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# **Pancreatic $\beta$ -cell specific loss of *E2f1* impairs insulin secretion and $\beta$ -cell identity through the epigenetic repression of non $\beta$ -cell programs**

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## Abstract

The loss of pancreatic  $\beta$ -cell identity emerges as an important feature of type 2 diabetes development, but the molecular mechanisms are still elusive. Here, we explore the cell-autonomous role of the cell cycle regulator and transcription factor E2F1 in the maintenance of  $\beta$ -cell identity and insulin secretion. We show that the  $\beta$ -cell-specific loss of *E2f1* function in mice triggers glucose intolerance associated with defective insulin secretion, an altered  $\alpha$ -to- $\beta$ -cell ratio, a downregulation of many  $\beta$ -cell genes and a concomitant increase of non- $\beta$ -cell markers. Mechanistically, the epigenomic profiling of non-beta cell upregulated gene promoters identified an enrichment of bivalent H3K4me3/H3K27me3 or H3K27me3 marks. Conversely, downregulated genes were enriched in active chromatin H3K4me3 and H3K27ac histone marks. We find that histone deacetylase inhibitors modulate E2F1 transcriptional and epigenomic signatures associated with these  $\beta$ -cell dysfunctions. Finally, the pharmacological inhibition of E2F1 transcriptional activity in human islets also impairs insulin secretion and the expression of  $\beta$ -cell identity genes. Our data suggest that E2F1 is critical for maintaining  $\beta$ -cell identity through a sustained repression of non  $\beta$ -cell transcriptional programs.

## Introduction

Type 2 Diabetes (T2D) is a progressive metabolic disorder characterized by permanent high blood glucose levels due to inadequate pancreatic  $\beta$ -cell response to peripheral insulin resistance. Normally,  $\beta$ -cells respond to obesity and aging associated insulin loss of sensibility by increasing insulin secretion to avoid rising glycemia. However, in case of imbalance between insulin secretion and action, the emerging chronic hyperglycemic state progressively leads to massive  $\beta$ -cell dysfunction and decreased mass (Weir & Bonner-Weir, 2004). Importantly, single cell transcriptomic analysis of human pancreatic islet cells from diabetic and healthy individuals allowed the community to define specific gene signatures of endocrine cell types and revealed a complex multi cellular lineage identity of T2D (Segerstolpe *et al*, 2016; Wang *et al*, 2016; Xin *et al*, 2016). In addition, recent studies demonstrated a loss of transcriptional maturity (Avrahami *et al*, 2020) and cell-type-specific regulatory profiles underlying T2D (Rai *et al*, 2020). Moreover, histology studies of diabetic human pancreata found a significant increase in bi-hormonal Insulin+ (Ins+)/Glucagon+ (Glu+) cells suggesting an altered  $\beta$ -cell identity (Dor & Glaser, 2013; Spijker *et al*, 2015; White *et al*, 2013). Accordingly, recent studies using  $\beta$ -cell lineage tracing murine models have demonstrated that islet cells have the capacity to directly trans-differentiate to another islet cell fate and/or de-differentiate to a progenitor-like cell (Brereton *et al*, 2014; Spijker *et al*, 2013; Spijker *et al.*, 2015; Talchai *et al*, 2012). In this context, both genetic and epigenetic mechanisms are important to maintain adult  $\beta$ -cell fate and function in mouse and human (Bramswig *et al*, 2013; Chakravarthy *et al*, 2017; Collombat *et al*, 2009; Ediger *et al*, 2017; Gutierrez *et al*, 2017; Lawlor & Stitzel, 2019; Lu *et al*, 2018; Schaffer *et al*, 2013; Thorel *et al*, 2010; Yang *et al*, 2011). Yet, the molecular actors controlling  $\beta$ -cell mass, identity maintenance and cellular plasticity remain poorly understood.

Gene transcription and chromatin states are tightly regulated to ensure the appropriate transcriptome for a specific cell type. Many transcription factors have been identified as key regulators of  $\beta$ -cell identity and function, including Pdx1 (Gao *et al*, 2014), Pax6 (Swisa *et al*, 2017), Nkx6.1 (Schaffer *et al.*, 2013) and Nkx2.2 (Gutierrez *et al.*, 2017). Interestingly, pleiotropic transcription factors are also involved in the control of  $\beta$ -cell functions and glucose homeostasis, suggesting their important roles in activating or repressing gene transcription. Amongst those, members of E2F transcription factors (E2F1 to E2F8) family play critical roles in cell survival and proliferation, by regulating the gene expression of several proteins involved in cell-cycle progression (Kent & Leone, 2019;

Poppy Roworth *et al*, 2015). The transcriptional activity of E2F1, the founder member of the family, is regulated by several protein complexes including the retinoblastoma tumor suppressor family (pRB, p107, p130), cyclin-dependent kinases (such as CDK4) and their regulatory partner cyclins (Ccn), as well as the family of the cdk inhibitors (CDKi, such as p16<sup>Ink4A</sup> encoded by the *Cdkn2a* locus) (Poppy Roworth *et al.*, 2015). Interestingly, the role of the cell cycle machinery goes beyond the unique regulation of cell proliferation. Indeed, modulating the expression levels of these cell cycle regulators revealed an important role for these proteins in glucose homeostasis (Denechaud *et al*, 2017) and diabetes development through the control of  $\beta$ -cell mass (Salas *et al*, 2014; Wang *et al*, 2015). Although *E2F1* gene expression is decreased in human T2D islets (Lupi *et al*, 2008), the causal effect of E2F1 deficiency on impaired  $\beta$ -cell mass, function and T2D development is not elucidated. In particular, the cellular and molecular mechanisms underlying the contribution of E2F1 as a transcription factor to  $\beta$ -cell identity and/or plasticity in mice and humans remain unknown. We recently demonstrated that the germline deletion of *E2f1* in the obese and diabetic *db/db* mouse model, despite lowering liver steatosis, does not protect against diabetes or obesity (Denechaud *et al*, 2016). Interestingly, we observed decreased plasma insulin levels, increased plasma glucose and glucose intolerance in *db/db::E2f1<sup>-/-</sup>* mice compared to *db/db::E2f1<sup>+/+</sup>* controls (Denechaud *et al.*, 2016). These metabolic alterations in a diabetic background raises the possibility that E2f1 may contribute to islet morphology, cell identity and function in a cell-autonomous manner. To test this hypothesis, we generated mice lacking *E2f1* in  $\beta$  cells and identified that E2F1 is necessary for maintaining  $\beta$ -cell identity gene expression in both mouse models and human islets. By combining cellular and mouse models to pharmacological approaches, our results identify E2F1 as a critical transcription factor necessary to maintain proper  $\beta$ -cell gene expression and function, while repressing non  $\beta$ -cell transcriptional programs.

## Material and methods

**Materials and Oligonucleotides.** Chemicals, unless stated otherwise, were purchased from Sigma-Aldrich. Anti-insulin (ab7842), anti-glucagon (ab11909) and IgG (ab37415 ChIP grade) antibodies for ChIP-seq experiments were from Abcam ; anti-E2F1 (sc-193 for immunofluorescence on mouse tissues) antibody was from Santa Cruz Biotechnology. H3K4me3 (#61379), H3K27ac (#39685) and H3K27me3 (#61017) antibodies were from Active motif. The HLM006474 compound (Ma *et al*, 2008) was synthesized as previously described (Rosales-Hurtado *et al*, 2019).

**Animal Experiments.** Mice were maintained according to European Union guidelines for the use of laboratory animals. In vivo experiments were performed in compliance with the French ethical guidelines for studies on experimental animals (animal house agreement no. A 59-35015, Authorization for Animal Experimentation no.59-350294, project approval by our local ethical committee no. CEEA 482012, APAFIS#2915-201511300923025v4). All experiments were performed with male mice. Mice were housed under a 12-hr light/dark cycle and given a regular chow (A04;Safe).

*E2f1*<sup>-/-</sup> (B6; 129S4-*E2f1*<sup>tm1Meg/J</sup>) mice and *db*/<sup>+</sup> mice (Janvier Labs) were crossed to obtain *db/db::E2f1*<sup>+/+</sup> and *db/db::E2f1*<sup>-/-</sup> mice and were previously described in (Denechaud *et al.*, 2016). *CMV-CDK4*<sup>R24C</sup> (Sotillo *et al*, 2001) and *Cdkn2a*<sup>-/-</sup> (Serrano *et al*, 1996) were described elsewhere and were crossed with *E2f1*<sup>-/-</sup> mice to obtain *E2f1*<sup>-/-::CMV-CDK4<sup>R24C</sup> and *E2f1*<sup>-/-::Cdkn2a</sup><sup>-/-</sup>. *E2f1* floxed (*E2f1*<sup>flox/flox</sup>, Taconic Biosciences, NY, USA) mice were previously described (Denechaud *et al.*, 2016; Giralt *et al*, 2018). The congenic mice carrying the floxed *E2f1* allele were thereafter mated with rat insulin II promoter (RIP)-Cre mice (Herrera, 2000) and then further intercrossed to generate pure mutant RIPcre<sup>Tg/+::E2f1</sup><sup>flox/flox</sup> mice. A PCR genotyping strategy was subsequently used to identify RIPcre<sup>+/+::E2f1</sup><sup>flox/flox</sup> (*E2f1*<sup>flox/flox</sup>), RIPcre<sup>Tg/+::E2f1</sup><sup>+/+</sup> (RIPCre/+), and RIPcre<sup>Tg/+::E2f1</sup><sup>flox/flox</sup> (*E2f1*<sup>β-/-</sup>) mice.</sup>

Metabolic phenotyping experiments were performed according to the EMPRESS protocols. Intraperitoneal glucose and insulin tolerance tests (ipGTT and ITT, respectively) were performed as previously described (Annicotte *et al*, 2009; Rabhi *et al*, 2016) on 16-hr-fasted animals for ipGTT and 5-hr-fasted animals for ITT. Glycemia was measured using the Accu-Check Performa (Roche Diagnostics). Circulating insulin levels were measured using the mouse Insulin ELISA kit (Merckodia).

## **Immunofluorescence, Immunohistochemistry and Morphometry.**

Immunofluorescence and immunohistochemistry were performed exactly as described previously (Annicotte *et al.*, 2009; Rabhi *et al.*, 2016). Pancreatic tissues were fixed in 10% formalin, embedded in paraffin and sectioned at 5  $\mu\text{m}$ . For immunofluorescence microscopy analyses, after antigen retrieval using citrate buffer, 5- $\mu\text{m}$  formalin-fixed paraffin embedded (FFPE) pancreatic sections were incubated with the indicated antibodies. Immunofluorescence staining was revealed by using a fluorescein-isothiocyanate-conjugated anti-rabbit (for E2f1; Santa Cruz), Alexa-conjugated anti-mouse (for glucagon co-staining with E2f1) or anti-guinea pig (for insulin co-staining with E2f1) secondary antibodies. Nuclei were stained with Hoechst. For morphometric analysis, three to ten animals from each genotype were analyzed, and images were processed and quantified using ImageJ software by an observer blinded to experimental groups.

**Pancreatic Islet Studies.** For mouse islet studies, pancreata were digested by type V collagenase (C9263; 1.5 mg/ml) for 10 min at 37°C as described previously (Rabhi *et al.*, 2016). Briefly, after digestion and separation in a density gradient medium, islets were purified by handpicking under a microscope and cultured during 16 hours before subsequent analysis. For glucose-stimulated insulin secretion (GSIS) tests, approximately twenty islets were exposed to either 2.8 mM or 20 mM glucose in Krebs-Ringer bicarbonate HEPES buffer containing 0.5% fatty-acid-free Bovine Serum Albumin (BSA). Insulin released in the medium was measured 1 hr later using the mouse insulin ELISA kit (Merckodia). For expression studies, mouse isolated islets were snap-frozen in liquid nitrogen before RNA extraction. Human pancreatic tissue was harvested from brain-dead, non-diabetic adult human donors (see [Supplementary Table S1](#) for donor information). Isolation and islets culture were performed as described elsewhere (Kerr-Conte *et al.*, 2010). Human islets were treated for 48 hours with DMSO 0.1% or HLM006474 at 10  $\mu\text{M}$ . Data are expressed as a ratio of total insulin content. For mRNA and protein quantification, human islets were isolated as described above and snap-frozen for further processing.

**Cell Culture and Pharmacological Treatments.** Min6 cells (AddexBio) were cultured in DMEM (Gibco) with 15% fetal bovine serum, 100 mg/ml penicillin-streptomycin, and 55 mM beta-mercaptoethanol. Cells were treated with Trichostatin A (TSA) at 0.5  $\mu\text{M}$  and subjected to GSIS or RNA extraction 16 hr later. Min6 cells were treated with HLM006474 (10  $\mu\text{M}$ ) or DMSO 0.1% (Ma *et al.*, 2008; Rosales-Hurtado *et al.*, 2019) for 48 hr before GSIS assay or RNA extraction.

**RNA extraction, qPCR and RNA-Sequencing.** Total RNA was extracted from cells and tissues using trizol reagent (Life Technologies) as described previously. mRNA expression was measured after reverse transcription by quantitative real-time PCR (qRT-PCR) with FastStart SYBR Green master mix (Roche) using a LightCycler Nano or LC480 instruments (Roche). qRT-PCR results were normalized to endogenous cyclophilin reference mRNA levels. The results are expressed as the relative mRNA level of a specific gene expression using the formula  $2^{-\Delta Ct}$ . The complete list of primers is presented in [Supplementary Table S2](#). For RNA sequencing, total RNA was extracted from Min6 cells or pancreatic islets using the RNeasy Plus Microkit (Qiagen) following manufacturer's instructions. RNA quality was verified using RNA 6000 nanochips on the Agilent 2100 bioanalyzer. Purified RNA (50ng) with RNA integrity number  $\geq 6.5$  was subsequently used for library preparation (TruSeq Stranded mRNA Library Preparation Kit, Illumina) and sequenced on a HiSeq2500 system (Illumina). 3 biological replicates per condition were sequenced using paired-end mode. A mean of 54 million paired-end reads of 75 bp were generated for each sample. After initial checks and validation of sequence quality, RNA-seq reads were aligned to the mouse reference genome (mm10) using TopHat2. Subsequently, both quantification and annotation of the reads were performed using Bioconductor package Rsubread. Finally, the differential gene expression analyses were performed using Bioconductor package DESeq2. Using a  $P < 0.05$  adjusted for multiple comparisons as threshold, we then performed pathway analysis using Ingenuity Pathway Analysis (Ingenuity Systems, Qiagen), Metascape (Zhou *et al*, 2019) and Gene Set Enrichment Analysis (GSEA; <http://software.broadinstitute.org/gsea/>).

**Chromatin immunoprecipitation and ChIP sequencing.** ChIP experiments were performed on formaldehyde-fixed Min6 cells. Briefly,  $20 \cdot 10^6$  Min6 cells were treated with formaldehyde at a final concentration of 1% to crosslink DNA and protein complexes during 10 min. The reaction was stopped by the addition of glycine (0.125 M) during 5 min. Cells were lysed and DNA-protein complexes were sheared using the Bioruptor Pico (Diagenode, ref B01060010) for 8 minutes. The sheared chromatin was immunoprecipitated with either the non-specific antibody IgG (Santa Cruz, sc2025), H3K4me3 (Active motif, #61379), H3K27me3 (Active motif, #61017) or H3K27ac (Active motif, #39685). 1 ng of eluted and purified DNA was used to prepare DNA sequencing library with the Nextflex rapid DNA seq kit 2.0 (Perkin Elmer, NOVA-5188-01) on the NextSeq 500 system (Illumina) using single read 100 base pairs mode. The demultiplexing



of sequence data (from BCL files generated by Illumina sequencing systems to standard FASTQ file formats) was performed using bcl2fastq Conversion Software (Illumina; version 2.20). Trimming of residuals adapters and low quality reads was performed using TrimGalore (version 0.4.5). Subsequently, sequence reads from FASTQ files were mapped to the mouse genome (mm10) using Bowtie2 Aligner (version 2.3.5.1). Finally, peak-calling was performed with MACS2 software (version 2.2.7.1). Further bioinformatic analyses of the public data sets and those of this study were performed using the open web-based platform Galaxy Europe (<https://usegalaxy.eu>). A list of ChIP-seq and RNA-seq data sets used in this study can be found in [Supplementary Table S3](#).

### **Rapid immunoprecipitation mass spectrometry of endogenous protein (RIME).**

*Chromatin Immunoprecipitation:* Min6 cells were transfected with an empty vector (pCMV-FLAG, negative control) or a vector encoding human *E2F1* gene coupled to a FLAG tag for immunoprecipitation (pCMV-hE2F1-FLAG). 48h after transfections, cells were fixed in 1% formaldehyde for 15 min and quenched with 0.125 M glycine. Chromatin was isolated by the addition of lysis buffer, followed by disruption with a Dounce homogenizer. Lysates were sonicated and the DNA sheared to an average length of 300-500 bp. Genomic DNA (Input) was prepared by treating aliquots of chromatin with RNase, proteinase K and heat for de-crosslinking, followed by ethanol precipitation. Pellets were resuspended and the resulting DNA was quantified on a NanoDrop spectrophotometer. Extrapolation to the original chromatin volume allowed quantitation of the total chromatin yield. An aliquot of chromatin (150 ug) was precleared with protein G agarose beads (Invitrogen). Proteins of interest were immunoprecipitated using 15 ug of antibody against FLAG (#F9291) and protein G magnetic beads. Protein complexes were washed then trypsin was used to remove the immunoprecipitate from beads and digested the protein sample. Protein digests were separated from the beads and purified using a C18 spin column (Harvard Apparatus). The peptides were vacuum dried using a speedvac.

*Mass Spectrometry:* Digested peptides were analyzed by LC-MS/MS on a Thermo Scientific Q Exactive Orbitrap Mass spectrometer in conjunction with a Proxeon Easy-nLC II HPLC (Thermo Scientific) and Proxeon nanospray source. The digested peptides were loaded on a 100 micron x 25 mm Magic C18 100Å 5U reverse phase trap where they were desalted online before being separated using a 75 micron x 150 mm Magic C18 200Å 3U reverse phase column. Peptides were eluted using a 90 minutes gradient with a flow rate of 300nl/min. An MS survey scan was obtained for the m/z range 300-1600, MS/MS spectra were acquired using a top 15 method, where the top 15 ions in the MS spectra

were subjected to HCD (High Energy Collisional Dissociation). An isolation mass window of 1.6 m/z was for the precursor ion selection, and normalized collision energy of 27% was used for fragmentation. A five second duration was used for the dynamic exclusion.

*Database Searching:* Tandem mass spectra were extracted by Unspecified version Unspecified. Charge state deconvolution and deisotoping were not performed. All MS/MS samples were analyzed using X! Tandem (The GPM, [thegpm.org](http://thegpm.org); version CYCLONE (2013.02.01.1)). X! Tandem was set up to search the mouse-F-\_20150428\_KK0vMm database (unknown version, 90758 entries) the cRAP database of common laboratory contaminants ([www.thegpm.org/crap](http://www.thegpm.org/crap); 114 entries) plus an equal number of reverse protein sequences assuming the digestion enzyme trypsin. X! Tandem was searched with a fragment ion mass tolerance of 20 PPM and a parent ion tolerance of 20 PPM. Carbamidomethyl of cysteine was specified in X! Tandem as a fixed modification. Glu->pyro-Glu of the n-terminus, ammonia-loss of the n-terminus, gln->pyro-Glu of the n-terminus, deamidated of asparagine and glutamine, oxidation of methionine and tryptophan, dioxidation of methionine and tryptophan and acetyl of the n-terminus were specified in X! Tandem as variable modifications.

*Criteria for Protein Identification:* Scaffold (version Scaffold\_4.5.3, Proteome Software Inc., Portland, OR) was used to validate MS/MS based peptide and protein identifications. Peptide identifications were accepted if they exceeded specific database search engine thresholds. X! Tandem identifications required at least  $-\text{Log}(\text{Expect Scores})$  scores of greater than 1.5. Protein identifications were accepted if they contained at least 1 identified peptides. Proteins that contained similar peptides and could not be differentiated based on MS/MS analysis alone were grouped to satisfy the principles of parsimony. Proteins sharing significant peptide evidence were grouped into clusters.

*List Filtering:* Final list generation was done by taking all proteins with a spectral count of five and above from each replicate reaction and comparing them in a venn-diagram against IgG control replicates. Proteins unique to both experimental replicates were then applied to the PANTHER database for protein ontology results.

**Statistical Analysis.** Data are presented as mean  $\pm$  s.e.m. Data are derived from multiple experiments unless stated otherwise. Statistical analysis was performed using a two-tailed unpaired *t*-test or one-way or two-way ANOVA with Tukey's post hoc test comparing all groups to each other, using GraphPad Prism 7.0 software. Differences were considered statistically significant at  $p < 0.05$  (\* $p < 0.05$ , \*\*  $p < 0.01$ , and \*\*\*  $p < 0.001$ ).

## Results

### Increased alpha to beta cell ratio in the pancreas of germline *E2f1*-deficient mice.

To investigate the contribution of *E2f1* to islet morphology, we performed immunofluorescence staining of insulin and glucagon in the pancreas of wild-type and global *E2f1* knock-out mice. The detailed analysis of *E2f1*-deficient pancreas revealed a decreased proportion of ins<sup>+</sup>  $\beta$ -cell and a concomitant expansion of the glu<sup>+</sup>  $\alpha$ -cell percentage per islet in chow-fed 16 week-old animals, as demonstrated through the quantification of insulin and glucagon positive cells in *E2f1*<sup>+/+</sup> and *E2f1*<sup>-/-</sup> pancreas (Figures 1A-B, Supplementary figures S1G). In the *db/db* background, *E2f1* deficient animals displayed a further increase of the  $\alpha$ -cell number per islet, while exhibiting an even lower  $\beta$ -cell count compared to *db/db::E2f1*<sup>+/+</sup> controls (Figures 1 C-D).

To test whether *bona fide* regulators of E2F1 activity could rescue the altered  $\alpha$ -to- $\beta$ -cell ratio observed in *E2f1*<sup>-/-</sup> mice, we used 2 different genetically-engineered mouse models (Supplementary figures S1A). First, the R24C mouse model of CDK4 hyperactivation (CMV-CDK4<sup>R24C</sup>) constitutively expresses a mutant CDK4 protein that restores  $\beta$ -cell mass and function during diabetes development (Martin *et al*, 2003; Miyawaki *et al*, 2008; Rane *et al*, 1999). As previously observed (Rane *et al.*, 1999),  $\alpha$ -to- $\beta$ -cell ratio was decreased in CMV-*Cdk4*<sup>R24C</sup> pancreas (Supplementary figures S1B, S1C and S1G). We then generated compound mutant mouse models with both *E2f1* deficiency and overactive CDK4 (*E2f1*<sup>-/-</sup>::CMV-*Cdk4*<sup>R24C</sup>). Interestingly, the increased  $\beta$ -cell number observed in CMV-*Cdk4*<sup>R24C</sup> pancreas was blunted in *E2f1*<sup>-/-</sup>::CMV-*Cdk4*<sup>R24C</sup> mice, with a concomitant increase of glucagon immunofluorescent staining (Supplementary figures S1D and S1G). We replicated these data in the second model using *Cdkn2a*-deficient mice (*Cdkn2a*<sup>-/-</sup>; (Serrano *et al.*, 1996)), an upstream regulator of the E2F1-CDK4-pRb signaling pathway involved in  $\beta$ -cell function (Helman *et al*, 2016; Ndiaye *et al*, 2017; Pal *et al*, 2016). Although Glu<sup>+</sup> and Ins<sup>+</sup> immunofluorescent positive cell staining was conserved between *Cdkn2a*<sup>+/+</sup> and *Cdkn2a*<sup>-/-</sup> pancreas (Supplementary figures S1E and S1G), *E2f1*<sup>-/-</sup>::*Cdkn2a*<sup>-/-</sup> compound mutant mice displayed an altered  $\alpha$ -to- $\beta$ -cell ratio with a decrease of Ins<sup>+</sup> and an increase Glu<sup>+</sup> cell numbers, respectively (Supplementary figures S1F and S1G). Altogether, these results suggest a specific role of *E2f1* in maintaining pancreatic  $\beta$  cell numbers under normal conditions but also in a diabetic environment associated to glucose intolerance, insulin resistance and obesity.

## **$\beta$ -cell specific *E2f1* deficiency impairs glucose tolerance, insulin secretion and alters $\alpha$ -to- $\beta$ cell ratio.**

To determine whether *E2f1* regulates insulin-producing  $\beta$ -cell fate and function in a cell-autonomous manner, we generated  $\beta$ -cell specific *E2f1* deficient mice by crossing *E2f1* floxed (*E2f1<sup>fl/fl</sup>*) with RIP-Cre (Rip-Cre/+) mice (Herrera, 2000). Quantitative RT-PCR showed a 91 % tissue-specific reduction in *E2f1* expression in pancreatic islets isolated from *E2f1 <sup>$\beta$ -/-</sup>* mice (Supplementary figure S2A).  $\beta$ -cell specific deletion of *E2f1* was also confirmed at the protein level by immunofluorescence analysis (Supplementary figure S2B). *E2f1 <sup>$\beta$ -/-</sup>* mice had normal body weight (Supplementary figure S2C) and fasting glycemia when fed a chow diet (Supplementary figure S2D). When challenged with a bolus of glucose, *E2f1 <sup>$\beta$ -/-</sup>* mice exhibit glucose intolerance (Figures 2A-B), primarily due to decreased insulin secretion in response to glucose (Figure 2C) rather than defective insulin sensitivity (Figure 2D). GSIS experiments on mouse pancreatic islets isolated from *E2f1<sup>fl/fl</sup>* and *E2f1 <sup>$\beta$ -/-</sup>* further confirmed insulin secretion defects in response to glucose (Figure 2E). Interestingly, an immunofluorescence analysis of sections from control and *E2f1 <sup>$\beta$ -/-</sup>* pancreas demonstrated increased glucagon-positive cells and an increased  $\alpha$ -to- $\beta$ -cell ratio in  $\beta$ -cell specific *E2f1* KO islets (Figures 2F-G). The number of cells per islet section remained unchanged between control and *E2f1 <sup>$\beta$ -/-</sup>* pancreas (Supplementary figure S2E). As observed in germline *E2f1* deficient mice (Figure 1), these data suggest that  $\beta$ -cell expression of *E2f1* is necessary to maintain insulin secretion and glucose homeostasis associated to normal  $\alpha$ -to- $\beta$ -cell ratio.

### **Loss of $\beta$ -cell identity markers in *E2f1* deficient pancreatic islets**

E2F1 is a transcription factor that controls gene expression in several cellular systems. In order to get a global view of the transcriptional mechanisms associated with the loss of *E2f1* expression in the  $\beta$  cell, we performed RNA sequencing (RNA-seq) in control (*E2f1<sup>fl/fl</sup>*) and *E2f1 <sup>$\beta$ -/-</sup>* isolated islets. As expected, the floxed region of the *E2f1* gene spanning exon 2 and 3 was not covered in *E2f1 <sup>$\beta$ -/-</sup>* isolated islets compared to *E2f1<sup>fl/fl</sup>* isolated islets, indicating specific and efficient gene deletion through the Cre recombinase activity in *E2f1 <sup>$\beta$ -/-</sup>* isolated islets (Supplementary figure S3A). The analysis of the transcripts revealed that 692 annotated genes were differentially expressed across the two groups (adjusted P Value (AdjP) <0.05). Interestingly, a vast majority of the genes were upregulated in *E2f1 <sup>$\beta$ -/-</sup>* isolated islets (493 genes, Figure 3A and Supplementary Table S4),

with only 199 down-regulated genes associated with the loss of *E2f1* expression in  $\beta$  cells (Figure 3A and Supplementary Table S4). This first observation suggests that *E2f1* expression is not only necessary to activate, but also to repress gene transcription within the  $\beta$  cell. Analysis of the RNA-seq data of downregulated genes with metascape software revealed an enrichment of gene networks involved in signal release, regulation of exocytosis and negative regulation of secretion (Figure 3B). Conversely, upregulated genes in *E2f1* <sup>$\beta$ -/-</sup> isolated islets were associated with the regulation of cell adhesion, inflammatory response and cytokine production (Figure 3C). To better understand the relationship between the observed metabolic phenotype (*i.e.* glucose intolerance and defective insulin secretion), increased glu+ cells, decreased ins+ cells and *E2f1* deficiency, we filtered gene sets to focus on  $\beta$ - and  $\alpha$ -cell genes being conserved between zebrafish, mouse and human (Tarifeno-Saldivia *et al*, 2017). Notably, a total of 15 genes from 109 conserved genes (82 and 27 for  $\alpha$ -cell and  $\beta$ -cell genes, respectively) were differentially expressed. Interestingly, most of the conserved  $\beta$ -cell genes were found to be decreased in *E2f1* <sup>$\beta$ -/-</sup> isolated islets (Figure 3D and Supplementary figure S3B), whereas most of the conserved  $\alpha$ -cell genes were upregulated upon *E2f1* deficiency (Figure 3D and Supplementary figure S3C). Gene Set Enrichment Analysis (GSEA (Subramanian *et al*, 2005)) further confirmed an enriched signature of decreased expression of  $\beta$ -cell markers (Figure 3E) and conversely, an increased expression of  $\alpha$ -cell markers in *E2f1* <sup>$\beta$ -/-</sup> isolated islets (Figure 3F). We further confirmed these changes in the expression of selected  $\alpha$ - and  $\beta$ -cell markers at the transcriptional level by qPCR in an independent experiment: indeed we observed a strong decrease in transcript levels of *Pdx1*, *Mafa* ( $p=0.13$ ), *Ins2*, *Pcsk9*, *Foxo1* and *Glp1r* in *E2f1* <sup>$\beta$ -/-</sup> islets (Supplementary figure S3D). Conversely,  $\alpha$ -cell specific Aristaless-related homeobox (*Arx*) mRNA levels were increased in *E2f1* <sup>$\beta$ -/-</sup> islets (Supplementary figure S3E). Altogether these results suggest that the  $\beta$ -cell specific deletion of *E2f1* induces a transcriptional reprogramming characterized by a loss of  $\beta$ -cell identity genes associated to an increased expression of non  $\beta$ -cells markers.

### **The treatment with the E2F inhibitor HLM006474 inhibits glucose-stimulated insulin secretion and impairs $\beta$ - and $\alpha$ -cell gene expression in Min6 cells and human islets.**

To assess the effect of E2F1 activity on  $\beta$ -cell identity markers in human islets, we made use of the E2F pan-inhibitor HLM006474 previously shown to inhibit the binding of E2Fs to their DNA target genes (Sangwan *et al*, 2012) and E2F1 transcriptional activity (Rosales-Hurtado *et al.*, 2019). Consistent with our previous findings in HEK293 cells (Rosales-

Hurtado *et al.*, 2019), a 48h treatment of Min6 cells with this inhibitor triggered a decrease in E2f1 transcriptional activity, as measured by transient transfection experiments using an E2F reporter gene (Figure 4A). In addition, the treatment of Min6 cells with this inhibitor induced a marked decrease in glucose-stimulated insulin secretion (Figure 4B) and in the expression of several  $\beta$ -cell markers, including *Ins1*, *Pdx1*, *Pax4* and *Nkx2.2* (Figure 4C). The treatment of human islets with the E2F inhibitor for 48 hours also decreased GSIS (Figure 4D) and  $\beta$ -cell marker expression levels with a concomitant increase in the expression of  $\alpha$ -cell genes (Figure 4E). Therefore, the pharmacological inhibition of E2F activity impairs  $\beta$ -cell function and gene expression in both mouse cell line and human islets, suggesting that E2F1 activity is also required in human islets to maintain proper insulin secretion and  $\beta$ -cell identity genes, as observed in mice.

### **Maintenance of $\beta$ -cell identity is dependent on histone deacetylase and E2F1 activities.**

Our transcriptome analysis revealed a 2.5-fold more up- than downregulation of global gene expression in *E2f1* <sup>$\beta$ -/-</sup> isolated islets. Comparative analysis of log10 transcription levels (Log10(TPM+1)) of up- and downregulated genes values demonstrated that the expression of upregulated genes in *E2f1* <sup>$\beta$ -/-</sup> islets was significantly increased upon *E2f1* deficiency compared to wild-type controls whereas the expression of downregulated genes was not significantly modulated (Figure 5A). Considering that E2f1 could play a dual role in the regulation of gene expression in pancreatic  $\beta$  cells, we postulated that this mechanism could be related to a distinct epigenomic profile within promoter of genes that are up- and down-regulated in *E2f1* <sup>$\beta$ -/-</sup> islets. Using a recently published chromatin-state segmentation model (Lu *et al.*, 2018), we probed the activation/repressive level of these promoters by monitoring several epigenome marks such as active and poised promoters (tri-methylation of lysine 4 in histone H3 [H3K4me3]) and enhancers (acetylation of lysine 27 in histone H3 [H3K27ac]). Intersecting publicly available data of chromatin immunoprecipitation followed by next-generation sequencing (ChIP-seq) from healthy C57Bl6/J mouse pancreatic islets (GSE 110648 (Lu *et al.*, 2018)) and our RNA-seq data, we grouped up- and down regulated genes according to their chromatin state (Figure 5B and Supplementary Table S4). 61% of the upregulated genes in *E2f1* <sup>$\beta$ -/-</sup> pancreatic islets were associated to a silent chromatin state in healthy C57Bl6/J mouse pancreatic islets characterized by bivalent H3K4me3/H3K27me3 and Polycomb-repressed (H3K27me3) marks. Conversely, 82% of

the down-regulated genes showed an enrichment in active chromatin state characterized by RNA-Pol2 recruitment, H3K4me3 and H3K27ac histone marks.

While H3K4me3, H3K27ac and H3K27me3 ChIP-seq data were available for mouse islets, we then performed ChIP-seq experiments in Min6 cells as a surrogate of  $\beta$  cell. H3K4me3, H3K27ac and H3K27me3 ChIP-seq signals were thus interrogated within promoter (centered to transcription start site [TSS] +/- 1 kb) of up- and downregulated genes both in Min6 cells and mouse pancreatic islets (Figures 5C-D and Supplementary figures 4A-B). H3K4me3 as well as H3K27ac signals were stronger within promoter of genes that are downregulated in  $E2f1^{\beta-/-}$  isolated islets compared to upregulated genes, both in Min6 cells and mouse pancreatic islets (Figure 5C and Supplementary figures 4A-B). Conversely, H3K27me3 ChIP-seq signals were lower in the promoter region of downregulated genes compared to upregulated genes (Figure 5D and Supplementary figures 4A-B). We then analyzed our integrated RNA-seq/ChIP-seq data using the “upstream regulator analysis” function of Ingenuity Pathway Analysis (IPA) to identify potential contributors that could associate to the phenotype of  $E2f1^{\beta-/-}$  isolated islets, which would be related to epigenomics. Among the most significant upstream regulators of the upregulated genes, the HDAC inhibitor trichostatin A (TSA) signaling pathway was predicted to be significantly activated (Table 1), suggesting that HDAC could regulate an  $E2f1$ -dependent gene program. Consequently, having shown that (i) the levels of upregulated genes were significantly increased upon  $\beta$ -cell specific  $E2f1$  deletion (Figure 5A), (ii) H3K27ac signal was weaker within the promoter region of upregulated genes compared to downregulated genes (Figure 5C) and (iii) TSA may modulate the  $E2f1$ -dependent epigenome, we next hypothesized that  $E2f1$  could repress the expression of upregulated genes through an HDAC (histone deacetylase)-dependent mechanism. To ascertain this hypothesis, Min6 cells were treated during 16h with the pan-HDAC inhibitor trichostatin A (TSA, 0.5  $\mu$ M). Interestingly, via RNA-seq, we evidenced that the expression of upregulated genes in  $E2f1^{\beta-/-}$  islets was significantly increased in response to TSA treatment compared to vehicle-treated cells whereas the expression of downregulated genes was not significantly modulated (Figure 5E), as observed in  $E2f1^{\beta-/-}$  islets. These results showed that the pharmacological HDAC inhibition in Min6 cells partly mimicked the effects observed in  $E2f1^{\beta-/-}$  pancreatic islets on the expression of upregulated genes, suggesting that an  $E2f1$ /HDAC complex could contribute to regulate the expression of these genes in the  $\beta$  cell. Conversely, these results also indicated that  $E2f1$ -dependent downregulation of genes probably occurred through an HDAC-independent mechanism. To go further in the

characterization of the molecular mechanisms linking E2f1 to HDAC in the  $\beta$  cell, we measured the acetylation levels of promoter (TSS +/- 1 kb) of up- and down-regulated genes in Min6 cells by probing H3K27ac level in response to TSA treatment through ChIP-seq experiments. Interestingly, TSA treatment increased H3K27ac levels within the promoter of upregulated genes compared to vehicle-treated cells, whereas H3K27ac levels were less affected within the promoter of down-regulated genes (Figure 5F). In addition, H3K27me3 ChIP-seq signals were lower in the promoter region of upregulated genes upon TSA treatment (Figure 5G), whereas no effects were observed upon TSA treatment on downregulated genes. These results were in accordance with gene expression analysis (Figure 5E) and support a role for HDAC activity in the transcriptional repression of E2f1 target genes in  $\beta$  cell whereas HDAC enzymes may probably not be involved in the E2f1-mediated transcriptional activation.

**Interactomic analysis by rapid immunoprecipitation mass spectrometry of endogenous protein (RIME) identifies HDAC1 and HDAC6 as partners of E2f1 in  $\beta$  cell.**

We next asked whether E2f1 could directly interact with HDAC enzymes in  $\beta$  cell. Rather than addressing this using coimmunoprecipitation strategies targeting a series of specific HDAC, we decided to follow a global interactomic approach by using the rapid immunoprecipitation mass spectrometry of endogenous protein (RIME) technology (Mohammed *et al*, 2013) enabling the identification of E2f1-associated proteins at proteome-wide level in Min6 cells. Consequently, E2f1 was over-expressed in Min6 cells through transfection of a plasmid encoding E2f1 cDNA fused to Flag tag followed by an anti-Flag-based E2f1 immunoprecipitation in order to identify E2f1 interacting proteins through mass spectrometry analysis. RIME analysis revealed that 245 peptides were found to be associated with E2f1 in Min6 cells (Table 2 and Supplementary figure 5A). As expected, E2f1 peptides were the most significantly enriched peptides thus validating our approach. Interestingly, peptides from HDAC6 and HDAC1 were also significantly enriched providing evidence that these two HDAC enzymes were associated with E2f1 in Min6 cells at the chromatin level (Table 2). Altogether, these results suggest that E2f1-mediated transcriptional repression may occur through interactions with HDAC1 and/or HDAC6.



## Discussion

In the present study, we show that the transcription factor E2F1 plays an essential role in maintaining  $\beta$ -cell function and identity through the control of transcriptomic and epigenetic programs within the pancreatic islets. Germ-line as well as  $\beta$ -cell specific *E2f1* deficient mice exhibit impaired glucose homeostasis and decreased  $\beta$ -cell functions that are associated to a gene expression reprogramming. A detailed analysis of the transcriptome and epigenome of the pancreatic islet reveals that E2f1 is necessary to maintain several key genes for cell adhesion and inflammatory processes in a repressive state through the maintenance of epigenomic marks including H3K27me3 (Figure 5). We showed that the  $\beta$ -cell specific loss of *E2f1* function also leads to an altered  $\alpha$ -to- $\beta$ -cell ratio, while maintaining islet size, associated to insulin secretion defects in response to glucose and affects  $\beta$ -cell identity maintenance. In addition, through the use of the E2Fs inhibitor HLM006474, which selectively disrupts the binding of E2Fs to its target genes (Figure 4 and (Ma *et al.*, 2008; Rosales-Hurtado *et al.*, 2019)), we demonstrated here that a pharmacological intervention lowering the E2F1 transcriptional activity could mimic the genetic effects of *E2f1* deficiency on the maintenance of  $\beta$ -cell identity and function, in mouse  $\beta$ -cell lines and human islets. Indeed, the treatment of human islets with this compound not only blunts  $\beta$ -cell function by impairing GSIS, but also leads to an alternative transcriptional program that affects the expression of  $\alpha$ - and  $\beta$ -cell markers. Our results, associated to those showing that E2F1 overexpression stimulates  $\beta$ -cell proliferation and function (Grouwels *et al.*, 2010), suggest that carefully targeting this pathway might be of interest for the maintenance of  $\beta$ -cell functions in the context of diabetes.

Our study is the first one to demonstrate a direct, cell-autonomous contribution of E2f1 in controlling not only GSIS but also  $\beta$ -cell identity maintenance, without affecting the pancreatic islet cell number. The role of E2F1 in the control of cell cycle and proliferation has been extensively studied, particularly in the context of cancer (Poppy Roworth *et al.*, 2015). However, its function in non-proliferating fully differentiated cells, including  $\beta$  cells, remains to be precisely deciphered. The observation that cell cycle regulators, including

E2F1, are expressed in cells that are not proliferating, suggest that they may be involved in adaptive pathways that are independent of cellular proliferation. We and others have demonstrated that this pathway plays a key role in post-natal  $\beta$ -cell proliferation (Fajas *et al*, 2004; Iglesias *et al*, 2004; Li *et al*, 2003), glucose homeostasis and insulin secretion (Annicotte *et al.*, 2009; Boni-Schnetzler *et al*, 2018; Grouwels *et al.*, 2010). Studies also revealed that the Cdk4-E2F1-pRb pathway controls the fate of pancreatic progenitors through the transcriptional control of the expression of *Ngn3* and *Pdx1* as well as Pdx1 protein stability (Cai *et al*, 2013; Kim & Rane, 2011; Kim *et al*, 2011). Most of these studies, including those from our group, were performed using germ-line *E2f1* deficient mice, which precludes to ascertain a cell-autonomous role of E2f1 in the endocrine pancreas and  $\beta$ -cell functions. To better appreciate the specific role of E2F1 in  $\beta$  cells, we specifically knocked-down *E2f1* in the  $\beta$  cell using the Cre/loxP technology. Although we cannot rule out an early role for E2f1 in pancreatic progenitors due to the use of the RIP-Cre mice (Herrera, 2000), our data demonstrate that E2f1 expression within the  $\beta$  cell is necessary to maintain a proper gene expression to regulate insulin secretion and glucose homeostasis.

