1.37E-13	
Quantity of hematopoietic progenitors	BCL3	1.979804628	9.16E-38	2.58E-35
Quantity of hematopoietic progenitors	BHLHE40	1.942230528	2.49E-54	1.16E-51
Quantity of hematopoietic progenitors	NFKB2	1.884957345	2.08E-35	5.05E-33
Quantity of hematopoietic progenitors	IL21R	1.710960068	1.10E-26	1.75E-24
Quantity of hematopoietic progenitors	CD72	1.606853116	2.21E-21	2.79E-19
Quantity of hematopoietic progenitors	NR4A1	1.418283585	6.57E-10	2.51E-08
Quantity of hematopoietic progenitors	IL15RA	1.397117898	8.39E-16	6.47E-14
Quantity of hematopoietic progenitors	FYN	1.360719854	4.68E-14	3.03E-12
Quantity of hematopoietic progenitors	FOSB	1.352738721	2.18E-13	1.33E-11
Quantity of hematopoietic progenitors	DNASE2	1.278115021	2.83E-20	3.26E-18
Quantity of hematopoietic progenitors	MMP19	1.273173713	1.49E-13	9.31E-12
Quantity of hematopoietic progenitors	TXK	1.263425367	6.76E-12	3.38E-10
Quantity of hematopoietic progenitors	VEGFA	1.251588971	2.61E-16	2.13E-14
Quantity of hematopoietic progenitors	CTSD	1.215697826	1.72E-15	1.28E-13
Quantity of hematopoietic progenitors	TNFAIP3	1.188785111	2.14E-12	1.13E-10
Quantity of hematopoietic progenitors	ATF4	1.144958978	4.52E-14	2.94E-12
Quantity of hematopoietic progenitors	NOG	1.129256337	1.04E-07	2.63E-06
Quantity of hematopoietic progenitors	DMTN	1.118189412	0.000650669	0.005569133
Quantity of hematopoietic progenitors	EPAS1	1.102510026	3.37E-06	6.01E-05

Quantity of hematopoietic progenitors	PIM2	1.083072771	5.78E-12	2.91E-10
Quantity of hematopoietic progenitors	BBC3	1.07785076	3.49E-15	2.53E-13
Quantity of hematopoietic progenitors	SOCS3	1.042321933	7.15E-13	4.08E-11
Quantity of hematopoietic progenitors	IL2RB	0.977635096	2.74E-06	4.98E-05
Quantity of hematopoietic progenitors	NFKBIA	0.964884941	1.67E-16	1.43E-14
Quantity of hematopoietic progenitors	BMF	0.886508865	2.55E-10	1.05E-08
Quantity of hematopoietic progenitors	LAMA3	0.884170234	0.005186337	0.030230347
Quantity of hematopoietic progenitors	SOCS1	0.873057532	1.85E-05	0.00026955
Quantity of hematopoietic progenitors	PIM1	0.833251766	8.84E-14	5.58E-12
Quantity of hematopoietic progenitors	FLVCR1	0.820069206	4.51E-06	7.75E-05
Quantity of hematopoietic progenitors	JAK3	0.813630154	1.34E-05	0.000201349
Quantity of hematopoietic progenitors	TEC	0.791823253	2.64E-10	1.08E-08
Quantity of hematopoietic progenitors	BNIP3L	0.780648672	1.70E-05	0.000249034
Quantity of hematopoietic progenitors	KLF4	0.719159815	0.000310431	0.003033031
Quantity of hematopoietic progenitors	CD36	0.713480431	1.38E-05	0.000206174
Quantity of hematopoietic progenitors	MAP3K8	0.679998335	2.36E-05	0.000333767
Quantity of hematopoietic progenitors	FOXO3	0.654309211	0.000191978	0.002033587
Quantity of hematopoietic progenitors	MXD1	0.646690606	0.000194541	0.002057061
Quantity of hematopoietic progenitors	BCL2L11	0.635530734	0.00021924	0.002268598
Quantity of hematopoietic progenitors	CD44	0.632311117	9.09E-07	1.86E-05
Quantity of hematopoietic progenitors	TFRC	0.613223929	0.001209894	0.009345737
Quantity of hematopoietic progenitors	FNIP1	0.600366451	0.00585483	0.033242321
Quantity of hematopoietic progenitors	LYL1	0.588015227	0.0001419	0.001570634