The complexity of E2F1 biology resides in the fact that it can positively or negatively regulate the expression of its target genes. Our data suggest that E2F1 is part of a repressor complex that regulates  $\beta$  cell identity. In line with this, we observe that most of the genes with altered expression in *E2f1* <sup>$\beta$ -/-</sup> isolated islets were upregulated, suggesting that the repressive effects of E2F1 are key in maintaining  $\beta$ -cell identity and subsequent  $\beta$ -cell function. Accordingly, repression of non  $\beta$ -cell programs is crucial for maintaining  $\beta$ -cell identity. *Pdx1* (Gao *et al.*, 2014), *Pax6* (Swisa *et al.*, 2017), *Nkx6.1* (Schaffer *et al.*, 2013) and *Nkx2.2* (Gutierrez *et al.*, 2017) are key transcription factor required to maintain gene repression of non- $\beta$ -cell programs. Interestingly, *Nkx6.1* mRNA levels are decreased in *E2f1* <sup>$\beta$ -/-</sup> isolated islets, suggesting that E2F1 could modulate  $\beta$  cell functions through *Nkx6.1* regulation. Chromatin regulators and epigenomic features play important roles in the control of  $\beta$ -cell identity and plasticity (Arda *et al*, 2016; Avrahami *et al*, 2015; Campbell & Hoffman, 2016). Indeed, the modulation of islet enriched transcription factor activity, including *Pdx1* or *Nkx2.2*, involves their interaction with coregulators such as *Dnmt1*, *Dmmt3a* or *Hdac1* (Dhawan *et al*, 2011; Papizan *et al*, 2011; Spaeth *et al*, 2016) or their accessibility to chromatin, as demonstrated for the  $\beta$ -cell specific deletion of protein arginine methyltransferase 1 (*Prmt1*) that results in the loss of  $\beta$ -cell identity and diabetes development (Kim *et al*, 2020). In addition, recent studies also indicate that loss of

Polycomb silencing in human and mouse  $\beta$ -cells contributes to loss of  $\beta$ -cell identity in diabetes (Lu *et al.*, 2018). Indeed, the  $\beta$ -cell specific deletion of *Eed*, a component of the Polycomb repressive complex (PRC)-2, triggers  $\beta$ -cell dysfunctions, dedifferentiation and diabetes development associated to chromatin-state-associated transcriptional dysregulation (Lu *et al.*, 2018). The findings that loss of PRC2 activity induces  $\beta$ -cell plasticity through epigenomic reprogramming at both active and silent genes suggest that maintaining proper and specific histone marks and chromatin state at precise loci is crucial to maintain normal  $\beta$ -cell functions and avoid T2D development. Interestingly, most of the upregulated genes in *E2f1* <sup>$\beta$ -/-</sup> pancreatic islets were characterized by bivalent H3K4me3/H3K27me3 and Polycomb-repressed (H3K27me3) marks. In addition, epigenomic interventions triggering ectopic acetylation and gene derepression contribute to  $\beta$ -cell dysfunctions. Indeed, blocking HDAC activity through the use of the HDAC inhibitor SAHA, impairs glucose intolerance in mice fed a HFD (Lu *et al.*, 2018). Here we show that the loss of *E2f1* function triggers transcriptional dysregulation of specific genes that are in a bivalent (*i.e.* H3K4me3/H3K27me3 and Polycomb-repressed (H3K27me3) marks) and active (*i.e.* RNA-Pol2 recruitment, H3K4me3 and H3K27ac histone marks) state in healthy pancreatic islets, suggesting an ectopic acetylation in the promoter region of upregulated genes in *E2f1* <sup>$\beta$ -/-</sup> islets and decreased activation of the promoter region of downregulated genes. Accordingly, the use of the HDACi TSA also impairs the expression of genes regulated by *E2f1* in pancreatic islets. Although E2F1 is a ubiquitous transcription factor that is weakly expressed within  $\beta$  cell compared to *bona fide*  $\beta$ -cell genes, we speculate that this transcriptional regulator may cooperate with  $\beta$ -cell transcription factors and/or the chromatin machinery such as HDAC or the PRC2 complex to integrate some signals necessary for  $\beta$ -cell maintenance in physiological conditions. Since E2F1 regulates gene expression through its interaction with repressor complexes including pRb, SWI/SNF and HDACs (Brehm *et al.*, 1998; Luo *et al.*, 1998; Magnaghi-Jaulin *et al.*, 1998), our finding that E2F1 mediates repression of non  $\beta$ -cell programs deserves deeper investigations to identify the E2F1 complexes that can trigger these transcriptomic and epigenomic effects in the  $\beta$ -cell and their physio(patho)logical consequences.

In summary, the present data highlight that E2F1 transcriptional activity within pancreatic islets is key for maintaining glucose homeostasis and insulin secretion through the regulation of key  $\beta$ -cell identity genes and the repression of non  $\beta$ -cell programs, both in mouse and human islets. The observation that E2F1 levels are decreased in human T2D

islets (Lupi *et al.*, 2008) suggests that a reduced E2F1 expression or activity may contribute to  $\beta$ -cell failure in diabetes.

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**Conflict of interest.** The authors declare no competing financial interests.

## Figure legends

**Figure 1. Altered  $\alpha$ -to- $\beta$  cell ratio in germline *E2f1*-deficient mice. (A)** Representative immunofluorescent staining of insulin and glucagon in pancreatic sections from 16 week old global *E2f1* knockout male mice (*E2f1*<sup>-/-</sup>) compared to littermate controls (*E2f1*<sup>+/+</sup>). **(B)** Quantification of glucagon (Glucagon +) and insulin (Insulin +) labelled cells from (A, n=3 per genotype). **(C)** Representative immunofluorescent staining of insulin and glucagon in pancreatic sections from 14 to 15 week old global *E2f1* knockout male mice in a *Db/Db* background (*Db/Db::E2f1*<sup>-/-</sup>) compared to littermate control (*Db/Db::E2f1*<sup>+/+</sup>). **(D)** Quantification of glucagon (Glucagon +) and insulin (Insulin +) labelled cells in *Db/Db::E2f1*<sup>-/-</sup> and *Db/Db::E2f1*<sup>+/+</sup> mice calculated from C (n=4 per genotype). Values in B and D are expressed as mean  $\pm$  s.e.m. and were analysed by two-tailed unpaired *t*-test. \**p* < 0.05; \*\**p*<0.01.

**Figure 2. The  $\beta$  cell-specific deletion of *E2f1* impairs glucose tolerance and insulin secretion in mice. (A)** Intraperitoneal glucose tolerance test (IPGTT) was performed on *E2f1* <sup>$\beta$ -/-</sup> (n=12), RIP-Cre<sup>+/-</sup> (n=7) and *E2f1*<sup>fl/fl</sup> (n=8) male mice at 12 weeks of age. **(B)** Area under the curve (AUC) calculated from (A). **(C)** Plasma insulin levels at 0 and 30 min after intraperitoneal glucose injection in *E2f1* <sup>$\beta$ -/-</sup> (n=18), RIP-Cre<sup>+/-</sup> (n=15) and *E2f1*<sup>fl/fl</sup> (n=6) male mice at 12 weeks of age. **(D)** Intraperitoneal insulin tolerance test (IPITT) of *E2f1* <sup>$\beta$ -/-</sup> (n=8), RIP-Cre<sup>+/-</sup> (n=8) and *E2f1*<sup>fl/fl</sup> (n=8) male mice at 12 weeks of age. **(E)** Glucose-stimulated insulin secretion (GSIS) at indicated glucose concentrations on islets isolated from *E2f1* <sup>$\beta$ -/-</sup> (n=3) and control *E2f1*<sup>fl/fl</sup> (n=5) male mice. **(F)** Representative immunofluorescent staining of insulin and glucagon in pancreatic sections from 3 months old *E2f1* <sup>$\beta$ -/-</sup> and control *E2f1*<sup>fl/fl</sup> male mice. **(G)** Ratio of glucagon labelled cells (Glucagon +) over insulin labelled cells (Insulin +) in *E2f1* <sup>$\beta$ -/-</sup> and *E2f1*<sup>fl/fl</sup> male mice calculated from (F). All values are expressed as mean  $\pm$  s.e.m. and were analysed by one-way analysis of variance (ANOVA) with Tukey's test (A, C, D), two-way ANOVA with Tukey's test (B, E, F) or two-tailed unpaired *t*-test (H). \**p* < 0.05; \*\**p*<0.01; \*\*\**p*<0.001.

**Figure 3. RNA-seq analysis of *E2f1*  $\beta$  cell-specific knockout islets reveal altered transcriptional programs. (A)** Volcano plot providing adjusted P value (*i.e.*, FDR, false discovery rate) and fold change for all gene transcripts in islets from *E2f1* <sup>$\beta$ -/-</sup> mice. Genes that are differentially expressed compared to *E2f1*<sup>fl/fl</sup> with an AdjP<0.05 are indicated by

two-level color coding. 199 downregulated protein-coding genes are highlighted in red. 493 upregulated protein-coding genes are highlighted in green (n=3 per genotype for RNA-seq analysis). **(B-C)** Metascape enrichment analysis of downregulated (B) and upregulated (C) genes in  $E2f1^{\beta-/-}$  compared to  $E2f1^{fl/fl}$ . Histogram of enriched terms across input gene lists are shown. **(D)** Evolutionary conserved  $\alpha$ - and  $\beta$ -cell markers were recovered from Tarifeno-Saldivia E *et al.* (Tarifeno-Saldivia *et al.*, 2017) and were used to filter our RNA-seq dataset. Volcano plots provides AdjP values (*i.e.*, FDR, false discovery rate) and fold change for both  $\alpha$ - and  $\beta$ -cell marker transcripts in islets from  $E2f1^{\beta-/-}$  mice. The  $\alpha$ - and  $\beta$ -cell markers are displayed as blue triangle and red square, respectively. Gene symbols of differentially expressed  $\alpha$ - and  $\beta$ -cell markers are displayed (AdjP<0.05). **(E-F)** Enrichment plot from Gene Set Enrichment Analysis (GSEA) was conducted with 82 probe sets specifically expressed in  $\alpha$ -cells (E) and with 26 probe sets specifically expressed in  $\beta$ -cells (F).

**Figure 4. The pharmacological inhibition of E2f transcription factor activity induces a loss of  $\beta$ -cell function in mouse and human islets.** **(A)** Min6 cells were transiently co-transfected with the E2F-RE-Tk promoter luciferase construct in the absence (PCDNA3) or presence of E2F1:DP1 heterodimer (E2F1/DP1) and were subsequently treated with DMSO (0.1 %, 48h) or HLM006474-treated (10  $\mu$ M, 48h). Results were normalized to  $\beta$ -galactosidase activity. **(B)** Glucose stimulated insulin secretion (GSIS) at indicated glucose concentration on DMSO (0.1 %, 48h) or HLM006474-treated (10  $\mu$ M, 48h) Min6 cells (n=6). **(C)** qPCR-based analysis of  $\beta$ -cell specific mRNA expression in DMSO (0.1 %, 48h) or HLM006474-treated (10  $\mu$ M, 48h) Min6 cells (n=3). **(D)** Glucose stimulated insulin secretion (GSIS) at indicated glucose concentration on human islets treated with DMSO (0.1 %, 48h) or HLM006474 (10  $\mu$ M, 48h) (n=3) (see supplementary Table S1 for donor information). **(E)** qPCR-based analysis of  $\beta$ -cell specific (*INS*, *PDX1*, *PAX4*, *MAFA* and *NEUROD1*) and  $\alpha$ -cell specific (*ARX* and *GCG*) mRNA expression in DMSO (0.1 %, 48h) or HLM006474-treated (10  $\mu$ M, 48h) human islets (n=3). Data are represented as mean  $\pm$  s.e.m. and were analyzed by two-way ANOVA with Tukey's test (A, B, D) and two-tailed unpaired *t*-test (C, E). \*p < 0.05; \*\*p<0.01; \*\*\*p<0.001.

**Figure 5. The transcriptional repression of *E2f1*  $\beta$ -cell target genes occurs through an HDAC-dependent mechanism.** **(A)** Expression level of  $E2f1^{\beta-/-}$  up- and down-regulated genes both in pancreatic islets from control (WT) and  $E2f1$  knock-out ( $E2f1^{\beta-/-}$ )

mice. Results are displayed as  $\text{Log}_{10}(\text{TPM}+1)$  calculated from TPM obtained from RNA-seq data. Data are represented as mean s.e.m and were analyzed by unpaired *t*-test (\*\*\*\*  $p < 0.0001$ ). **(B)** Pie-chart displaying chromatin state of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down- regulated genes according to pancreatic islets genes-associated chromatin state stratification from Lu TT *et al.* (Lu *et al.*, 2018) **(C)** H3K4me3 and H3K27ac ChIP-seq mean signal within promoter (centered to TSS +/- 1kb) of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down- regulated genes both in Min6 cells and mouse pancreatic islets (Lu *et al.*, 2018). **(D)** H3K27me3 ChIP-seq mean signal within promoter (centered to TSS +/- 1kb) of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down- regulated genes both in Min6 cells and mouse pancreatic islets (Lu *et al.*, 2018). **(E)** Expression level of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down- regulated genes in TSA-treated Min6 cells. Results are displayed as  $\text{Log}_{10}(\text{TPM}+1)$  calculated from TPM obtained from RNA-seq data. Data are represented as mean  $\pm$  s.e.m and were analyzed by unpaired *t*-test (\*\*\*\*  $p < 0.0001$ ). **(F)** H3K27ac ChIP-seq mean signal within promoter (centered to TSS +/- 1kb) of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down-regulated genes in TSA-treated Min6 cells. **(G)** H3K27me3 ChIP-seq mean signal within promoter (centered to TSS +/- 1kb) of *E2f1* <sup>$\beta^{-/-}$</sup>  up- and down- regulated genes in TSA-treated Min6 cells.

**Table 1. Pathway analysis of RNA-sequencing data in pancreatic islets isolated from control *E2f1*<sup>*fl/fl*</sup> and  $\beta$ -cell specific *E2f1* <sup>$\beta^{-/-}$</sup>  deficient mice identifies potential upstream regulators associated to *E2f1* deficiency.**

**Table 2. List of peptides associated to E2F1 in Min6 cells identified through RIME experiments. RIME was performed on biological duplicates and common peptides found in both replicates are shown.**

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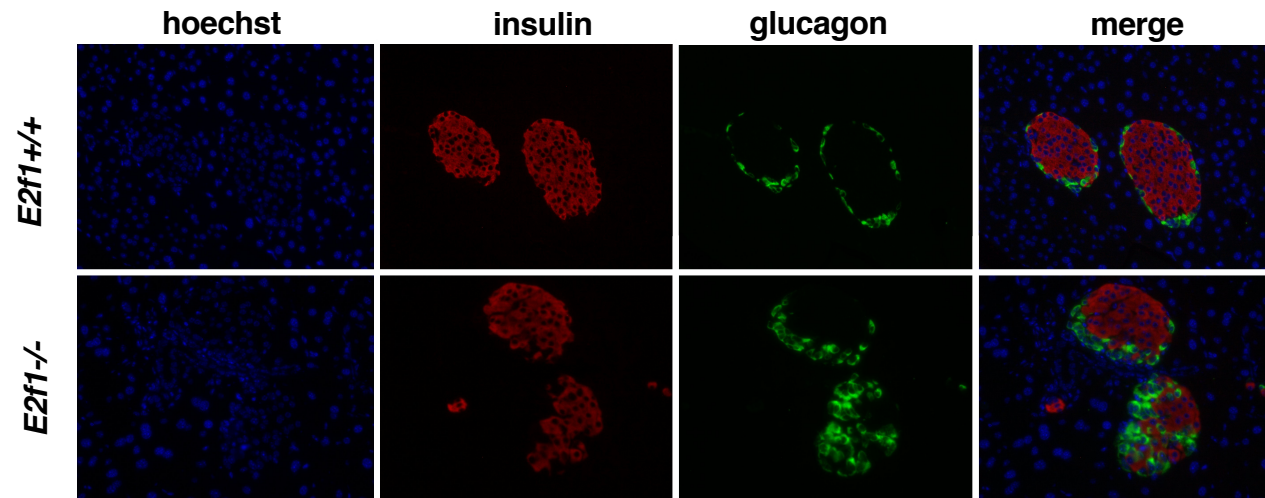
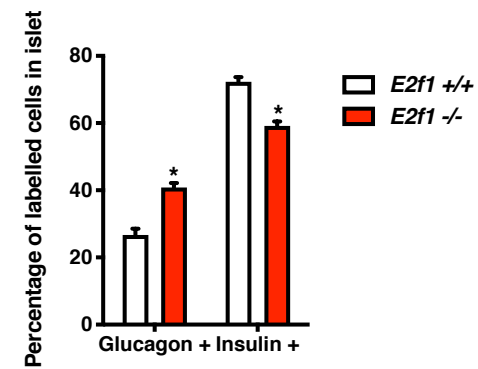
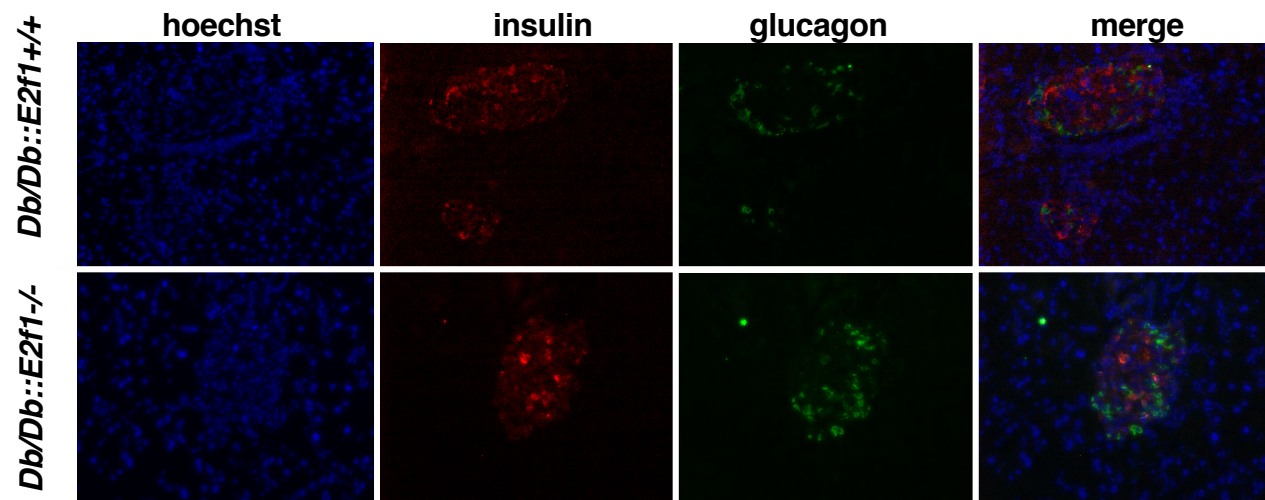
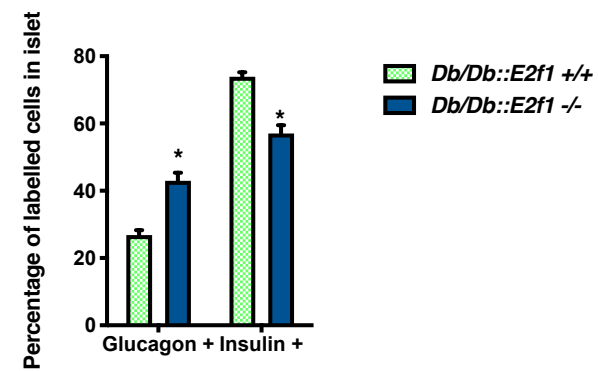
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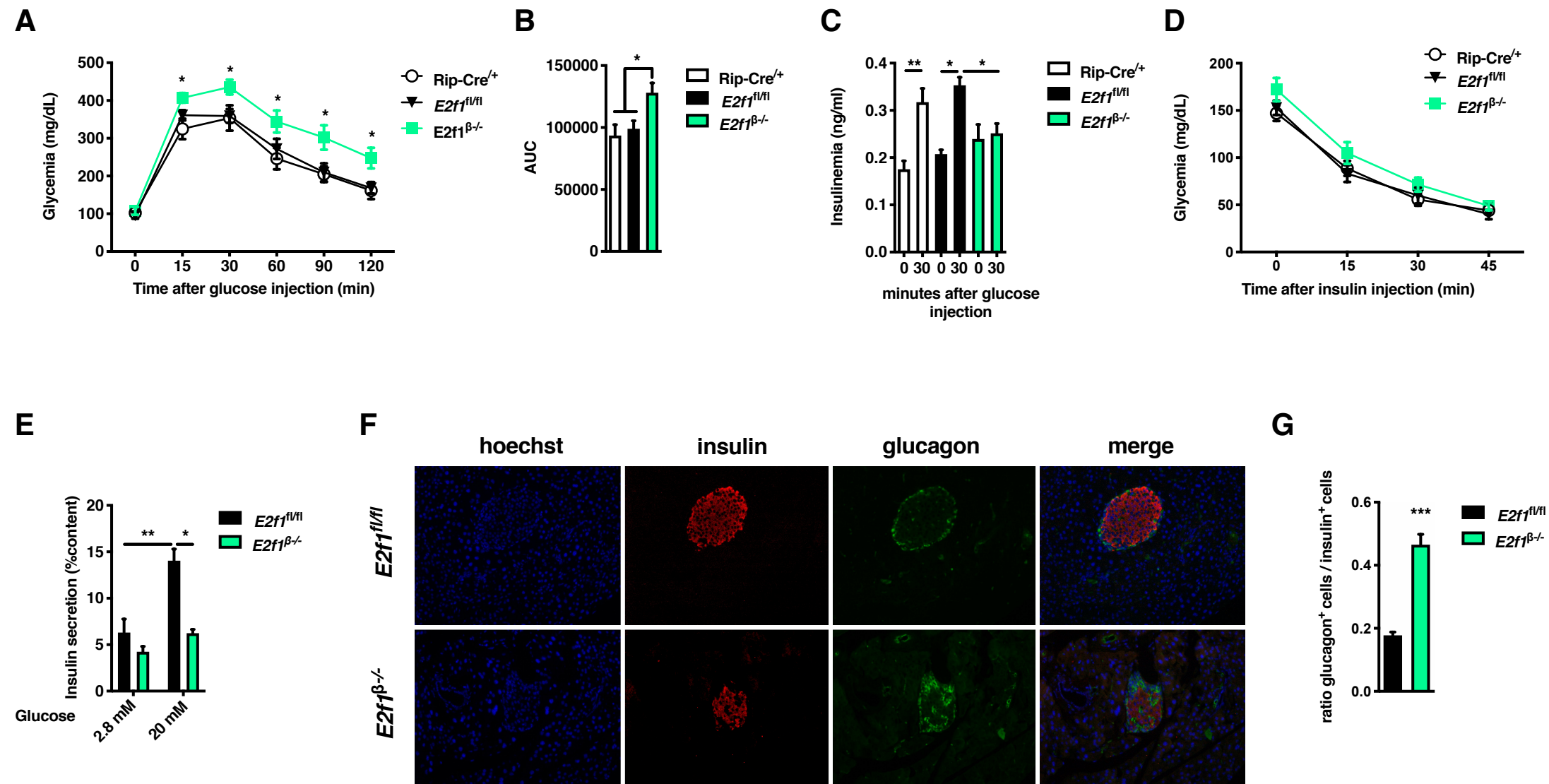


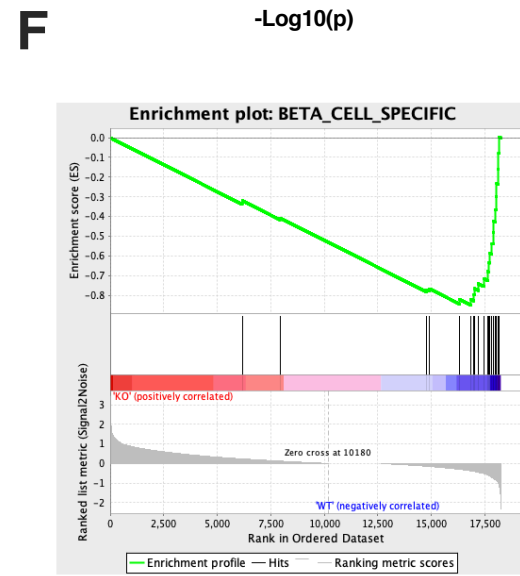
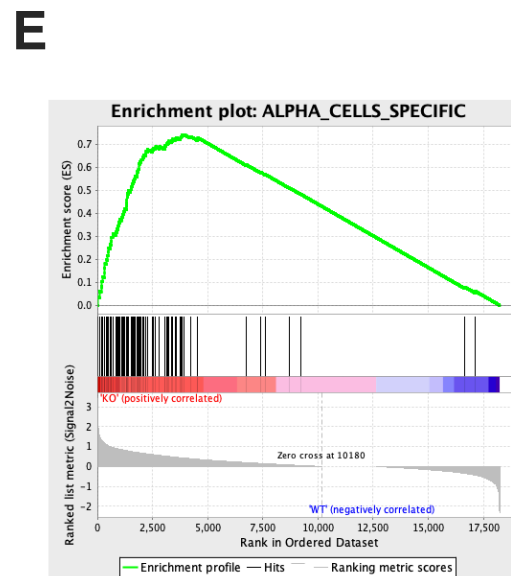
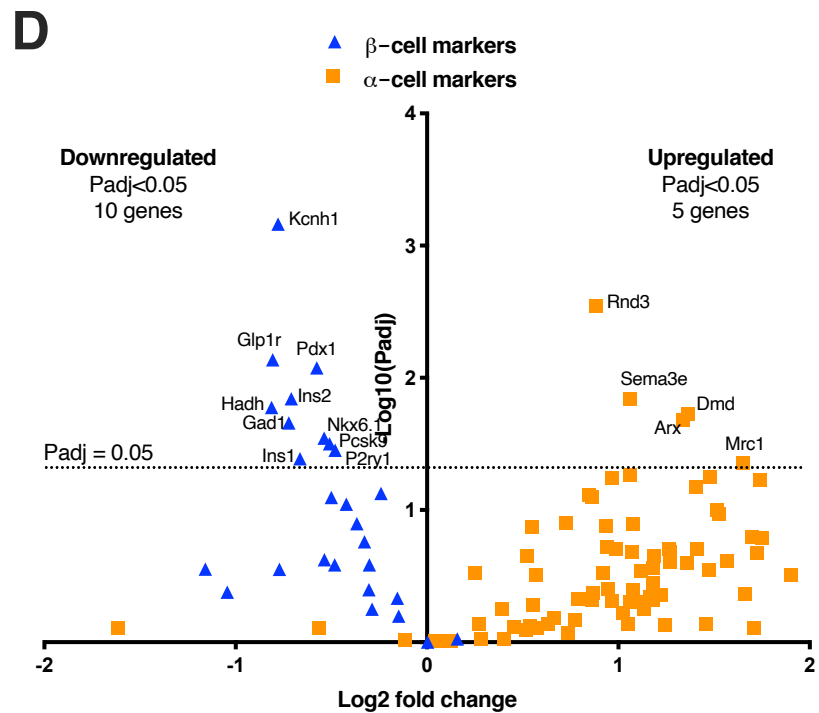
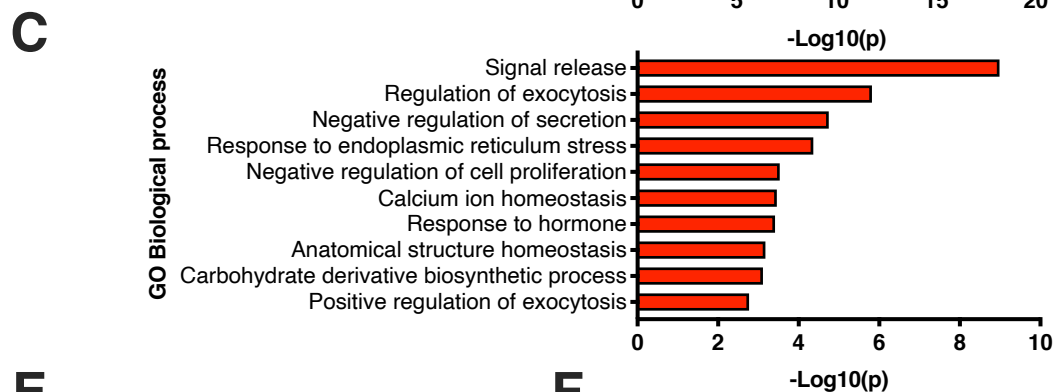
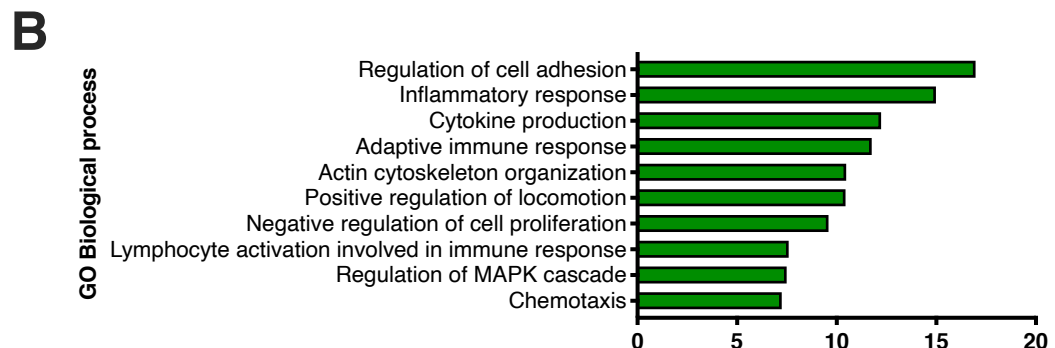
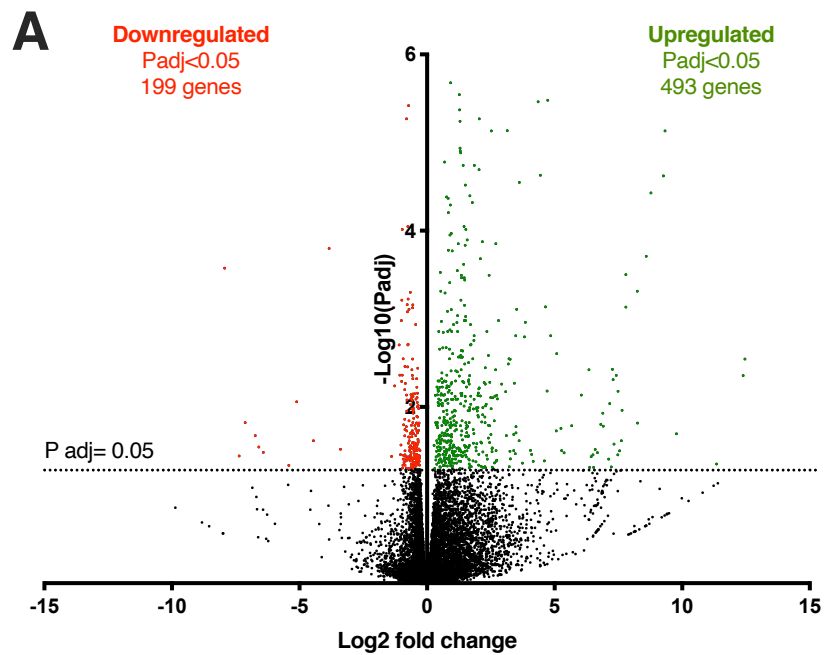
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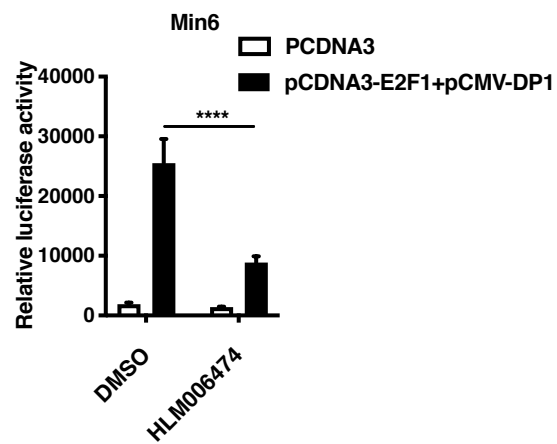
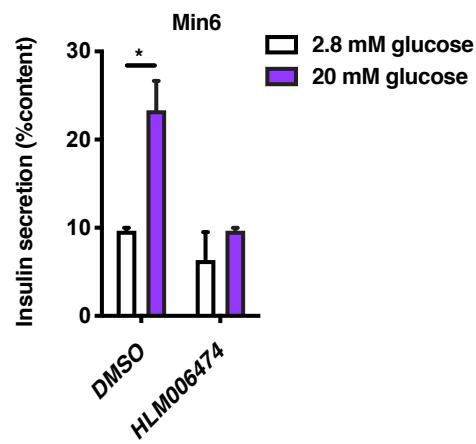
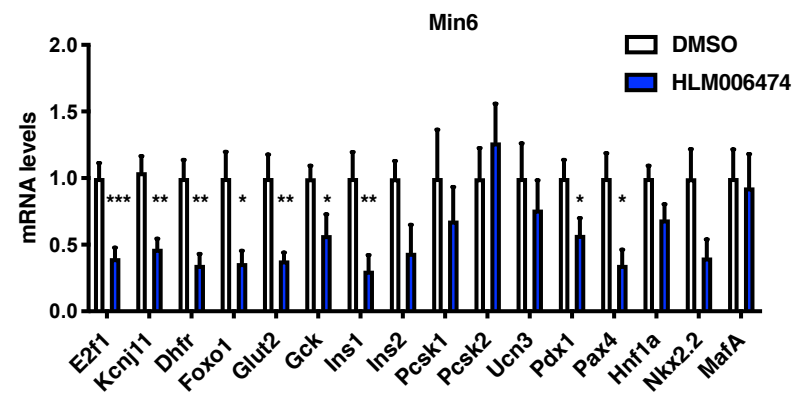
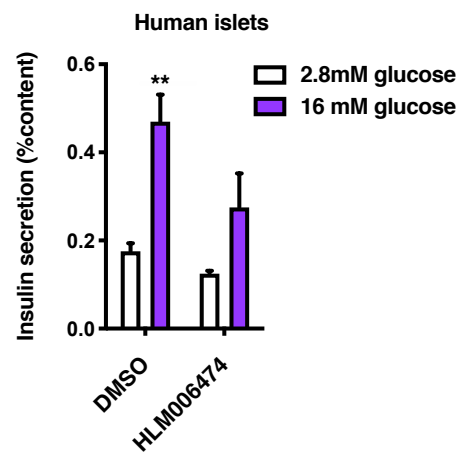
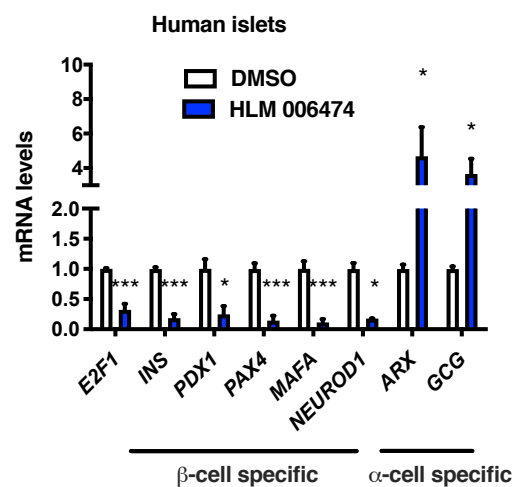
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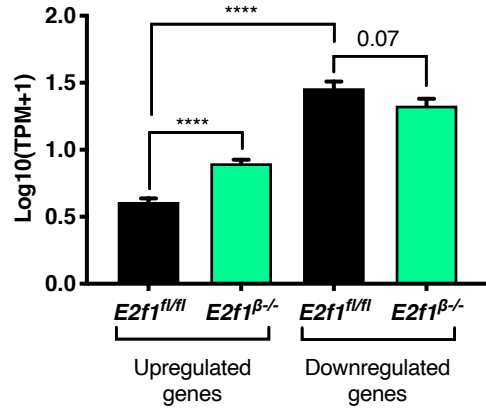
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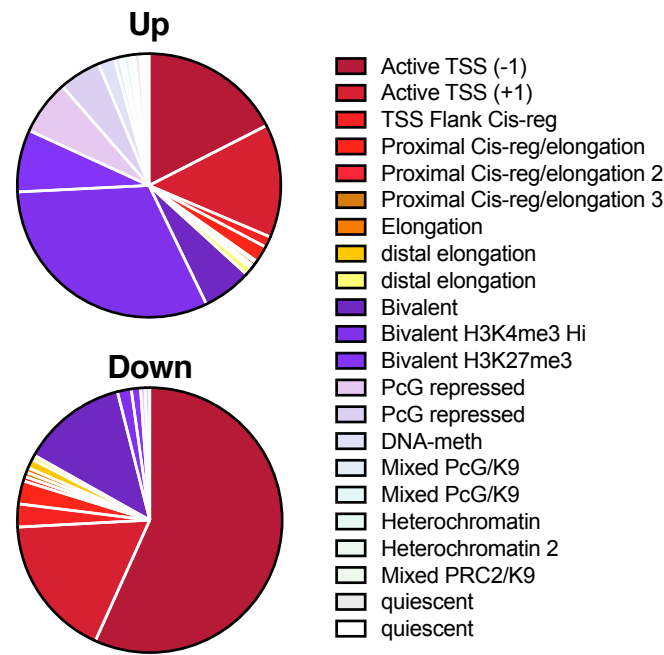


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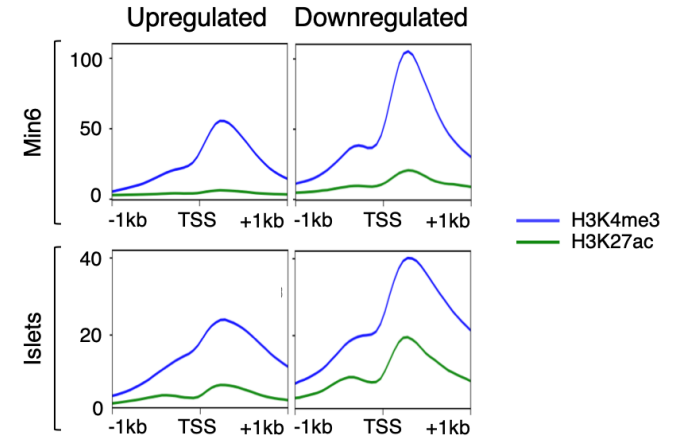
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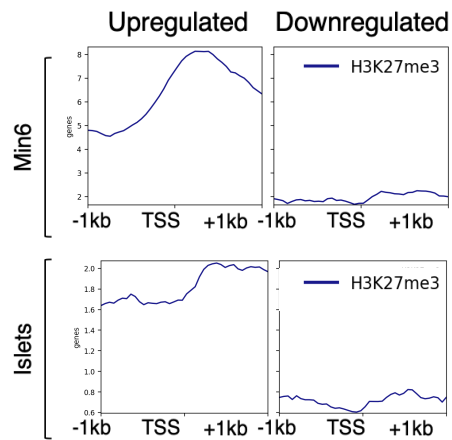
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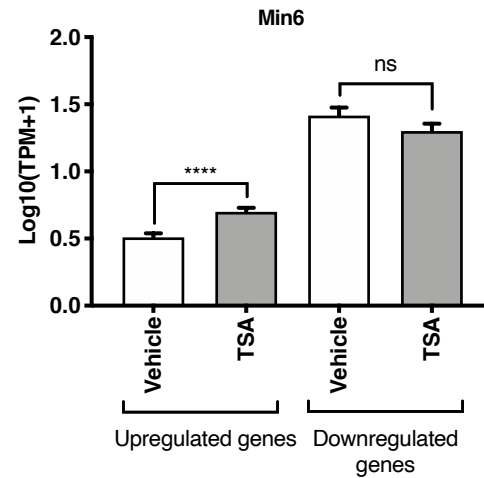
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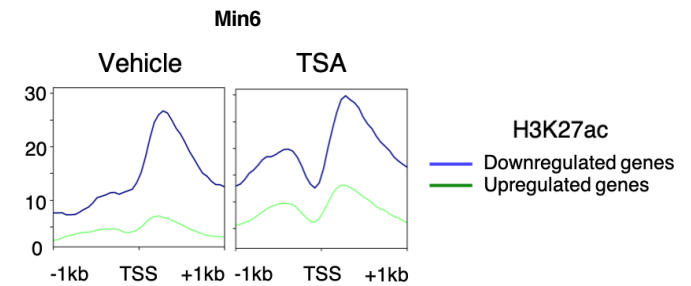
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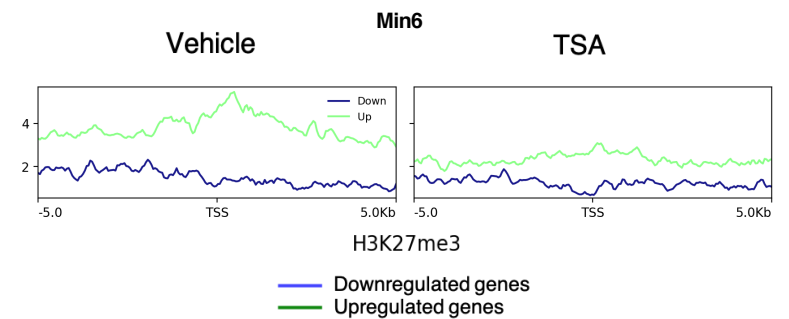
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**F**