Quantity of hematopoietic progenitors	PAG1	0.58161832	0.008127289	0.043174399
Quantity of hematopoietic progenitors	ETS2	0.543489774	1.07E-05	0.000165056
Quantity of hematopoietic progenitors	TAP1	0.535957412	5.88E-05	0.00074146
Cell death of tumor cells	RHOB	3.532285315	3.19E-92	3.33E-89
Cell death of tumor cells	BIRC3	2.868615659	3.35E-29	5.95E-27
Cell death of tumor cells	SERPINE1	2.62252236	1.83E-20	2.16E-18
Cell death of tumor cells	JUN	2.597003569	2.52E-62	1.49E-59
Cell death of tumor cells	FGF18	2.559396042	2.77E-23	3.82E-21
Cell death of tumor cells	CSF1	2.227878521	9.83E-16	7.55E-14
Cell death of tumor cells	HES1	2.23186863	5.87E-13	3.40E-11
Cell death of tumor cells	HMOX1	2.057537368	2.88E-61	1.60E-58
Cell death of tumor cells	CXCL8	2.015	1.37E-13	
Cell death of tumor cells	IL2RA	2.009707646	8.77E-32	1.71E-29
Cell death of tumor cells	SLC7A11	1.97973289	1.74E-20	2.06E-18
Cell death of tumor cells	DDIT3	1.956820081	1.17E-36	3.02E-34
Cell death of tumor cells	PPARD	1.939584196	2.78E-37	7.71E-35
Cell death of tumor cells	L1CAM	1.813903506	1.31E-07	3.20E-06
Cell death of tumor cells	ACLY	1.691260648	5.47E-31	1.04E-28
Cell death of tumor cells	TLR7	1.665973236	2.15E-07	5.05E-06
Cell death of tumor cells	GDF15	1.571462898	5.90E-06	9.81E-05
Cell death of tumor cells	mir-146	1.525	5.94E-13	
Cell death of tumor cells	NR4A1	1.418283585	6.57E-10	2.51E-08
Cell death of tumor cells	DAPK1	1.384697953	4.81E-06	8.19E-05
Cell death of tumor cells	MUC1	1.351269875	9.60E-11	4.18E-09
Cell death of tumor cells	SGK1	1.32382235	9.34E-06	0.0001478
Cell death of tumor cells	RARG	1.283795401	1.17E-15	8.87E-14
Cell death of tumor cells	VEGFA	1.251588971	2.61E-16	2.13E-14
Cell death of tumor cells	GAB2	1.12229928	1.84E-14	1.26E-12
Cell death of tumor cells	NTRK1	1.069886928	0.002050862	0.014434132
Cell death of tumor cells	SOCS3	1.042321933	7.15E-13	4.08E-11
Cell death of tumor cells	IRF7	0.998590528	3.05E-11	1.42E-09
Cell death of tumor cells	SERPINB9	1.022966361	0.002864285	0.018906622
Cell death of tumor cells	NFKBIA	0.964884941	1.67E-16	1.43E-14
Cell death of tumor cells	TIMP2	0.949074587	7.87E-10	2.96E-08
Cell death of tumor cells	TRIB1	0.900394683	8.35E-07	1.72E-05
Cell death of tumor cells	LAMA3	0.884170234	0.005186337	0.030230347
Cell death of tumor cells	PLAU	0.822672687	3.21E-12	1.67E-10
Cell death of tumor cells	ANPEP	0.822563631	1.00E-05	0.000156595
Cell death of tumor cells	TSC22D1	0.769104229	0.00010016	0.001163815
Cell death of tumor cells	ANXA2	0.704936965	4.66E-07	1.01E-05
Cell death of tumor cells	HIPK2	0.660674751	2.95E-05	0.00040621
Cell death of tumor cells	NFATC2	0.643830897	1.61E-05	0.000237312
Cell death of tumor cells	BCL2L11	0.635530734	0.00021924	0.002268598

Cell death of tumor cells	CD44	0.632311117	9.09E-07	1.86E-05
Cell death of tumor cells	PHLDA1	0.62869776	0.00174051	0.012604845
Cell death of tumor cells	ZFP36	0.617702889	2.17E-05	0.000310473
Cell death of tumor cells	EIF2AK3	0.567675117	0.005250684	0.030495216
Cell death of tumor cells	NFKB1	0.524918786	3.65E-05	0.000492368
Cell death of tumor cells	CDKN1A	0.494322236	0.00018452	0.001963975
Cell death of tumor cells	SRC	0.492665056	0.000401667	0.003737171
Cell death of tumor cells	NFE2L2	0.482896814	0.00154405	0.011506125
Cell death of tumor cells	STAT3	0.468893574	0.000266371	0.002670928
Cell death of tumor cells	RTN4	0.43688721	0.003919637	0.02413697
Cellular homeostasis	KLF2	5.067774521	8.32E-120	2.95E-116
Cellular homeostasis	CXCL10	3.693627299	6.31E-34	1.38E-31
Cellular homeostasis	HTR2B	3.47436491	5.39E-45	1.99E-42
Cellular homeostasis	IL4I1	3.440797385	2.92E-99	3.69E-96
Cellular homeostasis	TSC22D3	3.005059715	1.52E-113	2.69E-110
Cellular homeostasis	CCL3	2.891412015	1.19E-33	2.55E-31
Cellular homeostasis	SERPINE1	2.62252236	1.83E-20	2.16E-18
Cellular homeostasis	JUN	2.597003569	2.52E-62	1.49E-59
Cellular homeostasis	P2RX7	2.429506763	1.75E-21	2.26E-19
Cellular homeostasis	C3AR1	2.371469186	1.91E-16	1.61E-14
Cellular homeostasis	ICAM1	2.318962488	5.85E-34	1.30E-31
Cellular homeostasis	RELB	2.200161936	1.19E-42	4.13E-40
Cellular homeostasis	NUPR1	2.204677749	1.15E-12	6.40E-11
Cellular homeostasis	TRPM8	2.182704734	8.69E-13	4.91E-11
Cellular homeostasis	LGALS2	2.12503897	3.68E-17	3.45E-15
Cellular homeostasis	DDIT4	2.107648358	3.81E-48	1.54E-45
Cellular homeostasis	HMOX1	2.057537368	2.88E-61	1.60E-58
Cellular homeostasis	CXCL8	2.015	1.37E-13	
Cellular homeostasis	IL2RA	2.009707646	8.77E-32	1.71E-29
Cellular homeostasis	EGR2	2.023978767	3.39E-09	1.13E-07
Cellular homeostasis	VWF	1.994804229	6.03E-13	3.48E-11
Cellular homeostasis	BCL3	1.979804628	9.16E-38	2.58E-35
Cellular homeostasis	DDIT3	1.956820081	1.17E-36	3.02E-34
Cellular homeostasis	BHLHE40	1.942230528	2.49E-54	1.16E-51
Cellular homeostasis	CD83	1.816516585	5.32E-34	1.19E-31
Cellular homeostasis	OPTN	1.807967664	1.87E-36	4.74E-34
Cellular homeostasis	L1CAM	1.813903506	1.31E-07	3.20E-06
Cellular homeostasis	PLEKHF1	1.765516332	2.21E-30	4.13E-28
Cellular homeostasis	IL21R	1.710960068	1.10E-26	1.75E-24
Cellular homeostasis	ACLY	1.691260648	5.47E-31	1.04E-28
Cellular homeostasis	AXL	1.666082351	1.52E-28	2.64E-26
Cellular homeostasis	TLR7	1.665973236	2.15E-07	5.05E-06
Cellular homeostasis	SQSTM1	1.60709689	7.42E-44	2.69E-41
Cellular homeostasis	CD72	1.606853116	2.21E-21	2.79E-19
Cellular homeostasis	CCL4	1.61971811	2.96E-06	5.33E-05
Cellular homeostasis	TBC1D17	1.552491735	4.34E-26	6.76E-24