**G**





Analysis of RNA-sequencing data in pancreatic islets isolated from control E2f1 <sup>fl/fl</sup> and <i>islet</i> -cell specific E2f1 <sup>islet-/-</sup> deficient mice identifies potential upstream regulators associated to E2f1 deficiency.								
Upstream Regulator	Expr Log Ratio	Molecule Type	Predicted Activation State	Activation z-score	Flags	p-value of overlap	Target Molecules in Dataset	Mechanistic Network
HNF1A		transcription regulator	Inhibited	-4.293	bias	8.22E-10	ADH1C, ANPEP, CASC4, CCND1, COX6A2, ETV5, GLP1R, GNG12, INS, Ins1	43 (9)
XBP1		transcription regulator	Inhibited	-2.417	bias	9.70E-10	ATP2A2, BHLHA15, CREB3L1, ERO1B, FKBP11, INS, LMAN1, NUCB2, PDX1, RAB3A	16 (2)
2-oxoadipic acid		chemical - endogenous mammalian	Inhibited	-2.236	bias	4.65E-09	GLP1R, INS, Ins1, PCLO, SYTL4	
2-aminoadipic acid		chemical - endogenous mammalian	Inhibited	-2.236	bias	4.65E-09	GLP1R, INS, Ins1, PCLO, SYTL4	
DHTKD1		enzyme				1.68E-08	GLP1R, INS, Ins1, PCLO, SYTL4	
tunicamycin		chemical - endogenous non-mammalian		-1.737	bias	1.96E-08	ATP2A2, CCND1, ERO1B, FKBP11, INS, LMAN1, MANF, MLXIPL, PROM1, SDF2L1	19 (4)
PDX1	-0.576	transcription regulator	Inhibited	-2.530	bias	6.53E-08	ATP2A2, CCND1, ERO1B, FFAR1, GLP1R, GNG12, INS, Ins1, NKX6-1, PDX1	
NEUROG3		transcription regulator	Inhibited	-2.613	bias	3.05E-06	DLL4, INS, Ins1, NKX6-1, NTRK2, PDX1, SYP	32 (10)
NKX2-2		transcription regulator				4.36E-06	INS, Ins1, NKX6-1, PDX1	7 (4)
dithiothreitol		chemical reagent		-1.131	bias	4.56E-06	ATP2A2, CCND1, ERO1B, INS, LMAN1	8 (2)
FFAR3		G-protein coupled receptor	Activated	2.630		5.56E-06	ANPEP, CA10, Ins1, KCNH1, NECAB2, PCSK9, PITPNM3	
ERCC1		enzyme				1.12E-05	GHR, Ins1, PRLR	
PAX6		transcription regulator		-1.790		1.15E-05	CCND1, FFAR1, GLP1R, INS, Ins1, NECAB2, NKX6-1, PDX1, TCEAL6, WLS	13 (5)
ATF6		transcription regulator				1.41E-05	ATP2A2, INS, LMAN1, MANF, NUCB2, PDX1	
NEUROD1		transcription regulator	Inhibited	-2.187	bias	1.73E-05	INS, Ins1, NKX6-1, NTRK2, SYP	
INSM1		transcription regulator				1.94E-05	INS, NKX6-1, PDX1	
ERN1		kinase	Inhibited	-2.135	bias	2.21E-05	ATP2A2, ERO1B, FKBP11, MLXIPL, SDF2L1, SPCS2, SRPRA, WFS1	17 (3)
GLIS3	-0.401	transcription regulator				2.49E-05	INS, Ins1, NKX6-1, PDX1	30 (7)
IRS2		enzyme		-0.223		2.51E-05	ACLY, CCND1, INS, Ins1, PDX1	18 (4)
SST		other		0.651		3.16E-05	CCND1, GHR, INS, Ins1, PRLR	19 (4)
D-glucose		chemical - endogenous mammalian		-1.474	bias	3.67E-05	ACLY, ADARB1, ATP2A2, CCND1, COX6A2, DLL4, ERO1B, FFAR1, GALR1, INS	33 (11)
CD38		enzyme	Inhibited	-2.804	bias	6.30E-05	CHST12, Ins1, MANF, NDUUFV3, PKIB, PYCR1, SDF2L1, SPCS2	
PTPRF		phosphatase				6.90E-05	CCND1, Ins1	
MAFA		transcription regulator				8.92E-05	INS, Ins1, PDX1	
PCSK2		peptidase				1.18E-04	Ins1, NKX6-1, PDX1	
PRLR	-0.983	transmembrane receptor		-0.781	bias	1.23E-04	GHR, IGFBP5, Ins1, VDR	
THRA		ligand-dependent nuclear receptor		-0.536		1.27E-04	ATP2A2, CCND1, FRZB, Ins1, PDX1, PROM1, RCAN2	
TO-901317		chemical reagent		-1.294	bias	1.73E-04	ACLY, ADH1C, CCND1, GHR, INS, MLXIPL, PCSK9, PDX1, SYP	33 (9)
rosiglitazone		chemical drug	Inhibited	-2.750	bias	1.79E-04	ACLY, CCND1, FFAR1, HADH, IGFBP5, INS, MMUT, NDUFS2, NDUUF3, PCCA	22 (4)
MGAT4A		enzyme				2.06E-04	CCND1, Ins1	
diethylstilbestrol		chemical drug		-0.478	bias	2.85E-04	ADH1C, CCND1, CD200, DLG3, FRZB, MNS1, Muc4, NTRK2, PROM1, VDR	
SPOP		other				2.94E-04	INS, Ins1, PDX1	12 (2)
ACACB		enzyme				2.94E-04	ACLY, Ins1, MLXIPL	30 (7)
Ins1	-0.664	other		-1.041	bias	3.07E-04	ADH1C, BPGM, CCND1, IGFBP5, INS, Ins1, LGALS12, MLXIPL, PRLR, SYP	41 (10)

isobutylmethylxanthine		chemical toxicant		-1,131	bias	3,66E-04	ACLY,CCND1,Ins1,LGALS12,NDUFS2,NDUFV3,PRLR,SYP	20 (4)
MED1		transcription regulator		-1,964	bias	3,81E-04	ACLY,ANAPC5,CCND1,GHR,PRLR,TET2,VDR	
SLC13A5		transporter				4,09E-04	ACLY,Ins1	
SLC39A4		transporter				4,09E-04	CCND1,NELL1	
MAP4K4		kinase		0,816	bias	4,68E-04	ACLY,HADH,IMPDH1,MLXIPL,NKX6-1,PDX1	21 (5)
Histone h3		group				5,07E-04	CCND1,CDK14,EFCAB7,GAD1,GHR,Ins1,NDUFS2,NDUFV3,PDX1	
FOXA2		transcription regulator	Inhibited	-2,400	bias	5,31E-04	ADH1C,CCND1,HADH,IGFBP5,Ins1,MLXIPL,NKX6-1,PDX1	21 (5)
pioglitazone		chemical drug		-1,674		5,89E-04	ATP2A2,CCND1,INS,Ins1,PDX1,PRLR,PTPN11	49 (11)
Insulin		group	Inhibited	-2,927	bias	6,47E-04	ACLY,CCND1,COX6A2,GUCY2C,LGALS12,MLXIPL,NDUFS2,NDUFV3,NUCB2,PCSK9	
CEL		enzyme				6,78E-04	CCND1,Ins1	
lactose		chemical - endogenous mammalian				6,78E-04	Ins1,VDR	
progesterone		chemical - endogenous mammalian		-1,951		7,31E-04	ADARB1,CCND1,DBP,FAAH,GAD1,GALR1,GHR,IGFBP5,PRLR,PTGER1	26 (5)
HTT		transcription regulator		1,455		9,58E-04	ATP2A2,BMP1,CCND1,COX6A2,DBP,DLG3,GAD1,IGFBP5,Ins1,MYT1L	29 (6)
SFRP1		transmembrane receptor		1,067	bias	9,91E-04	ACLY,CCND1,MLXIPL,PRLR	18 (4)
glucosamine		chemical - endogenous mammalian		1,702	bias	9,91E-04	ATP2A2,COX6A2,INS,Ins1	
GPR119		G-protein coupled receptor				1,01E-03	GLP1R,Ins1	
PRKAB2		kinase				1,01E-03	INS,Ins1	
BAD		other				1,01E-03	CCND1,Ins1	18 (4)
TAF10		transcription regulator				1,01E-03	GHR,PRLR	
TRPC3		ion channel				1,01E-03	CCND1,TRPC1	20 (4)
CXXC4		other				1,01E-03	CCND1,TET2	
ERCC3		enzyme				1,01E-03	GHR,PRLR	
OGT		enzyme		-0,318		1,09E-03	ACLY,ATP2A2,CCND1,INS,Ins1	25 (8)
SOX6		transcription regulator				1,14E-03	CCND1,INS,Ins1	18 (4)
thapsigargin		chemical toxicant		-1,222	bias	1,20E-03	ATP2A2,CCND1,CREB3L1,INS,LMAN1,PDX1,WFS1	9 (2)
CAV1		transmembrane receptor				1,37E-03	ATM,CCND1,Ins1,NTRK2,PRLR,PROM1	23 (5)
ERCC4		enzyme				1,41E-03	GHR,PRLR	
KHDRBS1		transcription regulator				1,41E-03	CCND1,ECE1	
TNF		cytokine		-0,439	bias	1,59E-03	ANPEP,ATP2A2,BPGM,CCND1,CD200,CMBL,DLL4,ETV5,FFAR1,FRZB	49 (10)
P2RY14		G-protein coupled receptor				1,60E-03	FFAR1,GALR1,GLP1R	
levodopa		chemical - endogenous mammalian		-0,535		1,61E-03	ATP2A2,C2CD2L,CAMK1G,CCND1,CD200,DBP,ECE1,FAAH,FAM210B,HAPLN4	
beta-estradiol		chemical - endogenous mammalian		-1,746	bias	1,72E-03	ADH1C,ANPEP,ASB9,ATM,CCND1,COX6A2,DLG3,ECHDC2,FAAH,GALR1	36 (3)
PTCH1		transmembrane receptor				1,77E-03	CCND1,DLL4,PDX1	
TCF4		transcription regulator	Inhibited	-2,390	bias	1,79E-03	BHLHA15,CCND1,FKBP11,MANF,NELL1,SDF2L1,SPCS2	
Ca2+		chemical - endogenous mammalian		-1,093	bias	1,84E-03	ATP2A2,CCND1,DBP,FAAH,Ins1,NTRK2,TRPC1,VDR	41 (9)
AQP7		transporter				1,87E-03	INS,Ins1	18 (4)
CCDC80		other				1,87E-03	CCND1,Ins1	18 (4)

SLC2A2		transporter				1,87E-03	Ins1,PDX1	
NFATC1		transcription regulator	Inhibited	-2,213	bias	1,87E-03	CCND1,INS,Ins1,PDX1,PRLR	24 (3)
NR4A1		ligand-dependent nuclear receptor		1,673	bias	1,93E-03	ACLY,BPGM,CCND1,INS,Ins1,NDUFV3,NUCB2,PDX1	33 (7)
GCK		kinase				1,95E-03	ACLY,HADH,Ins1	
SUMO1		enzyme				1,95E-03	ATP2A2,CCND1,PDX1	30 (6)
TCF3		transcription regulator	Inhibited	-2,736	bias	2,09E-03	BHLHA15,FKBP11,INS,Ins1,MANF,NELL1,NTRK2,SDF2L1,SPCS2	
BSCL2		other				2,12E-03	CCND1,IGFBP5,Ins1,LGALS12	
DIO3		enzyme				2,15E-03	INS,Ins1,PDX1	
GPBAR1		G-protein coupled receptor				2,39E-03	CCND1,Ins1	
SHANK3		other				2,39E-03	PCLO,SYP	
EPAS1		transcription regulator				2,72E-03	ACLY,CCND1,IGFBP5,MANF,MYO7A,P2RY1,PKIB	
PHF21A		other				2,97E-03	RAB3A,SYP	
TAF5		transcription regulator				2,97E-03	GHR,PRLR	
LDB1		transcription regulator				2,97E-03	FRZB,Ins1	
SETD7		enzyme				2,97E-03	CCND1,Ins1	12 (2)
RANBP9		other				2,97E-03	RAB3A,SYP	
RELN		peptidase				2,97E-03	GAD1,NTRK2	
STK11		kinase		-0,820		3,00E-03	CCND1,HIRA,IGFBP5,NOD1,NPEPL1,PAPSS1,POLD2,PYCR1	
PTH		other		-1,116	bias	3,15E-03	ATP2A2,CCND1,GNGL2,IGFBP5,PPP1R1A,VDR	35 (7)
Growth hormone		group	Inhibited	-2,404	bias	3,22E-03	CCND1,GHR,HADH,IGFBP5,Ins1,PRLR,RAB3A	37 (6)
NTRK2	-0,677	kinase				3,57E-03	CCND1,GAD1,RAB3A,SYP	
PTTG1		transcription regulator		1,067	bias	3,57E-03	ATM,CCND1,Ins1,TLK1	
TRH		other				3,58E-03	CDK14,Ins1,PRLR	
CIC		transcription regulator				3,61E-03	CCND1,ETV5	
VDR	-0,679	transcription regulator		-1,698		3,89E-03	ATM,CCND1,HIRA,IGFBP5,Ins1,TLK1,VDR	34 (6)
CYP19A1		enzyme		-1,624		3,92E-03	CCND1,Ins1,PRLR,SYP	
metribolone		chemical reagent		-1,746	bias	4,06E-03	ACLY,ADH1C,BPGM,CCND1,IGFBP5,NDUFS2,NDUFV3,WIP1	
cycloamine		chemical reagent				4,17E-03	CCND1,NKX6-1,PDX1	
PTPN11	-0,341	phosphatase		-1,154		4,30E-03	ATP2A2,CCND1,Ins1,PTPN11	31 (4)
SREBF2		transcription regulator		-0,192	bias	4,30E-03	ACLY,Ins1,PCSK9,PDX1	18 (4)
LAMTOR5		other				4,31E-03	INS,Ins1	
NUMBL		other				4,31E-03	DLL4,VDR	
CCNT1		transcription regulator				4,31E-03	CCND1,INS	
PIK3CB		kinase				4,31E-03	DLL4,Ins1	
myristoylated protein kinase A inhibitor 14-22 amide		chemical - kinase inhibitor				4,31E-03	CCND1,PDX1	12 (2)
indomethacin		chemical drug		0,168	bias	4,45E-03	ABCD3,CCND1,MANF,PRLR,PROM1,TNFRSF21,VDR	
tacrolimus		chemical drug	Activated	2,425	bias	4,86E-03	ABCD3,CCND1,CD200,INS,Ins1,PROM1,WLS	42 (6)

GHR	-0,488	transmembrane receptor				5,14E-03	GHR,Ins1,PRLR	
SREBF1		transcription regulator		-1,354	bias	5,41E-03	ACLY,ADH1C,INS,Ins1,NKX6-1,PCSK9,PDX1	31 (9)
FGF19		growth factor				5,58E-03	ACLY,CCND1,PROM1,SLC2A5	
MAFB		transcription regulator				5,81E-03	INS,Ins1,NKX6-1,PDX1	
moxonidine		chemical drug				5,88E-03	ANPEP,P2RY1	
NAE1		enzyme				5,88E-03	CCND1,CDK5RAP1	
NEUROG2		transcription regulator				5,88E-03	INS,NKX6-1	
PER2		transcription regulator				5,88E-03	CCND1,DBP	
cyproterone acetate		chemical drug				5,88E-03	CCND1,PRLR	7 (2)
A2M		transporter				6,24E-03	ACLY,CCND1,PRLR	
hydrocortisone		chemical - endogenous mammalian		-1,503		6,59E-03	CCND1,IGFBP5,INS,NTRK2,PRLR	32 (4)
roscovitine		chemical drug				6,63E-03	CCND1,Ins1,PDX1	21 (5)
ADAM10		peptidase				6,82E-03	ATP2A2,CCND1,SYP,TRIM9	
IFNG		cytokine		1,144	bias	6,95E-03	ABCD3,ACLY,AQP11,ATP2A2,CCND1,CD200,DBP,ECE1,FAAH,FFAR1	61 (12)
FGF21		growth factor				7,04E-03	ACLY,GHR,Ins1	
phosphate		chemical - endogenous mammalian	Activated	2,000	bias	7,09E-03	ATM,CHST12,PCCA,SDF2L1	
FGF8		growth factor		-0,468	bias	7,36E-03	CCND1,DUSP23,ETV5,VDR	
MED13		transcription regulator				7,46E-03	BPGM,NTRK2,PCSK9	
FMR1		translation regulator		1,340	bias	7,61E-03	DLG3,NPEPL1,PCLO,RAB3A,SYP	
KLF9		transcription regulator				7,67E-03	CCND1,GHR	
NKX6-1	-0,538	transcription regulator				7,67E-03	Ins1,PDX1	
NDN		transcription regulator				7,67E-03	NUCB2,SYP	
nilotinib		chemical drug				7,90E-03	ABCD3,ATM,PTPN11	
Histone h4		group				8,05E-03	CCND1,INS,NTRK2,POLD2,PRLR	
NCOA1		transcription regulator		0,762	bias	8,05E-03	BPGM,CCND1,DBP,HIRA,PRLR	
PPARG		ligand-dependent nuclear receptor	Inhibited	-2,850	bias	8,18E-03	ACLY,ATP2A2,CCND1,FFAR1,IGFBP5,INS,Ins1,PCLO,PDX1,VDR	47 (9)
HMGSA1		transcription regulator		-1,452	bias	8,27E-03	ATM,CCND1,COX6A2,GHR,Ins1	
ALG10		enzyme				8,33E-03	PROM1	
DRAXIN		other				8,33E-03	Ins1	
dichlobenil		chemical toxicant				8,33E-03	GAD1	
Ces1b/Ces1c		enzyme				8,33E-03	GHR	
NCK		group				8,33E-03	CCND1	
CYP2R1		enzyme				8,33E-03	VDR	
MOGS		enzyme				8,33E-03	PROM1	
PtI7d1		cytokine				8,33E-03	PRLR	
ENHO	-0,613	other				8,33E-03	Ins1	
FBXO31		enzyme				8,33E-03	CCND1	

Rhox11		other			8,33E-03	INS	
FXN		kinase			8,33E-03	ACLY	
ALG8		enzyme			8,33E-03	PROM1	
SLC19A2		transporter			8,33E-03	Ins1	
KCNJ12		ion channel			8,33E-03	CCND1	
BAIAP2L1		other			8,33E-03	Ins1	
CALCOCO1		transcription regulator			8,33E-03	CCND1	
URGCP		other			8,33E-03	CCND1	
INSL5		other			8,33E-03	Ins1	
SLC17A9	-0,546	other			8,33E-03	Ins1	
ALG6		enzyme			8,33E-03	PROM1	
CCDC62		transcription regulator			8,33E-03	CCND1	
ALG5		enzyme			8,33E-03	PROM1	
GPR87		G-protein coupled receptor			8,33E-03	PROM1	
ERO1B	-0,875	enzyme			8,33E-03	Ins1	
Rhox8		other			8,33E-03	INS	
PLAC1		other			8,33E-03	CCND1	
FRMPD1		other			8,33E-03	GPSM1	
MGAT4C		enzyme			8,33E-03	PROM1	
SLC9B2		transporter			8,33E-03	Ins1	
RHOXF2/RHOXF2B		transcription regulator			8,33E-03	INS	
Integrin alpha 5 beta 1		complex			8,33E-03	CCND1	
Mannosidase2		group			8,33E-03	PROM1	
RNMT		enzyme			8,33E-03	CCND1	
COL5A3		other			8,33E-03	Ins1	
KHK		kinase			8,33E-03	SLC2A5	
LINC01370		other			8,33E-03	GLIS3	
ADCY2		enzyme			8,33E-03	CCND1	
mir-500		microRNA			8,33E-03	GAD1	
NNMT		enzyme			8,33E-03	SYP	
TOB2		other			8,33E-03	CCND1	
GTPBP4		enzyme			8,33E-03	CCND1	
PTPRU		phosphatase			8,33E-03	CCND1	
HADH	-0,812	enzyme			8,33E-03	Ins1	
RHAG		peptidase			8,33E-03	RHCE/RHD	
PMS2		enzyme			8,33E-03	CCND1	
SHCBP1		other			8,33E-03	CCND1	

ABCG5		transporter				8,33E-03	INS	
INSRR		kinase				8,33E-03	Ins1	
ITIH4		other				8,33E-03	VDR	
CDK20		kinase				8,33E-03	CCND1	
PTOV1		other				8,33E-03	CCND1	
PASK		kinase				8,33E-03	PDX1	
ARFGEF3		other				8,33E-03	Ins1	
PNLIP		enzyme				8,33E-03	Ins1	
RPLP0		other				8,33E-03	CCND1	
amlexanox		chemical drug				8,33E-03	CCND1	
sulfaphenazole		chemical drug				8,33E-03	CCND1	
Ro 20-1724		chemical reagent				8,33E-03	CCND1	
anti-miR-302d		chemical reagent				8,33E-03	CCND1	
anti-miR-302c inhibitor		chemical reagent				8,33E-03	CCND1	
beta-penta-O-galloyl-glucose		chemical - endogenous non-mammalia				8,33E-03	CCND1	
formycin B		chemical reagent				8,33E-03	Ins1	
monomethyl succinate		chemical reagent				8,33E-03	Ins1	
10-hydroxystearic acid		chemical - endogenous non-mammalia				8,33E-03	FFAR1	
NMN		chemical - endogenous mammalian				8,33E-03	PDX1	
fish oils		chemical drug				8,36E-03	ABCD3,MLXIPL,NUCB2	
Hedgehog		group				8,36E-03	CCND1,NKX6-1,PDX1	
CTNNB1		transcription regulator	Inhibited	-2,163	bias	8,45E-03	ACLY,ATM,BMP1,CASC4,CCND1,DLL4,GAD1,GHR,IFT57,IGFBP5	17 (2)
daidzein		chemical drug				8,53E-03	CCND1,PKIB,PRLR,SYP	16 (3)
calcitriol		chemical drug		1,329		8,54E-03	ATM,CCND1,ETV5,GHR,IGFBP5,INS,Ins1,KCNH1,PYCR1,TLK1	44 (7)
MAZ		transcription regulator				8,64E-03	INS,Ins1	
pyruvaldehyde		chemical - endogenous mammalian				8,64E-03	Ins1,PDX1	
ARNTL		transcription regulator				8,83E-03	DBP,Ins1,MLXIPL	
PGR		ligand-dependent nuclear receptor		-1,791	bias	9,04E-03	ADARB1,CCND1,IGFBP5,Ins1,PRLR,TNFRSF21,VDR	20 (4)
torin1		chemical reagent		1,982	bias	9,16E-03	ADH1C,BPGM,CCND1,NDUFS2	
CREM		transcription regulator		0,391		9,46E-03	ATP2A2,CCND1,INS,Ins1,MNS1	19 (4)
clofibrate		chemical drug		-0,152	bias	9,48E-03	ABOD3,CCND1,PCSK9,SLCO2B1	
HIF1A		transcription regulator		-1,950	bias	9,62E-03	ATP2A2,CCND1,DLL4,GHR,IGFBP5,MANF,NTRK2,PROM1,TRIM66	22 (3)
NMDA Receptor		complex				9,67E-03	NTRK2,SYP	
GLIS2		transcription regulator				9,67E-03	CCND1,INS	
TAF1		transcription regulator				9,67E-03	GHR,PRLR	
ATR		kinase				9,67E-03	ATM,CDK14	
RPS6KA3		kinase				9,67E-03	INS,Ins1	8 (2)

REST		transcription regulator				9,71E-03	GAD1,NELL1,PCLO,RAB3A,SYP	
FOXA1		transcription regulator		-1,982		9,71E-03	ADH1C,HADH,Ins1,MLXIPL,NDUFV3	20 (4)
PRL		cytokine	Inhibited	-2,374	bias	9,73E-03	ATP2A2,CCND1,GPSM1,IGFBP5,Ins1,PRLR,VDR	30 (7)
THRB		ligand-dependent nuclear receptor		-0,948		9,81E-03	ABCD3,ATP2A2,CCND1,FRZB,MLXIPL,PROM1	9 (2)
bucladesine		chemical toxicant	Inhibited	-2,600	bias	9,84E-03	CAMK1G,CCND1,FAAH,IGFBP5,LGALS12,SYP,VDR,WHRN	36 (9)
MAPK1		kinase		-1,572		1,00E-02	ADH1C,ANPEP,CCND1,FAM20A,Ins1,MNS1,TRPC1,VDR	12 (2)
IL5		cytokine	Inhibited	-2,646	bias	1,06E-02	CHST12,MANF,NDUFV3,PKIB,PYCR1,SDF2L1,SPCS2	
MAPK8IP1		other				1,07E-02	CCND1,Ins1	
MED30		transcription regulator				1,07E-02	COX6A2,NDUFS2	
NUMB		other				1,07E-02	DLL4,PROM1	
MPZ		other				1,07E-02	ERO1B,SDF2L1	
CTBP2		transcription regulator				1,07E-02	CCND1,DLL4	
HDAC7		transcription regulator				1,07E-02	CCND1,DLL4	
TMBIM6		other				1,07E-02	ERO1B,WFS1	
testosterone		chemical - endogenous mammalian		-1,572	bias	1,13E-02	ANPEP,CCND1,COX6A2,GALR1,IGFBP5,Ins1,PKIB,PRLR	
mir-96		microRNA				1,19E-02	GHR,SYTL4	
1-methyl-4-pyridinium		chemical toxicant				1,19E-02	CCND1,TRPC1	
salvin		chemical toxicant				1,19E-02	CCND1,VDR	
MAP2K7		kinase				1,20E-02	CCND1,PTPN11,VDR	
palmitic acid		chemical - endogenous mammalian	Activated	2,327	bias	1,23E-02	ACLY,GLP1R,INS,Ins1,MLXIPL,PDX1	
trichloroethylene		chemical toxicant				1,25E-02	ANPEP,ECE1,PRLR	
benzene		chemical toxicant				1,25E-02	ANPEP,ECE1,PRLR	
EIF2AK3		kinase				1,27E-02	CCND1,ERO1B,Ins1,WFS1	
SLC2A4		transporter				1,31E-02	Ins1,MLXIPL	
SPZ1		transcription regulator				1,31E-02	CCND1,PROM1	
PER1		transcription regulator				1,31E-02	CCND1,DBP	
KLF5		transcription regulator				1,31E-02	CCND1,GPSM1,WFS1	
LEP		growth factor		0,119	bias	1,39E-02	ABCD3,ACLY,ATP2A2,CCND1,DLL4,FAAH,INS,Ins1,MLXIPL	
miR-30c-5p (and other miRNAs w/seed GUAACA)		mature microRNA		1,941	bias	1,40E-02	ANPEP,ATP2A2,INS,Ins1	
MAPK13		kinase				1,43E-02	Ins1,VDR	
IGFBP5	-0,747	other				1,43E-02	CCND1,Ins1	
TRPC1	-0,392	ion channel				1,43E-02	CCND1,TRPC1	
MAPK12		kinase				1,43E-02	CCND1,VDR	
HFE		transmembrane receptor				1,43E-02	INS,Ins1	
EPCAM		other				1,43E-02	CCND1,INS	
RAPGEF3		other				1,43E-02	Ins1,PDX1	
MUC1		other				1,44E-02	CCND1,POL,D2,PYCR1	

trogilazone		chemical drug		-0,006		1,44E-02	BMP1,CCND1,INS,Ins1,MLXIPL,NKX6-1,PDX1,PTPN11
IL6ST		transmembrane receptor				1,50E-02	ATP2A2,CCND1,Muc4
ERBB3		kinase		0,152		1,53E-02	CCND1,ETV5,GHR,IGFBP5
miR-204-5p (and other miRNAs w/seed UCCUUUU)		mature microRNA				1,56E-02	BMP1,PTPN11
MBD1		transcription regulator				1,56E-02	PROM1,PTPRM
DNMT3B		enzyme		0,447	bias	1,57E-02	ATM,ATP2A2,MID1,PPP1R1A,RCAN2
ethanol		chemical - endogenous mammalian		-1,982	bias	1,61E-02	ACLY,ADH1C,ANPEP,CCND1,FAAH,MLXIPL,NTRK2,RAB3D
gefitinib		chemical drug				1,61E-02	CCND1,ETV5,GHR,IGFBP5,PTGER1
guanosine		chemical - endogenous mammalian				1,66E-02	Ins1
isopropyl thiogalactoside		chemical reagent				1,66E-02	CCND1
COL4A3BP		kinase				1,66E-02	CCND1
Ionaprisan		chemical drug				1,66E-02	CCND1
nitrosomethylurethane		chemical reagent				1,66E-02	CCND1
propionate derivative		chemical - other				1,66E-02	MMUT
SLC5A1		transporter				1,66E-02	Ins1
CACNA1E		ion channel				1,66E-02	Ins1
IP6K1		kinase				1,66E-02	Ins1
LCLAT1		enzyme				1,66E-02	Ins1
SLC9A6		transporter				1,66E-02	NTRK2
REM2		enzyme				1,66E-02	CCND1
RPRD1B		other				1,66E-02	CCND1
CCDC88C		other				1,66E-02	CCND1
OSI-027		chemical drug				1,66E-02	CCND1
SLC30A8		transporter				1,66E-02	INS
VENTX		transcription regulator				1,66E-02	CCND1
GATM		enzyme				1,66E-02	Ins1
WDR13		other				1,66E-02	Ins1
PARL		peptidase				1,66E-02	TTC19
EGFL6		other				1,66E-02	PTPN11
ETS-ELK1		complex				1,66E-02	CCND1
CTNNB1-LEF1		complex				1,66E-02	CCND1
SLURP1		cytokine				1,66E-02	Ins1
UCN3		other				1,66E-02	Ins1
EIF4H		translational regulator				1,66E-02	CCND1
MCF2L		other				1,66E-02	CCND1
SRI		transporter				1,66E-02	Ins1
RRAD		enzyme				1,66E-02	CCND1



DAPK3		kinase				1,66E-02	CCND1	
RAC3		enzyme				1,66E-02	CCND1	
miR-185-3p (and other miRNAs w/seed GGGGUG)		mature microRNA				1,66E-02	NTRK2	
miR-101-5p (miRNAs w/seed AGUUAUC)		mature microRNA				1,66E-02	ATM	
miR-501-3p (and other miRNAs w/seed AUGCACC)		mature microRNA				1,66E-02	GAD1	
mir-184		microRNA				1,66E-02	Ins1	
SDC3		other				1,66E-02	Ins1	
NEIL1		enzyme				1,66E-02	Ins1	
PCBD1		transcription regulator				1,66E-02	Ins1	
CCNDBP1		other				1,66E-02	CCND1	
GPD2		enzyme				1,66E-02	Ins1	
CALB1		other				1,66E-02	Ins1	
NASP		other				1,66E-02	CCND1	
FBXO4		enzyme				1,66E-02	CCND1	
BCLAF1		transcription regulator				1,66E-02	CCND1	
SRPK2		kinase				1,66E-02	CCND1	
ILKAP		phosphatase				1,66E-02	CCND1	
GCKR		other				1,66E-02	Ins1	
PDHX		enzyme				1,66E-02	Ins1	
DPH1		other				1,66E-02	CCND1	
PRDX3		enzyme				1,66E-02	Ins1	
ONECUT2		transcription regulator				1,66E-02	SYTL4	
Ces1g		other				1,66E-02	Ins1	
Pt13d1 (includes others)		other				1,66E-02	Ins1	
STX4		transporter				1,66E-02	Ins1	
sorafenib derivative SC-1		chemical reagent				1,66E-02	CCND1	
phosphorylethanolamine		chemical - endogenous mammalian				1,66E-02	CCND1	
inostamycin		chemical reagent				1,66E-02	CCND1	
neratinib		chemical drug				1,66E-02	CCND1	
sulfonylurea		chemical drug				1,66E-02	INS	
(S)-flurbiprofen		chemical drug				1,66E-02	CCND1	
hypericin		chemical drug				1,66E-02	ATP2A2	
LCAT		enzyme				1,69E-02	CCND1,Ins1	
GW7647		chemical drug				1,69E-02	ABCD3,IGFBP5	
diosgenin		chemical - endogenous non-mammalia				1,69E-02	CCND1,PTPN11	
L-triiodothyronine		chemical - endogenous mammalian	Inhibited	-2,336	bias	1,70E-02	ABCD3,ATP2A2,CCND1,DBP,ECE1,MLX1PL,PDX1,RCAN2	
HNF1B		transcription regulator				1,71E-02	Ins1,PCSK9,PDX1,PTPRM	

TGFB1		growth factor		1,327	bias	1,72E-02	ACLY,ANPEP,AQP11,ATM,BMP1,CCND1,DBP,ECE1,GAD1,GUCY2C
methylmercury		chemical toxicant				1,77E-02	ANPEP,ECE1,PRLR
calpain		complex				1,82E-02	CCND1,NTRK2
BCL2L11		other				1,82E-02	CCND1,NOD1
BTG2		transcription regulator				1,82E-02	CCND1,PDX1
NR2C2		ligand-dependent nuclear receptor				1,82E-02	CCND1,Ins1
SMARCA2		transcription regulator				1,84E-02	IGFBP5,MYT1L,VDR
levothyroxine		chemical - endogenous mammalian				1,84E-02	ATP2A2,CDK14,MLXIPL
GSK3B		kinase		1,694		1,86E-02	ATP2A2,CCND1,Ins1,PDX1
staurosporine		chemical - kinase inhibitor		0,000		1,86E-02	CCND1,IGFBP5,Ins1,VDR
lithium chloride		chemical drug		-1,109	bias	1,91E-02	ACLY,CCND1,DLL4,FAM135B
MAP2K2		kinase				1,97E-02	ETV5,INS
linolenic acid		chemical - endogenous mammalian				1,97E-02	ABCD3,Ins1
Raf		group				1,99E-02	ANPEP,CCND1,ETV5
PITX2		transcription regulator		-1,929	bias	2,02E-02	ADH1C,CCND1,GAD1,NDUFS2
tetrodotoxin		chemical drug				2,11E-02	GAD1,NTRK2
PRKDC		kinase				2,11E-02	ATM,CCND1
TCF7L2		transcription regulator	Inhibited	-2,580	bias	2,15E-02	CCND1,GLP1R,INS,Ins1,PAPSS1,PDX1,PTPN11
KLF3		transcription regulator		-0,378	bias	2,18E-02	GAD1,GPSM1,HIST1H2BI,NDUFV3,NOD1,TNFRSF21,UFSP2
EGFR		kinase		-1,572	bias	2,22E-02	CCND1,FKBP11,GHR,HIRA,IGFBP5,PROM1,SDP2L1,VDR
FGF7		growth factor				2,23E-02	CCND1,ETV5,INS
sterol		chemical - endogenous mammalian				2,26E-02	ACLY,PCSK9
bexarotene		chemical drug		-0,314	bias	2,29E-02	CCND1,Ins1,NTRK2,PCSK9,SYP
E2F2		transcription regulator				2,31E-02	CCND1,ECE1,Ins1
POU5F1		transcription regulator		-0,933	bias	2,35E-02	CCND1,FRZB,PDX1,PROM1,TET2,TNFRSF21,WLS
CRTC2		other				2,42E-02	CCND1,Ins1
CFLAR		other				2,42E-02	Ins1,PDX1
letrozole		chemical drug				2,42E-02	CCND1,SYP
UM101		chemical - kinase inhibitor				2,42E-02	CD200,VDR
1-palmitoyl-2-arachidonoyl-phosphatidylcholine		chemical - endogenous mammalian				2,48E-02	CCND1
myosin-light-chain kinase		group				2,48E-02	CCND1
FKHR		group				2,48E-02	CCND1
muraglitazar		chemical drug				2,48E-02	Ins1
NSD3		enzyme				2,48E-02	CCND1
Jun-ATF2		complex				2,48E-02	CCND1
FREM1		other				2,48E-02	FREM2
FAM129B		transcription regulator				2,48E-02	CCND1

NOP58		enzyme			2,48E-02	CCND1	
GPC6		transmembrane receptor			2,48E-02	CCND1	
MYBPC3		other			2,48E-02	ATP2A2	
NDUFAF3		other			2,48E-02	CCND1	
LHX5		transcription regulator			2,48E-02	GAD1	
PSMD14		peptidase			2,48E-02	CCND1	
SLC5A10		transporter			2,48E-02	Ins1	
SIDT2		transporter			2,48E-02	Ins1	
MOGAT2		enzyme			2,48E-02	Ins1	
KLHL2		other			2,48E-02	CCND1	
OLA1		enzyme			2,48E-02	CCND1	
UBE2D3		enzyme			2,48E-02	CCND1	
CACNA1D		ion channel			2,48E-02	Ins1	
CACNA1B		ion channel			2,48E-02	Ins1	
SRGAP1		other			2,48E-02	CCND1	
SERTAD1		transcription regulator			2,48E-02	CCND1	
Pd1		group			2,48E-02	Ins1	
GPC3		other			2,48E-02	CCND1	
MAT2B		enzyme			2,48E-02	CCND1	
Akr1b7		enzyme			2,48E-02	Ins1	
MGMT		enzyme			2,48E-02	ATM	
HPRT1		enzyme			2,48E-02	P2RY1	
AGAP2		enzyme			2,48E-02	CCND1	
U2AF2		other			2,48E-02	CCND1	
RIMS2		other			2,48E-02	Ins1	
PHIP		other			2,48E-02	CCND1	
mir-489		microRNA			2,48E-02	PTPN11	
mir-497		microRNA			2,48E-02	CCND1	
PPP1R3C		phosphatase			2,48E-02	Ins1	
MCHR1		G-protein coupled receptor			2,48E-02	Ins1	
SGI 1776		chemical drug			2,48E-02	CCND1	
RALGDS		other			2,48E-02	CCND1	
NPTX1		other			2,48E-02	SYP	
EIF2B1		transiation regulator			2,48E-02	CCND1	
RAD50		enzyme			2,48E-02	ATM	
AHNAK		other			2,48E-02	CCND1	
INPP5K		phosphatase			2,48E-02	Ins1	

BCAT2		enzyme				2,48E-02	Ins1	
KCNQ2		ion channel				2,48E-02	SYP	
DDOST		enzyme				2,48E-02	PROM1	
PTTG1IP		other				2,48E-02	CCND1	
MARK3		kinase				2,48E-02	Ins1	
HELZ2		transcription regulator				2,48E-02	Ins1	
MBD5		other				2,48E-02	Ins1	
CTAG1A/CTAG1B		other				2,48E-02	CCND1	
TBC1D4		other				2,48E-02	Ins1	
GOPC		transporter				2,48E-02	KCNH1	
ANK1		other				2,48E-02	RHCE/RHD	
SERP1		other				2,48E-02	Ins1	
ARHGEF2		other				2,48E-02	CCND1	
TFPI2		other				2,48E-02	CCND1	
PES1		other				2,48E-02	CCND1	
RBBP8		enzyme				2,48E-02	CCND1	
RAB3B		enzyme				2,48E-02	SYP	
PDCD5		other				2,48E-02	ATP2A2	
CYP2C9		enzyme				2,48E-02	CCND1	
Irs4		other				2,48E-02	Ins1	
CMYA5		other				2,48E-02	ATP2A2	
ATAD2		enzyme				2,48E-02	CCND1	
SB-657510		chemical reagent				2,48E-02	ATP2A2	
(E)-1-(2-nitrovinyl)naphthalene		chemical reagent				2,48E-02	CCND1	
(E)-9-(2-nitrovinyl)anthracene		chemical reagent				2,48E-02	CCND1	
N-ethylmaleimide		chemical reagent				2,48E-02	GHR	
rocuronium		chemical drug				2,48E-02	CCND1	
tarenflurbil		chemical drug				2,48E-02	CCND1	
nitromifene		chemical reagent				2,48E-02	SYP	
betamethasone valerate		chemical drug				2,48E-02	CCND1	
MK-1642		chemical reagent				2,48E-02	LGALS12	
phosphoramidon		chemical - endogenous non-mammalia				2,48E-02	ECE1	
R-etodolac		chemical drug				2,48E-02	CCND1	
cyclohexanecarboxylic acid		chemical reagent				2,48E-02	SYP	
mizoribine		chemical drug				2,48E-02	CCND1	
ponasterone A		chemical reagent				2,48E-02	CCND1	
KLF4		transcription regulator		-1,334	bias	2,51E-02	ATP2A2,CCND1,DLL4,FRZB,PROM1,WLS	

F2		peptidase		-1,762	bias	2.51E-02	CCND1,ECE1,IGFBP5,RAB3A,SYP,TRPC1
MAP2K6		kinase				2.56E-02	ATP2A2,CCND1,VDR
ZNF281		transcription regulator				2.58E-02	PROM1,XRCC3
H2AFZ		other				2.58E-02	CCND1,IGFBP5
MLXIPL	-0,866	transcription regulator				2.58E-02	ACLY,Ins1
CXCL12		cytokine		-1,299	bias	2.58E-02	BMP1,CCND1,GAD1,PDX1,XRCC3
lactacystin		chemical - protease inhibitor		-0,692	bias	2.58E-02	CCND1,IGFBP5,PDX1,PRLR,VDR
ATN1		transcription regulator				2.59E-02	BMP1,DBP,GAD1,IGFBP5
dinoprost		chemical - endogenous mammalian				2.65E-02	ATP2A2,CCND1,PRLR
nifedipine		chemical drug				2.65E-02	IGFBP5,Ins1,NTRK2
MAPK11		kinase				2.74E-02	INS,VDR
PRKAR1A		kinase				2.74E-02	CCND1,VDR
THBS4		other				2.74E-02	MANF,SDF2L1
Hmgn3		other				2.74E-02	INS,Ins1
4-tert-octylphenol		chemical toxicant				2.74E-02	DLG3,Muc4
ROR2		kinase				2.74E-02	CCND1,CDK5RAP1,SLC17A9
GCG		other				2.74E-02	INS,Ins1,PDX1
CASR		G-protein coupled receptor	Inhibited	-2,000	bias	2.78E-02	CCND1,IGFBP5,TLK1,VDR
halofuginone		chemical drug				2.78E-02	CD200,MLXIPL,PRLR,PROM1
n-nitrosomethylbenzylamine		chemical toxicant				2.78E-02	CCND1,GNG12,PCSK9,PECR
IGF1R		transmembrane receptor	Inhibited	-2,379	bias	2.88E-02	ATM,COX6A2,IGFBP5,Mir686,PECR,PROM1
KN 93		chemical - kinase inhibitor				2.90E-02	CCND1,GAD1
RETNLB		other				2.92E-02	BMP1,FRZB,MID1
EGF		growth factor		-0,754	bias	2.96E-02	ANPEP,ATM,ATP2A2,CCND1,HIRA,IGFBP5,Ins1,SYP,VDR
fluoxetine		chemical drug				3.02E-02	ADARB1,NTRK2,WIP1
KDM3A		transcription regulator				3.08E-02	CCND1,Ins1
Imipramine blue		chemical drug				3.08E-02	CCND1,XRCC3
Calcineurin A		group				3.25E-02	ATP2A2,CCND1
SOX17		transcription regulator				3.25E-02	CCND1,PROM1
TFDP1		transcription regulator				3.25E-02	ATM,CCND1
CGP 74514A		chemical - kinase inhibitor				3.29E-02	CCND1
L-alanine		chemical - endogenous mammalian				3.29E-02	CCND1
ribose		chemical - endogenous mammalian				3.29E-02	Ins1
inacalcitol		chemical drug				3.29E-02	CCND1
HCFC1		transcription regulator				3.29E-02	PDX1
AKAP5		other				3.29E-02	Ins1
aloe-emodin		chemical toxicant				3.29E-02	ATM

CINP		other			3,29E-02	CCND1	
DNAJB4		other			3,29E-02	CCND1	
HINT2		other			3,29E-02	Ins1	
TACSTD2		other			3,29E-02	CCND1	
TEX11		other			3,29E-02	CCND1	
ITPRID2		other			3,29E-02	Ins1	
Slfn1		enzyme			3,29E-02	CCND1	
SLC2A8		transporter			3,29E-02	Ins1	
LRIG3		other			3,29E-02	Ins1	
MUCL1		other			3,29E-02	CCND1	
DACT3		other			3,29E-02	CCND1	
FAM57A		other			3,29E-02	CCND1	
CDC25B		phosphatase			3,29E-02	CCND1	
ADRA2B		G-protein coupled receptor			3,29E-02	CCND1	
SUFU		transcription regulator			3,29E-02	INS	
BRS3		G-protein coupled receptor			3,29E-02	Ins1	
CSH1/CSH2		other			3,29E-02	PDX1	
RAB11A		enzyme			3,29E-02	SLC2A5	
SEPT9		enzyme			3,29E-02	CCND1	
SSTR5		G-protein coupled receptor			3,29E-02	Ins1	
GALR1	-0.816	G-protein coupled receptor			3,29E-02	CCND1	
PTPRN		phosphatase			3,29E-02	Ins1	
GNG7		enzyme			3,29E-02	Ins1	
PER3		other			3,29E-02	DBP	
UBTF		transcription regulator			3,29E-02	CCND1	
STEAP4		enzyme			3,29E-02	Ins1	
CTNNA1		other			3,29E-02	CCND1	
PDE10A		enzyme			3,29E-02	Ins1	
ADRA2A		G-protein coupled receptor			3,29E-02	Ins1	
MOGAT1		enzyme			3,29E-02	Ins1	
ATP2A1		transporter			3,29E-02	ATP2A2	
SNRK		kinase			3,29E-02	CCND1	
MME		peptidase			3,29E-02	SYP	
S3I-1757		chemical reagent			3,29E-02	CCND1	
PLA2G16		enzyme			3,29E-02	Ins1	
PLAC8		other			3,29E-02	CCND1	
SLC9A3R2		transporter			3,29E-02	CCND1	

ARF1		enzyme				3,29E-02		CCND1	
PMX 205		chemical reagent				3,29E-02		BMP1	
LY5		chemical reagent				3,29E-02		CCND1	
phenylacetic acid		chemical - endogenous mammalian				3,29E-02		Ins1	
carboxyamido-triazole		chemical drug				3,29E-02		CCND1	
acetoacetic acid		chemical - endogenous mammalian				3,29E-02		CCND1	
KP-SD-1		chemical - kinase inhibitor				3,29E-02		CCND1	
liarozole		chemical drug				3,29E-02		VDR	
phosphorus		chemical reagent				3,29E-02		Ins1	
CDP-choline		chemical - endogenous mammalian				3,29E-02		SYP	
vigabatrin		chemical drug				3,29E-02		GAD1	
L-asparagine		chemical - endogenous mammalian				3,29E-02		CCND1	
Collagen type VI		complex				3,29E-02		CCND1	
STAT5B		transcription regulator		0,211		3,29E-02		ATM,ATP2A2,CCND1,COX6A2,PRLR,PROM1	
sildenafil		chemical drug				3,43E-02		SYP,TRPC1	
sodium orthovanadate		chemical reagent				3,43E-02		CCND1,SLC2A5	
exenatide		biologic drug				3,43E-02		GLP1R,PDX1	
estrogen		chemical drug	Inhibited	-2,371	bias	3,44E-02		CCND1,IGFBP5,KCNH1,NDUFV3,PRLR,VDR	
PIK3R1		kinase				3,52E-02		CCND1,Ins1,PDX1	
LDLR		transporter				3,55E-02		ACLY,CCND1,Ins1,NOD1,PKIB	
carbon tetrachloride		chemical toxicant				3,55E-02		FAAH,IGFBP5,Ins1,PDX1,PROM1	
methylprednisolone		chemical drug		0,563		3,56E-02		ANPEP,ATP2A2,CCND1,ECE1,FAAH,GHR,MLXIPL,NDUFV3,SCLY	
8-bromoguanosine 3',5'-cyclic monophosphate		chemical - kinase inhibitor				3,61E-02		CDK14,PCCA	
GTF2B		transcription regulator				3,61E-02		GHR,PRLR	
amiodarone		chemical drug				3,61E-02		SLC02B1,WIP1	
ISL1		transcription regulator				3,62E-02		ETV5,Ins1,NTRK2	
ERBB4		kinase				3,62E-02		CCND1,GHR,IGFBP5	
HDL-cholesterol		complex				3,80E-02		ALDH1L2,TRIM66	
SERPINE1		other				3,80E-02		Ins1,SYP	
Nr1h		group		0,152	bias	3,93E-02		ACLY,ECE1,MLXIPL,PDX1	
TCF		group				4,05E-02		CCND1,GAD1,PCCA	
1,2-dioctanoyl-sn-glycerol		chemical reagent				4,10E-02		VDR	
L-aspartic acid		chemical - endogenous mammalian				4,10E-02		CCND1	
p38 Sapk		group				4,10E-02		CCND1	
ILX-23-7553		chemical drug				4,10E-02		CCND1	
TPPP2		other				4,10E-02		ATM	
liraglutide		biologic drug				4,10E-02		GLP1R	