Cellular homeostasis	mir-146	1.525	5.94E-13	
Cellular homeostasis	NEUROG3	1.522853097	9.13E-21	1.11E-18
Cellular homeostasis	OAS1	1.501187542	3.65E-16	2.88E-14
Cellular homeostasis	MT2A	1.499766012	3.10E-16	2.48E-14
Cellular homeostasis	XIRP1	1.512492148	1.36E-05	0.000203559
Cellular homeostasis	GADD45B	1.437361491	1.34E-17	1.27E-15
Cellular homeostasis	NLRP4	1.432202798	2.41E-06	4.45E-05
Cellular homeostasis	NR4A1	1.418283585	6.57E-10	2.51E-08
Cellular homeostasis	IL15RA	1.397117898	8.39E-16	6.47E-14
Cellular homeostasis	HCN3	1.392877486	1.04E-10	4.51E-09
Cellular homeostasis	MLXIPL	1.385831306	1.07E-07	2.68E-06
Cellular homeostasis	DAPK1	1.384697953	4.81E-06	8.19E-05
Cellular homeostasis	FYN	1.360719854	4.68E-14	3.03E-12
Cellular homeostasis	MUC1	1.351269875	9.60E-11	4.18E-09
S-phase	CCL3	2.057537368	2.88E-61	1.60E-58
S-phase	RGCC	0.660674751	2.95E-05	0.00040621
S-phase	JUN	-0.30348524	0.008902489	0.046362447
S-phase	SDC3	-0.32982833	0.001774176	0.012811432
S-phase	CSF1	-0.36942464	0.000208971	0.002186914
S-phase	HMOX1	-0.37273845	0.004973728	0.029124577
S-phase	BHLHE40	-0.38824207	0.004696507	0.027852922
S-phase	CDKN1C	-0.44913741	0.003003438	0.019591915
S-phase	VEGFA	-0.45638619	4.04E-05	0.000536222
S-phase	GRB10	-0.46974007	0.001601722	0.011851272
S-phase	CDKN2B	0.907412965	7.56E-06	0.000122568
S-phase	CEBPB	-0.5106885	0.000581056	0.005096227
S-phase	FCER2	-0.51511623	9.74E-05	0.001136526
S-phase	PEA15	-0.51527615	0.004471218	0.026776165
S-phase	CDKN2D	-0.5436719	0.000189552	0.002010294
S-phase	CCNG2	-0.5715617	2.01E-05	0.000290056
S-phase	KLF4	-0.58738551	0.000292478	0.002884627
S-phase	MAP3K8	-0.58874494	0.002385934	0.016294696
S-phase	FOXO3	-0.59649091	0.000171933	0.001855596
S-phase	MXD1	-0.63945958	1.99E-05	0.000287762
S-phase	JUNB	-0.72317676	5.79E-09	1.83E-07
S-phase	OSGIN1	-0.76085678	6.44E-07	1.36E-05
S-phase	PMEPA1	-0.78900947	2.06E-09	7.11E-08
S-phase	CDKN1A	-0.79522817	0.000258848	0.002606547
S-phase	SRC	-0.80618637	2.04E-09	7.06E-08
S-phase	MAPK3	-0.81040462	1.31E-06	2.55E-05
S-phase	STAT3	-0.92576902	1.94E-10	8.08E-09
S-phase	OSM	-0.98456126	1.36E-10	5.77E-09
S-phase	TFE3	-1.10369229	9.12E-15	6.42E-13
S-phase	HINFP	-1.48130396	9.69E-08	2.46E-06
S-phase	PTPN6	2.891412015	1.19E-33	2.55E-31
S-phase	NOTCH1	2.800832485	6.26E-46	2.36E-43