BMS-387032		chemical drug			4,10E-02	CCND1	
lupeol		chemical drug			4,10E-02	PRDM1	
RNF187		enzyme			4,10E-02	CCND1	
LGALS12	-0,797	other			4,10E-02	Ins1	
ISX		transcription regulator			4,10E-02	CCND1	
NPAS4		transcription regulator			4,10E-02	Ins1	
FOXN4		transcription regulator			4,10E-02	DLL4	
KLF8		transcription regulator			4,10E-02	CCND1	
SGMS1		enzyme			4,10E-02	Ins1	
ZMIZ2		transcription regulator			4,10E-02	CCND1	
FFAR2		G-protein coupled receptor			4,10E-02	Ins1	
CDH16		enzyme			4,10E-02	CCND1	
GPR88		G-protein coupled receptor			4,10E-02	Ins1	
Cathepsin		group			4,10E-02	CCND1	
ZIC1		transcription regulator			4,10E-02	CCND1	
AHSG		other			4,10E-02	Ins1	
MC3R		G-protein coupled receptor			4,10E-02	Ins1	
MCF2		other			4,10E-02	CCND1	
mir-637		microRNA			4,10E-02	CCND1	
HADHA		enzyme			4,10E-02	Ins1	
rigosertib		chemical drug			4,10E-02	CCND1	
RBM14		transcription regulator			4,10E-02	CCND1	
GNAO1		enzyme			4,10E-02	Ins1	
FLOT1		other			4,10E-02	CCND1	
WFS1	-0,375	enzyme			4,10E-02	Ins1	
PSAP		enzyme			4,10E-02	CCND1	
PORCN		enzyme			4,10E-02	CCND1	
BCAR3		other			4,10E-02	CCND1	
RAD51C		enzyme			4,10E-02	XRCC3	
SH2B2		other			4,10E-02	Ins1	
TACC3		other			4,10E-02	ATM	
PRMT2		enzyme			4,10E-02	CCND1	
ECT2		other			4,10E-02	CCND1	
VCAM1		transmembrane receptor			4,10E-02	CCND1	
CXCL14		cytokine			4,10E-02	Ins1	
CDC27		other			4,10E-02	CCND1	
DNM1		enzyme			4,10E-02	GLP1R	



SPRY4		other				4,10E-02		ETV5	
KRT10		other				4,10E-02		CCND1	
Muc1		transmembrane receptor				4,10E-02		CCND1	
KMT2B		transcription regulator				4,10E-02		Ins1	
GYS2		enzyme				4,10E-02		MLXIPL	
CLDN2		other				4,10E-02		CCND1	
scoparone		chemical - endogenous non-mammalia				4,10E-02		CCND1	
silicon phthalocyanine		chemical drug				4,10E-02		CCND1	
temsirolimus		chemical drug				4,10E-02		CCND1	
2,2'-dipyridyl		chemical toxicant				4,10E-02		NTRK2	
atenolol		chemical drug				4,10E-02		ATP2A2	
nigericin		chemical drug				4,10E-02		PROM1	
ASCL1		transcription regulator				4,16E-02		DLL4,GAD1,INS	
SLC13A1		transporter				4,16E-02		ACLY,SDF2L1,SRPRA	
GW9662		chemical reagent				4,16E-02		ACLY,FFAR1,PDX1	
kainic acid		chemical toxicant				4,17E-02		CCND1,CD200,NTRK2,SYP	
carbamylcholine		chemical drug				4,38E-02		CCND1,ECE1	
propranolol		chemical drug				4,38E-02		ATP2A2,LGALS12	
PDLIM2		other				4,39E-02		CCND1,FHDC1,GHR	
ERK1/2		group		-1,067	bias	4,40E-02		CCND1,ECE1,GAD1,INS,Ins1,PTPN11	
ibuprofen		chemical drug				4,58E-02		CCND1,TNFRSF21	
H-7		chemical - kinase inhibitor				4,58E-02		ECE1,VDR	
ATF4		transcription regulator				4,59E-02		IGFBP5,Ins1,PYCR1,WFS1	
SLC25A13		transporter				4,62E-02		ACLY,CCND1,Ins1	
IL10RA		transmembrane receptor		-1,633		4,69E-02		ADH1C,GHR,LGALS12,NOD1,SLCO2B1,SORBS2	
WT1		transcription regulator		-1,160		4,72E-02		ANPEP,CCND1,LMAN1,NTRK2,VDR	
olanzapine		chemical drug				4,74E-02		DBP,GALR1,INS	
PC-SPE5		chemical drug				4,74E-02		ACLY,CCND1,IMPDH1	
Laminin (complex)		complex				4,78E-02		CCND1,ETV5	
KL		enzyme				4,78E-02		CCND1,VDR	
PKM		kinase				4,78E-02		ACLY,CCND1	
PTEN		phosphatase		-1,417		4,84E-02		BPGM,CCND1,HADH,IGFBP5,Ins1,NOD1,PECR,POLD2,SLCO2B1,TRAM1	
UCP1		transporter		1,000		4,85E-02		EML1,ENHO,Ins1,PYCR1	
LGALS3		other				4,86E-02		CCND1,IGFBP5,LGALS12	
IGF1		growth factor		-1,473	bias	4,87E-02		ANPEP,ATM,CCND1,GHR,IGFBP5,Ins1,NTRK2,PRLR	
prednisone		chemical drug				4,89E-02		INS	
vanillyl-N-nonylamide		chemical drug				4,89E-02		CCND1	

DBH-AS1		other			4,89E-02	CCND1	
FTO		enzyme			4,89E-02	INS	
CNOT6		enzyme			4,89E-02	IGFBP5	
ANKHD1/ANKHD1-EIF4EBP3		other			4,89E-02	CCND1	
ANGPTL6		other			4,89E-02	Ins1	
Crme		other			4,89E-02	CCND1	
GPR39		G-protein coupled receptor			4,89E-02	Ins1	
LDL-cholesterol		complex			4,89E-02	SYP	
GUCY2C	-0,658	kinase			4,89E-02	Ins1	
PXN		other			4,89E-02	CCND1	
vaccenic acid		chemical - endogenous mammalian			4,89E-02	FAAH	
PLSCR1		enzyme			4,89E-02	CCND1	
PAPPA		peptidase			4,89E-02	IGFBP5	
UBA1		enzyme			4,89E-02	CCND1	
SLC7A11-AS1		other			4,89E-02	CCND1	
HTR2C		G-protein coupled receptor			4,89E-02	Ins1	
SOX18		transcription regulator			4,89E-02	DLL4	
SNIP1		other			4,89E-02	CCND1	
Irs3		other			4,89E-02	Ins1	
DNM1L		enzyme			4,89E-02	SYP	
GPAM		enzyme			4,89E-02	Ins1	
WIF1		other			4,89E-02	FRZB	
Nisch		other			4,89E-02	MLXIPL	
PRKAB1		kinase			4,89E-02	Ins1	
FSTL3		other			4,89E-02	Ins1	
SIX3		transcription regulator			4,89E-02	CCND1	
GDF5		growth factor			4,89E-02	FRZB	
STX2		transporter			4,89E-02	CCND1	
TFF2		other			4,89E-02	CCND1	
YWHAB		other			4,89E-02	CCND1	
WRN		enzyme			4,89E-02	Ins1	
IGKC		other			4,89E-02	VDR	
CDH13		other			4,89E-02	CCND1	
Npy4r		G-protein coupled receptor			4,89E-02	Ins1	
OBP2B		transporter			4,89E-02	MLXIPL	
CIMO		chemical reagent			4,89E-02	CCND1	
dibenzoylmethane		chemical toxicant			4,89E-02	CCND1	

papaverine		chemical drug				4,89E-02	NTRK2	
GSI34		chemical reagent				4,89E-02	CCND1	
Z-VEID-FMK		chemical reagent				4,89E-02	CCND1	
quisqualic acid		chemical - endogenous non-mammalia				4,89E-02	NTRK2	
3',4',7-trihydroxyisoflavone		chemical - endogenous non-mammalia				4,89E-02	CCND1	
TWIST1		transcription regulator		0,000	bias	4,94E-02	FREM2,IGFBP5,PROM1,TNFRSF21	
INSR		kinase		-1,455	bias	4,95E-02	CCND1,COX6A2,INS,Ins1,Mir686,PDX1,PECR	
RPS6KB1		kinase				4,98E-02	CCND1,Ins1	
SRSF2		transcription regulator				4,98E-02	CCND1,MLXIPL	
GSK2816126		chemical drug				4,98E-02	CD200,FRZB	
TP53		transcription regulator	Inhibited	-2,587		7,55E-02	ACLY,BMP1,CCND1,CHST12,CMBL,COX6A2,DBP,GAD1,HADH,IGFBP5	
ESR1		ligand-dependent nuclear receptor		-1,866		1,48E-01	ADH1C,ANAPC5,CCND1,EML1,GHR,GNG12,IGFBP5,PKIB,PRLR,PROM1	

Upstream Regulator	Expr Log Ratio	Molecule Type	Predicted Activation State	Activation z-score	Flags	p-value of overlap	Target Molecules in Dataset	Mechanistic Network
TNF		cytokine	Activated	6.542	bias	9.24E-35	A4GALT,ACOD1,AKR1B10,ALCAM,ALDH2,AMPD3,APOA1,APOBEC3B,ARID5B,B4GALNT1	192 (14)
IFNG		cytokine	Activated	6.621	bias	7.25E-33	ACOD1,BCL2A1,BIRC3,BLNK,BMF,BMP6,BST1,C1R,CAMK4,CASP3	199 (18)
lipopolysaccharide		chemical drug	Activated	8.302	bias	3.99E-31	ACOD1,ALCAM,ALDH2,AMPD3,ANXA3,APOA1,APOBEC3B,ApoI7e (includes others),ARHGFEF3,BATF	215 (14)
TGFB1		growth factor	Activated	3.805	bias	1.75E-23	ADAM19,ALDH2,ARID5B,BMF,BMP2,BMP4,BMP6,BUB1,C1R,CASP3	235 (19)
dexamethasone		chemical drug		1.059		6.77E-23	ACOT7,ALAS1,ALCAM,AMIGO2,AMPD3,ANXA3,APOA1,BATF,BCL2A1,BIRC3	222 (15)
IL1B	1,038	cytokine	Activated	5.905	bias	1.30E-22	A4GALT,ACOD1,AMPD3,ANTXR1,BCL2A1,BIRC3,BMF,BMP2,BMP4,C1R	240 (19)
NFKBIA	0,623	transcription regulator	Activated	2.801	bias	9.07E-19	ACOD1,AMPD3,APOA1,BCL11A,BCL2A1,BIRC3,BMP2,CCNA2,CD40,CD86	196 (17)
TNFSF11		cytokine	Activated	5.699	bias	2.84E-18	ACOD1,BCL2A1,BMP4,BST1,CD14,CD40,CD44,CD83,CEBPA,CSF3	133 (14)
beta-estradiol		chemical - endogenous mammalian	Activated	2.051	bias	3.85E-17	A4GALT,ALCAM,ANXA3,APOA1,ARID5B,BATF,BCL2A1,BIRC3,BLNK,BMP2	263 (21)
CSF2		cytokine	Activated	5.651	bias	4.93E-17	BCL2A1,BIRC3,BUB1,CASP3,CCNA2,CCR7,CD14,CD28,CD40,CD83	232 (17)
IL4		cytokine	Activated	3.078	bias	5.78E-17	ACOD1,ADAM19,ALAS1,ALDH2,ANXA6,B4GALNT1,BCL11A,CAMK1D,CASP3,CCR7	187 (16)
IKZF1		transcription regulator	Inhibited	-4.354	bias	2.66E-16	ADAM19,ANTXR1,BLNK,CAV2,CD68,CD8A,CSF3,DEP1,DOCK1,DOCK4	
trichostatin A		chemical drug	Activated	2.202		7.12E-16	ANXA6,BCL11A,BCL2A1,BMP2,BMP4,CASP3,CCNA2,CCR7,CD14,CD28	229 (22)
MYD88		other	Activated	4.953	bias	1.59E-15	ACOD1,APOBEC3B,BATF,CD14,CD40,CD44,CD83,CD86,CEBPD,CSF3	192 (14)
HRAS		enzyme		-0.331	bias	1.75E-15	ANTXR1,ANXA3,ANXA6,BIRC3,BMP4,CCNA2,CD44,CD81,CEBPD,CRIM1	223 (19)
NFKB (complex)		complex	Activated	6.136	bias	3.04E-15	B4GALT1,BATF,BCL11A,BCL2A1,BIRC3,BMP2,C1R,CCKAR,CCR7,CD40	185 (12)
dectabine		chemical drug	Activated	3.610	bias	6.35E-15	BCL11A,BIRC3,BMP4,BTG3,CCNA2,CCR7,CD44,CD8A,CD9,CDCA7	219 (20)
IKBKB		kinase	Activated	3.454	bias	7.53E-15	ACOD1,AMPD3,BIRC3,BMP2,CCNA2,CCR7,CD44,CEBPD,CP,CSF1	185 (13)
cyclosporin A		biologic drug		0.308	bias	9.42E-15	ALAS1,ANG,BATF,BIRC3,BMP2,CASP3,CCR7,CD14,CD40,CD44	214 (21)
IL10		cytokine		0.825		1.16E-14	BCL2A1,BMP2,BMP6,CASP3,CCR7,CD14,CD2,CD28,CD40,CD44	180 (19)
TICAM1		other	Activated	4.566	bias	2.89E-14	ACOD1,APOBEC3B,ApoI7e (includes others),Cd2,CD40,CD86,CEBPD,FAS,GDF15,ICAM1	137 (17)
IL2		cytokine	Activated	5.046	bias	3.44E-14	ADAM19,ARHGFEF3,BCL2A1,BIRC3,BMP2,CASP3,CCR7,CD2,CD28,CD40	180 (19)
IL6		cytokine	Activated	4.595	bias	1.19E-13	AKR1B10,ALAS1,ANG,APOA1,BATF,BMP2,BMP6,BUB1,CASP3,CCNA2	191 (16)
OGA		enzyme		-0.434		1.51E-13	ADAM19,AHNAK2,CAMK1D,CD14,CD40,CD44,CD68,CD86,CDCA7,CEBPA	114 (7)
cisplatin		chemical drug	Activated	4.037	bias	1.69E-13	AHNAK2,BCL2A1,BIRC3,BMP4,CASP3,CD14,CD44,CD68,CEBPA,CLCA1	219 (20)
triamterene		chemical drug	Activated	3.965	bias	2.95E-13	BIRC3,CD14,CD44,CLDN4,CP,LAMC2,MCM3,MRC1,PSMB10,RCN1	
poly rI:rC-RNA		biologic drug	Activated	5.531	bias	5.77E-13	ACOD1,ApoI7e (includes others),BIRC3,BMP2,CCR7,CD14,CD40,CD44,CD83,CD86	194 (14)
fenamic acid		chemical reagent	Activated	3.959	bias	6.24E-13	BIRC3,CD14,CD44,CLDN4,CP,LAMC2,MCM3,MRC1,PSMB10,RCN1	
salmonella minnesota R595 lipopolysaccharides		chemical - endogenous non-mammalian	Activated	4.378	bias	7.27E-13	ACOD1,Cd2,Cd8,CD83,CD86,CEBPD,FOSL1,GDF15,ICAM1,IL1B	182 (16)
Immunoglobulin		complex		0.524		8.30E-13	ADAM19,BATF,BCL2A1,BIRC3,CCR7,CD14,CD28,CD40,CD44,CD68	172 (17)
CEBPB		transcription regulator	Activated	4.177	bias	9.07E-13	AKR1B10,ANTXR1,BCL2A1,BLNK,CCNA2,CD14,CEBPA,CEBPD,CP,CSF3	204 (20)
IKBKG		kinase	Activated	3.290	bias	1.03E-12	ACOD1,AMPD3,BIRC3,BMP2,Cd2,CEBPD,CP,CSF1,CTSZ,CXCL12	209 (13)
allopurinol		chemical drug	Activated	3.637	bias	1.56E-12	BIRC3,CD14,CD44,CLDN4,CP,IL1B,LAMC2,MCM3,MRC1,PSMB10	
vancomycin		biologic drug	Activated	3.483	bias	2.84E-12	BIRC3,CD14,CD44,CLDN4,CP,LAMC2,MCM3,MRC1,PSMB10,RCN1	
STAT3		transcription regulator		1.803	bias	3.79E-12	BATF,BMF,CASP3,CD40,CD83,CD86,CD9,CEBPA,CEBPD,CLIC5	185 (22)

KRAS		enzyme		1,188		3.94E-12	AKR1B10,BCL2A1,BIRC3,BMP4,CASP3,CAVIN1,CCNA2,CD44,CLIC5,CSF2RB	203 (21)
IL1A		cytokine	Activated	4,591	bias	4.06E-12	BIRC3,Ccl2,CD40,CD44,CD83,CD86,Clec2d (includes others),CSF1,CSF3,CXCL12	180 (15)
resiquimod		chemical drug	Activated	3,556	bias	4.58E-12	BATF,BCL2A1,Ccl2,CD40,CD44,CD83,CD86,Clec2d (includes others),CSF3,CXCL12	145 (16)
puromycin aminonucleoside		chemical reagent	Activated	2,621	bias	4.61E-12	CD14,CD44,CLDN4,CLIC5,CP,CYBA,GSTP1,LAMC2,MCM3,MRC1	
progesterone		chemical - endogenous mammalian		-0.054		5.14E-12	ACOD1,ACOT7,AMPD3,AMY2A,BIRC3,BMP2,CASP3,CCNA2,CD40,CD86	218 (18)
doxorubicin		chemical drug	Activated	4,451	bias	7.23E-12	ANXA6,BCL2A1,BIRC3,BMP4,CASP3,CD14,CD40,CD44,CLDN4,CP	215 (19)
E. coli B5 lipopolysaccharide		chemical - endogenous non-mammalian	Activated	4,073	bias	7.64E-12	ALDH2,APOA1,BIRC3,CCR7,CD40,CD44,CD83,CD86,CEBPA,CSF3	176 (14)
IL33		cytokine	Activated	4,282	bias	8.75E-12	BCL2A1,BIRC3,Ccl2,CD40,CD86,CXCL16,FAS,GADD45B,GATA3,ICAM1	146 (16)
EP300		transcription regulator		0.647	bias	1.07E-11	ANXA6,ARHGEF3,BMF,CAMK4,CCR7,CEBPA,CRIM1,CRISPLD2,CSF3,DHRS3	248 (23)
PPARG		ligand-dependent nuclear receptor		0.760	bias	1.41E-11	ACOD1,APOA1,CAV2,Ccl2,CCR7,CD40,CEBPA,CSF3,CXCL14,CYBA	232 (21)
CHUK		kinase	Activated	4,203	bias	1.69E-11	ACOD1,AMPD3,BMP2,Ccl2,CEBPD,CP,CSF1,CTSZ,CXCL12,CYBA	192 (14)
ZBTB16	3,395	transcription regulator		0.209		1.77E-11	BMP2,CASP3,CCNA2,CD14,CD2,CD44,CD81,CD83,CD86,CD8A	160 (7)
TP53		transcription regulator	Activated	4,025		2.85E-11	ANTXR1,ANXA3,ANXA6,APOA1,BCL2A1,BIRC3,BMF,BUB1,CASP3,CAV2	229 (22)
tretinoin		chemical - endogenous mammalian	Activated	4,606	bias	2.89E-11	ALAS1,ANXA6,APBB1IP,ATOH8,BCL2A1,BIRC3,BMP2,BMP4,BMP6,CAMK4	213 (21)
CG		complex	Activated	4,388	bias	2.94E-11	AKR1B10,BMP2,BTG3,CAMK4,Ccl2,CEBPA,CEBPD,DMD,FABP5,FAS	238 (22)
STAT1		transcription regulator	Activated	4,251	bias	3.62E-11	ACOD1,ALPK1,APOBEC3B,C1R,CASP3,CCR7,CD14,CD40,CD86,CEBPD	191 (18)
gentamicin C		chemical drug	Activated	3,729	bias	4.12E-11	BIRC3,CD14,CD44,CLDN4,CP,DMD,LAMC2,MCM3,MRC1,PSMB10	
lomustine		chemical drug	Activated	3,742	bias	4.12E-11	BIRC3,CD14,CD44,CLDN4,CP,LAMC2,MCM3,RCN1,SLC34A2,TMEM173	
ERK1/2		group	Activated	3,040	bias	6.30E-11	AKR1B10,BCL2A1,BIRC3,BMP2,CCR7,CD40,CD44,CD86,CEBPA,CXCL12	215 (17)
Alpha catenin		group	Inhibited	-4.059	bias	6.41E-11	BIRC3,CXCL12,GAP43,IL1B,IL36G,IL6ST,KLK3,LAMA2,LYN,NFKBIA	177 (15)
STAT5A		transcription regulator		0.745		7.46E-11	BCL11A,BCL2A1,BIRC3,CASP3,Ccl2,CD68,CEBPA,CSF3,CXCR3,FAS	252 (19)
CD40LG		cytokine	Activated	3,119	bias	8.19E-11	A4GALT,ALCAM,ANXA6,BATF,BCL2A1,BIRC3,BTG3,CCR7,CD40,CD44	138 (14)
IL10RA		transmembrane receptor		-1.612		9.20E-11	ACOD1,ALDH2,BMP2,BMP4,CCR7,Cd24a,CD40,FABP5,FADS3,FAS	158 (13)
ID2		transcription regulator		0.786		9.43E-11	BATF,CCR7,CD44,CD83,CSF1,CSF2RB,CXCR3,GADD45B,HOMER2,ICAM1	135 (7)
prostaglandin E2		chemical - endogenous mammalian	Activated	4.183	bias	1.07E-10	BIRC3,BMP2,CASP3,CCR7,CD14,CD40,CD44,CD83,CD86,CEBPD	150 (16)
TCF3		transcription regulator		1.213	bias	1.08E-10	ALCAM,ANXA6,BLNK,BUB1,CASP3,CCNA2,CD2,Clec2d (includes others),CTRB2,DOCK1	30 (2)
ERBB2		kinase	Activated	2,690	bias	1.08E-10	ADAM19,ALAS1,ANG,BIRC3,BUB1,CAVIN1,CCNA2,CD9,CDCA7,CLDN4	230 (23)
mifepristone		chemical drug		-1.001		1.10E-10	ACOD1,ALAS1,CASP3,Ccl2,CD14,Cd24a,CEBPD,CYBA,FAS,FTH1	254 (23)
PI3K (complex)		complex	Activated	3,094	bias	1.29E-10	BIRC3,CASP3,Ccl2,CD2,CD44,CD86,FABP5,FOSL1,GAP43,GATA3	203 (19)
Jnk		group	Activated	3,528	bias	1.56E-10	BIRC3,BMF,CASP3,Ccl2,CCR7,CD40,CD44,CD83,CD86,CXCL12	180 (16)
methylprednisolone		chemical drug		1.908		1.75E-10	ALAS1,ANXA3,B4GALNT1,Cald1,CAMK1D,Ccl2,Cd24a,CD44,CD9,DMD	215 (20)
ID3	0.768	transcription regulator		0.549		1.90E-10	BATF,CCR7,CD44,CD83,CSF1,CSF2RB,CXCR3,GADD45B,HOMER2,ICAM1	174 (11)
VCAN		other		-1.309		1.98E-10	ANG,C1R,CASP3,Ccl2,CRISPLD2,CXCL12,CYBA,FABP5,FAS,ICAM1	161 (19)
2-bromoethylamine		chemical reagent	Activated	3,434	bias	2.51E-10	CD14,CD44,CLDN4,CP,LAMC2,MCM3,MRC1,SLC34A2,TMEM173,TNFRSF12A	
E. coli B4 lipopolysaccharide		chemical toxicant	Activated	3,764	bias	2.62E-10	ACOD1,AMPD3,CASP3,Ccl2,CCR7,CD40,CD83,CD86,CSF3,FAS	183 (17)
ethionine		chemical toxicant	Activated	2,720	bias	2.67E-10	CD14,CD44,CP,LAMC2,MCM3,PSMB10,SLC34A2,TNFRSF12A,Tpm1,TSPAN8	
SP1		transcription regulator	Activated	2,869	bias	2.68E-10	APOA1,BMP4,CASP3,Ccl2,CCNA2,CD28,CD40,CEBPA,CEBPD,CXCL12	202 (21)

CD40	0,881	transmembrane receptor	Activated	3,352	bias	2,70E-10	A4GALT,BCL2A1,BIRC3,CCNA2,CD40,CD44,CD83,CD86,CD8A,CSF1	155 (15)
MYB		transcription regulator		-1,340	bias	3,07E-10	BIRC3,BLNK,BMF,Ccl2,CD14,CSF3,CXCL12,CXCL16,GATA3,ICAM1	195 (20)
ESR1		ligand-dependent nuclear receptor		0,647		3,26E-10	ALCAM,ANXA3,APOA1,BIRC3,BMP2,BMP4,BUB1,CAV2,CBLC,CCNA2	234 (20)
NOTCH1		transcription regulator	Activated	2,581		3,34E-10	ADAM19,BIRC3,BMP2,CD14,CD44,CD68,CDCA7,CEBPA,CEBPD,CSF2R8	186 (15)
STAT6		transcription regulator		0,107		3,40E-10	ADAM19,ALDH2,CAMK1D,Ccl2,CCR7,CD2,Cd24a,CD40,DOCK10,EHFD2	175 (16)
SMARCA4		transcription regulator	Activated	3,591	bias	3,78E-10	ALDH2,ANTXR2,APOA1,BATF,BCL2A1,BMP4,CASP3,CCNA2,CD44,CP	228 (20)
SP1		transcription regulator	Activated	2,737	bias	3,91E-10	BCL11A,BLNK,CCNA2,CCR7,CD14,CD68,CEBPA,CSF1,CSF2R8,FTH1	176 (20)
Interferon alpha		group	Activated	3,825	bias	3,98E-10	A4GALT,ADAM19,APOBEC3B,BCL2A1,BMP4,CASP3,CCR7,CD40,CD81,CD83	172 (17)
BCL6		transcription regulator		-1,468	bias	6,44E-10	ALCAM,ANXA6,BCL2A1,BLNK,Ccl2,CCR7,CD2,CD44,CSF1,DOCK10	167 (18)
IL3		cytokine	Activated	3,459	bias	7,60E-10	ALDH2,BIRC3,BMP2,CASP3,CD14,CD40,CD83,CD86,CSF1,CSF3	156 (17)
bleomycin		chemical drug	Activated	4,260	bias	8,81E-10	BMP4,CASP3,Ccl2,Ccl8,CD68,CD86,CEBPA,CXCL12,FAS,FOSL1	233 (19)
ADRB		group	Inhibited	-3,154	bias	9,41E-10	ARHGEF3,CASP3,Ccl2,CCNA2,CD40,CD68,CLEC4D,FAS,GDF15,GSTA3	209 (22)
CREBBP		transcription regulator		0,239	bias	9,93E-10	ALAS1,ANXA6,ARHGEF3,CAMK4,CCR7,CD44,CEBPA,CRIM1,CRISPLD2,CSF1	193 (18)
tetradecanoylphorbol acetate		chemical drug	Activated	4,839	bias	1,01E-09	AKR1B10,ALAS1,AMIGO2,APOBEC3B,BCL2A1,BIRC3,BMP6,CAV2,CCNA2,CCR7	235 (19)
NR3C1		ligand-dependent nuclear receptor		-0,977		1,05E-09	AMIGO2,ARHGEF3,BIRC3,BMF,BMP2,C1R,CD83,CEBPA,CORO2A,CYP3A7	238 (21)
ATF3		transcription regulator	Inhibited	-2,496		1,25E-09	BIRC3,CD83,CXCL16,FBP1,GBP6,HSPB1,ICAM1,ID1,IL1B,JUN	224 (19)
IL13		cytokine	Activated	3,073	bias	1,26E-09	BATF,BCL2A1,CASP3,CD14,CD40,CD44,CD86,CEBPA,CFI,CLCA1	178 (20)
TCR		complex	Activated	2,535	bias	1,33E-09	BATF,BCL2A1,BIRC3,CCR7,CD28,CD44,CD6,CXCR3,FAS,GADD45B	170 (20)
KLF2		transcription regulator		-1,899		1,42E-09	BMP4,Ccl2,CCR7,CD40,CD44,CD86,CEBPA,CXCR3,ID1,ID3	194 (19)
APOE		transporter		-1,448	bias	1,46E-09	APOA1,BMP4,CASP3,CKAR,CD40,CD44,CD68,CD86,CSF1,CSR1	156 (16)
CpG oligonucleotide		chemical drug	Activated	3,749	bias	1,48E-09	BCL2A1,CD14,CD40,CD83,CD86,CLEC4D,FAS,GBP6,Glycam1,ICAM1	180 (22)
JUN	0,556	transcription regulator	Activated	3,524	bias	1,49E-09	ALAS1,BCL2A1,BIRC3,Ccl2,CCNA2,CD14,CD44,CD68,CSF1,CXCL16	233 (23)
rosiglitazone		chemical drug	Activated	2,010	bias	1,49E-09	CASP3,CAV2,CKAR,Ccl2,Ccl8,CD68,CD86,CEBPA,CSF1,DHRS3	207 (21)
PDGF BB		complex	Activated	3,317	bias	1,56E-09	BMP4,BMP6,CAV2,Ccl2,CD44,CEBPD,CP,CSF1,CSF3,ENPP1	216 (22)
LY294002		chemical - kinase inhibitor	Inhibited	-3,867	bias	1,62E-09	BIRC3,BMP2,CASP3,CCNA2,CD14,CD44,CD83,CD86,CEBPA,CLDN4	198 (16)
hexachlorobenzene		chemical toxicant	Activated	3,464	bias	1,65E-09	CD14,CD44,CP,LAMC2,MRC1,PSMB10,RCN1,SLC34A2,TNFRSF12A,TSPAN8	
Ige		complex	Activated	4,097	bias	1,78E-09	ALAS1,BCL2A1,C6orf222,Ccl2,CD40,CD86,CSF3,CXCL16,FAS,GADD45B	155 (17)
APP		other		1,618	bias	1,83E-09	ADAM19,ANXA6,BASP1,BMF,BMP4,BMP6,C1R,CASP3,CD40,CD44	220 (17)
GFI1		transcription regulator	Inhibited	-3,260	bias	1,85E-09	ANXA6,Ccl2,CCR7,CD40,CEBPA,CSF1,GATA3,GZMA,ICAM1,IL1B	134 (13)
camptothecin		chemical drug		1,879	bias	1,89E-09	BCL11A,BCL2A1,BIRC3,BTG3,CASP3,CD40,CD83,CD86,CSF1,FAS	170 (15)
TLR4		transmembrane receptor	Activated	4,671	bias	2,03E-09	APOBEC3B,BATF,BMP2,CCR7,CD14,CD40,CD44,CD86,CEBPD,CSF3	172 (16)
DUSP1		phosphatase		-0,961		2,04E-09	BMP2,Ccl2,CD40,CD86,FOSL1,GDF15,GJB2,ICAM1,IL1B,JUN	210 (24)
F2		peptidase	Activated	4,789	bias	2,16E-09	B4GALT1,BIRC3,CASP3,Ccl2,CCNA2,CD44,CD68,CDCA2EP1,DOCK10,FOSL1	168 (15)
5-O-mycoly-beta-araf-(1->2)-5-O-mycoly-alpha-araf-(1->1)-glycerol		chemical - endogenous non-mammalian	Activated	3,695	bias	2,20E-09	BCL2A1,CCR7,CD40,CD44,CD83,ICAM1,IL1B,MGLL,NFKBIZ,RND3	174 (13)
IL17A		cytokine	Activated	3,673	bias	2,21E-09	BCL2A1,Ccl2,Ccl8,CD14,CD40,CD68,CD83,CEBPD,CSF3,CXCL12	144 (15)
tacrolimus		chemical drug		0,392	bias	2,39E-09	ADAM19,BASP1,BATF,CASP3,Ccl2,CD6,CEBPA,CORO2A,CXCR3,GAP43	223 (20)
thioacetamide		chemical toxicant	Activated	3,961	bias	2,39E-09	BIRC3,CD14,Cd24a,CD44,CLDN4,CP,HK1,IL1B,JUN,LAMC2	

NFE2L2		transcription regulator	Activated	3,785	bias	2,73E-09	AKR1B10,ALAS1,ANG,ARHGEF3,B4GALNT1,Ccl2,CD86,CEBPA,ESD,FTH1	165 (17)
RELA		transcription regulator	Activated	4,274	bias	2,73E-09	ALCAM,BCL2A1,BIRC3,BMP2,CASP3,Ccl2,CCR7,CD14,CD40,CD44	187 (14)
SB203580		chemical - kinase inhibitor	Inhibited	-4,228	bias	3,01E-09	ANXA3,APOBEC3B,BMP2,BMP4,CD28,CD40,CD83,CD86,CEBPD,COBL	187 (16)
TRAF3IP2		other	Activated	3,112	bias	3,06E-09	Ccl2,CEBPD,CSF1,CSF3,CXCL16,GATA3,ICAM1,IL1B,NFKBIZ,STEAP4	172 (13)
phenylbutazone		chemical drug	Activated	3,429	bias	3,09E-09	CD44,CLDN4,CP,LAMC2,MCM3,MRC1,RCN1,SLC34A2,TMEM173,TNFRSF12A	
IL1		group	Activated	4,968	bias	4,08E-09	BMP2,Ccl2,CCR7,CD40,CEBPD,CP,CSF1,CSF2RB,CSF3,FAS	176 (15)
Pam3-Cys-Ser-Lys4		chemical reagent	Activated	3,627	bias	4,35E-09	BATF,BCL2A1,Ccl2,CCR7,CD14,CD40,CD83,CD86,CSF3,HLA-A	142 (14)
cigarette smoke		chemical toxicant	Activated	3,477	bias	4,41E-09	AKR1B10,CASP3,Ccl2,ESD,FABP5,FOSL1,FTL,GATA3,GSTA3,GSTP1	221 (17)
OSM		cytokine	Activated	2,583	bias	5,37E-09	AKR1B10,AMPD3,ANXA3,C1R,Ccl2,CEBPA,CEBPD,CLDN4,CSF3,CXCL12	201 (20)
hydrocortisone		chemical - endogenous mammalian		0,731		5,99E-09	CD40,CD86,CEBPA,CEBPD,FAS,GADD45B,GAP43,H6PD,ICAM1,IL1B	177 (17)
CEBPA	1,590	transcription regulator	Activated	2,552	bias	6,41E-09	ACOD1,AKR1B10,BCL2A1,CCNA2,CD14,CEBPA,CEBPD,CSF1,CSF3,CYP3A7	203 (20)
cycloheximide		chemical reagent		0,279		6,64E-09	APBB1IP,APOA1,BIRC3,CD44,CD8A,CEBPD,CSF1,FAS,GADD45B,GAP43	193 (21)
CCN5		growth factor		-1,035		7,56E-09	CD44,CEBPA,GATA3,JUN,JUP,KLF4,KRTR,LAMB3,LAMC2,SDC4	132 (7)
FOS		transcription regulator	Activated	2,620	bias	8,12E-09	ALAS1,B4GALT1,CASP3,Ccl8,CCNA2,CD14,CD44,CD68,CSF3,CXCL16	211 (20)
indomethacin		chemical drug	Activated	2,619	bias	8,98E-09	BIRC3,Ccl2,CD14,CD44,CLDN4,CP,CSF2RB,GDF15,ID1,IL1B	228 (18)
hydrogen peroxide		chemical - endogenous mammalian	Activated	4,082	bias	9,57E-09	BCL2A1,BIRC3,BUB1,CASP3,CCNA2,CD68,CD81,CD86,CSF1,CSF3	143 (16)
PD98059		chemical - kinase inhibitor	Inhibited	-3,828	bias	1,06E-08	ACOT7,APOA1,APOBEC3B,BMP2,CASP3,CCNA2,CD14,CD40,CD44,CD83	161 (19)
phenacetin		chemical drug	Activated	3,148	bias	1,08E-08	BIRC3,CD44,CLDN4,CP,LAMC2,MRC1,SLC34A2,TNFRSF12A,TSPAN8,UPP1	149 (7)
etoposide		chemical drug	Activated	3,095	bias	1,13E-08	BCL2A1,BIRC3,CASP3,CD40,CD86,CEBPA,FAS,FTH1,GDF15,HK1	133 (14)
calcitriol		chemical drug	Activated	2,383		1,27E-08	ADAM19,APOA1,ARHGEF3,BATF,CAVIN1,CCNA2,CD14,CD40,CEBPA,CEBPD	208 (21)
Tnf (family)		group	Activated	2,524	bias	1,39E-08	BCL2A1,BIRC3,Ccl2,CD40,CD86,CLDN4,CSF1,CXCL12,ICAM1,IL1B	135 (15)
EGR1		transcription regulator	Activated	3,371	bias	1,48E-08	APOA1,CASP3,CAVIN1,Ccl2,Ccl8,CD44,CSF1,FAS,FOSL1,FTL	226 (22)
RNA polymerase II		complex				1,60E-08	ALAS1,BLNK,CD14,CD40,CD83,CEBPA,CSF1,FOSL1,GADD45B,GDF15	180 (12)
PRKCD		kinase	Activated	2,910	bias	1,75E-08	BCL2A1,BIRC3,Ccl2,CCNA2,CD68,CXCL12,CXCL16,FOSL1,GDF15,ICAM1	159 (17)
Tlr		group	Activated	3,217	bias	2,04E-08	Ccl2,CCR7,CD40,CD83,CD86,HLA-A,ICAM1,IL1B,IRAK3,JAG1	141 (18)
YAP1	1,318	transcription regulator		1,832	bias	2,29E-08	BMP2,CASP3,CCNA2,GAB1,HMGCS2,ICAM1,ID1,IL1B,LATS2,MCM3	206 (21)
IKZF3		transcription regulator	Inhibited	-3,464	bias	2,30E-08	ANTXR1,BLNK,CAV2,CD68,DEPP1,DOCK4,KLF4,LHFPL2,MGLL,NFKBIZ	
FAS	1,934	transmembrane receptor		-1,237		2,38E-08	BCL11A,BCL2A1,BIRC3,BTG3,CASP3,CD44,CD83,CD86,CEBPD,CSF1	147 (17)
SOCS1		other	Inhibited	-3,118	bias	2,95E-08	ACOD1,BCL2A1,Ccl2,CCR7,CD40,CD44,CD86,CSF3,CXCR3,FAS	145 (16)
IRF8		transcription regulator	Activated	3,385	bias	3,63E-08	ARID5B,CASP3,CCR7,CD14,CD40,CD83,CD86,CEBPA,CXCL16,FAS	199 (16)
TNFRSF1A		transmembrane receptor	Activated	3,525		4,06E-08	BIRC3,CASP3,Ccl2,CD44,CD68,CD83,CD86,CSF3,GATA3,ICAM1	143 (16)
TREM2		transmembrane receptor		0,661		4,10E-08	Ccl2,CCR7,CD40,CD86,IL1B,NFKBIA,TNFAIP3	150 (14)
forskolin		chemical toxicant		1,643	bias	4,21E-08	AKR1B10,APOA1,B4GALT1,CD14,CD44,CD68,CD86,CD8A,CD9,CEBPD	239 (20)
Hsp70		group		0,400		4,29E-08	Ccl2,CD14,CD40,CD83,CD86,ICAM1,IL1B,ILK3,NFKBIA,NOD2	137 (17)
IL18		cytokine	Activated	4,090	bias	4,55E-08	ADAM19,Ccl2,CCR7,CD40,CD44,CD83,CD86,CSF1,CXCL12,CXCL16	149 (16)
FOXO1		transcription regulator	Activated	2,522	bias	4,74E-08	ALAS1,ANXA3,BCL2A1,BIRC3,BLNK,CAMK4,CCNA2,CCR7,CD40,FABP5	193 (17)
MAP3K14		kinase	Activated	3,261	bias	5,08E-08	BIRC3,BST1,Ccl2,CD44,FAS,ICAM1,IL1B,IL7R,NFKBIA,RELB	145 (11)

captopril		chemical drug	Activated	2,354		5,08E-08	CD44,CP,LAMC2,LTBP2,MCM3,MRC1,SERPING1,SLC34A2,TNFRSF12A,TSPAN8	
filgrastim		biologic drug		-1,444		5,49E-08	ANXA3,BATF,BIRC3,CD44,CD83,CLEC4D,FABP5,FBP1,GZMA,HMGA1	
IFNB1		cytokine	Activated	2,766	bias	5,54E-08	ACOD1,Apol7e (includes others),CASP3,Ccl2,CD14,Cd24a,CD40,CD83,CD86,GBP6	168 (18)
MAPK9		kinase		1,545	bias	5,85E-08	BIRC3,BMP4,Ccl2,DMD,FAS,FOSL1,GADD45B,HMGA1,IFI16,IL1B	216 (18)
15-deoxy-delta-12,14 -PGJ 2		chemical - endogenous mammalian		0,233	bias	5,86E-08	BIRC3,CASP3,CAV2,Ccl2,CEBPD,FTH1,GDF15,GSTP1,HSPB1,ICAM1	227 (22)
resveratrol		chemical drug		0,598		5,90E-08	BCL2A1,BIRC3,BMP2,CASP3,Ccl2,CD14,CD68,FAS,FOSL1,GDF15	179 (17)
clobetasol propionate		chemical drug		-1,664	bias	6,38E-08	CD40,CD86,FABP5,FAS,ICAM1,LY75	122 (10)
IL12 (complex)		complex		1,642	bias	7,56E-08	CASP3,Ccl2,CCR7,CD28,CD44,CD86,CSF1,CXCR3,FAS,GADD45B	153 (16)
methylselenic acid		chemical reagent				7,65E-08	B4GALT1,BCL2A1,BIRC3,BMP4,CAMK4,CCNA2,CD44,GDF15,ID1,ID3	241 (22)
NFKB1		transcription regulator	Activated	2,882	bias	7,73E-08	BCL2A1,BIRC3,BMP2,Ccl2,CD40,CD86,CEBPA,CSF1,FAS,GATA3	203 (14)
genistein		chemical drug		1,628	bias	9,44E-08	ALAS1,APOA1,BMP2,BTG3,CASP3,CD44,CD68,CD86,CEBPA,CXCL12	190 (21)
LY8E		other		-1,937		9,63E-08	CD14,CD83,IL1B,IRAK2,NFKBIA,RELB,SERPINE1	
IGF1		growth factor	Activated	2,917	bias	9,84E-08	BCL2A1,BIRC3,BMP2,BMP4,CASP3,CCNA2,CD44,CEBPD,CSF1,CYBA	215 (21)
SMAD3		transcription regulator		1,652	bias	1,00E-07	APOA1,BMP2,BMP6,Ccl2,CRISPLD2,DOCK4,GADD45B,GATA3,GZMA,Hamp/Hamp2	199 (20)
VEGFA		growth factor	Activated	2,219	bias	1,02E-07	ALAS1,ALDH2,BATF,BCL2A1,BMP2,BMP4,CASP3,CD40,CD68,CD83	166 (17)
hyaluronic acid		chemical - endogenous mammalian	Activated	2,762	bias	1,05E-07	Ccl2,CCR7,CD40,CD44,CD83,CD86,ICAM1,IL1B,IRAK3,IRF5	147 (16)
N-nitro-L-arginine methyl ester		chemical drug		1,439		1,05E-07	CASP3,Ccl2,CD68,CD83,CD86,CSF1,CYBA,FAS,ICAM1,IL1B	191 (17)
PTGER4		G-protein coupled receptor		-1,207		1,06E-07	Ccl2,CCR7,CD40,CD44,CP,GAB1,GBP6,H2-M2,ICAM1,IFI16	193 (19)
dextran sulfate		chemical drug		1,012	bias	1,07E-07	BUB1,Ccl2,Ccl8,CCNA2,CD14,CD40,CD83,CD86,CSF3,ICAM1	154 (17)
trogilazone		chemical drug		0,784		1,14E-07	ALAS1,BIRC3,Cald1,CAV2,Ccl2,CD86,CEBPA,CEBPD,CYP3A7,DHRS3	207 (22)
mir-223		microRNA		0,697		1,16E-07	ALCAM,AMPD3,BST1,Clec2d (includes others),CSF1,HPGDS,ICAM1,IFI16,IL1B,MCTP2	
iron dextran		chemical drug	Activated	2,391	bias	1,16E-07	BMP6,Ccl2,Hamp/Hamp2,ID1,IL1B,NFKBIA	
ADCYAP1		other		0,192		1,19E-07	181009J06RIK/Gm2663,BMP6,CAMK4,Ccl2,CCNA2,CD40,CD86,CEBPD,GAP43,GATA3	167 (18)
bee venom		chemical - endogenous non-mammalian		0,507	bias	1,19E-07	ACOD1,Ccl2,HSPB1,ICAM1,IL1B,JUN,KLF4,LCP2,LPIN2,NFKBIA	117 (12)
LDL		complex	Activated	3,548	bias	1,22E-07	APOBEC3B,BCL2A1,BMP2,CASP3,Ccl2,CCR7,CD40,CD68,FAS,ICAM1	179 (17)
TLR3		transmembrane receptor	Activated	3,584	bias	1,22E-07	ACOD1,Apol7e (includes others),Ccl2,CD40,CD86,CLCA1,CSF3,FAS,GADD45B,Hamp/Hamp2	141 (16)
SHC1		other		1,062		1,40E-07	BMF,CCR7,FTH1,FTL,GSTP1,ICAM1,NQO1,SDC4,SERPINE1,SOD2	167 (17)
EGF		growth factor	Activated	3,789	bias	1,44E-07	ALCAM,APOA1,B4GALT1,CASP3,CD44,CD42EP1,CEBPD,CTRB2,CXCL14,CXCR3	192 (21)
SMAD4		transcription regulator	Activated	2,366	bias	1,56E-07	APOA1,BMP2,BMP4,Ccl2,CSF1,DOCK4,GADD45B,ICAM1,ID1,IL1B	259 (24)
fasudil		chemical drug		-0,800	bias	1,59E-07	BMP2,CASP3,Ccl2,CD14,CD40,ICAM1,IL1B,JUN,MRC1	168 (17)
zVAD-FMK		chemical - protease inhibitor		0,174		1,59E-07	BCL2A1,BIRC3,CAMK4,CASP3,CD40,GATA3,IL1B,IL6ST,MLKL	154 (17)
AGT		growth factor	Activated	3,140	bias	1,62E-07	ANXA3,BMP6,CASP3,Ccl2,CCR7,CD44,CD86,CP,CYBA,GAP43	195 (18)
SMAD5		transcription regulator	Activated	2,010	bias	1,66E-07	BMP2,CSF1,Hamp/Hamp2,ICAM1,ID1,ID3,RUNX2,SERPINE1	
carboplatin		chemical drug	Activated	2,530	bias	1,68E-07	CASP3,CD44,CLDN4,CP,LAMC2,MCM3,MRC1,SLC34A2,TNFRSF12A,UPP1	
IL21		cytokine	Activated	3,374	bias	1,78E-07	BATF,CASP3,CCR7,CD2,CD28,CD86,CLIC5,CXCR3,GATA3,GBP6	191 (18)
CD3		complex	Activated	3,844	bias	1,93E-07	ALAS1,ANG,BATF,BCL2A1,BIRC3,C1R,CASP3,CD2,CD28,CD44	168 (18)
IL15		cytokine	Activated	2,546	bias	1,93E-07	CASP3,CD2,CD28,CD40,CD44,CD83,CD86,CD8A,CSF1,CSF3	166 (17)



pirinixic acid		chemical toxicant	Activated	3,249	bias	2,21E-07	AKR1B10,ALAS1,APOA1,Ccl2,CCNA2,Cd24a,CFI,CXCL12,CYP3A7,FABP5	218 (17)
MYC		transcription regulator		1,102	bias	2,30E-07	ACOD1,ALCAM,ANXA6,BCL2A1,BUB1,CASP3,CCNA2,CD44,CD86,CD9	229 (20)
caffeic acid phenethyl ester		chemical drug		-1,279	bias	2,72E-07	BIRC3,CASP3,CD44,CD83,FBX1,FTL,HSPB1,ICAM1,IL1B,KLF6	147 (16)
RUNX1		transcription regulator		1,243	bias	2,88E-07	ALCAM,CEBPA,CSF1,CSF2RB,FAS,GATA3,IL1B,IL7R,ITGA9,LCP2	246 (25)
TGFB111		transcription regulator		0,918	bias	2,89E-07	ID1,KLF4,KLK3,KRT19,KRT20,LTBP2,SERPINE1	93 (7)
EZH2		transcription regulator		0,135		2,94E-07	ANXA6,BIRC3,BMP4,Ccl2,CEBPA,CLDN10,CRISPLD2,CSF3,CXCR3,FLT3	231 (22)
P38 MAPK		group	Activated	3,801	bias	3,25E-07	BCL2A1,BMP2,CCR7,CD40,CD44,CD83,CD86,CEBPA,CEBPD,CSF3	158 (16)
TCF4		transcription regulator	Activated	2,550	bias	3,48E-07	ALCAM,ANXA6,CCNA2,CD2,CD9,CEBPA,Clec2d (includes others),CSF3,ENPP1,ID3	209 (16)
Hbb-b2		other	Activated	2,236	bias	3,64E-07	Ccl2,CD44,CEBPA,CXCR3,CYBA,FBX1,FTL,Hamp/Hamp2,IL1B	138 (9)
D-glucose		chemical - endogenous mammalian	Activated	3,388	bias	3,72E-07	ANXA3,BMP2,BMP4,CASP3,Ccl2,CEBPA,CYBA,DMD,DTNA,FABP5	234 (21)
TFAP2C		transcription regulator		-0,990		3,99E-07	ALCAM,ANTXR2,CD44,GSTA3,HK1,JAG1,KRT8,MAL,SEMA3B,SOD2	
cyclophosphamide		chemical drug	Activated	2,373	bias	3,99E-07	CD44,CP,FAS,FLT3,GAP43,IL1B,LAMC2,SLC34A2,TNFRSF12A,TSPAN8	191 (17)
Mi2		other	Inhibited	-2,219	bias	4,00E-07	CEBPA,GSTP1,Hamp/Hamp2,IL1B,JUN,MEST,SERPINE1	207 (19)
dihydrotestosterone		chemical - endogenous mammalian	Activated	2,176	bias	4,43E-07	ALAS1,BMF,CASP3,CCNA2,CDCA7,CEBPA,FBX1,FTL,GAP43,GSTP1	233 (21)
IL7		cytokine		1,347	bias	4,72E-07	BLNK,CASP3,Ccl2,CD2,CD86,CD8A,CSF1,FAS,GATA3,IL7R	181 (17)
Salmonella enterica serotype abortus equi lipopolysaccharide		chemical toxicant	Activated	3,978	bias	4,99E-07	BIRC3,Ccl2,CCR7,CSF3,FJX1,FOSL1,GADD45B,GJB2,IL1B,IL36G	163 (11)
PRKAA1		kinase		-1,291	bias	5,15E-07	ACOT7,BIRC3,CXCL12,DOCK4,GJB2,HIGD1A,LITAF,NFKBIA,OAT,PARP3	170 (15)
paclitaxel		chemical drug	Activated	2,264	bias	5,19E-07	ANXA6,BIRC3,CD40,CD44,CD86,FAS,FOSL1,GADD45B,GDF15,HLA-A	204 (20)
PRKAA2		kinase		-1,038	bias	5,22E-07	ACOT7,ALAS1,CAMK4,CEBPA,CXCL12,DOCK4,GATA3,HIGD1A,NFKBIA,OAT	62 (5)
SB-431542		chemical reagent		-0,851	bias	5,22E-07	BMP4,BMP6,Ccl2,CD14,CD44,GADD45B,GJB2,ID1,ID3,PTPRK	211 (20)
WWTR1		transcription regulator		0,690	bias	5,34E-07	BMP2,CCNA2,CD44,ICAM1,IL1B,LATS2,RUNX2,SERPINE1,YAP1	98 (8)
FLT3LG		cytokine		1,640	bias	5,44E-07	CCR7,CD40,CD83,CD86,CEBPA,CXCL12,FLT3,ICAM1,IL1RL1,IL7R	200 (19)
IFNAR1		transmembrane receptor	Activated	2,601	bias	5,61E-07	ACOD1,ApoI7e (includes others),CD40,CLEC4D,CLIC5,CSF1,HLA-A,IFI16,IL1B,Ms4a4b (includes others)	180 (18)
ACVRL1		kinase		0,771	bias	5,82E-07	CXCL12,GDF15,ICAM1,ID1,IL1RL1,JUP,SERPINE1,ZYX	143 (11)
MAPK8		kinase	Activated	2,000	bias	6,33E-07	APOA1,B4GALT1,BIRC3,BMP2,BMP4,CASP3,Ccl2,CCNA2,CXCL16,FOSL1	218 (18)
CD86	2,334	transmembrane receptor		0,727	bias	6,43E-07	CD28,CD40,CD86,FAS,GZMA,HOMER2,ICAM1,NFKBIA,TNFAIP3	154 (19)
LRP1	1,226	transmembrane receptor		-1,320		6,43E-07	C1R,Ccl2,CD14,CD68,IL1B,LRP1,SERPING1,SLC2A3,SMO	108 (12)
IRAK4		kinase		1,938	bias	6,84E-07	BIRC3,Ccl2,CD86,CXCL16,IL1B,IRF5,JUN,NFKBIA,NFKBIZ,TNFAIP3	175 (14)
RARB		ligand-dependent nuclear receptor		1,093	bias	7,17E-07	APOA1,BCL2A1,CXCL12,DHRS3,GAP43,ICAM1,ID1,ID3,IL1B,JUN	220 (20)
HGF		growth factor	Activated	2,015	bias	7,25E-07	BCL2A1,BIRC3,BMP2,BUB1,Ccl2,CD28,CD40,CD44,CSF1,FOSL1	199 (18)
ROCK2		kinase		0,933	bias	7,30E-07	Ccl2,CD44,CEBPA,FABP5,FAS,ICAM1,PRKG1,SERPINE1	178 (18)
TLR9		transmembrane receptor	Activated	3,300	bias	8,46E-07	ACOD1,Ccl2,CCNA2,CCR7,CD40,CD83,CD86,CSF1,CSF3,FAS	155 (17)
Ca2+		chemical - endogenous mammalian	Activated	2,534	bias	8,58E-07	CD83,CD86,CEBPD,CSRPI,ENPP1,FABP5,FOSL1,ICAM1,ID1,ID3	189 (18)
oxytetracycline		chemical drug	Activated	2,000	bias	8,96E-07	BMP2,BMP4,BMP6,ID1	
ECSIT		transcription regulator	Activated	2,567	bias	9,73E-07	CD44,CD83,IL1B,NFKBIA,RELB,SOD2,TNFAIP3	151 (16)
TGFBR2		kinase		0,605		1,01E-06	BMP6,Ccl2,CD14,CD44,GADD45B,GJB2,ICAM1,IL1B,JUN,JUP	209 (21)
ERK		group	Activated	3,110	bias	1,02E-06	BMF,BTG3,Ccl2,CEBPD,CLDN4,FAS,FOSL1,GDF15,GPRC5C,HMGA1	214 (21)

NFATC2		transcription regulator		-0.336	bias	1,08E-06	BATF,CASP3,Ccl2,CCNA2,CCR7,CD40,CD83,CD86,FAS,GATA3	172 (18)
TNFRSF9		transmembrane receptor		-0.342		1,12E-06	BCL2A1,CD14,CD28,CD40,CD83,CD86,FAS,IL1B	155 (16)
CTNNB1		transcription regulator	Activated	3.308	bias	1,22E-06	ALCAM,BMF,BMP2,BMP4,CCNA2,CD44,CEBPA,CSF3,CTS2,CXCL12	199 (19)
TRADD		other		1.890	bias	1,27E-06	BCL2A1,ICAM1,KLK3,NFKBIA,RIK2,RND1,TNFAIP3	140 (15)
DACH1		transcription regulator		-1.276	bias	1,38E-06	BMP4,ID1,JUN,KLF4,KLK3,SERPINE1,STC2,TNFAIP3	206 (16)
Ilf1		group	Activated	3.111	bias	1,41E-06	CD40,CD44,CD83,CD86,CXCR3,FAS,HLA-A,ICAM1,IF116,OASL	158 (19)
palmitic acid		chemical - endogenous mammalian		1.933	bias	1,43E-06	BIRC3,CASP3,Ccl2,CD28,CD68,CD86,CYBA,GDF15,HK2,HTR7	199 (18)
NKX2-1		transcription regulator		0.958	bias	1,45E-06	BCL2A1,BMP4,BTG3,CCKAR,CD14,CEBPA,HLA-A,LCK,Nes,RNASE4	
CTLA4		transmembrane receptor		-1.832	bias	1,51E-06	CCNA2,CD40,CD83,CD86,GATA3,ICAM1,LAG3,PADI2,PRKD3,SOD2	151 (17)
TRAF6		enzyme	Activated	2.382	bias	1,51E-06	BIRC3,Ccl2,CSF3,CXCL16,ICAM1,IL1B,IRF5,RELB,SOD2,TNFAIP3	155 (14)
lipoteichoic acid		chemical - endogenous non-mammalian	Activated	2.203	bias	1,51E-06	ANTXR1,ANTXR2,Ccl2,CD14,CD83,CD86,CSF3,ICAM1,IL1B,NOD2	133 (17)
F2R		G-protein coupled receptor		0.854	bias	1,51E-06	CASP3,Ccl2,CD44,CXCL12,FBP1,ICAM1,IL1B,KRT19,KRT8,LAMB3	237 (24)
iron		chemical - endogenous mammalian		1.537		1,52E-06	BMP6,CEBPA,FTH1,FTL,GADD45B,Hamp/Hamp2,ID1,SLC11A2,SOD2	129 (9)
tetrachlorodibenzodioxin		chemical toxicant		0.648		1,53E-06	ATOH8,BLNK,BMP4,CCKAR,CCNA2,CD86,CYP3A7,FAS,IL1B,ITGB7	200 (20)
TLR2/3/4/9		group	Activated	2.207	bias	1,56E-06	CCR7,CD40,CD83,CD86,ICAM1	102 (7)
N-acetyl-L-cysteine		chemical drug	Inhibited	-3.741	bias	1,62E-06	BCL2A1,BIRC3,BMP2,CASP3,Ccl2,CD86,CXCL12,CYBA,FAS,GSTP1	189 (18)
Mt1		other		-1.408	bias	1,65E-06	CEBPA,GSTP1,IL1B,JUN,MEST,NFKBIA,SERPINE1	181 (15)
NR5A2		ligand-dependent nuclear receptor		1.177	bias	1,68E-06	APOA1,AQP12A/AQP12B,Ccl8,CEBPD,CPA2,CXCL16,Hspa1b,ICAM1,IL1B,JUN	172 (14)
TP63		transcription regulator	Activated	3.116	bias	1,71E-06	APOBEC3B,CASP3,CCNA2,CEBPA,FAS,FOSL1,HK2,ID1,ID3,IL1B	216 (22)
E. coli serotype O127B8 lipopolysaccharide		chemical - endogenous non-mammalian	Activated	3.500	bias	1,80E-06	Ccl2,Ccl8,CD14,CD40,CXCL12,CXCL16,GJB2,IL1B,IRF5,ITPK1	174 (20)
TWIST1		transcription regulator		0.421	bias	1,89E-06	ALCAM,CASP3,Ccl2,CD40,CD44,CLDN4,CXCL12,FAS,FOSL1,HEG1	180 (17)
curcumin		chemical drug	Inhibited	-2.347	bias	1,90E-06	A4GALT,BIRC3,CASP3,Ccl2,CD44,CD81,CD86,CEBPA,CXCR3,FAS	192 (18)
CD2	3,268	transmembrane receptor	Activated	2.433	bias	2,04E-06	CCNA2,CCR7,CD40,CD44,CD86,CD8A,FAS,ICAM1	155 (18)
ethanol		chemical - endogenous mammalian		1.935	bias	2,11E-06	APOA1,BMP4,CAMK4,CASP3,Ccl2,CD14,CEBPA,CEBPD,CYP3A7,FAS	218 (19)
SATB1		transcription regulator		0.874		2,20E-06	BCL2A1,BLNK,CD40,CD86,CD8A,GADD45B,GATA3,GDF15,ID3,IL7R	103 (7)
FGF7		growth factor	Activated	2.447	bias	2,25E-06	CD44,CEBPA,CEBPD,CSF1,CTRB2,FABP5,Nrg1,RUNX2,SDC1,SERPINE1	189 (19)
BIRC3	0,908	enzyme		-1.633	bias	2,32E-06	BIRC3,CSF1,CSF3,ICAM1,IL1B,NFKBIA	148 (14)
NOS2		enzyme		1.546		2,37E-06	BCL2A1,CASP3,Ccl2,CD14,CD44,CD86,CLEC4D,CP,FAS,IL1B	134 (13)
pyrrolidine dithiocarbamate		chemical reagent	Inhibited	-2.759	bias	2,51E-06	BCL2A1,BIRC3,BMF,BMP2,Ccl2,CD40,ICAM1,IL1B,NFKBIA,RACK1	120 (14)
ATG7		enzyme		1.294		2,57E-06	BMF,CASP3,Ccl2,HK1,HK2,IL1B,NFKBIA,NQO1,PDLM1,PLIN3	185 (15)
simvastatin		chemical drug		-0.174		2,57E-06	ANXA3,APOA1,BMP2,CASP3,CD14,CD40,CD81,CD9,HK1,ICAM1	136 (14)
RBPJ		transcription regulator	Inhibited	-2.735	bias	2,60E-06	BMP2,CD44,CDCA7,CSF1,CSF3,CTRB2,CXCL12,IL1B,IL7R,JAG1	198 (24)
REL		transcription regulator	Activated	3.080	bias	2,64E-06	BCL2A1,CD40,CD86,CLDN10,FAS,FOSL1,GADD45B,HLA-A,ICAM1,IRF5	172 (17)
WNT3A		cytokine	Activated	2.120	bias	2,75E-06	BMP2,BMP4,CAMK4,CD44,CD68,CEBPA,CXCL12,GAP43,ID1,JAG1	188 (17)
Akt		group		0.852	bias	2,76E-06	BCL2A1,BMF,BMP2,Ccl2,CCR7,CD44,CP,CXCL12,FAS,FOSL1	199 (20)
TRAF3		enzyme		-0.684	bias	2,87E-06	BIRC3,CXCL12,FAS,ICAM1,IL1B,NFKBIA,PTPN14,RELB,RHBDP1,Serpina3g (includes others)	114 (13)
NOD2	2,190	other	Activated	2.807	bias	2,91E-06	ACOD1,BCL2A1,BMP2,CD40,ICAM1,IL1B,NFKBIA,RASGRP1,SOD2,TNFAIP3	118 (13)

estrogen receptor		group		-0.545		2.97E-06	CAV2,CD44,CD68,CLDN4,CXCL12,F11R,GATA3,ICAM1,JAG1,JUN	244 (24)
RAF1		kinase	Activated	2,761	bias	3.11E-06	ACOT7,CD44,CDC42EP1,DHRS3,FAS,HSPB1,ID3,IL1B,JUN,MGLL	227 (22)
erlotinib		chemical drug	Activated	2,391	bias	3.19E-06	CD14,CD40,CSF3,FAS,ICAM1,IL1B,NFKBIA,RELB,SERPINE1,SLC2A3	192 (17)
PRKCB		kinase	Activated	2,646	bias	3.27E-06	CD40,CD83,CD86,ICAM1,JUN,RELB,SERPINE1,SOD2,TCIRG1	139 (15)
SMAD7		transcription regulator		-1,932	bias	3.30E-06	BMP2,Cd2,CCNA2,CXCL12,FAS,HampHamp2,ICAM1,ID1,ID3,IL1B	178 (20)
FOSL1	1,319	transcription regulator		1,463		3.30E-06	Ccl2,Ccl8,CD44,CSF3,FOSL1,IL1B,JUN,RUNX2,SERPINE1,SERPINE2	185 (20)
bisindolylmaleimide I		chemical - kinase inhibitor	Inhibited	-3,420	bias	3.36E-06	APOA1,BCL2A1,BIRC3,CD44,GAP43,GDF15,ICAM1,ID3,CLK3,NFKBIA	171 (17)
lipid A		chemical toxicant	Activated	2,789	bias	3.52E-06	ACOD1,Ccl2,CD14,CD40,CD86,CSF3,IL1B,LYN	134 (18)
Irgm1		other	Inhibited	-2,781	bias	3.52E-06	BUB1,Ccl2,CCNA2,FAS,ID3,IFI16,NEK2,OASL	106 (7)
Y 27632		chemical drug		-1,601	bias	3.73E-06	BMP2,BMP4,Ccl2,CD44,CEBPA,ICAM1,PERP,SERPINE1,Tpm1,YAP1	148 (18)
miR-125b-5p (and other miRNAs w/seed CCCUGAG)		mature microRNA	Inhibited	-3,273	bias	3.95E-06	BMF,CCNA2,CD44,HK2,ID1,ID3,JUN,KRT19,PERP,SMO	160 (7)
thermozymocidin		chemical reagent		-1,195	bias	4.20E-06	APOA1,CD86,IL1B,MRC1,TNFAIP3	84 (5)
ALOX15		enzyme		1,141	bias	4.21E-06	Ccl2,FOSL1,ICAM1,ID3,IL1B,JUN,Muc1	184 (18)
CXCL12	1,946	cytokine	Activated	3,915	bias	4.33E-06	BMP2,BMP6,CD14,CD44,CD9,CXCL12,FAS,ICAM1,ID1,IFNGR2	147 (15)
SP600125		chemical - kinase inhibitor		-1,312	bias	4.40E-06	APOA1,APOBEC3B,CASP3,Ccl2,Cd24a,CD44,CD83,CD86,CLDN4,CXCL16	159 (16)
SIRT1		transcription regulator	Inhibited	-2,157	bias	4.41E-06	BIRC3,Ccl2,CD83,CLCA1,FAS,GBP6,GSTA3,HK2,HLA-A,ICAM1	200 (20)
RAS		group		0,000	bias	4.47E-06	B4GALT1,CEBPA,CLDN4,FOSL1,GSTP1,HMGA1,IFI47,IL1B,JUN,SERPINE1	212 (22)
ELAVL1		other	Activated	3,543	bias	4.92E-06	1810009J06Rik/Gm2663,9930111J21Rik1/Gm12185,Ccl8,CD83,CD86,GATA3,GBP6,Gbp8,HLA-A,HOMER3	
IRF3		transcription regulator	Activated	2,324	bias	4.92E-06	APOBEC3B,BIRC3,Ccl2,CD40,CD86,FAS,HampHamp2,IFI16,IL1B,IRF5	183 (19)
TNFAIP3	0,947	enzyme		-1,309	bias	4.96E-06	BIRC3,Ccl2,CSF1,FAS,ICAM1,IL1B,NFKBIA,TNFAIP3	148 (13)
C3AR1		G-protein coupled receptor		1,002	bias	4.96E-06	Ccl2,CD28,CD40,CD86,CSF3,IL1B,LTBP2,SERPINE1	160 (18)
TYROBP		transmembrane receptor	Activated	2,608	bias	5.00E-06	CCR7,CD40,CD83,CD86,ICAM1,IL1B,LHFPL2,NOD2,TCIRG1	162 (19)
bryostatins 1		chemical drug		1,892	bias	5.20E-06	BIRC3,CD40,CD44,CD86,ICAM1,IFNGR2,IL1B	153 (18)
5-azacytidine		chemical drug	Activated	3,657	bias	5.21E-06	BTG3,CAVIN1,CD44,CXCL12,FOSL1,GDF15,GSTP1,HK2,KLF4,KLF6	171 (11)
ESR2		ligand-dependent nuclear receptor		1,603		5.31E-06	A4GALT,ARID5B,BMP2,BMP4,CCNA2,CEBPD,CLDN4,CLIC5,CRIM1,CXCL12	227 (20)
PPP3CA		phosphatase				5.32E-06	B3GAT1,CD2,CD9,CSR1,FTL,GSTP1,KRT8,LITAF,RUNX2,SDC4	
DYSF		other				5.32E-06	Ccl8,CD68,CD83,CYBA,FTL,HLA-A,HSPB1,IFI16,MRC1,TMEM123	
MAP3K7		kinase		1,949	bias	5.32E-06	BIRC3,Ccl2,CCR7,CD14,IL1B,JUN,OASL,RNASEL,Saa3,SERPINE1	177 (16)
AGN194204		chemical drug	Activated	2,868	bias	5.37E-06	ADAM19,BCL2A1,CCNA2,Cd24a,CD6,CEBPA,CSR1,Fmnl1,FNBP1,GATA3	
BMP6	1,628	growth factor	Activated	2,245	bias	5.39E-06	BMP4,Cald1,CD44,FOSL1,HampHamp2,ID1,ID3,KLF4,SERPINE1,TNFRSF12A	199 (20)
bucladesine		chemical toxicant		1,104	bias	5.41E-06	AKR1B10,CD14,Cd24a,CD44,CD86,CD8A,DMD,ENPP1,FOSL1,GADD45B	231 (21)
ETV5		transcription regulator		0,053		5.96E-06	ALCAM,CAVIN1,CLDN4,CLIC5,CXCL12,ICAM1,KRT19,KRT23,SLC34A2,TINAGL1	
recombinant human endostatin		chemical drug		0,849	bias	6.07E-06	CASP3,FAS,JUN,CLK3	
murabutide		chemical reagent		1,000	bias	6.07E-06	CD40,CD83,CD86,MRC1	156 (15)
let-7		microRNA	Inhibited	-2,921	bias	6.33E-06	BCL11A,BUB1,CASP3,CCNA2,CCR7,CD44,CDCA7,CEBPD,DMD,FOSL1	118 (9)
Mek		group		0,899	bias	6.40E-06	BMF,Ccl2,CDCA7,FOSL1,GAP43,GDF15,HSPB1,ID1,IFI47,IL1B	229 (21)
epigallocatechin-gallate		chemical drug		-0,165	bias	6.40E-06	CASP3,CEBPA,CSF3,FAS,FOSL1,GADD45B,GJB2,ICAM1,IL1B,IL6ST	203 (22)

MVP		other				6,42E-06	CD83,CD86,ICAM1,IL1B,JUN	223 (20)
gamma-tocotrienol		chemical drug		0,251	bias	6,42E-06	CSF3,IL1B,JUN,NFKBIA,TNFAIP3	128 (13)
nitric oxide		chemical - endogenous mammalian		1,586	bias	6,49E-06	CD44,CXCL12,FAS,FTH1,GSTP1,HPGDS,IL1B,IL7R,JUN,NQO1	230 (23)
napabucasin		chemical drug	Inhibited	-3,000	bias	6,54E-06	ALCAM,CD44,ID1,JAG1,KLF4,NOTCH2,SMO,WWC1,YAP1	
Sn50 peptide		chemical toxicant	Inhibited	-2,942	bias	6,54E-06	BCL2A1,BIRC3,Ccl2,FAS,ICAM1,IFNGR2,IL1B,RACK1,SERPINE1	140 (14)
SOD1		enzyme		-1,982	bias	6,56E-06	BMP4,BUB1,CASP3,CD14,CP,FAS,FTH1,GSTP1,HSPB1,ICAM1	191 (17)
BMP2	3,424	growth factor	Activated	2,593	bias	6,74E-06	BMP2,BMP4,BTG3,Cald1,CAMK4,CSF1,CXCL12,GADD45B,Hamp/Hamp2,ID1	185 (19)
RARA		ligand-dependent nuclear receptor		0,258		6,76E-06	APOA1,CCNA2,CD14,CD44,CD9,CEBPA,CLMN,COBL,CP,CSF3	230 (22)
PRDM1		transcription regulator		-1,661		6,78E-06	BCL2A1,Ccl2,CCR7,CD44,CD86,CRISPLD2,CSF3,DUSP16,FOSL1,FTH1	232 (18)
cephaloridine		chemical drug	Activated	3,283	bias	7,26E-06	AKR1B10,ALAS1,CXCL14,Glycam1,GSTP1,LAMB3,MCM3,NQO1,PIR,RND1	
PP2/AG1879 tyrosine kinase inhibitor		chemical - kinase inhibitor	Inhibited	-2,983	bias	7,48E-06	BIRC3,CXCL16,ICAM1,ID1,IL1B,JUP,KLK3,LYN,SERPINE1,SOD2	221 (19)
MTPN		transcription regulator	Activated	3,130	bias	7,48E-06	BCL2A1,CASP3,Ccl2,CCNA2,CEBPA,CP,FAS,H6PD,JUN,SERPINE1	102 (10)
oxazolone		chemical reagent		1,289	bias	7,52E-06	Ccl2,Glycam1,ICAM1,IL1B,SDC1,SDC4	94 (7)
CD44	0,486	other	Activated	2,897	bias	7,62E-06	BIRC3,Ccl2,CCR7,CD44,CD8A,CXCR3,FAS,IL1B,IRAK3,JUN	171 (18)
BMP4	5,064	growth factor	Activated	2,817	bias	7,62E-06	BMP2,BMP4,Cald1,CCR7,CEBPA,CSF3,DEPP1,GATA3,Hamp/Hamp2,ID1	180 (18)
TFRC		transporter		-1,726	bias	8,35E-06	CASP3,CCNA2,FTH1,FTL,HK2,JUN,LY75,SLC11A2,STC2,TNFRSF12A	43 (3)
infliximab		biologic drug	Inhibited	-3,000	bias	8,48E-06	ADAM19,BATF,BMP2,Ccl2,IL1B,LAG3,MYO1B,NFKBIA,TGM3	124 (11)
Vegf		group	Activated	4,094	bias	8,51E-06	BCL2A1,BMP2,BUB1,CASP3,Ccl2,CD40,CD44,CXCL12,FAS,FOSL1	160 (17)
SP2509		chemical reagent		-0,447	bias	8,74E-06	BCL11A,CCNA2,CDCA7,DHRS3,DOCK1,GAP43,GDPD5,ID1,KLF4,MICALL2	
MIR17HG		other	Inhibited	-2,887	bias	9,01E-06	BMP4,HEG1,IL6ST,IL7R,JAG1,LRP1,NOTCH2,PTK7,PTPRK,SEMA3E	
PRKCA		kinase		0,595	bias	9,01E-06	BCL11A,CSF3,GDF15,ICAM1,ID1,ID3,JUN,NFKBIA,NQO1,OASL	203 (23)
celecoxib		chemical drug		0,708	bias	9,01E-06	BCL2A1,CASP3,CD68,CLDN4,FAS,GDF15,ICAM1,ID1,IL1B,RIPK2	197 (20)
valproic acid		chemical drug		0,347		9,29E-06	AMPD3,ANTXR2,APOA1,B4GALT1,CASP3,CD40,CD44,CD83,CDCA7,CEBPA	207 (20)
ITK		kinase		0,708	bias	9,31E-06	CD44,CRIM1,FAS,GATA3,HLA-A,LYN,PREX1,Serpina3g (includes others),SRGAP3,ZBTB16	138 (8)
PTGS2		enzyme	Activated	3,642	bias	9,43E-06	ANG,BIRC3,Ccl2,CCR7,CD44,CD68,CSF3,CXCL12,CXCL14,ICAM1	175 (19)
IKZF2		transcription regulator	Inhibited	-2,646	bias	9,43E-06	BATF,CD2,CD28,GATA3,GZMA,ICAM1,LAG3	
ATP-gamma-S		chemical reagent				9,62E-06	CCR7,CD40,CD83,CD86,CD8A,CSF1,GAP43,IL7R,SOD2	165 (17)
Nfat (family)		group	Activated	3,000	bias	9,67E-06	B4GALT1,CD40,DOCK10,FAS,ICAM1,KLF6,LAG3,RELB,SDC4,SERPINE1	178 (21)
XIAP		enzyme		-0,156	bias	9,72E-06	ACOD1,CASP3,CSF1,CSF3,SERPINE1,SOD2	161 (16)
sirolimus		chemical drug	Inhibited	-2,124	bias	9,84E-06	BCL2A1,BMP2,CASP3,CCNA2,CCR7,CD40,CD68,CD86,CEBPA,CSF1	164 (18)
nitrofurantoin		chemical drug		1,437		9,92E-06	CASP3,CFI,CP,FAS,GSTP1,HMGCS2,ID1,IL1B,KRT19,NFKBIA	
IgG		complex		-0,822	bias	1,03E-05	Ccl2,CD40,CD86,CD9,CEBPD,CLDN4,CSF1,FABP5,HSPB1,IL1B	139 (18)
histamine		chemical - endogenous mammalian	Activated	2,283	bias	1,04E-05	BMP2,Ccl2,CD40,CD86,CLCA1,CLDN4,GDF15,ICAM1,IL1B,JUN	219 (21)
CAV1		transmembrane receptor	Activated	2,621	bias	1,06E-05	CAV2,CAVIN1,CD14,FAS,HK2,ICAM1,ID1,KRT19,KRT8,NQO1	199 (22)
VDR		transcription regulator		1,291		1,06E-05	ARHGEF3,Ccl2,CD14,CD44,Clec2d (includes others),CSF1,GATA3,HK2,ICAM1,ID1	188 (20)
BCL3		transcription regulator		0,105		1,08E-05	CD40,CD86,GATA3,ICAM1,ID1,IL1B,IL36G,JUN	152 (14)
IRF6		transcription regulator		0,114	bias	1,08E-05	APOBEC3B,CD14,CD86,CD9,IL1B,KLF4,MRC1,SOD2	141 (16)

trovafloxacin		chemical drug	Activated	2.333	bias	1,09E-05	BIRC3,CEBPA,HLA-A,ICAM1,NFKBIA,SERPINE1,SLC11A2,SOD2,TNFAIP3	187 (11)
CYLD		transcription regulator		1,031		1,14E-05	CD40,CD86,IL1B,IL7R,JUN,RELB,SERPINE1	119 (14)
ADORA2B		G-protein coupled receptor		-0,114	bias	1,14E-05	Ccl2,CD86,IL1B,KLF4,MRC1,RUNX2,SERPINE1	151 (19)
FGF1		growth factor		-0,996		1,16E-05	AKR1B10,Ccl2,CD68,GSTP1,ICAM1,IL1B,JUN,NQO1,RHO,SERPINB1	167 (17)
arachidonic acid		chemical - endogenous mammalian		0,092		1,16E-05	BCL2A1,CD40,CD83,CD86,FAS,FOSL1,IL1B,JUN,KLF6,MRC1	175 (18)
HDAC1		transcription regulator		-1,141		1,17E-05	AMPD3,APOA1,BMF,CCNA2,CD44,CEBPA,FAS,GSTP1,ID1,KLK3	215 (21)
androgen		chemical drug		-1,671		1,22E-05	BMP4,BMP6,CD44,CTS2,FOSL1,JUN,KLK3,NFKBIA,PTP4A2,PTPRK	190 (20)
SP3		transcription regulator	Activated	2,195	bias	1,23E-05	BMF,Ccl2,CD40,CEBPA,DMD,FAS,FOSL1,GDF15,JUN,KLF4	216 (20)
JAK1		kinase	Activated	2,937	bias	1,23E-05	BMF,CD14,CD40,CSF3,HLA-A,ICAM1,ID1,IL1B,IL6ST	179 (18)
IRAK3	0,720	kinase	Activated	2,429		1,24E-05	BCL2A1,Ccl2,IRF5,NFKBIA,SOD2,TNFAIP3	165 (15)
bromodeoxyuridine		chemical drug	Activated	2,813	bias	1,25E-05	CSF1,GSTP1,IFI16,IL1B,IL36G,IL7R,SERPINE1,SP110	173 (11)
thapsigargin		chemical toxicant	Activated	2,340	bias	1,29E-05	BIRC3,Ccl2,CD83,CD86,CLDN4,CP,GADD45B,HMGC52,ICAM1,IL1B	171 (19)
LDLR		transporter	Inhibited	-2,078	bias	1,30E-05	ALCAM,BMP2,Ccl2,Ccl8,CCNA2,CD40,CD68,CEBPA,FABP5,H6PD	172 (16)
LIF		cytokine	Activated	2,341	bias	1,30E-05	BATF,BMP2,Ccl2,CCNA2,CD9,CEBPD,FBP1,HK2,IFI16,IL1B	217 (22)
PPARA		ligand-dependent nuclear receptor		0,230	bias	1,30E-05	ALDH2,APOA1,C1R,Ccl2,CCNA2,CEBPA,CEBPD,CFI,CXCL12,CYBA	192 (17)
lenalidomide		chemical drug	Activated	3,183		1,32E-05	ANTXR1,BLNK,CAV2,CD68,CEBPA,DEPP1,DOCK4,DTNA,GPR68,KLF4	35 (3)
Histone H3		group				1,35E-05	BMP4,BTG3,Ccl2,CCNA2,CD40,CD9,CEBPA,DUSP16,GATA3,GCNT4	210 (19)
S1PR3		G-protein coupled receptor		0,372	bias	1,35E-05	Ccl2,CD44,ICAM1,IL1B,JUN	192 (19)
WNT5A		cytokine		1,303		1,36E-05	BMP6,CAMK4,CD14,CD40,CSF3,CXCL12,ID3,IL1B,ITGB7,LAMB3	226 (21)
CSF1	0,920	cytokine	Activated	3,518	bias	1,38E-05	Ccl2,CD68,CEBPA,CSF1,FAS,GDF15,GPR68,HK2,IL1B,IL1RL1	209 (21)
pioglitazone		chemical drug		-0,292		1,39E-05	APOA1,CASP3,Ccl2,CD86,CEBPD,FBP1,FOSL1,ICAM1,IL1B,KLF4	160 (18)
GLI2		transcription regulator	Activated	2,000	bias	1,39E-05	BMP4,CSF3,CXCR3,GATA3,HK2,IL1B,IL1RL1,JAG1,KLK3,RUNX2	164 (10)
MYOC		other				1,41E-05	CD44,JDP2,LAMA2,PXDN,RAB27B,RHBDF1,RUNX2,SLC2A3,STC2,UPP1	
TGFBR1		kinase		1,541	bias	1,41E-05	BMP4,CCR7,CD40,CD86,DOCK4,Hamp/Hamp2,JAG1,KLF4,PTPRK,SERPINE1	219 (21)
MTOR		kinase		1,389	bias	1,57E-05	CASP3,CCR7,CD40,CD86,CEBPA,CEBPD,DMD,FABP5,GAP43,GATA3	242 (21)
MAP3K8		kinase		1,101		1,65E-05	Ccl7e (includes others),BIRC3,C130026121Rik (includes others),C6orf222,Ccl2,CEBPD,CLIC5,CSF3,GAB1,IL	187 (18)
KDM1A		enzyme		-0,285		1,69E-05	BMP2,CCNA2,IRAK3,KLK3,KRT8,LATS2,LCK,MCM3,MYO1B,POLE4	120 (7)
sulfafan		chemical drug		1,234		1,72E-05	AKR1B10,CASP3,CD44,FAS,FTL,GATA3,GSTA3,GSTP1,ICAM1,IL1B	185 (14)
benzo(a)pyrene		chemical toxicant		0,578	bias	1,72E-05	APOA1,BTG3,CASP3,ESD,GSTP1,HK2,Hspa1b,HSPB1,IL1B,JUN	225 (22)
tazemetostat		chemical drug		-0,229	bias	1,73E-05	BCL11A,CDCA7,DHRS3,DOCK1,GAP43,GDPD5,ID1,KLF4,MICALL2,MYO1B	
ZFPM1		transcription regulator				1,75E-05	BLNK,CEBPA,ENPP1,GATA3,IRAK3,KLF6,PLA2G16,SCIN,SH2D4A	21 (2)
GnRH-A		chemical reagent	Activated	2,971		1,75E-05	AKR1B10,CD68,FOSL1,GADD45B,JUN,KLF4,KLF6,NFKBIZ,SERPINE1	212 (18)
TREM1		transmembrane receptor	Activated	2,438	bias	1,75E-05	Ccl2,CCR7,CD14,CD83,CD86,CSF1,FOSL1,GADD45B,IL1B,IL1RL1	186 (15)
deferoxamine		chemical drug	Activated	3,539	bias	1,75E-05	CCR7,CD14,CP,DUSP16,GADD45B,GDF15,HK2,ICAM1,IFI16,ITGB7	204 (21)
CHD1		enzyme	Activated	2,236	bias	1,88E-05	BCL2A1,BMP2,ICAM1,IL1B,SOD2	
cytokine		group	Activated	3,028	bias	1,89E-05	ANG,BMF,CCR7,CD40,CD86,CSF1,FAS,ICAM1,JUN,RIPK2	148 (17)
GDF2		growth factor	Activated	3,055	bias	1,90E-05	ANXA3,CXCL12,GADD45B,Hamp/Hamp2,ICAM1,ID1,ID3,NFKBIA,SEMA3B,SERPINE2	142 (11)