S-phase	RBM5	2.597003569	2.52E-62	1.49E-59
S-phase	RHOA	2.234380055	6.69E-24	9.57E-22
S-phase	MYC	2.227878521	9.83E-16	7.55E-14
S-phase	TRIM21	2.057537368	2.88E-61	1.60E-58
S-phase	XRCC5	1.942230528	2.49E-54	1.16E-51
S-phase	CCND3	1.395482465	1.34E-14	9.28E-13
S-phase	BLM	1.251588971	2.61E-16	2.13E-14
S-phase	AGK	0.912318923	2.43E-08	6.81E-07
S-phase	PRPF19	0.907412965	7.56E-06	0.000122568
S-phase	TOPBP1	0.897234551	2.58E-10	1.06E-08
S-phase	CCNA2	0.842014833	1.21E-07	2.96E-06
S-phase	PNPT1	0.79722927	1.80E-15	1.33E-13
S-phase	PARP1	0.797500292	7.04E-08	1.81E-06
S-phase	NAE1	0.742331626	0.003218754	0.020677174
S-phase	MCM7	0.719159815	0.000310431	0.003033031
S-phase	RBBP8	0.679998335	2.36E-05	0.000333767
S-phase	CSF1R	0.654309211	0.000191978	0.002033587
S-phase	CDK1	0.646690606	0.000194541	0.002057061
Formation of γH2AX foci	HMOX1	0.644714972	7.02E-07	1.47E-05
Formation of γH2AX foci	HIPK2	0.583270692	0.001129992	0.008843726
Formation of γH2AX foci	APEX1	0.540213623	0.000211969	0.002212596
Formation of γH2AX foci	DDB1	0.494322236	0.00018452	0.001963975
Formation of γH2AX foci	XRCC5	0.492665056	0.000401667	0.003737171
Formation of γH2AX foci	CCND3	0.490232363	0.00086527	0.007052521
Formation of γH2AX foci	TACC3	0.468893574	0.000266371	0.002670928
Formation of γH2AX foci	POLE3	0.462010833	0.001789019	0.012893002
Formation of γH2AX foci	TIMELESS	0.446358885	0.00664206	0.036839661
Formation of γH2AX foci	INCENP	0.36832922	0.002401248	0.016378533
Formation of γH2AX foci	H2AX	0.356111165	0.00533371	0.030842707
Formation of γH2AX foci	TOPBP1	0.341574198	0.006955293	0.038088817
Formation of γH2AX foci	POLD1	0.334448198	0.002409126	0.016408876
Formation of γH2AX foci	CCNA2	0.322853003	0.0009865	0.007891556
Formation of γH2AX foci	RFWD3	-0.31023257	0.003127196	0.020220785
Formation of γH2AX foci	RBBP8	-0.35112902	0.005778063	0.032869562
Formation of γH2AX foci	CDK1	-0.36942464	0.000208971	0.002186914
Formation of γH2AX foci	NTHL1	-0.37273845	0.004973728	0.029124577
Formation of γH2AX foci	FANCC	-0.3997151	0.001032081	0.008211242
Formation of γH2AX foci	POLQ	-0.41045825	0.006802856	0.037473791
Formation of γH2AX foci	RAD54L	-0.44498603	0.000272324	0.002718054
Formation of γH2AX foci	PRKDC	-0.5106885	0.000581056	0.005096227
Formation of γH2AX foci	BRCA1	-0.51527615	0.004471218	0.026776165
Formation of γH2AX foci	RMI1	-0.525597	1.42E-05	0.000212428
Formation of γH2AX foci	MSH6	-0.52630526	6.69E-07	1.41E-05
Formation of γH2AX foci	MSH2	-0.53426976	0.000620162	0.005374518
Formation of γH2AX foci	CHEK1	-0.55672791	1.23E-05	0.000186952
Formation of γH2AX foci	CLSPN	-0.5715617	2.01E-05	0.000290056

Formation of γH2AX foci	CDC45	-0.57744161	5.67E-06	9.48E-05
Formation of γH2AX foci	CCND1	-0.58738551	0.000292478	0.002884627

Supplementary Table 4. Antibodies for Mass Cytometry

Antibody (anti-human)	Clone	Vendor
H3K4me3	C42D8	CST
CD3 (Used for SPADE)	UCHT1	Biolegend
CD45 (Used for SPADE)	HI30	Biolegend
H3K9ac	C5B11	CST
CD41 (Used for SPADE)	HIP8	Biolegend
cPARP	F21-A52	BD Biosciences
pATM	10H11.E12	Biolegend
CD7 (Used for SPADE)	M-T701	BD Biosciences
CD71 (Used for SPADE)	CY1G4	Biolegend
pAKT	193H12	CST
CD34 (Used for SPADE)	581	Biolegend
CD90 (Used for SPADE)	5-E10	Biolegend
CD33 (Used for SPADE)	P67.6	Biolegend
HLADR (Used for SPADE)	L243	Biolegend
pMAPKAP2	27B7	CST
CyclinB1	V152	Biolegend
pSTAT5	pY694	BD Biosciences
Ki-67	Sola15	eBiosciences
CD38 (Used for SPADE)	HIT2	Biolegend
CD14 (Used for SPADE)	M5E2	Biolegend
CD16 (Used for SPADE)	3G8	Biolegend
CD11b (Used for SPADE)	ICRF44	Biolegend
CD15 (Used for SPADE)	W6D3	Biolegend
pRb	J112-906	BD Biosciences
CD99	HCD99	Biolegend
pERK	D13.14.4E	CST
pSyk	ab52212	Abcam
pH2AX	JBW301	Millipore
CD10 (Used for SPADE)	HI10a	Biolegend
CD19 (Used for SPADE)	HIB19	Biolegend
CD20 (Used for SPADE)	2H7	Biolegend
pS6	N7-548	BD Biosciences
pHH3	HTA28	Biolegend