AGTR1		G-protein coupled receptor		0.816	bias	1.92E-05	CASP3,CP,CYBA,GSTP1,JUN,SERPINE1,XDH	197 (20)
gefitinib		chemical drug		0.776	bias	1.93E-05	BDH2,BMF,BUB1,Ccl2,CEBPD,FOSL1,GADD45B,HSPB1,ID1,KRT19	179 (16)
E. coli lipopolysaccharide		chemical - endogenous non-mammalian	Activated	2.414	bias	1.96E-05	Ccl2,CCR7,CD40,CD83,CD86,CEBPA,CEBPD,ICAM1,IL1B	150 (17)
PAX7		transcription regulator	Activated	2.759	bias	1.96E-05	CAMK1D,Cd24a,Id3,Marcks,MEST,MYO1D,NQO1,RASA3,SEMA3E	
peptidoglycan		chemical - endogenous non-mammalian	Activated	3.246	bias	1.98E-05	BCL2A1,CASP3,Ccl2,CD40,CD86,CSF3,CXCL16,FAS,ICAM1,IL1B	140 (16)
ciprofloxacin		chemical drug		1.571		1.98E-05	ALDH2,ALDH3B1,B4GALNT1,BMP4,CD40,CD68,CD86,CSF2R8,HLA-A,ICAM1	162 (13)
PTEN		phosphatase		0.065		1.99E-05	Ccl2,Ccl8,CCR7,CD40,CD44,CD86,CEBPA,CSR1,CTSZ,FAS	140 (16)
NFAT5		transcription regulator	Activated	2.355	bias	2.10E-05	B3GAT1,BCL2A1,Ccl2,CSF3,CXCL16,Hspa1b,IL1B,NFKBIA,PTGFRN,TNFAIP3	113 (9)
carbonyl iron		chemical reagent		1.960	bias	2.11E-05	Ccl2,CEBPA,Hamp/Hamp2,IL1B	
Ferritin		complex				2.11E-05	BMP6,ICAM1,IL1B,NFKBIA	87 (7)
PSMB9		peptidase		1.067	bias	2.11E-05	HLA-A,NFKBIA,RELB,TNFAIP3	97 (10)
S-nitrosoglutathione		chemical toxicant		-0.873		2.26E-05	BIRC3,CD86,CD8A,ICAM1,NFKBIA,NQO1,PRKG1	190 (19)
AHR		ligand-dependent nuclear receptor		0.638		2.28E-05	ADAM19,ALDH2,ATOH8,CCNA2,CD14,CEBPA,FAS,FOSL1,HK2,IL1B	226 (21)
Hbb-b1		transporter		1.408	bias	2.31E-05	Ccl2,CD44,CEBPA,CXCR3,CYBA,FTH1,FTL,Hamp/Hamp2,ICAM1,IL1B	174 (13)
PGR		ligand-dependent nuclear receptor		1.985	bias	2.34E-05	ACOD1,BIRC3,BUB1,CD44,CEBPA,CEBPD,CSR1,GATA3,ICAM1,ID1	235 (21)
FGF2		growth factor	Activated	3.465	bias	2.38E-05	AKR1B10,ANG,BMP4,Ccl2,CSF1,CSF3,CXCL12,ENPP1,FAS,FOSL1	206 (25)
butyric acid		chemical - endogenous mammalian		0.316		2.53E-05	BCL2A1,CASP3,CCNA2,CD44,CD81,CD83,CD86,CSF1,FTH1,GATA3	245 (21)
Ifnar		group	Activated	3.040	bias	2.53E-05	APOBEC3B,Ccl2,CD40,CD86,CD8A,HLA-A,IFI16,IL1B,OASL,UNC93B1	142 (18)
GPD1		enzyme				2.53E-05	CLCA1,CPNE8,FADS3,Gbp8,Hamp/Hamp2,KRT23,NQO1,PTK2B,SERPIN1,SERPINE2	
PAEP		other		-0.277	bias	2.57E-05	CD83,CXCL16,CXCR3,GATA3,IL1RL1	128 (12)
superoxide		chemical - endogenous mammalian		0.849	bias	2.57E-05	CYBA,ICAM1,ID3,IL1B,SOD2	194 (17)
S100A8		other		0.737	bias	2.64E-05	BMF,Ccl2,CP,CSF2R8,CXCL14,FAS,FOSL1,GJB2,ICAM1,IL1B	145 (14)
trans-hydroxytamoxifen		chemical drug		-1.994		2.64E-05	ANXA3,BLNK,BMP4,CCNA2,CXCL12,CYBA,GSTP1,KLF6,LHFPL2,LITAF	125 (7)
ARNT2		transcription regulator	Activated	3.860	bias	2.79E-05	ANG,BST1,CD86,CYBA,FNBP1,GALNT4,GRM8,GSTA3,HLA-A,ICAM1	
emodin		chemical drug		-1.732	bias	2.81E-05	Ccl2,CD86,CLDN4,ICAM1,IL1B,IRF5,MRC1,SOD2	136 (18)
BTK		kinase		1.486		2.99E-05	BCL2A1,CCR7,CD2,CD40,CD86,CEBPA,FABP5,IL1B,JUN,RELB	159 (18)
dinoprost		chemical - endogenous mammalian		0.213	bias	3.02E-05	GSTP1,HMGCS2,ID1,ID3,IL1B,JUN,MAPK6,PTK2B,RUNX2	209 (23)
PLG		peptidase	Activated	2.883	bias	3.02E-05	CD40,CSF1,DOCK1,IL1B,IL1RL1,IQSEC1,MRC1,RALA,SERPINE1	158 (17)
SOX11		transcription regulator		1.320	bias	3.05E-05	BMP2,BMP4,CD86,CD9,FAS,IL6ST,LCK,MYO1B,RUNX2,TIAM1	131 (7)
SLC25A13		transporter				3.05E-05	CLCA1,CPNE8,FADS3,Gbp8,Hamp/Hamp2,KRT23,NQO1,PTK2B,SERPIN1,SERPINE2	
TXN		enzyme		0.132		3.10E-05	APOA1,CD40,CD86,ICAM1,IL1B,NFKBIA,SOD2	127 (16)
isobutylmethylxanthine		chemical toxicant	Activated	2.774	bias	3.12E-05	ALDH3B1,Ccl2,CD14,CD44,CEBPA,CEBPD,DHRS3,IL1B,JUN,KLF4	222 (21)
Ap1		complex		1.673	bias	3.25E-05	BCL2A1,CCNA2,CD40,CD44,CXCL12,FOSL1,GSTP1,IL1B,JUN,KLK3	189 (21)
diethylmaleate		chemical toxicant		-0.600		3.42E-05	GSTP1,IL1B,NFKBIA,NQO1,TNFAIP3	182 (16)
GNPAT		enzyme				3.48E-05	Ccl2,IL1B,UGT8	
CBX5		transcription regulator	Inhibited	-3.317	bias	3.51E-05	BCL11A,CD68,KLK3,KRT20,LAMB3,PROM2,RUNX2,SLC2A3,SYTL2,TM4SF1	
cholecalciferol		chemical - endogenous mammalian		1.548	bias	3.51E-05	CD14,CD40,CD83,CD86,CEBPA,CEBPD,CSF1,JUN,LY75,RUNX2	198 (23)

IL5		cytokine	Activated	4,130	bias	3.56E-05	ANXA6,CCR7,CD40,CD9,CSF2RB,CXCR3,FAS,HIGD1A,ICAM1,IL1RL1	198 (18)
tamoxifen		chemical drug		1,264		3.56E-05	ANG,BMP2,BMP4,CAV2,CCNA2,CXCL12,DEPP1,GAP43,GDF15,GJB2	228 (24)
C5AR1		G-protein coupled receptor	Activated	2,778	bias	3.60E-05	Ccl2,CD28,CD40,CD86,CSF3,IL1B,LTBP2,SERPINE1	138 (15)
TNFSF14		cytokine	Activated	2,180	bias	3.64E-05	BIRC3,Ccl2,CD40,CD86,CXCL12,ICAM1	151 (18)
clodronic acid		chemical drug		0,721	bias	3.64E-05	Ccl2,CD40,CD86,ICAM1,IL1B,MRC1	204 (16)
TBK1		kinase		-0,149	bias	3.65E-05	ACOD1,APOBEC3B,CD40,CD86,ICAM1,IL1B,NFKBIZ,OASL,Vmn3,ZC3H12A	181 (19)
enterotoxin B		biologic drug	Activated	2,759	bias	3.72E-05	Ccl2,CD40,CSF2RB,CSF3,CXCL12,Hspa1b,ICAM1,IL1B,LY75	188 (10)
TEAD4		transcription regulator	Activated	2,000	bias	3.72E-05	ARID5B,BMP4,FJX1,GATA3,JUN,NFKBIZ,NOTCH2,SLC2A3,TRNP1	
MMP9		peptidase		1,682	bias	3.72E-05	Ccl2,CD44,CD68,CXCL12,GAP43,ICAM1,JAG1,SDC4,SERPINE2	215 (20)
NFKB2		transcription regulator		1,706	bias	3.72E-05	BIRC3,BMP2,CCR7,CD83,CD86,CXCL12,Glycam1,KLK3,SOD2	151 (16)
carbon monoxide		chemical - endogenous mammalian		-0,980	bias	4.06E-05	CASP3,CD14,CXCL12,Hamp/Hamp2,ICAM1,IL1B,NQO1,SERPINE1	186 (20)
fingolimod		chemical drug	Inhibited	-2,876	bias	4.11E-05	Ccl2,CCR7,CD40,CD86,FOSL1,ICAM1,IL1B,RUNX2,SERPINE1	149 (16)
MRTFB		transcription regulator		1,667	bias	4.16E-05	ARID5B,CYBA,F11R,FJX1,HLA-A,IDI1,NFKBIZ,RAB27B,Saa3,TRNP1	
Pam3-Cys		chemical toxicant	Activated	2,493	bias	4.18E-05	CD14,CD83,CD86,IL1B,IL1RL1,SERPINE1,SOD2	155 (17)
U0126		chemical - kinase inhibitor	Inhibited	-4,053	bias	4.30E-05	BIRC3,BMP6,Ccl2,CD44,CEBPA,CEBPD,CLDN4,CSF3,CXCL12,FOSL1	222 (20)
TNFSF10		cytokine	Activated	2,397		4.35E-05	BIRC3,CASP3,CD14,FTH1,HLA-A,IFI16,IL1B,JUN,NFKBIA,TNFAIP3	142 (15)
PPARGC1A		transcription regulator		-1,278		4.39E-05	ALAS1,ANG,BMP4,CD40,CD68,CDC42EP1,CEBPD,CXCL14,GDF15,HK2	209 (19)
UXT		transcription regulator		-0,865	bias	4.40E-05	B4GALT1,BUB1,CCNA2,KLK3,NFKBIA,TNFAIP3	137 (7)
actinomycin D		biologic drug		-0,173	bias	4.46E-05	APOA1,BCL2A1,BIRC3,CASP3,CD28,FAS,FTH1,GSTP1,HK1,IL7R	229 (19)
W7		chemical reagent		-1,387	bias	4.49E-05	BIRC3,CD14,CD83,CD86,KLK3	81 (7)
zymosan A		chemical - endogenous non-mammalian	Activated	2,236	bias	4.49E-05	Ccl2,CD40,CD86,FAS,IL1B	133 (15)
MAPK14		kinase	Activated	2,652	bias	4.51E-05	BMP2,Ccl2,CCNA2,CCR7,CD40,CD83,CD86,CEBPD,FAS,ICAM1	146 (17)
IFN alpha/beta		group		1,778	bias	4.54E-05	CCR7,CD40,CD83,CD86,CXCL14,CXCL16,HLA-A,IFI16,MRC1	184 (17)
CpG ODN 1826		chemical reagent	Activated	2,906	bias	4.54E-05	Apol7e (includes others),CCR7,CD14,CD40,CD83,CD86,CYBA,IL1B,PARP14	148 (21)
TP73		transcription regulator		1,612	bias	4.64E-05	ADAM19,C1R,CASP3,Ccl2,CCNA2,CD83,CLDN10,CLMN,DHRS3,FAS	202 (22)
AR		ligand-dependent nuclear receptor	Activated	2,243	bias	4.68E-05	B4GALNT1,BASP1,BMF,BMP4,BUB1,CAV2,CCNA2,CXCL12,FABP5,GDF15	218 (23)
LTBR		transmembrane receptor	Activated	2,000	bias	4.82E-05	BST1,Ccl2,CD86,CXCL12,Glycam1,ICAM1,NFKBIA	88 (10)
KLF4	0,988	transcription regulator		0,998	bias	4.86E-05	ACOD1,ALCAM,CASP3,CD14,CD44,CEBPA,GJB2,HSPB1,IDI3,KLF4	204 (18)
mir-8		microRNA	Inhibited	-2,578	bias	5.11E-05	BMP2,BST1,DDIT4L,FTH1,IL1B,KLF4,KRT19,LRP1,PERP,PTPN13	
PDCD1		phosphatase		-1,066	bias	5.13E-05	BATF,CCNA2,CD40,CD86,FAS,GZMA,PADI2,PRKD3	151 (15)
TNFSF13B		cytokine		1,954	bias	5.13E-05	BCL2A1,CCR7,CD40,CD83,CD86,ICAM1,JUN,RELB	128 (13)
HLX		transcription regulator		-0,663	bias	5.28E-05	BMP2,Cd24a,CD44,GDF15,ICAM1,JUN	
MMP14		peptidase		-0,616		5.28E-05	CSF3,GAP43,JAG1,LRP1,Saa3,SDC1	32 (3)
GJA1		transporter		-0,883		5.28E-05	BMP2,BMP4,CD40,GJB2,ICAM1,IL1B	159 (19)
epilrenone		chemical drug	Inhibited	-2,418	bias	5.28E-05	Ccl2,CD68,CYBA,ICAM1,IL1B,SERPINE1	134 (10)
NRG1		growth factor		1,341	bias	5.33E-05	BDH2,CASP3,CAVIN1,CDC42EP1,CRIM1,CXCR3,FABP5,HK2,HMGA1,IDI1	197 (18)
EPHB1		kinase		1,982	bias	5.36E-05	Ccl2,IL6ST,JUN,SERPINE1	194 (19)

tyrphostin AG 1296		chemical - kinase inhibitor		-1.980	bias	5,36E-05	Ccl2,CD14,ICAM1,JUN	187 (17)
EGFR		kinase		1,885	bias	5,37E-05	ACOT7,CASP3,CCNA2,CXCL12,CXCL14,FOSL1,HK2,HMGA1,HSPB1,ICAM1	228 (22)
methotrexate		chemical drug		-0,377		5,44E-05	C1R,CASP3,CD28,CFI,CSF1,CXCL12,FAS,GAP43,GZMA,HMGCS2	188 (22)
ITGB2		transmembrane receptor		0,000		5,54E-05	BCL2A1,Ccl2,CD86,CSF3,GADD45B,GATA3,RUNX2	154 (17)
C5		cytokine	Activated	3,200	bias	5,56E-05	Ccl2,CD86,CSF1,CSF3,GDF15,ICAM1,IFNGR2,IL1B,NFKBIA,SERPINE1	147 (15)
gentamicin		chemical drug	Activated	2,080		5,71E-05	ALCAM,BTG3,Ccl2,CD9,DMD,GDF15,GJB2,HSPB1,ICAM1,IL1B	162 (14)
tributyrin		chemical drug	Activated	2,157	bias	5,75E-05	BCL2A1,BIRC3,CASP3,CD3,IL1B,SLC30A1,SOD2,TNFAIP3	
CpG ODN 2395		chemical reagent	Activated	2,236	bias	5,79E-05	Ccl2,CD14,CD40,CD86,IL1B	141 (15)
CYP2J2		enzyme		-0,785		5,79E-05	Ccl2,CD44,ICAM1,IL1B,NFKBIA	127 (17)
fulvestrant		chemical drug		-0,233		5,84E-05	APOA1,BMP2,BMP4,CAV2,Ccl2,CCNA2,CSF1,CXCL12,GJB2,GSTP1	210 (20)
raloxifene		chemical drug		0,033		6,08E-05	ANXA3,BLNK,BMP2,BMP4,CSF1,CXCL12,JUN,KLF6,LITAF,MYO1B	221 (22)
PPARδ		ligand-dependent nuclear receptor		0,022	bias	6,26E-05	ALDH2,APOA1,Ccl2,CD68,FBP1,HMGCS2,ICAM1,IL1B,LPIN2,RASGRP1	197 (18)
NOX4		enzyme	Activated	2,425	bias	6,31E-05	BMF,Ccl2,CD44,ICAM1,Saa3,SERPINE1	183 (18)
PAF1		other	Activated	2,646	bias	6,35E-05	BIRC3,KLF4,NFKBIZ,OASL,SDC4,SERPINE1,SOD2	
MAPK7		kinase	Activated	2,580	bias	6,35E-05	BCL2A1,ID1,IL1B,JUN,KLF4,NQO1,STEAP4	212 (23)
Map3k7		kinase		1,616	bias	6,42E-05	BMP4,CASP3,Ccl2,IL1B,JUN,NFKBIZ,NOD2,Vnn3	181 (17)
SMARCB1		transcription regulator		1,933	bias	6,46E-05	CCNA2,CD44,CSF1,CYP3A7,DOCK4,F11R,FAS,FBP1,GJB2,IFI16	193 (11)
mycophenolic acid		chemical drug	Activated	2,121	bias	6,67E-05	BIRC3,ID3,IL1B,KRT19,RUNX2,SERPINE1,SLC30A1,SOD2,TNFAIP3	142 (14)
docosahexaenoic acid		chemical drug		-0,367	bias	6,85E-05	BCL2A1,Ccl2,CD40,CD44,CD83,CD86,CSF1,FAS,IL1B,MRC1	143 (15)
IRF2		transcription regulator	Activated	2,277	bias	6,91E-05	ANG,CD14,HK2,ID1,IFI47,IL1B,IL6ST,KLF4,MAPK6,PSMB10	156 (18)
Gcg		other		0,707	bias	7,16E-05	ANG,ARX,FABP5,FBP1,Hamp/Hamp2,OAT,RNASE4,SDC1	
TCF7L2		transcription regulator	Activated	2,299	bias	7,17E-05	BMP4,CSR1,CYP3A7,DOCK10,FBP1,FTH1,GAB1,HMGCS2,ID1,ID3	138 (7)
NR1H3		ligand-dependent nuclear receptor		-1,309		7,29E-05	APOA1,Ccl2,Ccl8,CCNA2,CCR7,CD40,CSF3,CXCL16,FBP1,GSTP1	193 (15)
LYN	0,712	kinase		1,177	bias	7,31E-05	BCL2A1,Ccl2,CCNA2,CD40,CD86,CSF1,IL1B,NFKBIA,NFKBIZ	178 (15)
L-buthionine (SR)-sulfoximine		chemical drug		0,000	bias	7,36E-05	CASP3,NFKBIA,NQO1,SERPINE1,TNFAIP3	165 (11)
lactacystin		chemical - protease inhibitor		0,320	bias	7,45E-05	Ccl2,CD9,FAS,FBP1,FOSL1,FTL,GATA3,GSTP1,HLA-A,HSPB1	188 (20)
KRIT1		other		0,000	bias	7,90E-05	BMP2,JUN,KLF4,SOD2	
PIK3CA		kinase		1,941		7,97E-05	ALCAM,Ccl2,CD14,Cd24a,CD44,CEBPD,JAG1,SERPINE1	211 (23)
PLAU		peptidase		0,186	bias	7,97E-05	ANG,Ccl2,GDF15,ICAM1,IL1B,RELB,SERPINE1,SERPINE1	232 (24)
CCL2		cytokine		1,401	bias	8,01E-05	Ccl2,CD40,CD86,CEBPA,CEBPD,ICAM1,IL1B,SERPINE1,ZC3H12A	159 (17)
FADD		other		0,333	bias	8,01E-05	BIRC3,Ccl2,FAS,GADD45B,ICAM1,IRF5,JUN,KLF6,TNFAIP3	146 (18)
BRD2		kinase				8,26E-05	CBLC,Ccl2,IL1B,IL7R,LY9,NQO1,PRKD3	
SREBF1		transcription regulator	Activated	2,466	bias	8,34E-05	CAMK1D,CD14,CEBPA,CEBPD,CFI,CSR1,DEPP1,FABP5,FAS,HK2	186 (20)
TMPRSS6		peptidase				8,58E-05	BMP6,Hamp/Hamp2,ID1	
Wfdc17		other				8,58E-05	Ccl2,IL1B,MRC1	
IKBKE		kinase		0,594	bias	8,76E-05	ACOD1,BIRC3,Ccl2,CSF3,CXCL12,HLA-A,IFI16,NFKBIA,SLC2A3	175 (15)
RARG		ligand-dependent nuclear receptor		1,230		8,76E-05	APOA1,BMP2,DHRS3,GAP43,JUN,KLF4,KLK3,KRT20,ZNF703	160 (10)



FASLG		cytokine		0.692		8,82E-05	CASP3,CD44,FAS,FTH1,IL1B,RUNX2	187 (18)
PF4		cytokine	Activated	2,401	bias	8,82E-05	CD83,CD86,ICAM1,IL1B,KLF4,LY75	137 (18)
NGF		growth factor	Activated	2,488	bias	8,90E-05	AKR1B10,CCR7,CD40,CD83,CD86,FAS,FOSL1,GAP43,ID1,JUN	149 (18)
inosine		chemical - endogenous mammalian	Activated	2,646	bias	9,38E-05	ALCAM,ANTXR2,CD68,FTL,GAP43,SERPINB1,SERPING1	
carrageenan		chemical drug	Activated	2,592	bias	9,38E-05	Ccl2,FOSL1,GRM8,ICAM1,IL1B,JUN,NFKBIA	205 (18)
ZFP36		transcription regulator	Inhibited	-2,415	bias	9,57E-05	BIRC3,FOSL1,ICAM1,IL1B,JUN,LATS2,NEK2,NFKBIA,PNRC1	181 (17)
tert-butyl-hydroquinone		chemical reagent	Activated	2,740	bias	9,57E-05	FOSL1,FTH1,FTL,GSTA3,GSTP1,JUN,NQO1,SERPINE1,UGT1A7 (includes others)	186 (19)
17-alpha-ethinyloestradiol		chemical drug		1,863	bias	9,75E-05	Ccl2,CCR7,CD68,CXCR3,GDF15,IFI16,JUN,KRT19,MRC1,PERP	247 (20)
SYK		kinase		-0,256		9,80E-05	BIRC3,CCR7,CD44,DOCK10,FOSL1,GATA3,ICAM1,IL1B,LY9,RASSF4	192 (22)
wortmannin		chemical - kinase inhibitor	Inhibited	-2,689	bias	1,02E-04	CASP3,Ccl2,CD14,CD44,CEBPD,CSF1,CXCL16,GAP43,GSTP1,ICAM1	206 (20)
SAA		group	Activated	2,403	bias	1,03E-04	Ccl2,CSF1,CSF3,ICAM1,IL1B,MRC1	158 (18)
NORAD		other	Activated	2,449	bias	1,03E-04	BASP1,GADD45B,ID3,JUN,SDC1,TFNRSF12A	93 (7)
Ins1		other		1,372	bias	1,04E-04	ALAS1,APOA1,CEBPA,CEBPD,GATA3,GSTP1,HK2,IL1B,IL6ST,JUN	233 (23)
hemin		chemical - endogenous mammalian		0,838		1,04E-04	Ccl2,CD68,FTH1,FTL,GSTP1,IL1B,JUN,MRC1,NQO1	220 (19)
KITLG		growth factor		1,344	bias	1,08E-04	CASP3,Ccl2,CCNA2,CD14,Cd24a,CD68,CEBPA,CSF1,CXCL12,FABP5	142 (16)
lysophosphatidylcholine		chemical - other		1,692	bias	1,09E-04	Ccl2,FABP5,ICAM1,IL1B,JUN,LRP1,NOD2,SERPINE1	202 (20)
Bay 11-7082		chemical - kinase inhibitor	Inhibited	-2,789	bias	1,09E-04	BCL2A1,BMP2,Ccl2,CD44,CD83,ICAM1,IL1B,SOD2	141 (15)
PLA2G2D		enzyme		-1,000	bias	1,12E-04	Ccl2,CD68,IL1B,MRC1	190 (12)
BCR (complex)		complex		1,354	bias	1,12E-04	B4GALT1,BCL2A1,CASP3,CCNA2,CCR7,CD44,CD86,FAS,KLF4,LCK	140 (16)
JUNB		transcription regulator		1,109	bias	1,12E-04	Ccl8,CD68,CXCL16,FOSL1,FTH1,IL1RL1,Raet1d/Raet1e,REL8,RUNX2,SERPINE1	133 (13)
APC		enzyme	Inhibited	-2,121	bias	1,12E-04	CD44,CXCL12,HK2,ID1,ID3,JAG1,KLF4,LCK,TIAM1,TFNRSF12A	130 (7)
TCF		group				1,14E-04	BMP4,CD44,ID3,KLK3,PLS3,RCN1,SERPINE1,SFN,TSPAN8	134 (7)
IL36B		cytokine				1,15E-04	CD40,CD83,CD86,IL1B,NFKBIZ	130 (13)
BMPER		other		-1,432	bias	1,15E-04	BMP4,Hamp/Hamp2,ICAM1,ID1,RUNX2	15 (4)
ANGPT2		growth factor	Activated	3,384	bias	1,19E-04	C1R,CASP3,Ccl2,CD68,CD86,CYBA,FAS,ICAM1,IL1B,LYN	160 (19)
NKX3-1		transcription regulator				1,20E-04	CTS2,KLK3,PTP4A2,PTPRK,SDC1,SDC4,Vnn3	
NFKBIB		transcription regulator		-0,391	bias	1,20E-04	BCL2A1,CD40,CD86,ICAM1,IL1B,NFKBIA,Saa3	117 (12)
IL4R		transmembrane receptor		0,447		1,20E-04	Ccl2,CD14,CLCA1,FAS,GATA3,IL1B,RUNX2	157 (17)
carbonyl cyanide m-chlorophenyl hydrazone		chemical toxicant		1,890	bias	1,20E-04	BMP6,GDF15,HK2,LAMB3,NFKBIZ,RND3,SERPINE1	108 (7)
TLR5		transmembrane receptor		1,964	bias	1,21E-04	Ccl2,CD40,CD86,CSF3,ICAM1,IL1B	143 (15)
thalidomide		chemical drug	Inhibited	-2,186	bias	1,21E-04	BIRC3,GADD45B,GDF15,ICAM1,IL1B,SERPINE1	165 (19)
RAC1		enzyme	Activated	2,184	bias	1,23E-04	Ccl2,CD86,FAS,FOSL1,HSPB1,ICAM1,IL1B,JUN,PRKG1,SOD2	182 (19)
GNA15		enzyme				1,23E-04	BMP4,CAV2,Ccl2,CEBPD,CP,ENPP1,FOSL1,PDLIM1,SOD2,XDH	169 (11)
GW9662		chemical reagent	Inhibited	-2,183	bias	1,24E-04	CD14,CD83,CD86,CEBPA,FADS3,GDF15,KLF4,KRT20,SDC1	167 (11)
10E,12Z-octadecadienoic acid		chemical - endogenous mammalian		0,921		1,24E-04	BUB1,CASP3,Ccl2,CEBPA,CLIC5,GCNT4,GDF15,IL1B,IL6ST,LRP1	162 (20)
SPP1		cytokine	Activated	2,414	bias	1,28E-04	Ccl2,CD44,CD9,CXCL12,CXorf21,HOMER2,ICAM1,IL1B,JAG1,KRT20	200 (21)
SYVN1		transporter	Activated	2,525	bias	1,28E-04	CAVIN1,CD44,FAS,HLA-A,HSPB1,IL17R,IRAK2,SCARA3,SLC2A3,SLC30A1	

BMP7		growth factor		1.681	bias	1,28E-04	BMP2,BMP4,CD44,CEBPA,CEBPD,ICAM1,ID1,IL1B,KLF4,RUNX2	157 (19)
triamcinolone acetonide		chemical drug		0.997		1,32E-04	B4GALNT1,BCL2A1,BMP2,BMP4,BMP6,CD44,GZMA,IL6ST,JUN,NFKBIA	117 (7)
heparin		chemical - endogenous mammalian	Activated	2.180	bias	1,32E-04	ALAS1,CD40,CD83,CD86,Hamp/Hamp2,ICAM1,IL6ST,RUNX2	139 (16)
SRF		transcription regulator		1.598	bias	1,33E-04	BATF,BMP2,Cald1,CEBPD,CSRP1,DMD,FOSL1,ITGA9,JUN,LRP1	29 (3)
colchicine		chemical drug	Activated	2.271	bias	1,35E-04	CD40,FAS,GAP43,IL1B,JUN,NQO1,TMEM123	208 (19)
n-nitrosomethylbenzylamine		chemical toxicant				1,37E-04	AKR1B10,BUB1,CD44,CYP3A7,GSTA3,KRT20,LAMB3,MAPK6,PLS3,SDC1	
CARM1		transcription regulator	Activated	2.219	bias	1,40E-04	Ccl2,CSF3,FTH1,FTL,ICAM1,STC2	178 (14)
fluvastatin		chemical drug		-0.059		1,40E-04	CD40,CD81,CD9,CYBA,LRP1,SERPINE1	
pristane		chemical toxicant				1,40E-04	Ccl2,CD86,CXCR3,IFI16,IL1B,IRF5	145 (14)
COMMD1		transporter		-1.732	bias	1,41E-04	BIRC3,HK2,KRT19,NFKBIA,STC2	149 (7)
heme		chemical - endogenous mammalian		0.659	bias	1,41E-04	ALAS1,CD14,CD86,ICAM1,MRC1	122 (10)
calcimycin		chemical reagent	Activated	2.658	bias	1,42E-04	CD14,CD40,CD83,CD86,FOSL1,ICAM1,ID3,IL1RL1,JUN,SERPINE1	194 (21)
ionomycin		chemical reagent	Activated	3.524	bias	1,43E-04	B3GAT1,BCL2A1,BMP2,CASP3,CLDN4,CSF3,ENPP1,FAS,GATA3,HTR7	153 (15)
SIM1		transcription regulator	Activated	3.729	bias	1,46E-04	ANG,BST1,CD86,CYBA,FNBP1,GALNT4,GRM8,GSTA3,HLA-A,ICAM1	
EHF		transcription regulator		1.480	bias	1,46E-04	BLNK,BMP4,CASP3,GPR68,JAG1,KLK3,LYN,NOTCH2,SERPINE1	
trinitrobenzenesulfonic acid		chemical reagent	Activated	2.904	bias	1,46E-04	BST1,Ccl2,CD44,CD68,CLEC4D,CSF3,IL1B,Saa3,TNFRSF12A	198 (15)
eicosapentenoic acid		chemical drug		-1.089		1,46E-04	CD40,CD44,CD83,CD86,CEBPD,IL1B,JUN,MRC1,SERPINE1	185 (19)
bortezomib		chemical drug		-0.498		1,50E-04	BCL2A1,BIRC3,Ccl2,CSF2RB,CXCL12,DMD,FAS,GADD45B,GDF15,Hspa1b	193 (17)
CpG ODN 1668		chemical reagent	Activated	2.578	bias	1,51E-04	Ccl2,CD40,CD86,CSF3,ICAM1,IL1B,IRAK3	148 (17)
fenofibrate		chemical drug		-0.273	bias	1,56E-04	APOA1,Ccl2,CD40,CD68,FBP1,GSTA3,ICAM1,IL6ST,JUN,MEST	166 (17)
PPIF		enzyme		0.522		1,59E-04	AMIGO2,BMP6,Ccl2,Ccl8,CSRP1,CXCL12,CXCR3,IRF5,Serpina3h	123 (7)
ADAM12		peptidase		-1.425	bias	1,60E-04	Ccl2,Ccl8,GDF15,IL1RL1,LAMB3,Nrg1,SERPINE1,SERPINE2	
Cdc42		enzyme		-1.400	bias	1,62E-04	Ccl2,CD86,CEBPA,CSF1,CTSZFAS	173 (18)
SOX2		transcription regulator		1.372	bias	1,64E-04	ACOD1,BMP4,CD44,CD9,CXCL14,DOCK10,GAB1,GADD45B,GATA3,ID3	
IFNA2		cytokine	Activated	2.473	bias	1,64E-04	C1R,CD28,CD86,CORO2A,CXCR3,ENPP1,FAS,HLA-A,IFI16,IL1B	169 (18)
coumarin		chemical drug				1,69E-04	GSTA3,GSTP1,NQO1	
MAPKAPK2		kinase		1.741	bias	1,70E-04	Ccl2,CEBPD,HSPB1,ICAM1,IL1B,MRC1,NFKBIA	208 (19)
mir-183		microRNA	Inhibited	-2.219	bias	1,72E-04	JUP,KLF4,LRP1,SERPINE2,SLC30A1	
arsenic		chemical toxicant		0.796	bias	1,72E-04	BIRC3,CCR7,FTH1,FTL,NQO1	170 (15)
CREB1		transcription regulator	Activated	2.198	bias	1,72E-04	ALAS1,CAMK1D,CAMK4,CCNA2,CD68,CD9,CEBPD,CRIM1,ESD,GADD45B	179 (13)
oleic acid		chemical - endogenous mammalian		-0.748	bias	1,76E-04	Ccl2,CD68,GADD45B,GDF15,HK2,ICAM1,IL1B,NFKBIA,PLIN3,SERPINE1	198 (19)
TLR7		transmembrane receptor	Activated	3.532	bias	1,86E-04	BCL2A1,Ccl2,CCR7,CD40,CD44,CD83,CD86,FOSL1,ICAM1,IL1B	132 (14)
carbon tetrachloride		chemical toxicant	Activated	3.134	bias	1,86E-04	APOA1,CASP3,Ccl2,GADD45B,GDF15,GSTP1,HSPB1,ICAM1,IL1B,JUN	194 (17)
F7		peptidase		-0.291	bias	1,87E-04	Ccl2,FOSL1,ICAM1,IL1B,JAG1,RND3	191 (21)
2-amino-5-phosphonovaleric acid		chemical - other		-0.971		1,88E-04	2610035D17Rik,ADAM19,BTG3,CGN,GADD45B,JUN,LHFPL2,LURAP1,NHSL1,RELB	
cerivastatin		chemical drug		-0.519		1,93E-04	APOA1,BMP2,CD40,HSPB1,ICAM1,JUN,MAL,SERPINE1	148 (17)
NKX2-3		transcription regulator		-1.059		1,95E-04	BMP2,BMP4,CD68,CXCL16,EIF4EBP3,GALNT15,GDF15,Glycam1,IL7R,KLF4	

EIF2AK2		kinase	Activated	2.124	bias	2.01E-04	BCL2A1,CEBPD,FAS,Hspa1b,IL1B,NFKBIA,PSMB10,SOD2,TNFAIP3	159 (13)
ETS1		transcription regulator	Activated	2.554	bias	2.05E-04	BCL11A,BMP4,Ccl2,CD14,CD44,GZMA,ICAM1,IL7R,KRT8,LCK	225 (21)
BMPR2		kinase		1.984	bias	2.07E-04	CXCL12,Hamp/Hamp2,ICAM1,ID1,RUNX2	187 (18)
TRIB3		kinase		-0.555	bias	2.07E-04	CEBPA,GDF15,ID1,RUNX2,STC2	134 (7)
nystatin		chemical drug		1.982	bias	2.07E-04	CD40,CD86,ICAM1,IL1B	155 (19)
CHRNA1		transmembrane receptor		-0.577	bias	2.07E-04	CD28,CD40,CD86,FAS	136 (11)
NRP1		transmembrane receptor	Inhibited	-2.000		2.07E-04	CD40,CD86,ID1,IL1B	143 (18)
IL11		cytokine		0.447		2.11E-04	BCL2A1,CD40,CEBPD,Clec2d (includes others),ICAM1,IL1B,IL6ST	181 (19)
POLR2A		enzyme				2.11E-04	BMF,CCNA2,KLK3,NFKBIA,STC2,TNFAIP3,YAP1	
ACOX1		enzyme		-0.632		2.12E-04	CXCL12,GSTP1,KLF6,KRT23,KRT8,MGLL,OAT,Saa3,SLC4A4,UGT8	114 (7)
CCR5		G-protein coupled receptor		1.211	bias	2.14E-04	CASP3,Ccl2,CD9,CXCL12,FAS,IL1B	184 (18)
MAP2K1		kinase	Activated	2.412	bias	2.16E-04	BCL2A1,BIRC3,CCNA2,CD44,CEBPA,CRIM1,FOSL1,JUN,JUP,NFKBIA	190 (20)
LEP		growth factor	Activated	2.555	bias	2.17E-04	APOA1,BCL2A1,CASP3,Ccl2,CCNA2,CD14,CD40,CD68,CSF3,CYBA	155 (18)
PLA2G10		enzyme		-1.134	bias	2.17E-04	BMP4,CD40,CD8A,DHRS3,FAS,GATA3,IL1B,KRT8,MRC1	238 (20)
S100A9		other		1.263	bias	2.20E-04	BMF,Ccl2,CP,CSF2R8,CXCL14,FAS,FOSL1,GJB2,ICAM1,IL1B	161 (17)
testosterone		chemical - endogenous mammalian		0.822	bias	2.28E-04	ANXA3,BMP4,CAMK4,CASP3,FAS,FOSL1,HMGCS2,ID1,ID3,IL1B	225 (21)
TRIM24		transcription regulator	Inhibited	-2.828	bias	2.34E-04	BLNK,CSR1P1,IFI47,IFNGR2,MOV10,Msa4a4b (includes others),OASL,PSMB10,SERPINE1	
TAZ		enzyme				2.34E-04	AHNAK2,BASP1,CAV2,CD44,IFI16,KLF6,RUNX2,SERPINE1,UPP1	
CXCR4		G-protein coupled receptor		1.342	bias	2.35E-04	CD44,CD9,CXCL12,ID1,RRAS,RUNX2,ZBTB16	175 (22)
mir-30		microRNA	Inhibited	-2.397	bias	2.44E-04	ARID5B,Ccl2,IL1B,RUNX2,SERPINE1,UGT8	132 (12)
IFIH1		enzyme	Activated	2.433	bias	2.44E-04	Clec2d (includes others),FAS,IL1B,LCK,NFKBIA,RND3	134 (13)
HIF1A		transcription regulator	Activated	2.805	bias	2.46E-04	BMP2,Ccl2,CCR7,CD44,CSF1,CXCL12,GADD45B,Hamp/Hamp2,HK2,HSPB1	181 (15)
GNAQ		enzyme				2.47E-04	ANXA3,BMP2,BMP4,Ccl2,CD44,CXCL12,HIGD1A,HK2,SERPINE1,YAP1	180 (16)
NCF1		enzyme		1.982	bias	2.48E-04	Ccl2,CD14,CD44,ICAM1,SERPINE1	152 (17)
CAMP		other		0.959	bias	2.53E-04	Ccl2,CCR7,CD83,CD86,CSF1,ICAM1,IL1B,IL36G,TNFAIP3	150 (18)
MUC1		other		0.570	bias	2.61E-04	CD40,CD83,CD86,MRC1,NFKBIA,OASL,SOD2	182 (18)
N-acetylmuramyl-L-alanyl-D-isoglutamine		chemical - endogenous non-mammalian		1.975	bias	2.61E-04	Apol7e (includes others),CD40,CD86,ICAM1,IL1B,NFKBIA,NOD2	146 (16)
Histone h4		group				2.70E-04	BTG3,CD40,DUSP16,GSTP1,ICAM1,IL1B,MCM3,NEURL1,PREX1,RASGRP1	133 (7)
NR1H2		ligand-dependent nuclear receptor		-1.942		2.72E-04	Ccl2,CCR7,CSF3,CXCL16,HK1,IL1B,MRC1,NFKBIA,Saa3	147 (16)
Collagen type II		complex		-0.728		2.78E-04	BMP2,BMP4,BMP6,Ccl2,IL1B,RRAS	159 (17)
IFNLR1		transmembrane receptor				2.78E-04	CLEC4D,CSF1,IL1B,OASL,SOD2,TNFAIP3	
diethylstilbestrol		chemical drug		1.253	bias	2.81E-04	CCNA2,CD14,CD83,CXCL14,FAS,GAP43,GJB2,HLA-A,KLF4,KLK3	116 (8)
TGM2		enzyme	Activated	2.496	bias	2.83E-04	BCL2A1,BIRC3,CD86,CDCA7,CSF3,FERMT1,IL1B,OASL,PARP14,PLEKHO2	183 (18)
FIRRE		other				2.91E-04	CSF1,CSF3,IL1B	
HJV		other				2.91E-04	BMP6,Hamp/Hamp2,ID1	36 (3)
CTSE		peptidase				2.91E-04	CD40,CD86,IL1B	146 (11)
rabeprazole		chemical drug				2.91E-04	Ccl2,ICAM1,IL1B	

vinpocetine		chemical drug				2,91E-04	Ccl2,ICAM1,IL1B	139 (9)
BRAF		kinase				2,93E-04	BIRC3,BMF,Ccl2,CD40,CD86,CSF1,IL1B,RND3,SERPINE2	144 (16)
taurocholic acid		chemical - endogenous mammalian		0,391		2,95E-04	APOA1,Ccl2,GADD45B,IL1B,LPIN2	154 (17)
mir-135		microRNA	Inhibited	-2,183	bias	2,95E-04	Ccl8,CXCL12,IL1B,KLF4,RUNX2	
vitamin K3		chemical drug	Activated	2,236	bias	2,95E-04	BMP6,CASP3,FAS,HK2,KLF6	166 (14)
RUNX3		transcription regulator	Inhibited	-3,000	bias	3,00E-04	CCR7,CRIM1,IL1B,IL6ST,JAG1,LILRB3,PXDN,RTN1,SCARA3,STC2	155 (7)
NOS3		enzyme		-1,082		3,15E-04	BMP2,Ccl2,CD86,CXCL12,GSTP1,ICAM1	193 (20)
GPX1		enzyme	Inhibited	-2,189	bias	3,15E-04	Ccl2,CD14,FAS,Hspa1b,ICAM1,SOD2	150 (18)
Fcer1		complex		1,802	bias	3,19E-04	BCL2A1,Ccl2,CD83,CSF1,IL1B,JUN,MRC1	160 (17)
IL25		cytokine		1,608	bias	3,19E-04	Ccl2,CSF3,F11R,GATA3,IL1B,IL1RL1,JAG1	179 (17)
CSF3	1,184	cytokine		1,146	bias	3,20E-04	BATF,BIRC3,Ccl2,CCR7,CD14,CD44,CEBPA,CXCL12,GADD45B,ICAM1	141 (15)
reactive oxygen species		chemical toxicant		1,824	bias	3,20E-04	CASP3,CSF3,FAS,ICAM1,IL1B,JUN,KLF6,SERPINE1,SOD2,TNFAIP3	205 (18)
cardiotoxin		chemical - other	Activated	2,828	bias	3,21E-04	CASP3,Ccl2,CCNA2,CSF2RB,FLT3,IL1B,IL7R,ITGB7,MCM3,MEST	
geldanamycin		chemical - endogenous non-mammalian	Inhibited	-2,724	bias	3,21E-04	CD40,CEBPD,GPR179,Hspa1b,IL1RL1,IRF5,JUN,LCK,RNASEL,RTN1	123 (11)
TRAF2		enzyme		0,822		3,25E-04	BIRC3,FAS,ICAM1,Muc1,PTPN14,RHBDP1,Serpina3g (includes others),TNFAIP3	100 (12)
zinc		chemical drug		-0,167		3,25E-04	AKR1B10,CD86,FAS,IL1B,NFKBIA,SLC11A2,SLC30A1,SLC39A4	182 (17)
IL22		cytokine		1,334	bias	3,41E-04	CLCA1,CXCL12,CYBA,FTH1,HSPB1,IL1B,IL36G,Muc1,SOD2,TGM3	154 (12)
tanespimycin		chemical drug		-1,770	bias	3,41E-04	BCL2A1,BIRC3,FAS,FLT3,JUN,KRT8,LYN,SERPINE1,SOD2,TNFAIP3	132 (17)
medroxyprogesterone acetate		chemical drug		-1,019		3,41E-04	CAMK4,CASP3,Ccl2,CD44,FAS,ICAM1,IL1B,JUN,NEK2,Nrg1	218 (25)
PTX3		other		-1,571	bias	3,48E-04	Ccl2,Ccl8,GATA3,IL1B,JUN	147 (16)
ACSL4		enzyme		-1,342	bias	3,48E-04	CAMK1D,ENPP1,FERMT1,PRKG1,RHOJ	
vinblastine		chemical drug	Activated	2,213	bias	3,48E-04	CD40,CD86,HLA-A,IL1B,SOD2	142 (17)
Cyp2c23		enzyme		-0,883	bias	3,50E-04	Ccl2,CCNA2,CD86,IL36G	
PPP2R5C		other	Inhibited	-2,000	bias	3,50E-04	BCL2A1,BIRC3,RELB,TNFAIP3	117 (12)
P2RY2		G-protein coupled receptor				3,50E-04	Ccl2,GAP43,ICAM1,SERPINE1	142 (17)
DAXX		transcription regulator		-1,982	bias	3,50E-04	CASP3,HSPB1,KLK3,SERPINE1	208 (19)
SPIB		transcription regulator	Activated	2,813	bias	3,52E-04	BLNK,BMP6,CD86,Hspa1b,KLF6,KLK3,LILRB3,P2RY10	
HMGB1		transcription regulator		1,963	bias	3,52E-04	CASP3,CD40,CD83,CD86,ICAM1,IL1B,MRC1,RELB	161 (19)
SMAD1		transcription regulator	Activated	2,429	bias	3,56E-04	CSF1,GADD45B,Hamp/Hamp2,ICAM1,ID1,RUNX2	158 (13)
PROC		peptidase		-0,294	bias	3,56E-04	BCL2A1,Ccl2,ICAM1,IL1B,SERPINE1,TNFAIP3	154 (16)
stallimycin		biologic drug	Activated	2,449	bias	3,56E-04	CSF1,IFI16,IL1B,IL36G,IL7R,SP110	97 (7)
Nr1h		group	Inhibited	-2,723	bias	3,59E-04	BMP6,Ccl2,CCR7,CD40,CSF1,CSF3,H6PD,IL1B,NFKBIZ,SP110	169 (19)
SNAI1		transcription regulator		0,896		3,79E-04	BMP4,CGN,CLDN4,FOSL1,GDF15,ID1,KRT8,LASP1,RUNX2,SDC1	226 (22)
dimethyl sulfoxide		chemical drug	Activated	2,578	bias	3,86E-04	BMP2,BMP4,IFI16,IL1B,JUN,PTK2B,RUNX2,SLC11A2,Tcf7,Tpm1	206 (22)
Go 6976		chemical - kinase inhibitor	Inhibited	-2,607	bias	3,87E-04	BMP2,BMP6,Ccl2,CD83,CSF3,NFKBIA,SOD2	144 (16)
MET		kinase		0,633	bias	3,89E-04	BMF,CD44,Hspa1b,HSPB1,IL1B,JUN,KLF4,NFKBIZ,SOD2	173 (18)
Creb		group		1,929	bias	3,91E-04	ANTXR1,ANTXR2,BMP6,CD14,CEBPA,CEBPD,CLMN,CSR1,FAS,FOSL1	159 (11)