Additional antibodies used for SPADE- CD56, CD45RA, CD64, CD235, CD117, CD90

Supplementary Table 5. Mass Cytometric analysis of OSU-2S treated cells

A. Primary AML samples (V—Vehicle, O—OSU-2S)

	AML36		AML37		AML38		AML2		AML15		AML14		AML8		AML15 (SPADE only)		AML21 (SPADE only)		
Marker	V	O	V	O	V	O	V	O	V	O	V	O	V	O	V	O	V	O	
151Eu_CD123	13. 305	7.0 59	1.6 05	1.4 2	192 .47	113 .84							3.9 99	0	3.2 82	1.6 13	8.4 25	15. 376	
153Eu_HLA-DR	0.6 76	0.7 71	0	0.5 5	202 .23	151 .95	438 7	868 .46	66 6	111 5.6	68 2.6	471 0.2	23. .17	0	166 .16	70. 381	11 3	.58 04	147 8
142Ce_CD7	1.6 41	2.2 44	0.8 55	2.2 01	6.8 73	6.3 42	0.2 81	0.2 77	2.1 68	1.7 4	0	0	0	0	0.6 65	0.2 35	1.9 38	2.5 84	
148Nd_CD34	0	0	0	0	0.0 937	0.0 286	2.2 29	3.1 33	32. 51	29. 065	52. 40	14. 925	5.1 35	0.1 21	7.9 82	2.1 54	9.6 62	14. 598	
152Sm_CD33	2.7 47	5.0 87	3.0 96	7.2 03	37. 607	26. 971	6.0 46	5.9 24	2.1 15	1.6 51	0.7 24	0	13. 371	0.0 588	11. 403	0.7 45	29. 17	23. 58	
167Er_CD99	920 .37	255 .55	200 2.7	88. 117	517 .67	440 .67	912 .57	798 .30	59 4.3	479 .38	97 3.9	694 .17	449 .92	2.6 11	162 .80	35. 312	37 6.7	357 38	
139La_CD41	0	0	0	0	0.1 46	0.1 23	1.1 56	1.1 67	0.2 79	0.3 89	0.1 13	0	0	0	0.6 24	0	0.5 33	0.3 8	
143Nd_CD71	30. 82	27. 927	7.7	9.6 78	97. 793	62. 618	0.9 28	0.5 7	8.3 92	10. 216	1.0 37	0	0.6 44	0	28. 479	1.1 44	21. 13	5.0 4	
149Sm_CD90	0	0	0	0	0	0							0	0	0	0	0	0	
159Tb_CD38	61. 872	26. 857	54. 703	11. 927	144 .68	118 .6	23. 471	47. 208	80. 03	41. 957	22. 02	34. 6	5.4 82	0	2.1 66	0.0 866	65. 00	55. 94	
160Gd_CD14	1.4 52	1.5 53	0.4 85	1.0 2	1.6 77	1.6 71	330 .57	540 .74	2.1 9	1.3 32	1.0 91	0.1 0	0	0					
164Dy_CD15	0.1 4	0.4 92	0.1 27	0.6 08	0.6 05	0.7 01	0.6 01	1.3 1	0.8 1	1.0 32	0.4 91	0	0	0					
172Yb_CD10	12. 623	16. 557	8.8 56	12. 967	22. 924	20. 415	0	0	0	0	0	0	0	0	0	0	0	0	
174Yb_CD20	0.7 67	0.9 21	0.3 74	0.6 25	0.9 73	0.9 29	0.5 83	0.4 4	0.5 23	0.3 0	0.3 91	0	0	0	0.5 59	0	0	0	
161Dy_CD16	4.9 54	6.7 26	4.1 64	6.1 86	6.3 18	5.9 86	0.8 66	1.1 51	0	0	0	0	0	0	0	0	0	0	
162Dy_CD11b	2.3 59	3.0 92	1.3 93	2.6 26	2.2 72	2.3 26	3.6 67	1.5 69	0	0	0	0	0	0	0	0	0	0	