obeticolic acid		chemical drug		-1.347		4,01E-04	APOA1,Ccl2,CD68,CEBPA,ICAM1,IL1B	144 (17)
NGFR		transmembrane receptor		0.895	bias	4,07E-04	CCNA2,DMD,IL1RL1,JUN,SERPINE1	162 (12)
TNFSF15		cytokine	Activated	2.200	bias	4,07E-04	BIRC3,CCR7,CD40,CD83,CD86	155 (16)
crocidolite asbestos		chemical toxicant		1.985	bias	4,07E-04	Ccl2,CD44,FOSL1,JUN,ZYX	225 (19)
proteasome inhibitor PSI		chemical - protease inhibitor		1.342	bias	4,07E-04	BMP2,Ccl2,FAS,MAPK6,RUNX2	192 (16)
Tgf beta		group		1.334	bias	4,09E-04	BASP1,Ccl2,CCR7,CSF1,CSF3,GADD45B,GATA3,ID1,ID3,IL1B	216 (20)
EIF2AK3		kinase		1.846	bias	4,17E-04	ANG,BIRC3,Ccl2,FOSL1,IL1B,JUN,KLF4,RELB,RNASEL	182 (18)
VIP		other		-0.009		4,17E-04	Ccl2,CD40,CD86,CEBPD,GATA3,IL1B,IL1RL1,IRAK2,NFKBIA	153 (17)
aspirin		chemical drug	Inhibited	-2.372	bias	4,17E-04	APOA1,Ccl2,CD40,CD86,CSF1,CSF3,GDF15,ICAM1,IL1B	122 (16)
1,2-dithiol-3-thione		chemical reagent	Activated	3.560	bias	4,24E-04	AKR1B10,ALAS1,ANG,B4GALNT1,ESD,FTH1,GSTA3,GSTP1,MGLL,NQO1	45 (3)
vitamin E		chemical drug		-1.941	bias	4,26E-04	APOA1,CD44,Hamp/Hamp2,IL1B,KLF6,SERPINE1,SLC11A2	177 (19)
LEF1		transcription regulator		0.371	bias	4,26E-04	CASP3,CD44,FAS,GATA3,IL7R,LCK,RUNX2	160 (12)
MBD2		transcription regulator		0.115		4,26E-04	AMY2A,BIRC3,GSTP1,HK2,OAT,PLA2G16,RELB	
IL17RC		transmembrane receptor				4,29E-04	PLET1,STEAP4	
ZNF385B		other				4,29E-04	FAS,PERP	
PARM1		other				4,29E-04	BMP2,BMP4	
diaziquone		chemical drug				4,29E-04	CD40,IL1B	
cobimetinib		chemical drug				4,29E-04	CD44,CSF3	
cyclic AMP		chemical - endogenous mammalian	Activated	2.925	bias	4,37E-04	ANTXR1,ANTXR2,BMP2,CD86,CEBPA,CEBPD,GAP43,GATA3,IL1B,JUN	230 (22)
mannitol		chemical - endogenous mammalian		1.231		4,43E-04	Ccl2,ICAM1,JUN,SOD2	174 (21)
NR113		ligand-dependent nuclear receptor	Activated	2.759	bias	4,46E-04	ALAS1,APOA1,CYP3A7,GADD45B,GSTP1,HK1,ICAM1,PGD,STEAP4	139 (10)
PPRC1		transcription regulator	Activated	2.449	bias	4,50E-04	BMP6,GDF15,HK2,LAMB3,NFKBIZ,RND3	
GATA1		transcription regulator		1.117	bias	4,57E-04	BMP6,CAVIN1,CEBPA,CXCR3,ENPP1,GATA3,IL1RL1,IL6ST,IL7R,JDP2	
EPO		cytokine		-0.404	bias	4,57E-04	ATOH8,BMP4,CASP3,CTSZ,CXCL12,FABP5,FAS,GATA3,GDF15,Hamp/Hamp2	210 (16)
butyl N-[3-[4-(imidazol-1-ylmethyl)phenyl]-5-(2-methylpropyl)thiophen-2-yl]sulfonylcarbamate		chemical reagent				4,58E-04	CASP3,IL1B,MLKL	
CD5L		transmembrane receptor				4,58E-04	Ccl2,Ccl8,IL1B	83 (7)
FEM1A		transcription regulator				4,58E-04	Ccl2,CD68,IL1B	143 (13)
GIPR		G-protein coupled receptor				4,58E-04	Ccl2,Ccl8,Tcf7	
MIA-602		chemical reagent				4,58E-04	CASP3,Ccl2,IL1B	
GSKJ4		chemical reagent				4,58E-04	CD40,CD83,CD86	
Fc gamma receptor		group	Activated	2.200	bias	4,75E-04	CCNA2,CD40,CD86,ICAM1,TNFAIP3	117 (17)
TRB		transmembrane receptor		0.468	bias	4,75E-04	CD44,CD8A,CXCR3,FAS,GATA3	147 (11)
8-bromo-cAMP		chemical reagent		-0.731	bias	4,79E-04	ALDH2,APOA1,BMP2,Ccl2,FAS,GSTP1,IL1B,JUN,KRT8,NQO1	164 (19)
ATN1		transcription regulator				4,91E-04	BASP1,BTG3,CAMK4,Cd24a,IFI16,JUP,LTP2,Marcks,TIAM1,TM4SF1	
glucocorticoid		chemical drug		0.268		4,92E-04	BMP6,CD2,CD44,CEBPD,CSF1,CSF3,CYP3A7,FAS,ICAM1,IL1B	170 (15)
PTPN6		phosphatase	Inhibited	-2.412	bias	5,04E-04	Ccl2,CCR7,CD44,CD86,IL1B,LYN	155 (16)
zymosan		chemical - endogenous non-mammalian		1.988	bias	5,12E-04	Ccl2,CD40,CD86,CSF1,CSF3,DEPP1,IL1B	134 (15)

3,3'-diindolylmethane		chemical drug		1,937		5,12E-04	FAS,GDF15,HLA-A,IL1B,KRT19,NFKBIA,NQO1	215 (21)
PI3K (family)		group		1,510	bias	5,45E-04	AKR1B10,BIRC3,CXCL12,FTH1,HK1,IL1B,NQO1,PREX1,SERPINE1	195 (20)
IL36A		cytokine	Activated	2,200	bias	5,50E-04	CD40,CSF3,IL1B,IL36G,NFKBIZ	87 (7)
prostaglandin E1		chemical - endogenous mammalian		-1,192	bias	5,51E-04	CD14,CD40,CD86,ICAM1	211 (19)
TMSB4		group		1,964	bias	5,51E-04	BMP2,BMP4,RUNX2,SERPINE1	132 (12)
ADRB3		G-protein coupled receptor				5,51E-04	Ccl2,CXCL12,IL1B,JUN	178 (19)
BIRC2		enzyme				5,51E-04	BIRC3,CCNA2,CSF1,CSF3	146 (11)
Usp17la (includes others)		peptidase		1,987	bias	5,51E-04	Ccl2,CD44,IL1B,KLF4	87 (7)
ethoxyquin		chemical toxicant		1,934	bias	5,51E-04	FTH1,GSTA3,GSTP1,NQO1	
metrapone		chemical drug		0,000	bias	5,51E-04	ALAS1,CXCL12,ICAM1,IL1B	124 (11)
CD38		enzyme		1,964	bias	5,53E-04	ANXA6,CD44,CD86,CSF2RB,HIGD1A,ICAM1,ITGB7,NEK2,PDLIM1,SDC1	
Raf		group				5,59E-04	FOSL1,GDF15,IFI16,JUN,RND3,SLC43A3,TNFAIP3	220 (20)
FANCC		other				5,59E-04	CXCL12,GDF15,IL1B,JAG1,OAT,RND3,TAX1BP3	147 (16)
TBX21		transcription regulator		-0,180		5,59E-04	CXCR3,GATA3,GZMA,IL1RL1,IL6ST,IL7R,Tcf7	159 (15)
ADAM10		peptidase				5,63E-04	CSF1,CXCL12,CXCL16,DTNA,IL36G,IL6ST,LCK,SYT1	
NLRX1		other	Inhibited	-2,449	bias	5,63E-04	BIRC3,CD40,IL1B,NFKBIA,RELB,TNFAIP3	158 (13)
sphingosine-1-phosphate		chemical - endogenous mammalian	Activated	2,044	bias	6,06E-04	Ccl2,CD44,FAS,GAP43,ICAM1,JUN,RUNX2,SERPINE1	167 (19)
PDX1		transcription regulator		1,066	bias	6,08E-04	Ccl2,CD44,GAP43,HK1,ID1,ID3,IL1B,JUN,KLF6,KRT8	120 (7)
RIPK2	0,574	kinase	Activated	2,621	bias	6,11E-04	ACOD1,Ccl2,CD40,CD86,ICAM1,RASGRP1,SOD2	132 (17)
TERT		enzyme		-0,686		6,19E-04	ICAM1,IFI16,IL1B,JUP,KLK3,KRT19,NFKBIA,PCDHGA3,RAS3,SOD2	191 (14)
TSC22D3		transcription regulator		-1,053	bias	6,27E-04	CD83,CD86,CEBPA,ICAM1,IL1B,RUNX2	161 (19)
TIMP3		other		-0,816	bias	6,27E-04	BMP4,FAS,JUN,KLF4,LAMC2,SERPINE1	225 (18)
APOA1	4,105	transporter		-1,636	bias	6,27E-04	APOA1,Ccl2,ICAM1,IL1B,SOD2,XDH	153 (19)
OSCAR		other		1,342	bias	6,34E-04	CD40,CD83,CD86,ICAM1,RRAS	153 (15)
GATA3	7,490	transcription regulator		0,470		6,34E-04	BATF,BCL11A,BMF,CEBPA,GATA3,GZMA,ICAM1,IL1RL1,IL7R,KLF4	180 (16)
UCP1		transporter		-0,194		6,45E-04	ALAS1,CASP3,Ccl2,CD40,CD86,GDF15,GSTO1,IL1B,PGD,RNASEL,SERPINE1	85 (7)
CD36		transmembrane receptor		1,970	bias	6,52E-04	APOA1,CD86,CSF3,FAS,ICAM1,IL1B,LRP1,SERPINE1	162 (18)
AG490		chemical - kinase inhibitor	Inhibited	-2,792	bias	6,52E-04	BIRC3,CASP3,Ccl2,CD68,ICAM1,IL1B,LYN,SOD2	224 (21)
CCND1		transcription regulator		0,132		6,57E-04	CCNA2,CD44,CD6,CDC47,DONSON,HOMER2,HSPB1,ID1,ID3,KLK3	137 (7)
melatonin		chemical - endogenous mammalian		1,768		6,60E-04	BMP2,CASP3,FAS,GJB2,IL1B,KRT19,NQO1,RUNX2,SOD2	181 (19)
nicotine		chemical drug		1,115	bias	6,67E-04	BMP2,CASP3,Ccl2,CD40,CD44,CD86,GATA3,ICAM1,ID1,IL1B	148 (16)
sphingosylphosphocholine		chemical - endogenous mammalian				6,77E-04	Ccl2,ICAM1,JUN	185 (19)
C8		complex				6,77E-04	Ccl2,ICAM1,IL1B	107 (9)
SLC16A3		transporter				6,77E-04	CASP3,HK2,IL1B	
salmonella typhimurium lipopolysaccharide		chemical - endogenous non-mammalian				6,77E-04	Ccl2,CD86,IL1B	
TNFRSF17		transmembrane receptor				6,77E-04	CD40,CD86,ICAM1	136 (15)
ATG16L1		enzyme				6,77E-04	IL1B,NFKBIA,SOD2	112 (9)

RTKN	1,276	other				6,77E-04	BCL2A1,BIRC3,TNFAIP3	91 (9)
C7		other				6,77E-04	Ccl2,ICAM1,IL1B	107 (9)
DEK		transcription regulator				6,77E-04	BIRC3,Ccl2,NFKBIA	95 (8)
1,1-bis(3'-indolyl)-1-(4-trifluoromethyl-phenyl)methane		chemical reagent				6,77E-04	CAV2,GDF15,KLK3	160 (7)
puromycin		chemical - endogenous non-mammalian				6,78E-04	CASP3,CD40,IL1B,SERPINE1	186 (22)
TP53COR1		other	Activated	2,000	bias	6,78E-04	BIRC3,FAS,IL1B,SOD2	174 (13)
S-(2,3-bis(3'-indolylpropyl)-cysteine-GDPK)HPKSF		chemical reagent		1,974	bias	6,78E-04	Apol7e (includes others),CD40,CD86,ICAM1	136 (15)
Pkc(s)		group	Activated	2,673	bias	6,89E-04	APOA1,DMD,FAS,FOSL1,GADD45B,GAP43,IL1B,JUN,KLF6,KRT8	207 (19)
PRKAG3		other				7,14E-04	ALAS1,DDIT4L,FTL,IDL1,KLF4,PLIN3,POLE4,RHO,SLC2A3,TSPAN8	
GNA14		enzyme				7,24E-04	ANXA3,BMP2,BMP4,ENPP1,HK2,KLF6,DXH	
andrographolide		chemical drug		0,447		7,27E-04	CASP3,GATA3,GSTP1,ICAM1,IL1B	180 (21)
SN-38		chemical drug		1,982	bias	7,27E-04	BIRC3,BMP6,FAS,GDF15,HK2	183 (14)
DDIT3		transcription regulator		-1,054		7,48E-04	CEBPA,CEBPD,DOCK4,GALNT4,H6PD,IL1B,IRAK2,JAG1,Nrg1	210 (16)
miR-146a-5p (and other miRNAs w/seed GAGAACU)		mature microRNA	Inhibited	-2,791	bias	7,52E-04	ATOH8,CCNA2,CD40,IL36G,IRAK2,IRF5,NFKBIA,SYT1	91 (6)
Rock		group		1,664	bias	7,73E-04	BMP2,CAVIN1,DMD,ICAM1,Nes,RUNX2	217 (22)
NOG		growth factor		-1,634	bias	7,73E-04	BMP2,BMP4,CD2,FAS,IDS3,RUNX2	189 (23)
PTPRJ		phosphatase	Activated	2,236	bias	7,73E-04	CCNA2,CEBPD,NFKBIZ,OASL,Vmn3,ZC3H12A	
minocycline		chemical drug		-1,775	bias	7,87E-04	CASP3,Ccl2,CD86,GATA3,ICAM1,IL1B,IL6ST	174 (17)
YY1		transcription regulator		0,447		8,01E-04	ALCAM,BLNK,BMP4,BMP6,CCNA2,CXCL12,DMD,FAS,IDS3,IL1B	202 (19)
HDAC3		transcription regulator		-0,751	bias	8,07E-04	BIRC3,BMP2,ICAM1,JUP,KLK3,NFKBIA,RELB,SERPINE1	218 (23)
Pka		complex		1,915	bias	8,16E-04	ANTXR1,ANTXR2,CAMK4,CCR7,CD14,CD40,CD44,JUN,KLF6,MEST	200 (18)
Fibrinogen		complex		1,929	bias	8,24E-04	Ccl2,CD40,ICAM1,IL1B	133 (17)
ITGA9	0,739	other	Activated	2,000	bias	8,24E-04	Ccl2,CXCL12,CXCL14,IL1B	146 (12)
RPS8KA5		kinase				8,24E-04	CCR7,FOSL1,IL1B,JUN	191 (21)
PCDH11Y		other	Activated	2,000	bias	8,24E-04	BMP4,CD44,FOSL1,JUN	130 (7)
IL37		cytokine		-1,938	bias	8,24E-04	BMP2,CSF1,CSF3,IL1B	148 (15)
CRNDE		other	Activated	2,236	bias	8,30E-04	GAB1,GADD45B,RASA3,RRAS,TIAM1	
CASP1		peptidase		0,540	bias	8,30E-04	Ccl2,CSF3,IL1B,MLKL,RIPK2	180 (17)
NCSTN		peptidase	Inhibited	-2,219	bias	8,30E-04	CD14,CD68,CEBPA,CEBPD,CSF2RB	66 (7)
SAA1		transporter		1,264	bias	8,30E-04	Ccl2,CEBPA,CSF3,IL1B,MRC1	194 (16)
MMP2		peptidase	Activated	2,213	bias	8,30E-04	BMP2,CD44,CSF2RB,CXCL12,IL6ST	181 (20)
NLRP12		other		-1,206	bias	8,30E-04	CXCL12,HLA-A,ICAM1,IL1B,JUN	144 (16)
FOSB		transcription regulator				8,30E-04	CEBPA,FOSL1,FTH1,RUNX2,SERPINE1	181 (15)
1,4-bis[2-(3,5-dichloropyridyloxy)]benzene		chemical toxicant		1,548	bias	8,45E-04	ALAS1,APOA1,BUB1,CCNA2,GADD45B,GSTP1,HMGCS2,ICAM1,STEAP4	103 (7)
RNF31		enzyme		-1,890	bias	8,54E-04	APOA1,Ccl2,Ccl8,CXCL16,IL1B,IL1RL1,IL36G	162 (12)
lovastatin		chemical drug		0,943	bias	8,61E-04	CCNA2,CD86,GAP43,GATA3,IL1B,KLF4,MAL,RHO,SDC4,SERPINE1	191 (20)
ADIPOQ		other		0,039		8,69E-04	BMP2,Ccl2,CEBPA,CYBA,HMGCS2,ICAM1,NFKBIA,PTK2B,SLC2A3,SOD2	193 (15)

PRL		cytokine	Activated	3,832	bias	8,92E-04	ANXA3,CD40,CEBPD,Glycam1,ID1,IDS,JUN,KRT19,Marcks,MLKL	208 (20)
IRF7		transcription regulator	Activated	3,274	bias	9,12E-04	Ccl2,CD40,Hamp/Hamp2,IFI16,IFI47,IRF5,Ms4a4b (includes others),OASL,PARP14,PSMB10	147 (17)
norepinephrine		chemical - endogenous mammalian		1,363	bias	9,12E-04	Ccl2,Cd24a,FTH1,GDF15,IDI1,IL1B,IRAK2,LAMB3,NFKBIA,SERPINE1	192 (14)
imiquimod		chemical drug	Activated	2,395	bias	9,25E-04	Ccl2,CCR7,CD40,FOSL1,ICAM1,IL1B,OASL,SOD2	143 (17)
RELB	0,509	transcription regulator		0,807	bias	9,25E-04	BIRC3,CD40,CXCL12,IL1B,NFKBIA,RELB,SOD2	103 (11)
levodopa		chemical - endogenous mammalian		-0,470		9,39E-04	AMIGO2,CASP3,Clec2d (includes others),CTS2,CXCL12,DDIT4L,F11R,FOSL1,FTL,GADD45B	
TMEM173	1,650	other	Activated	2,414	bias	9,42E-04	CD68,IFI16,IL1B,OASL,Serpina3g (includes others),UPP1	152 (17)
FGF10		growth factor	Activated	2,425	bias	9,42E-04	ANXA3,BMP4,PERP,Saa3,TMEM123,TSPAN8	
Ccl2	1,035	cytokine	Activated	2,190	bias	9,42E-04	Ccl2,CD14,CSF1,IL1B,KLF4,SDC4	146 (13)
NPM1		transcription regulator				9,44E-04	Ccl2,CEBPA,CSF1,IL6ST,SOD2	203 (16)
xanthohumol		chemical drug		-0,218	bias	9,44E-04	BIRC3,ICAM1,IL1B,NQO1,RUNX2	142 (10)
XDH	0,689	enzyme		-0,094		9,44E-04	Ccl2,CEBPA,IDS,IL1B,SERPINE1	224 (24)
CD80		transmembrane receptor				9,44E-04	CASP3,CD28,FAS,ICAM1,IL1B	161 (20)
lrp		group				9,52E-04	FTH1,FTL,SLC11A2	
RBPJL		transcription regulator				9,52E-04	AMY2A,CPA2,CTRB2	
SELE		transmembrane receptor				9,52E-04	Ccl2,CSF3,IL1B	148 (17)
RANBP9		other				9,52E-04	GAP43,JUN,PTK2B	130 (7)
FTH1	0,558	enzyme				9,52E-04	CD86,FTH1,FTL	36 (3)
TFR2		transporter				9,52E-04	BMP6,GDF15,Hamp/Hamp2	120 (9)
sodium dodecyl sulfate		chemical drug				9,52E-04	FABP5,IL1B,SERPINE2	
clomipramine		chemical drug				9,52E-04	DEPP1,HPN,SLC2A3	
tin mesoporphyrin		chemical drug				9,52E-04	Ccl2,ICAM1,IL1B	99 (7)
pepstatin		chemical - protease inhibitor				9,52E-04	BMP2,CD9,STC2	
perilla alcohol		chemical drug				9,52E-04	BCL2A1,IL1B,NFKBIA	116 (11)
NRAS		enzyme	Inhibited	-2,804	bias	9,56E-04	CD68,CD86,HLA-A,IFI16,IL1B,MCM3,MEST,NQO1,PERP,SDC1	159 (17)
IL27		cytokine		1,444	bias	9,57E-04	CD14,CD86,CEBPD,DEPP1,GATA3,HLA-A,ICAM1,IL1B,LAG3,MRC1	185 (17)
lfn gamma		complex	Activated	2,226	bias	9,90E-04	CASP3,Ccl2,CD86,CXCL16,CXCR3,FAS,ICAM1,IL1B	157 (20)
lactosylceramide		chemical - endogenous mammalian				9,91E-04	Ccl2,CD40,ICAM1,RELB	144 (15)
Pkg		group		1,067	bias	9,91E-04	HK2,JUN,SOD2,VCL	180 (16)
EIF4G2		translation regulator		1,000		9,91E-04	JUN,KLF4,KRT19,SERPINE2	
LRPAP1		other		-0,308	bias	9,91E-04	Ccl2,IL1B,LRP1,SERPINE1	144 (16)
EPCAM		other		-0,762		9,91E-04	FABP5,FOSL1,IDI1,JUN	164 (13)
GRN		growth factor				9,91E-04	Ccl2,CTS2,ICAM1,IL1B	212 (19)
ketamine		chemical drug				9,91E-04	CASP3,HK1,KLF6,NQO1	102 (7)
apicidin		chemical - endogenous non-mammalia		0,000		9,91E-04	AMPD3,FAS,H6PD,ITGB7	
IFI16	2,317	transcription regulator		1,815	bias	1,00E-03	CD28,CD81,ICAM1,IFI16,IL1B,IL7R,NFKBIA	211 (20)
HTT		transcription regulator		1,372		1,00E-03	APOA1,BASP1,BTG3,C1R,CAMK4,CASP3,Cd24a,CD9,CEBPA,FOSL1	232 (21)



PARP1		enzyme		0.537	bias	1,01E-03	Ccl2,CXCL12,FAS,GBP6,GDF15,ICAM1,IL1B,JUN,KLK3	215 (20)
lithium chloride		chemical drug		0.923	bias	1,01E-03	B4GALT1,BMP2,BMP4,CD44,GATA3,GDF15,KLK3,KRT20,Marcks	219 (26)
CBL		transcription regulator				1,04E-03	CSF2RB,FLT3,IL1B,LCK,LYN,RUNX2	110 (7)
cholesterol		chemical - endogenous mammalian		1.021	bias	1,04E-03	CAMK1D,CAV2,Ccl2,CD14,CD68,CSF1,FABP5,ICAM1,IL1B,SMO	137 (17)
KMT2D		transcription regulator		1.372	bias	1,04E-03	BTG3,CDCA7,GJB2,GPRC5C,KLF4,KRT23,LAMB3,LCK,POLE4,PPIC	
TLR2		transmembrane receptor	Activated	3.226	bias	1,05E-03	BMP2,Ccl2,CD40,CD86,CEBPD,CSF3,GATA3,ICAM1,IL1B,IRAK3	148 (18)
lysophosphatidic acid		chemical - other	Activated	2.781	bias	1,06E-03	Ccl2,CD14,CSF1,ICAM1,IL1B,JUN,RALA,SERPINE1	149 (19)
NOO1	1,033	enzyme		-1.387		1,07E-03	BIRC3,Ccl8,CEBPA,CXCL12,CXCR3	105 (7)
IGHM		transmembrane receptor		-0.577		1,07E-03	Ccl2,CD86,FAS,IL1B,JUN	191 (20)
mevalonic acid		chemical - endogenous mammalian		1.477		1,07E-03	APOA1,CD40,ICAM1,IL1B,SERPINE1	171 (19)
CLDN7		other		0.990		1,07E-03	ANXA3,B4GALNT1,CD68,FADS3,FOSL1,PLA2G16,SERPINB1,SYTL2,TINAGL1	
Growth hormone		group		1.098	bias	1,08E-03	ARID5B,BMP2,BMP4,CEBPA,CEBPD,FTH1,GDF15,GSTP1,ID1,JUN	227 (18)
Notch		group		1.144	bias	1,08E-03	CDCA7,GADD45B,GATA3,ID1,ID3,JAG1,Nes	123 (14)
Sos		group				1,09E-03	B4GALT1,CD44,DOCK1,HPGDS,IL36G,KLF6,MAPK6,Ng1,SEMA3B,SEMA3E	
2-(4-amino-1-isopropyl-1H-pyrazolo[3,4-d]pyrimidin-3-yl)-1H-indol-5-ol		chemical reagent		0.859		1,10E-03	BMP2,C1R,CD44,FOSL1,ID1,ID3,KLF6,MCM3,SDC4,SERPINB1	118 (12)
estrogen		chemical drug	Activated	2.552	bias	1,10E-03	APOA1,BMP2,CCKAR,CXCL12,FAS,FTH1,GAP43,GJB2,ICAM1,IL1B	178 (20)
adenosine		chemical - endogenous mammalian		-0.394		1,14E-03	CD28,CD86,ICAM1,IL1B,Saa3,SERPINE1	197 (21)
CLEC4G		other		0.816	bias	1,14E-03	BMP2,CSF1,CSF3,FLT3,IL1B,Ng1	
PAX5		transcription regulator		-0.730		1,14E-03	BLNK,CD40,FLT3,HK2,SDC1,SLC2A3	
FOSL2		transcription regulator	Activated	2.219	bias	1,14E-03	Ccl2,FAS,FOSL1,IL1B,RELB,RUNX2	130 (11)
niacinamide		chemical - endogenous mammalian		-1.698		1,14E-03	BCL2A1,CD14,CD40,CXCL12,ICAM1,SLC34A2	149 (15)
CTR9		other		1.000		1,18E-03	CXCL12,RASGRP1,SDC1,TIAM1	
epicatechin gallate		chemical drug				1,18E-03	GDF15,ICAM1,LYN,PERP	96 (7)
evodiamine		chemical - endogenous non-mammalian		-1.715	bias	1,18E-03	BCL2A1,BIRC3,CASP3,ICAM1	86 (7)
chelerythrine		chemical drug		-1.000	bias	1,18E-03	Ccl2,CYBA,ICAM1,NFKBIA	110 (14)
TNFRSF1B		transmembrane receptor		1.809	bias	1,20E-03	CASP3,CXCL12,FAS,ICAM1,JUN,SERPINE1,SOD2,TNFAIP3	134 (16)
MEOX2		transcription regulator		-1.400	bias	1,21E-03	ICAM1,ID1,ID3,LRP1,TNFAIP3	
NR2F1		ligand-dependent nuclear receptor		0.000		1,21E-03	ALDH2,APOA1,FNBP1,GDF15,JAG1	
mitoxantrone		chemical drug		1.067	bias	1,21E-03	FAS,IFI16,IL1B,KLK3,PERP	167 (13)
paricalcitol		chemical drug		-1.000	bias	1,21E-03	BMP2,Ccl2,CYP3A7,ICAM1,IL1B	155 (17)
SIRT6		enzyme				1,25E-03	BIRC3,Ccl2,CSF1,IL1RL1,IRAK3,SOD2	212 (16)
miR-145-5p (and other miRNAs w/seed UCCAGUU)		mature microRNA	Inhibited	-2.411	bias	1,25E-03	CCNA2,F11R,KLF4,RTKN,SERPINE1,SOD2	
CD14	1,316	transmembrane receptor	Activated	2.392	bias	1,25E-03	BCL2A1,Ccl2,CXCL12,ICAM1,IL1B,TNFAIP3	144 (16)
MAP2K1/2		group		1.772	bias	1,26E-03	Ccl2,FOSL1,HK2,HSPB1,IL1B,JAG1,JUN	189 (21)
PTPN11		phosphatase		-1.254		1,26E-03	CD14,CD88,CEBPA,CSF1,GAB1,JUN,PERP	194 (23)
SFTPA1		transporter		-1.087	bias	1,26E-03	Ccl2,GPR68,IL1B,IL1RL1,MRC1,SERPINE1,TCEA3	138 (15)
galactosylceramide		chemical - endogenous mammalian				1,27E-03	CD40,CD86	

C1QTNF12		other				1,27E-03		Ccl2,IL1B	103 (7)
NIPBL		transcription regulator				1,27E-03		KLF4,POLE4	
ASH1L		transcription regulator				1,27E-03		IRAK3,TNFAIP3	
KLHL21		other				1,27E-03		NFKBIA,NFKBIZ	
CNDP2		peptidase				1,27E-03		CD44,CXCR3	
Ap1 gamma		group				1,27E-03		CD28,HLA-A	
CARD8		other				1,27E-03		BCL2A1,IL1B	
FTMT		enzyme				1,27E-03		FTH1,FTL	
STRAP		other				1,27E-03		JUN,SERPINE1	
Defb2		other				1,27E-03		Cd24a,CD40	
TIGAR		enzyme				1,27E-03		Ccl2,TNFAIP3	142 (10)
1-heptanol		chemical reagent				1,27E-03		CD40,CD86	
ellipticine		chemical reagent				1,27E-03		CD40,IL1B	
prostratin		chemical - endogenous non-mammalian				1,27E-03		CASP3,ICAM1	95 (7)
Mn2+		chemical - endogenous mammalian				1,27E-03		GAP43,ICAM1	
tenifunomide		chemical drug				1,29E-03		FAS,ICAM1,IL1B	126 (11)
Traj18		other				1,29E-03		Ccl2,CD40,CD86	135 (11)
GPR132		G-protein coupled receptor				1,29E-03		Ccl2,ICAM1,MRC1	175 (13)
ACVR2A		kinase				1,29E-03		Hamp/Hamp2,ICAM1,ID1	97 (4)
APOH		transporter				1,29E-03		CD40,CD83,CD86	156 (18)
MAS1		G-protein coupled receptor				1,29E-03		Ccl2,IL1B,MRC1	179 (17)
NDFIP1		other				1,29E-03		IL1B,LYN,SLC11A2	
2-[[[9-isopropyl-6-[[4-(2-pyridyl)phenyl]methylamino]purin-2-yl]amino]butan-1-ol		chemical - kinase inhibitor				1,29E-03		Ccl2,CCNA2,CD86	
lfnz (includes others)		cytokine				1,29E-03		CD40,CD83,CD86	119 (8)
HMOX1		enzyme	0,000			1,34E-03		CASP3,Ccl2,CD14,CXCL12,ICAM1,ID1,ID3,IL1B,NQO1	197 (21)
ERG		transcription regulator	1,000	bias		1,34E-03		ARHGAP28,BIRC3,CAMK1D,CCNA2,DOCK1,DOCK10,ICAM1,KLK3,MYO1D,RRAS	
TSLP		cytokine	1,966	bias		1,35E-03		CCR7,CD40,CD83,CD86,ICAM1	154 (16)
CEACAM1		transporter	1,342	bias		1,35E-03		ANG,CD40,CD86,CSF3,ICAM1	176 (18)
Tcf7	4,054	transcription regulator	-1,167	bias		1,35E-03		BATF,GATA3,GZMA,IL7R,LYN	
monocrotaline		chemical toxicant	0,600			1,35E-03		Ccl2,GAP43,ID1,ID3,IL1B	103 (7)
RETNLB		other	Activated	2,630	bias	1,36E-03		CASP3,Ccl2,Ccl8,CD86,IL1B,Saa3,TINAGL1	197 (18)
Gsk3		group		0,911	bias	1,36E-03		CD40,CEBPA,GDF15,ICAM1,IL1B,JUN,TNFAIP3	185 (16)
JUND		transcription regulator				1,36E-03		ALAS1,Ccl8,CXCL16,FOSL1,FTH1,RUNX2,SDC1	91 (9)
ciglitazone		chemical drug		-0,509		1,36E-03		CAV2,Ccl2,ICAM1,JUN,KLK3,NFKBIA,SERPINE1	247 (24)
N-Ac-Leu-Leu-nortetocinal		chemical - protease inhibitor		-0,506	bias	1,36E-03		CAMK4,CASP3,CEBPA,HLA-A,ICAM1,NFKBIA,RUNX2	232 (22)
dehydroisoandrosterone		chemical - endogenous mammalian		-0,742		1,36E-03		BMP4,Ccl2,ICAM1,KLK3,NFKBIA,RACK1,Saa3	197 (22)
IL12B		cytokine		1,525	bias	1,37E-03		Ccl2,CD86,CEBPD,ICAM1,IL1B,PIK3AP1	182 (18)

TCF12		transcription regulator		0.655	bias	1,37E-03	BLNK,FLT3,GATA3,GJB2,IL7R,ZC3H12A	30 (2)
sodium arsenite		chemical drug		1,400	bias	1,37E-03	CEBPA,FBX1,GADD45B,HK2,JUN,LITAF	187 (18)
TFAP2A		transcription regulator		-1,623		1,37E-03	ALCAM,BIRC3,CEBPA,KLF4,PLA2G16,RAB27B,SERPINE1,SOD2	195 (16)
INSIG1		other	Inhibited	-2,828	bias	1,37E-03	Ccl8,CCR7,CD68,CLEC4D,FABP5,HMGCS2,MRC1,NFKBIZ	
BRCA1		transcription regulator	Activated	2,319	bias	1,38E-03	Cd24a,FAS,GADD45B,GDF15,HSPB1,KLK3,NEK2,NOO1,PERP,SERPINE2	198 (17)
zembrone		chemical - endogenous non-mammalia		-0.832	bias	1,39E-03	BCL2A1,BIRC3,CASP3,ICAM1	101 (10)
NFAT (complex)		complex				1,39E-03	CD68,CD86,ICAM1,SERPINE1	
TRPS1		transcription regulator		0,152		1,39E-03	ENPP1,GALNT3,RUNX2,SERPING1	
MAP3K3		kinase				1,39E-03	BMP2,JUN,STEAP4,TNFAIP3	150 (17)
CLDN6		other				1,39E-03	CLDN10,CLDN4,KLF4,TGM3	
TRPV4		ion channel	Activated	2,000	bias	1,39E-03	Ccl2,Ccl8,FAS,Saa3	113 (7)
SB 290157		chemical reagent	Inhibited	-2,000	bias	1,39E-03	BMP4,CD40,CD86,IL1B	176 (13)
GLI1		transcription regulator	Activated	2,527	bias	1,40E-03	BCL2A1,Ccl2,Cd24a,CSF1,FAS,JUP,KLF4,KLK3,KRT19,MEST	139 (7)
4-hydroxytamoxifen		chemical drug	Activated	2,359	bias	1,44E-03	CDC47,CEBPA,CEBPD,CLDN4,IL7R,JUN,KRT19,NFKBIA,RND1,TM4SF1	215 (22)
Z-LLL-CHO		chemical - protease inhibitor		1,791	bias	1,46E-03	BIRC3,Ccl2,CEBPA,DMD,FAS,GSTP1,HSPB1,ICAM1,IL1B,JUN	217 (22)
USF1		transcription regulator		1,925	bias	1,46E-03	CD2,CEBPA,GATA3,Hamp1Hamp2,PRKG1,SERPINE1,TNFAIP3	
NCOA3		transcription regulator	Activated	2,592	bias	1,46E-03	CCNA2,CEBPA,GJB2,HK2,Muc1,NFKBIA,XDH	151 (11)
KLF6	1,036	transcription regulator		1,303		1,46E-03	Ccl2,IL1B,MRC1,NFKBIA,SDC1,TNFAIP3,TNIP1	154 (16)
PRNP		other		0,059		1,46E-03	CASP3,CD44,FOSL1,HSPB1,IL1B,LRP1,NFKBIA	212 (20)
STAT2		transcription regulator		1,980	bias	1,49E-03	Ccl2,CD40,CD86,GBP6,IFI47,IRF5	137 (10)
GPS2		transcription regulator		-1,706	bias	1,49E-03	BLNK,Ccl2,CD14,DHRS3,NFKBIA,ZNF703	
diphenyleiiodonium		chemical reagent	Inhibited	-2,400	bias	1,49E-03	BMP2,Ccl2,CLDN4,IL1B,SERPINE1,SOD2	189 (18)
DICER1		enzyme	Inhibited	-2,621		1,49E-03	CASP3,CD44,CD86,DEPP1,ICAM1,IDS,IL1B,IL7R,JUN,RASGRP1	210 (22)
CDKN2A		transcription regulator		-0,432		1,49E-03	BTG3,CASP3,Ccl2,Ccl8,CCNA2,CCR7,CEBPD,CXCL14,DONSON,IL1B	226 (22)
FN1		enzyme		1,571	bias	1,52E-03	BIRC3,CD83,CD8A,HK1,IL1B,NFKBIA,RUNX2,SDC1,SDC4,SERPINE1	215 (17)
RNASEH2A		enzyme				1,52E-03	IFI16,IFNGR2,IRF5,NFKBIA,OASL	
TLR7/8		group	Activated	2,000	bias	1,52E-03	BCL2A1,NFKBIA,NFKBIZ,PNRC1,TNFAIP3	107 (7)
TNFSF12		cytokine	Activated	2,747	bias	1,55E-03	BST1,Ccl2,CD68,CLEC4D,ICAM1,IL1B,NFKBIA,TNFRSF12A	174 (17)
PTGER2		G-protein coupled receptor		1,725	bias	1,55E-03	CCNA2,CCR7,CLEC4D,ESD,IL1B,IL36G,NEK2,SERPINE1	157 (17)
TNFRSF8		transmembrane receptor		0,816		1,63E-03	CCR7,FAS,IFI16,LCP2,RELB,VCL	
NODAL		growth factor		-1,000		1,63E-03	CCR7,CD40,CD86,MRC1	94 (7)
SLPI		other		-0,762	bias	1,63E-03	CD40,CD86,ICAM1,NFKBIA	126 (16)
NFKBIZ	0,499	transcription regulator		1,960	bias	1,63E-03	Ccl2,CEBPD,CSF3,IL36G	189 (12)
HSPD1		enzyme		1,969	bias	1,63E-03	Ccl2,GATA3,ICAM1,IL1B	156 (19)
ochratoxin A		chemical toxicant				1,63E-03	CASP3,FAS,GSTP1,NOO1	
IRS1		enzyme		1,054	bias	1,66E-03	BMP6,BUB1,CEBPA,CEBPD,GATA3,KLF4,NFKBIA,RHOA,Tcf7	173 (12)
chlorpromazine		chemical drug		-0,555	bias	1,69E-03	CD83,DEPP1,HPN,IL1B,SLC2A3	

azithromycin		chemical drug				1,69E-03	Ccl2,IL1B,MRC1	199 (20)
icilin		chemical reagent				1,69E-03	Ccl2,CSF3,IL1B	
chlorcyclizine		chemical drug				1,69E-03	DEPP1,HPN,SLC2A3	
WWC1	1,521	transcription regulator				1,69E-03	BMP2,RASSF4,YAP1	49 (6)
LECT2		other				1,69E-03	Ccl2,CSF3,IL1B	123 (9)
SH3KBP1		other				1,69E-03	BCL2A1,CD86,SERPINE1	86 (6)
PTGIR		G-protein coupled receptor				1,69E-03	Ccl2,CXCL12,IL1B	169 (16)
C9		other				1,69E-03	Ccl2,ICAM1,IL1B	107 (9)
CACNA1A		ion channel				1,69E-03	Ccl2,CD88,IL1B	
CXCL1		cytokine				1,69E-03	Ccl2,ICAM1,IL1B	135 (12)
LY-2510924		biologic drug				1,69E-03	BUB1,CD14,LILRB3	
edaravone		chemical drug				1,69E-03	CASP3,Ccl2,FAS	180 (20)
SR 144528		chemical reagent				1,69E-03	ICAM1,IL1B,NFKBIA	187 (16)
5-fluorouracil		chemical drug	Activated	2,031		1,70E-03	CASP3,CD40,CD81,CD86,FAS,GAP43,GDF15,IL1B,JUN,RHBD2	207 (19)
5-N-ethylcarboxamido adenosine		chemical reagent		-0,707		1,75E-03	Ccl2,CEBPD,CSF2RB,DUSP16,HK2,IL1B,KLF6,SERPINE1	177 (15)
TSC2		other	Inhibited	-2,355	bias	1,75E-03	Ccl2,CD68,CP,GAP43,HK2,HMGCS2,HSPB1,RASSF4,SOD2	198 (19)
EGLN1		enzyme		1,000		1,77E-03	Ccl2,CD86,Hamp/Hamp2,ICAM1,IL1B,SDC4	196 (19)
RHO		G-protein coupled receptor		-0,447		1,77E-03	CASP3,CD44,CEBPD,HK2,SERPINE1,TNFAIP3	
SIN3A		transcription regulator				1,77E-03	CASP3,GADD45B,GSTP1,KLF6,KLK3,SERPINE1	162 (11)
IRF1		transcription regulator	Activated	3,056	bias	1,79E-03	C1R,CASP3,CD40,CXCL16,IF47,IL1B,IRF5,OASL,PLA2G16,PSMB10	168 (16)
CDH1		other		0,051		1,80E-03	BMP4,CD44,FOSL1,JUN,JUP,KRT19,RALA	213 (22)
CFTR		ion channel		-0,896		1,80E-03	BLNK,CFI,FAS,NFKBIA,NFKBIZ,Saa3,TNFAIP3	133 (14)
phytohemagglutinin		chemical drug	Activated	2,750	bias	1,81E-03	ALDH2,CASP3,CCR7,CD44,CD83,CSF1,CXCL12,FAS,GATA3,ICAM1	173 (19)
CD24		other				1,85E-03	APOBEC3B,GDF15,ICAM1,JUN,OASL,RELB,SLC30A1,SLC4A4	135 (7)
ACKR2		G-protein coupled receptor	Inhibited	-2,236	bias	1,88E-03	ACOD1,IF16,IF47,IL1B,OASL	
D-galactosamine		chemical - endogenous mammalian	Activated	2,219	bias	1,88E-03	CD14,GDF15,ICAM1,JUN,SOD2	148 (17)
TAF4B		transcription regulator				1,90E-03	JUN,NFKBIA,TNFAIP3,ZBTB16	
OSMR		transmembrane receptor		1,969	bias	1,92E-03	BIRC3,Ccl2,GAP43,IF47,IL6ST,Serpina3g (includes others)	175 (18)
USF2		transcription regulator				1,92E-03	CD2,GATA3,Hamp/Hamp2,KLK3,PRKG1,SERPINE1	
HDAC4		transcription regulator				2,04E-03	DMD,FOSL1,HOMER2,JUN,RAB3C,RTN1,RUNX2,SYN2,TNFRSF12A	
LCN2		transporter		0,163	bias	2,06E-03	BMP2,Ccl2,Ccl8,IL1B,MRC1,RUNX2,TINAGL1	116 (9)
amphetamine		chemical drug		1,050	bias	2,06E-03	BMP4,BUB1,FOSL1,GRM8,ICAM1,JUN,TNFAIP3	106 (7)
ATP		chemical - endogenous mammalian	Activated	2,515	bias	2,08E-03	Ccl2,CCR7,CD14,CD83,CD86,ICAM1,IL1B,SERPINE1	150 (18)
EGLN		group	Inhibited	-3,109	bias	2,09E-03	CAVIN1,Ccl2,FTL,GATA3,Hamp/Hamp2,HK2,RNASE4,Serpina3g (includes others),SERPINE1,STC2	151 (7)
resatorvid		chemical drug				2,17E-03	APOBEC3B,Ccl2,IL1B	134 (16)
perhexiline		chemical drug				2,17E-03	DEPP1,HPN,SLC2A3	
LILRA2		other				2,17E-03	CD40,CSF3,MRC1	