163Dy_CD66b	0	0	0	0	0	0													
173Yb_CD19	26. 71	31. 407	22. 33	23. 743	41. 504	37. 963	0.1 14	0.0 444	0	0	0	0	0	0	0	0	0	0	0
115In_CD45	99. 441	80. 336	24. 874	38. 949	404 .96	314 .76	550 .63	708 .29	16 4.0	144 .71	12 6.7	98. 516	130 .08	0.9 2	87. 059	33. 649	17 0.9	.47 25	162 6
113In_CD3	0.3 2	0.2 52	0.0 543	0	0.3 66	0.3 2	0.4 86	0.6 02	0.8 12	0.5 37	0.5 55	0.1 81	0	0	1.1 61	0	0.0 05	0.0 75	0
156Gd_CyclinB1	57. 838	60. 251	39. 676	22. 403	119 .91	103 .04	112 .92	126 .28	81. 31	74. 715	81. 32	48. 352	10. 82	2.4 65	34. 334	7.1 54	21. 05	8.5 67	
165Ho_pRb	59. 229	52. 277	66. 878	12. 26	75. 24	54. 873	97. 86	78. 2	80. 69	81. 254	21 6.5	54. 326	5.2 69	0	44. 085	0	10. 94	3.5 39	
158Gd_Ki67	93. 149	82. 003	58. 343	35. 126	179 .07	138 .05	40. 828	38. 9	23 5.2	130 .11	24 6.3	49. 707	17. 129	0.4 36	220 .09	4.5 52	84. 69	19. 935	
140Ce_cPARP	0.2 76	0.6 84	0.3 51	1.5 68	1.2 81	1.3 51	1.2 18	1.0 98	0.2 83	0.3 8	0	0.1 35	1.4 42	2.4 11	1.8 09	6.9 84	1.3 24	2.0 05	
154Sm_pMAP_KAP2	21. 816	18. 949	17. 104	6.9 21	37. 622	31. 576	64. 122	62. 23	28. 82	31. 747	34. 51	19. 006	27. 853	0	50. 011	6.3 2	38. 93	29. 66	
175Lu_pS6	1.5 31	0.7 45	0.3 31	0.0 769	12. 401	3.0 85	44. 218	15. 255	2.6 87	3.7 31	2.2 11	3.3 02	0	0	2.5 17	0	0.3 83	0	
141Pr_pATM	1.4 27	1.6 16	1.2 27	1.1 64	2.6 92	2.4 29	5.3 33	7.1 8	3.6 1	3.4 9	2.4 39	1.2 43	5.7 04	0.8 2	18. 15	4.5 38	12. 28	11. 6	727
145Nd_pAkt	0.1 76	0.0 952	0	0	0.5 56	0.4 46	2.4 31	2.0 97	1.3 77	1.0 97	0.3 86	0	0.0 285	0	0.6 3	0	0.3 66	0	
168Er_pErk	27. 334	7.3 02	59. 647	2.7 43	10. 936	8.2 67	67. 543	52. 853	11. 71	6.3 13	16. 88	11. 055	18. 91	0	3.1 26	0.7 82	11. 97	10. 8	397
170Er_pH2AX	0.7 78	0.6 07	1.1 62	0.5 9	0.4 89	0.5 26	1.1 95	1.1 72	1.1 37	0.8 48	0.8 37	0.3 63	0.1 77	0	0.2 53	0	0.4 38	0.1 93	
209Bi_ph3	2.7 79	2.0 27	2.5 37	0.7 25	3.3 77	2.5 79	0.6 6	0.6 31	0.6 32	0.6 32	0.8 9	0.5 28	0	0	0	0	0	0	
116Cd_H3K9ac	33. 322	39. 868	41. 229	20. 485	54. 811	54. 424	18. 903	18. 816	61. 83	57. 015	48. 6	27. 112							
112Sn_H3K4m_e3	21. 522	29. 243	26. 655	20. 734	27. 609	26. 154	27. 327	27. 549	11 2.9	101 .59	10 8.9	68. 789							
pSTAT5								14. 285	12. 141	7.0 48	5.2 85	3.3 85	1.5 45	0.8 12	0	3.3 32	0.4 92	2.8 11	
150Nd_CD117														0	0	0	0	0	
163Dy_CD64													0	0	0	0	0	0	

89Y_CD235											8.6 6E-05	0	2.2 44	0.1 22	0.3 04	0.0 0824		
147Sm_CD56											5.3 74	0	20. 509	2.8 35	50. 379	30. 918		
155Gd_CD45RA											5.7 39	0	4.7 83	1.4 75	2.9 18	3.1 39		
127I_IdU	0	0.0 932	0	0	0	0	0.0 093 3	0	0.5 17	0	0.7 75	0	3.2 51	0	0.7 37	0		
Cisplatin (Pt)	110 1.9 28	187 9.1 24	204 7.1 92	618 3.6 99	211 3.9 05	239 8.3 14	104 3.2 72	100 4.8 45	36 1.6 36	783 .69 1	77 3.0 27	136 1.9 81	502 4.1 92	917 7.4 68	102 6.6 07	275 4.3 44	96 2.0 82	116 3.2 39

B. HL-60 cells

	Veh	OSU-2S (2.5μM)	Veh	OSU-2S (2.5μM)	Veh	OSU-2S (5μM)	Veh	OSU-2S (5μM)
%Pt-ve (live)	65.57	67.29	96.44	95.78	80.19	74.92	96.95	85.03
140Ce_cPARP	1.44	1.882	0.574	0.431	0	0.0133	0.558	0.654
156Gd_Cyclin_B1	58.668	52.924	49.349	47.814	107.789	123.888	43.568	39.695
165Ho_pRb	87.227	72.806	168.933	146.016	239.913	181.039	145.866	84.569
175Lu_pS6	0.0136	0	3.317	1.197	1.902	2.5	2.758	0
158Gd_Ki-67	188.217	180.074	216.21	210.717	163.645	225.336	194.113	176.068
170Er_pH2AX	1.375	1.443	2.336	3.132	1.278	1.548	1.779	2.362
157Gd_pSTAT5	3.123	2.77	3.991	4.473	4.986	5.433	3.312	4.025
176Yb_pH3	0	0			0.835	0.695	0	0
195Pt	563.545	795.706	178.219	135.83	1318.781	691.96	184.256	253.635
151Eu_CD123	0	0.00981	0.432	0.389	0.695	0.835	0.321	0.318
148Nd_CD34	2.52	3.138	1.144	1.114	0.738	0.682	1.158	2.088
141Pr_pATM	18.09	20.035	43.243	48.682	3.301	3.431	42.926	60.912
159Tb_CD38	13.581	9.123	7.424	7.038	1.508	1.354	6.077	2.509
160Gd_CD14	0.774	0.81	1.009	1.099	1.405	1.924	0.783	1.026
164Dy_CD15	1.404	1.928	3.671	4.891	3.317	8.684	3.431	4.517
150Nd_CD117	0	0						
162Dy_CD11b	0	0	0	0	0.126	0.157		
163Dy_CD64	0.694	0.746	6.324	7.155			4.041	3.404
168Er_pErk	7.637	6.106	6.616	6.676	4.585	3.713	4.967	5.355
89Y_CD235	0.595	0.992	0.127	0			0.349	1.154
113In_CD3	0	0			0	0	0	0
115In_CD45	52.217	79.666	48.015	55.122	36.701	91.795	46.34	30.615
127I	2.925	2.333	2.379	0.805	0.381	0.727	2.509	0.629
139La_CD41	1.198	1.102	0.764	0.546	0.0595	0	0.575	0.303
142Nd_CD7	1.998	1.151	0.197	0.0946	0	0	0.147	0

143Nd_CD71	412.556	308.623	47.178	48.142	6.718	2.481	45.896	4.532
145Nd_pAkt	1.206	0.975	0.495	0.606	0.794	0.5	0.418	0.264
147Sm_CD56	12.382	12.062	7.834	7.602			8.442	14.904
149Sm_CD90	0	0	0	0	0	0		
152Sm_CD33	113.501	102.768	149.33	124.529	4.5	3.53	125.703	92.033
153Eu_HLA-DR	0	0	0.642	0.612	0.321	0.268	0.439	0.622
154Sm_pMAPKAPK2	57.8	51.814	56.693	61.899	26.641	27.791	53.166	44.635
155Gd_CD45RA	1.94	2.374	2.805	2.776			2.747	5.022
161Dy_CD16	0	0	0	0	0	0		
167Er_CD99	233.114	182.904	158.801	138.106	218.789	181.257	142.322	95.669
172Yb_CD10	0	0	0	0	0	0	0	0
173Yb_CD19	0	0	0	0	0	0	0	0
174Yb_CD20	0.299	0.332	0.436	0.564	0.447	0.558	0.271	0.402
112Sn_H3K4me3					95.09	90.384		
116Cd_H3K9ac					147.348	69.14		