ERFE		other				2,17E-03	ATOH8,Hamp/Hamp2,ID1	
mir-373		microRNA				2,17E-03	CD44,LATS2,SERPINE1	
FSTL1		other				2,17E-03	Ccl2,GDF15,IL1B	146 (16)
ATXN3		peptidase				2,17E-03	CXCL12,IL1RL1,SOD2	
KRT8	0,955	other				2,17E-03	KRT19,KRT20,Reg3d	
CCL3L3		cytokine				2,17E-03	Ccl2,CD40,IL1B	135 (13)
SIRPA		phosphatase				2,17E-03	Ccl2,CSF3,IL1B	150 (17)
hydroquinone		chemical - endogenous mammalian				2,17E-03	IL1B,JUN,SFN	148 (12)
MRTFA		transcription regulator		0,946		2,19E-03	CXCL12,CYBA,F11R,HLA-A,ICAM1,ID1,RAB27B,Saa3,TST,VCL	29 (3)
UTP		chemical - endogenous mammalian				2,19E-03	Ccl2,CD14,ICAM1,SERPINE1	161 (18)
PROCR		other		-0,747	bias	2,19E-03	Ccl2,GBP6,ICAM1,IL1B	169 (19)
BCAP31		transporter		-0,152	bias	2,19E-03	Ccl2,CD81,CD9,IL1B	
BGN		other		0,882	bias	2,19E-03	BMP2,IL1B,RUNX2,SERPINE1	220 (22)
Saa3	1,778	other				2,19E-03	APOA1,BMP2,CSF3,RUNX2	
SLC9A3		ion channel				2,19E-03	Ifi47,Reg3d,Saa3,Upp1	
BMPR1B		kinase		1,969	bias	2,19E-03	ID1,ID3,RUNX2,SERPINE1	176 (17)
diallyl disulfide		chemical - endogenous non-mammalian		1,980	bias	2,19E-03	CASP3,GDF15,GSTA3,NQO1	
ceramide		chemical - endogenous mammalian		1,091	bias	2,19E-03	CASP3,ICAM1,IL1B,JUN	169 (21)
NCOA2		transcription regulator		0,964	bias	2,20E-03	BMP2,Ccl2,CEBPA,IL1B,KLK3,KRT19,NFKBIA,OASL	196 (18)
arsenite		chemical toxicant				2,20E-03	ESD,GSTP1,Hspa1b,HSPB1,JUN,NQO1,PRKG1,SERPINE1	217 (22)
FOXA2		transcription regulator		1,668	bias	2,24E-03	ALAS1,APOA1,Ccl8,CEBPA,CLCA1,CLDN4,EFHD2,FABP5,GPRC5C,HK2	111 (7)
mir-21		microRNA	Inhibited	-3,219	bias	2,25E-03	C1R,CCNA2,FAS,GATA3,GBP6,Gbp8,ICAM1,IFI16,IL1B,IL36G	184 (19)
FOXL2		transcription regulator	Activated	2,429	bias	2,26E-03	BCL2A1,BMP2,FAS,ICAM1,SOD2,TNFAIP3	
BCL2L1		other		-0,928		2,26E-03	CASP3,Ccl2,CD44,FAS,IL1B,NQO1	160 (18)
CASR		G-protein coupled receptor		1,667	bias	2,26E-03	ARHGEF3,CD44,Clec2d (includes others),CSF1,GATA3,ID1,ITGB7,VCL,ZYX	132 (7)
TLR8		transmembrane receptor	Activated	2,235	bias	2,31E-03	CCR7,CD40,CD83,CD86,IL1B	146 (18)
A2M		transporter		0,372	bias	2,31E-03	Ccl2,GADD45B,GAP43,IL1B,LRP1	180 (20)
IFNGR1		transmembrane receptor		1,698	bias	2,31E-03	Ccl2,CXCL12,FAS,ICAM1,IL1B	151 (15)
NLRP3		other		0,840		2,35E-03	Ccl2,CSF3,CXCR3,GATA3,IL1B,MRC1,RELB	150 (15)
bexarotene		chemical drug		1,411	bias	2,40E-03	ALCAM,BMP6,Ccl2,DEPP1,DHRS3,ICAM1,ID1,IL1B,Nes,PNRC1	193 (18)
cytarabine		chemical drug	Activated	2,431	bias	2,44E-03	CD40,CD86,FAS,HLA-A,ICAM1,IL1B	188 (18)
black raspberry extract		chemical drug				2,46E-03	AKR1B10,BUB1,CD44,KRT20,LAMB3,PLS3,SDC1,SLC30A1	
RET		kinase	Activated	2,425	bias	2,46E-03	Ccl2,CSF1,CSF3,CXCL12,IL1B,KLK3,PTPN13,SCARA3	181 (17)
CCR2		G-protein coupled receptor	Activated	2,743	bias	2,46E-03	Ccl2,Ccl8,CD40,CD86,CSF1,CSF3,CXCL12,IL1B	184 (19)
BRD4		kinase	Activated	2,000	bias	2,49E-03	CCNA2,CEBPA,ICAM1,IL7R,LCK,MAL,MCM3,NQO1,STC2	159 (11)
RORA		ligand-dependent nuclear receptor		1,609	bias	2,49E-03	Cald1,Ccl2,Ccl8,CLCA1,GADD45B,GSTP1,IL1B,LPIN2,NFKBIA,SLC2A3	131 (13)
aluminum hydroxide		chemical drug				2,50E-03	Glycam1,ICAM1	

LY75	1,199	transmembrane receptor				2.50E-03	CD40,CD86	97 (7)
B3GNT2		enzyme				2.50E-03	CD14,IL1B	
CYP2C8		enzyme				2.50E-03	Ccl2,IL1B	137 (11)
SIRT4		enzyme				2.50E-03	Ccl2,IL1B	
Casein		group				2.50E-03	ICAM1,IL1B	
cerotic acid		chemical - endogenous mammalian				2.50E-03	CD40,IL1B	
RNF6		transcription regulator				2.50E-03	BMF,KLK3	136 (7)
TAOK2		kinase				2.50E-03	GSTP1,SOD2	
miR-328-3p (and other miRNAs w/seed UGGCCCU)		mature microRNA				2.50E-03	CD44,CEBPA	
EGFL7		other				2.50E-03	ICAM1,NFKBIA	
FBXL5		enzyme				2.50E-03	FTH1,SLC11A2	
PTCH2		transmembrane receptor				2.50E-03	CXCL12,JAG1	
CFL1		other				2.50E-03	ICAM1,JUN	122 (12)
Mt3		other				2.50E-03	CEBPD,GSTP1	
DEETGE-CAL-Tat		chemical reagent				2.50E-03	NQO1,SOD2	
ascomycin		chemical reagent				2.50E-03	CD83,CD86	
phenanthridine		chemical toxicant				2.50E-03	CD83,CD86	
succinylacetone		chemical - endogenous mammalian				2.50E-03	ALAS1,CYBA	
MAX		transcription regulator		-0.128		2.51E-03	FTH1,GADD45B,HK2,HMGA1,ID1,KLF6,SLC2A3	
COL16A1		other	Inhibited	-2.621	bias	2.51E-03	ANTXR1,HK2,ICAM1,ID1,JD3,JUN,SERPINE1	181 (17)
TCL1A		transcription regulator				2.51E-03	ACOD1,CD68,CLEC4D,GDF15,IL1B,LY9,STEAP4	
choline fenofibrate		chemical drug		-0.218		2.51E-03	CXCL12,NFKBIA,SERPINE1,UGT1A7 (includes others)	111 (7)
CX3CR1		G-protein coupled receptor		0.000		2.51E-03	Ccl2,CD14,ICAM1,IL1B	160 (17)
RC3H1		enzyme				2.51E-03	CCR7,IL1B,IL6ST,SDC1	
MALP-2s		chemical reagent	Activated	2.000	bias	2.51E-03	BCL2A1,CD40,CD86,IL1B	194 (21)
SNCA		enzyme		1.779	bias	2.55E-03	CASP3,Ccl2,CD68,COBL,DHRS3,HOMER2,Hspa1b,Iff47,IL1B,PTK2B	201 (18)
VitaminD3-VDR-RXR		complex	Activated	2.207	bias	2.55E-03	CD14,IL1RL1,KLF4,SEMA3B,SERPINB1	
MYBL2		transcription regulator		0.152	bias	2.55E-03	BIRC3,BUB1,CCNA2,CEBPA,ID1	
SPHK1		kinase		1.432	bias	2.55E-03	BIRC3,Ccl2,IL1B,JUN,SERPINE1	174 (18)
IL12A		cytokine		1.091	bias	2.55E-03	CASP3,CD86,FAS,ICAM1,IL1B	160 (16)
vincristine		chemical drug		1.467	bias	2.55E-03	FAS,GAP43,IL1B,JUN,SOD2	170 (20)
D-fructose		chemical - endogenous mammalian	Activated	2.219	bias	2.55E-03	Ccl2,CD68,CEBPA,ICAM1,IL1B	176 (14)
TAL1		transcription regulator		-1.066		2.59E-03	BUB1,DOCK1,GATA3,HLA-A,ICAM1,JUN,MEST,NFKBIZ,PTK2B,SLC2A3	131 (12)
Hdac		group		-0.426		2.61E-03	BMP2,FOSL1,GADD45B,GATA3,IL1B,JUN,JUP,KLF6,PREX1,SMO	244 (22)
DKK1		growth factor	Inhibited	-2.389	bias	2.63E-03	BMP4,BMP6,CD44,GATA3,RUNX2,Tcf7	146 (9)
RHOA		enzyme		1.347	bias	2.67E-03	GDF15,ICAM1,IL1B,JUN,PRKG1,RND3,RUNX2	203 (21)
imatinib		chemical drug		-0.292	bias	2.71E-03	BLNK,BMP2,CASP3,CCNA2,CEBPA,CXCL12,ID1,IL1B,LYN,MAPK4	222 (23)

Actin		group				2,72E-03	CAVIN1,CD44,IL1B	
Ptprd		phosphatase				2,72E-03	Ccl2,CEBPD,CXCL14	
N(2)-(gamma-D-glutamyl)-meso-2,2'-diaminopimelic acid		chemical reagent				2,72E-03	Ccl2,ICAM1,IL1B	152 (15)
elastase		group				2,72E-03	ICAM1,IL1B,MLKL	133 (15)
PSMB10	0,446	peptidase				2,72E-03	GATA3,NFKBIA,TNFAIP3	85 (7)
Betacatenin/TCF		complex				2,72E-03	CD44,JUN,RUNX2	
ACE2		peptidase				2,72E-03	Ccl2,IL1B,SERPINE1	160 (11)
Hsp27		group		0,000		2,80E-03	CASP3,CD14,CD86,CSF1,KLK3	192 (18)
LRP6		transmembrane receptor		-0,176		2,80E-03	CD88,GATA3,HK2,IL1B,SLC2A3	
ADRA1B		G-protein coupled receptor				2,80E-03	CEBPD,FABP5,IL6ST,JUN,RALA	118 (10)
TCF7		transcription regulator				2,80E-03	CEBPA,CEBPD,GATA3,LCK,Tcf7	123 (9)
Igm		complex		-1,119		2,84E-03	BCL2A1,CCNA2,CD40,CD44,FAS,ID3	179 (20)
SPDEF		transcription regulator				2,84E-03	BIRC3,CD40,KLK3,LASP1,SDC1,SERPINE1	100 (9)
RASSF1		other		0,626		2,85E-03	AMIGO2,CASP3,CAV2,CCNA2,GDF15,KLF4,LITAF	137 (7)
SAMSN1		other	Activated	2,646	bias	2,85E-03	BATF,CD40,NFKBIZ,OASL,SDC1,Vnn3,ZC3H12A	89 (6)
CLECTA		transmembrane receptor		1,940	bias	2,87E-03	CCR7,CLCA1,CSF3,IL1B	164 (18)
B2M		transmembrane receptor		0,152	bias	2,87E-03	CD8A,Hamp,Hamp2,HLA-A,IL1B	
FCGR2A		transmembrane receptor		1,992	bias	2,87E-03	Ccl2,FAS,IL1B,SERPINE1	205 (20)
oltipraz		chemical drug		1,961	bias	2,87E-03	FTH1,GSTP1,NQO1,UGT1A7 (includes others)	
methylnitrosoguanidine		chemical toxicant		1,960	bias	2,87E-03	CEBPA,FAS,GDF15,SERPINE1	204 (17)
suramin		chemical drug		-0,911		2,87E-03	Ccl2,CD40,CD86,ICAM1	150 (18)
dicarbethoxydihydrocollidine		chemical toxicant				2,87E-03	Ccl2,CCNA2,IL1B,KRT19	81 (7)
hemozin		chemical - endogenous non-mammals		1,921	bias	2,87E-03	Ccl2,CD83,ICAM1,IL1B	154 (18)
CpG ODN 2006		chemical reagent	Activated	2,507	bias	3,03E-03	BIRC3,CD40,CD86,ICAM1,IL1B,NFKBIZ,OASL	146 (16)
MIF		cytokine	Activated	2,742	bias	3,05E-03	Ccl2,CD44,CXCL16,ICAM1,IL1B,IL6ST,IL7R,JUN	184 (20)
paraquat		chemical toxicant		1,916	bias	3,05E-03	APOA1,CEBPD,FAS,GSTA3,GSTP1,KLF6,LAMC2,LPIN2	136 (7)
C3		peptidase		1,378	bias	3,06E-03	CASP3,Ccl2,CSF1,CXCL16,IL1B,JUN	143 (16)
MYRF		transcription regulator		0,000		3,06E-03	ANXA6,CFI,GDF15,HPGD5,MFSD1,RHO	
PRKD1		kinase	Activated	2,190	bias	3,08E-03	Ccl2,CD2,CD86,IL1B,TNFAIP3	204 (21)
valsartan		chemical drug	Inhibited	-2,202	bias	3,08E-03	Ccl2,CYBA,ICAM1,IL1B,SERPINE1	175 (18)
PTH		other	Activated	2,296	bias	3,09E-03	BMP2,Ccl2,CSF1,CXCL12,CYBA,GALNT3,JUN,RUNX2,Saa3,SDC4	154 (16)
EDN1		cytokine	Activated	2,748	bias	3,15E-03	ADAM19,ANXA6,BCL2A1,CCR7,FOSL1,ICAM1,JUN,PLCB4,SDC1,SERPINE1	176 (16)
IFN Beta		group		1,445	bias	3,16E-03	ACOD1,CCR7,CD40,CD83,CD86,HLA-A,IFI16,IL1B,OASL	173 (18)
mir-155		microRNA		-0,684	bias	3,22E-03	CD68,CEBPA,CSF3,DOCK1,HK2,IL1B,IRAK3,SERPINE1	201 (20)
HNF1B		transcription regulator		0,816		3,22E-03	CD44,F11R,ID1,ID3,JAG1,RNASE4,UGT1A7 (includes others),UPP1	
RPSA		translation regulator	Inhibited	-2,000	bias	3,26E-03	CSF3,IFI47,IL1B,RELB	151 (9)
miR-221-3p (and other miRNAs w/seed GCUACAU)		mature microRNA		-1,994	bias	3,26E-03	BMF,ICAM1,KLK3,SOD2	

VAV3		cytokine				3,26E-03	BCL2A1,CAV2,KLK3,RALA	
CDK5		kinase		1,929	bias	3,26E-03	CD14,JUN,RALA,TNFAIP3	113 (10)
NFATC3		transcription regulator		-0,254	bias	3,29E-03	B3GAT1,BMP2,CASP3,GAP43,JUN,PRKD3	
2-deoxyglucose		chemical drug		0,056		3,29E-03	BMF,CASP3,Ccl2,IL1B,JUN,SOD2	164 (17)
AKT1		kinase	Activated	2,751	bias	3,29E-03	AKR1B10,BCL2A1,BIRC3,BMP2,CASP3,Ccl8,CD40,CD86,CEBPD,FABP5	209 (17)
monophosphoryl lipid A		chemical drug				3,34E-03	Ccl2,CD86,IL1B	155 (20)
1'-acetoxychavicol acetate		chemical reagent				3,34E-03	BCL2A1,BIRC3,ICAM1	118 (12)
TIFA		other				3,34E-03	ICAM1,NFKBIA,TNFAIP3	126 (15)
NSD1		transcription regulator				3,34E-03	BMP4,IRAK3,KLF6	
TRAF5		transporter				3,34E-03	CD86,FAS,ICAM1	155 (17)
TNFSF9		cytokine				3,34E-03	CCR7,CD14,ICAM1	104 (7)
Z-551		chemical reagent				3,34E-03	Ccl2,CD68,IL1B	105 (7)
FITC		chemical reagent				3,34E-03	Ccl2,CD86,ICAM1	
HDL		complex	Inhibited	-2,159	bias	3,37E-03	Ccl2,CD40,CD86,ICAM1,IL1B	147 (18)
PDLIM2		other		-1,890		3,41E-03	BST1,CRISPLD2,FBP1,RTN1,SCARA3,SLC43A3,STC2	
mir-210		microRNA	Inhibited	-2,368	bias	3,41E-03	CHD9,CXCL12,FGFR11,KLF6,LASP1,RAD52,SCARA3	
FOXO4		transcription regulator		0,692		3,41E-03	ANXA3,FABP5,GADD45B,JAG1,LCP2,SERPINE1,SOD2	150 (7)
ciprofibrate		chemical drug		0,174		3,47E-03	CXCL12,GSTP1,KRT8,MGLL,NFKBIA,OAT,Saa3,SLC4A4,Vnn3	114 (8)
L-triiodothyronine		chemical - endogenous mammalian		-0,730	bias	3,49E-03	APOA1,BMP4,CAMK4,CD44,CEBPA,CXCL12,FAS,GDF15,H6PD,ID1	190 (19)
LGALS1		other		1,710	bias	3,53E-03	ANG,Ccl2,CXCL16,IFNGR2,IL1B,SERPINE1	219 (23)
GW3965		chemical reagent		-1,039		3,57E-03	APOA1,Ccl2,CCNA2,CD86,CSF3,FABP5,IL1B,NFKBIA	148 (12)
RPTOR		other		-0,136	bias	3,62E-03	Ccl2,CCR7,CD86,HK2,IL1B,LY75,MRC1	188 (21)
TIRAP		other		0,762	bias	3,68E-03	CD40,CD86,ICAM1,IL1B	148 (17)
VTN		other		1,199	bias	3,68E-03	IL1B,RUNX2,SERPINE1,SFN	154 (20)
TAB1		enzyme		-0,762	bias	3,68E-03	BIRC3,IL1B,JUN,SERPINE1	143 (18)
butylated hydroxyanisol		chemical toxicant		1,896	bias	3,68E-03	GSTA3,GSTP1,JUN,NQO1	46 (3)
selenium		chemical drug		-0,152		3,68E-03	APOA1,CEBPA,KLK3,MRC1	114 (7)
Hedgehog		group				3,68E-03	CCNA2,JAG1,KLF4,KLK3,KRT19	
salicylic acid		chemical drug		-1,000	bias	3,68E-03	APOA1,CSF1,CSF3,GDF15,IL1B	161 (20)
AMPK		complex		1,195		3,75E-03	BMF,BMP2,Ccl2,CXCL12,LITAF,OAT,RUNX2,SERPINE1	202 (21)
3M-002		chemical reagent	Activated	2,204		3,75E-03	ACOD1,BCL2A1,CD40,CD83,CD86,FOSL1,IL1B,Saa3	140 (15)
staurosporine		chemical - kinase inhibitor		-1,238		3,75E-03	CASP3,CD28,FAS,FOSL1,ICAM1,IL1B,NQO1,SERPINE1	169 (20)
rifampin		chemical drug	Activated	2,412	bias	3,79E-03	ALAS1,CD14,CSF1,CYP3A7,GSTP1,IL1B,PADI2,SERPINE1,UGT1A7 (includes others)	26 (4)
H89		chemical - kinase inhibitor		-1,795	bias	3,79E-03	Ccl2,CD14,CD83,GSTP1,IL1B,NFKBIA,SDC1,SERPINE1,SOD2	209 (16)
daidzein		chemical drug		0,816	bias	3,84E-03	CASP3,CD86,CXCR3,HLA-A,LCP2,NQO1,RASGRP1	169 (17)
ARNT		transcription regulator		0,277	bias	3,95E-03	CCR7,CD81,CSF3,CXCR3,HK2,NQO1,SERPINE1,SLC2A3	182 (13)
vorinostat		chemical drug		-1,356		3,99E-03	BIRC3,BMF,CASP3,CD8A,CEBPA,FAS,ICAM1,IL1B,JUN,KLF4	204 (18)



9,10-dimethyl-1,2-benzanthracene		chemical toxicant				4,02E-03	IL1B,JUN,MRC1,NQO1,SERPINE1	182 (20)
beta-naphthoflavone		chemical toxicant	1,350	bias		4,02E-03	FTH1,GSTP1,NQO1,Saa3,UGT1A7 (includes others)	208 (17)
HDAC5		transcription regulator				4,05E-03	HK2,HMGCS2,JUN,KLF6,PTPN13,RUNX2	
AGER		transmembrane receptor	1,449	bias		4,05E-03	Ccl2,CSF1,FAS,ICAM1,IL1B,SERPINE1	186 (21)
SHARPIN		other				4,05E-03	IL1B,MLKL,TNFAIP3	120 (14)
GAS2L3		other				4,05E-03	FAS,PTPN14,TM4SF1	
BMP10		growth factor				4,05E-03	ICAM1,ID1,NFKBIA	149 (7)
PRF1		transporter				4,05E-03	Ccl2,CD44,IL1B	137 (12)
MAFG		transcription regulator				4,05E-03	GSTA3,GSTP1,NQO1	
EPHX2		enzyme				4,05E-03	Ccl2,ICAM1,IL1B	190 (19)
MAPK10		kinase				4,05E-03	CASP3,CD44,JUN	184 (17)
CXCL2		cytokine				4,05E-03	Ccl2,ICAM1,IL1B	182 (18)
VIPR1		G-protein coupled receptor				4,05E-03	Ccl2,CD40,CD86	119 (13)
SMURF2		enzyme				4,05E-03	JUN,RUNX2,SERPINE1	186 (17)
MAML1		transcription regulator				4,05E-03	IL1B,IL7R,RND3	66 (7)
EFNB2		kinase				4,05E-03	IL7R,RUNX2,TIAM1	
DSP		other				4,05E-03	Ccl2,CEBPA,JUP	
BHLHA15		transcription regulator				4,05E-03	CCKAR,GJB2,KRT19	
cycloplazonic acid		chemical - endogenous non-mammalia				4,05E-03	BCL2A1,Ccl2,FAS	86 (7)
silicon dioxide		chemical drug				4,05E-03	FOSL1,IL1B,JUN	208 (21)
erythromycin		chemical drug				4,05E-03	CD86,ICAM1,IL1B	148 (17)
CDK19		kinase	-1,414	bias		4,07E-03	CD81,FAS,JUN,RHBDP2,SDC1,SFN,UPP1	
atorvastatin		chemical drug	-1,671			4,09E-03	APOA1,BMP2,BMP6,Ccl2,CD40,CYBA,GADD45B,ICAM1,IL17RD,JUN	204 (21)
p38 Sapk		group				4,11E-03	CD83,CD86	
Mst1krs		group				4,11E-03	RELB,YAP1	
ATPase		group				4,11E-03	CD40,ICAM1	
Erm		group				4,11E-03	CD44,ICAM1	
CYP		group				4,11E-03	CD86,NQO1	
olmesartan		chemical drug				4,11E-03	CYBA,ICAM1	
FOXK2		transcription regulator				4,11E-03	MCM3,SERPINE1	
ZMIZ2		transcription regulator				4,11E-03	CD44,JUN	
Mucin		group				4,11E-03	CD83,CD86	
DCB 3503		chemical reagent				4,11E-03	Ccl2,IL1B	
TDP2		transcription regulator				4,11E-03	KLK3,SYT1	
HADHA		enzyme				4,11E-03	Ccl2,IL1B	95 (7)
MAPKAPK5		kinase				4,11E-03	MAPK6,TNFAIP3	
Orm1 (includes others)		other				4,11E-03	Ccl2,IL1B	

EIF2AK1		kinase				4,11E-03	Hamp/Hamp2,IL1B	
BCAR3		other				4,11E-03	RALA,RRAS	
CES1		enzyme				4,11E-03	Ccl2,IL1B	
Cxcl3		cytokine				4,11E-03	CEBPA,CEBPD	
ELF2		transcription regulator				4,11E-03	KLK3,LYN	
4,4'-disothiocyanostilbene-2,2'-disulfonic acid		chemical drug				4,11E-03	CASP3,Ccl2	128 (13)
cimetidine		chemical drug				4,11E-03	FAS,GDF15	
cinnamyl-3,4-dihydroxy-alpha-cyanocinnamate		chemical reagent				4,11E-03	Ccl2,MRC1	
orantinib		chemical drug				4,11E-03	CASP3,ICAM1	
retinaldehyde		chemical - endogenous mammalian				4,11E-03	BMP2,CD44	
Stat3-Stat3		complex	Activated	2.000	bias	4,14E-03	FTL,ICAM1,JUN,SOD2	144 (7)
HOXC8		transcription regulator		-1.000		4,14E-03	ADAM19,Ccl2,KRT19,NOO1	
SHH		peptidase		1.133	bias	4,28E-03	BMP2,BMP4,HK2,HMG1,1D1,LASP1,MCM3,RUNX2,SERPINE1,YAP1	213 (26)
miR-199a-5p (and other miRNAs w/seed CCAGUGU)		mature microRNA	Inhibited	-2.433	bias	4,33E-03	ID3,JAG1,KLF4,LAMC2,RND1,ZBTB16	
methamphetamine		chemical drug	Activated	2.407	bias	4,33E-03	Ccl2,FAS,HOMER2,ICAM1,IL1B,JUN	200 (18)
PELP1		other				4,35E-03	AHNAK2,BMP2,CSF3,GJB2,IL1B,KLK3,MAPK4,MRC1	121 (7)
GP1B		G-protein coupled receptor	Activated	2.236	bias	4,37E-03	CEBPD,JUN,NFKBIA,RND1,TNFAIP3	259 (21)
enalapril		biologic drug		0.447		4,37E-03	CLDN4,CP,SERPINE1,SLC34A2,TNFRSF12A	
RB1		transcription regulator		-0.473		4,41E-03	BTG3,CASP3,CCNA2,CEBPA,DONSON,FAS,FOSL1,GPR179,GPRC5C,ID1	215 (20)
Pdgf (complex)		complex		1.424	bias	4,55E-03	Ccl2,CD44,CYBA,ICAM1,JAG1,JUN,SERPINE1	197 (20)
NTRK2		kinase		1.964	bias	4,63E-03	BMP2,CCNA2,JAG1,Muc1,SERPINE1,SYT1	97 (7)
KDM3A		transcription regulator		1.982	bias	4,63E-03	ALCAM,CD9,GDF15,SERPINE1	
ARHGAP31		other		0.000		4,63E-03	BMP2,GADD45B,GDF15,JUN	
SOST		other		1.980	bias	4,63E-03	Ccl2,CEBPA,IL1B,SOD2	129 (12)
CYBB		enzyme	Activated	2.000	bias	4,63E-03	Ccl2,CYBA,ICAM1,IL1B	195 (17)
IL17RA		transmembrane receptor		1.992	bias	4,63E-03	Ccl2,CSF3,CXCL12,IL1B	153 (15)
SFRP1		transmembrane receptor		-1.413	bias	4,74E-03	CASP3,GATA3,RUNX2,SERPINE1,Tcf7	189 (16)
MMP1		peptidase		1.432	bias	4,74E-03	CXCL12,JUN,NFKBIA,RUNX2,SERPINE1	152 (15)
DCN		other		-0.836		4,74E-03	CASP3,ICAM1,IL1B,SDC1,SERPINE1	167 (23)
IL12 (family)		group	Activated	2.813	bias	4,79E-03	ADAM19,CD44,CD86,GATA3,IL1B,NFKBIZ,SERPINB1,SLC2A3	185 (20)
FZD9		G-protein coupled receptor				4,85E-03	Ccl2,CXCL14,JF116	
fontolizumab		biologic drug				4,85E-03	FAS,LAG3,TGM3	
GIP		other				4,85E-03	Ccl2,Ccl8,Tcf7	
CD70		cytokine				4,85E-03	BCL2A1,CD44,FAS	140 (19)
IL1RAP		transmembrane receptor				4,85E-03	CD14,CD40,IL1RL1	134 (10)
S1PR2		G-protein coupled receptor				4,85E-03	Ccl2,ICAM1,JUN	197 (20)
KLK5		peptidase				4,85E-03	Ccl8,ICAM1,IL1B	

7-nitroindazole		chemical reagent				4,85E-03	GSTP1,NFKBIA,PRKG1	
phenyl-N-tert-butylnitro		chemical reagent				4,85E-03	CD40,CD83,CD86	169 (14)
glutamyl-Se-methylselenocysteine		chemical - endogenous mammalian				4,85E-03	GSTP1,ID1,JUN	
IL3		cytokine				4,94E-03	ADAM19,CD14,CD68,CSF1,CSF3,FAS	165 (19)
MAP2K6		kinase		-0.763	bias	4,94E-03	Ccl2,CD40,CD83,CD86,JUN,RELB	138 (17)
doxycycline		chemical drug		1.000		4,94E-03	BMP2,CD86,CXCL12,SDC1,SOD2,XDH	127 (13)
ESRRA		ligand-dependent nuclear receptor		1.562	bias	4,99E-03	ALAS1,CCR7,CEBPA,CSF3,HK1,HK2,KRT19,KRT20,KRT23,RUNX2	80 (5)
acetaminophen		chemical drug	Activated	2.394	bias	4,99E-03	CASP3,Ccl2,CXCR3,FAS,GSTP1,HMGCS2,ICAM1,IL1B,JUN,NQO1	187 (19)
diethylnitrosamine		chemical toxicant		0.555		5,07E-03	CASP3,CXCL12,GSTP1,Hspa1b,KRT8,OAT,Vnn3	136 (7)
L-methionine		chemical - endogenous mammalian				5,14E-03	BUB1,GADD45B,IFI16,NFKBIA,SOD2	143 (7)
CASP8		peptidase				5,14E-03	CD14,CD44,CSF1,FAS,IL1B	139 (14)
LPL		enzyme		1.792	bias	5,14E-03	APOA1,CASP3,CSF1,ICAM1,IL1B	208 (20)
MAP3K1		kinase	Activated	2.176	bias	5,14E-03	BIRC3,FAS,HSPB1,JUN,SERPINE1	146 (18)
RGS10		other				5,14E-03	Ccl8,CXCR3,FAS,IL1B,IL6ST	121 (10)
DETA-NONate		chemical reagent		0.365		5,14E-03	BIRC3,FAS,ICAM1,PRKG1,SERPINE1	202 (23)
ARRB2		other		-1.987		5,16E-03	Ccl2,IL1B,NFKBIZ,SERPINE1	182 (18)
MARK2		kinase		1.000	bias	5,16E-03	BATF,CD44,NFKBIZ,Vnn3	
green tea polyphenol		chemical drug		-1.067	bias	5,16E-03	CASP3,ICAM1,IL1B,JUN	139 (15)
bardoxolone		chemical drug		1.067	bias	5,16E-03	CEBPA,FTH1,NFKBIA,NQO1	
PD173074		chemical reagent	Activated	2.449	bias	5,27E-03	CCR7,CEBPA,DEPP1,GATA3,KRT23,PRR5	
kainic acid		chemical toxicant	Activated	2.919	bias	5,35E-03	CASP3,Ccl2,FOSL1,GADD45B,GAP43,IL1B,JUN,SDC1,SLC39A4	169 (18)
IL1RN		cytokine	Inhibited	-2.179	bias	5,52E-03	CD44,H6PD,ICAM1,IL1B,KLF6,OASL,RIPK2,SERPINE1	175 (19)
MOG		other				5,56E-03	Ccl2,CD40,CD44,CD86,ICAM1	156 (16)
miR-34a-5p (and other miRNAs w/seed GGCAGUG)		mature microRNA	Inhibited	-2.215	bias	5,56E-03	ICAM1,JAG1,KLF4,MCM3,NOTCH2	
BNIP3L		other		0.000	bias	5,56E-03	BLNK,Ccl2,CCNA2,NFKBIA,PTK2B	110 (11)
bicuculline		chemical - endogenous non-mammalian	Activated	2.191	bias	5,56E-03	GADD45B,HK2,JUN,KLF4,SLC2A3	162 (12)
PRKCE		kinase		1.633	bias	5,61E-03	AMIGO2,BIRC3,CSF3,IL1B,IL6ST,JUN	164 (17)
CCL5		cytokine	Activated	2.416	bias	5,61E-03	ALCAM,Ccl2,CD40,CD44,HMGA1,IL1B	166 (18)
1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine		chemical toxicant	Activated	2.180	bias	5,61E-03	CASP3,Ccl2,HSPB1,IL1B,JUN,SOD2	171 (15)
rotterin		chemical toxicant	Inhibited	-2.415	bias	5,61E-03	APOBEC3B,BIRC3,Ccl2,CLDN4,ICAM1,JUN	195 (18)
Ctbp		group				5,73E-03	GATA3,JUP,PERP	
IFNW1		cytokine				5,73E-03	CD40,CD83,CD86	
GLIS2		transcription regulator				5,73E-03	Ccl2,LTBP2,SERPINE1	
S100B		other				5,73E-03	Ccl2,IL1B,JUN	177 (19)
TAF1		transcription regulator				5,73E-03	BCL2A1,CCNA2,RUNX2	135 (7)
PLA2G4A		enzyme				5,73E-03	Ccl2,ICAM1,IL1B	154 (16)
CXCL3		cytokine				5,73E-03	Ccl2,ICAM1,IL1B	199 (19)

EGLN3		enzyme				5,73E-03	Ccl2,Hamp/Hamp2,IL1B	149 (7)
ACTN4		transcription regulator				5,73E-03	IL1B,PDLIM1,SERPINE1	115 (9)
propionic acid		chemical - endogenous mammalian				5,73E-03	CCR7,ICAM1,IL1B	
lisinopril		biologic drug				5,73E-03	Ccl2,IL1B,JUN	165 (14)
ZC3H12A	1,270	enzyme		0,105	bias	5,74E-03	Ccl2,CEBPA,CEBPD,IL1B	171 (15)
SU6656		chemical toxicant				5,74E-03	Ccl2,CSF1,IL1RL1,KRT8	166 (15)
nicotinic acid		chemical - endogenous mammalian		-1,192		5,74E-03	ANG,APOA1,CD68,IL1B	156 (15)
sodium orthovanadate		chemical reagent		1,000	bias	5,74E-03	CCNA2,CEBPA,NFKBIA,SERPINE1	201 (22)
HSF1		transcription regulator		0,797		5,80E-03	BMP4,CCNA2,COBL,CSF3,Hspa1b,HSPB1,ICAM1,IL1B,IL7R,JUN	207 (17)
THRB		ligand-dependent nuclear receptor		-0,113		5,80E-03	APOA1,Ccl2,CEBPA,FOSL1,ID1,JUN,PGD,RUNX2,SERPINE1,TCEA3	203 (22)
fenretinide		chemical drug		-0,651		5,97E-03	BCL2A1,CASP3,IL1B,JUN,MAPK6,NFKBIA	164 (15)
MED1		transcription regulator				6,04E-03	BCL11A,CEBPA,GSTP1,KLF4,KLK3,NFKBIA,POLE4,STC2,Tcf7	203 (15)
WNT1		cytokine	Activated	2,016	bias	6,04E-03	BMP4,CEBPA,JUN,KRT19,RHOJ,RUNX2,SERPINE1,SERPINE2	200 (20)
psychosine		chemical - endogenous mammalian				6,08E-03	FOSL1,IL1B	213 (23)
SERCA		group				6,08E-03	FOSL1,JUN	174 (15)
N-hexanoylhomoserine lactone		chemical - endogenous non-mammalian				6,08E-03	CSF1,IL1B	
CCAR1		transcription regulator				6,08E-03	CEBPA,CEBPD	
CCN6		growth factor				6,08E-03	BMP4,ICAM1	
Cr3		complex				6,08E-03	CD40,CD86	100 (7)
PXN		other				6,08E-03	KLK3,VCL	136 (7)
CSRP3		other				6,08E-03	DMD,KRT8	
SDC4	0,444	other				6,08E-03	IL1B,KLF4	104 (7)
W-54011		chemical reagent				6,08E-03	CD86,IL1B	
PTPRR		phosphatase				6,08E-03	FOSL1,JUN	
PIPSK1B		kinase				6,08E-03	IL1B,PIPSK1C	
FGF18		growth factor				6,08E-03	CSF1,RUNX2	
STX2		transporter				6,08E-03	BMP2,BMP4	130 (7)
ABCB7		transporter				6,08E-03	FTH1,FTL	36 (3)
SERPIND1		other				6,08E-03	Ccl2,IL1B	108 (7)
ferric nitrilotriacetate		chemical toxicant				6,08E-03	ID3,KLF4	
FC-99		chemical reagent				6,08E-03	CD40,CD86	106 (7)
calcium chloride		chemical drug				6,08E-03	ENPP1,ID3	
ferric chloride		chemical toxicant				6,08E-03	FTH1,FTL	
phenylamil		chemical reagent				6,08E-03	ID1,RUNX2	
zofenopril		chemical drug				6,08E-03	Ccl2,CSF1	
NFATC1		transcription regulator				6,26E-03	B3GAT1,CD40,FAS,ICAM1,IL1B,NQO1,PLS3	187 (21)
lipoxin A4		chemical - endogenous mammalian		-1,982	bias	6,35E-03	Ccl2,ICAM1,IL1B,SERPINE1	198 (21)

3-methyladenine		chemical toxicant		0.334		6,35E-03	CD40,CD86,IL1B,RUNX2	187 (21)
asoprisnil		chemical drug		-1.000	bias	6,35E-03	CASP3,LAMB3,SFN,XDH	
amiodarone		chemical drug				6,35E-03	HPN,ICAM1,SLC2A3,SOD2	
NCOR2		transcription regulator				6,47E-03	BIRC3,CEBPA,IL1B,JUN,RELB	180 (17)
SERPINF1		other		-0.600		6,47E-03	BCL2A1,CEBPA,CYBA,NFKBIA,SOD2	208 (20)
luteolin		chemical drug		0.492	bias	6,47E-03	CASP3,FAS,ICAM1,JUN,SOD2	184 (19)
EGR2		transcription regulator		1.823	bias	6,54E-03	CAMK4,GATA3,ID3,IL1B,IL7R,JUN,LAG3,LAMA2,ZBTB16	155 (13)
potassium chloride		chemical drug		1.067	bias	6,59E-03	AMIGO2,CASP3,Ccl2,ID3,IL1B,JUN	183 (19)
THRA		ligand-dependent nuclear receptor		0.577		6,61E-03	APOA1,BMP4,CAMK4,Ccl2,CD44,CEBPA,JUN,SERPINE1	184 (25)
Pde4		group				6,70E-03	CD14,CD40,ICAM1	129 (12)
CDK5R1		kinase				6,70E-03	CD14,IL1B,SERPINE1	180 (14)
TNFRSF11B		transmembrane receptor				6,70E-03	BMP2,Ccl2,RUNX2	118 (9)
ibrutinib		chemical drug				6,70E-03	CD44,CD86,FAS	136 (16)
NT5E		phosphatase				6,70E-03	Ccl2,IL1B,SERPINE1	175 (21)
PDCD4		other				6,70E-03	CASP3,IL1B,JUN	199 (18)
RARRRES2		transmembrane receptor				6,70E-03	Ccl2,CCNA2,IL1B	61 (4)
PS-1145		chemical - kinase inhibitor				6,70E-03	ICAM1,NFKBIA,TNFAIP3	109 (12)
thioridazine		chemical drug				6,70E-03	DEPP1,HPN,SLC2A3	
vitamin K2		chemical drug				6,70E-03	CD14,CSF1,SERPINB1	
magnesium		chemical - endogenous mammalian				6,70E-03	BMP6,PTP4A2,RUNX2	
CXCL8		cytokine		1.671	bias	6,73E-03	CD44,FAS,ICAM1,IL1B,KLK3,NFKBIA	174 (17)
TGFA		growth factor		1.371	bias	6,73E-03	BIRC3,GJB2,GSTP1,ICAM1,LAMC2,SERPINE1	239 (21)
apigenin		chemical - endogenous non-mammalian		-1.513	bias	6,73E-03	CASP3,Ccl2,ICAM1,IL1B,KLK3,SOD2	146 (16)
SUZ12		enzyme		1.000		6,90E-03	IRAK3,KLF4,LAMB3,LAMC2,LITAF,MGAT4B,Nes,PLCB4	79 (5)
L-glutamic acid		chemical - endogenous mammalian	Activated	2.571	bias	6,93E-03	CASP3,Ccl2,GADD45B,IL1B,JUN,MGLL,RUNX2	202 (20)
Mapk		group	Activated	2.000	bias	6,93E-03	APOA1,CLDN4,IL1B,IRAK3,ITGB7,JUN,RUNX2	221 (27)
miR-1-3p (and other miRNAs w/seed GAAUGU)		mature microRNA	Inhibited	-3.123	bias	6,94E-03	CSRP1,LASP1,LRP1,MOV10,NOTCH2,OAT,PREX1,SDC4,SH2D4A,UNC93B1	
MAP2K4		kinase		1.996	bias	6,96E-03	BIRC3,CD44,CD86,FAS,JUN	194 (18)
PTK2		kinase		-0.371	bias	6,96E-03	BIRC3,Ccl2,KRT8,PTK2B,SERPINB1	136 (7)
CCL11		cytokine	Activated	2.190	bias	6,96E-03	BMP6,CXCL12,FAS,ICAM1,IL1B	121 (14)
thioctic acid		chemical drug				6,96E-03	Ccl2,ICAM1,JUN,NQO1,SOD2	139 (16)
3M-001		chemical drug		1.987	bias	7,01E-03	CD40,CD83,CD86,IL1B	100 (7)
HSF2		transcription regulator				7,01E-03	Hspa1b,HSPB1,IL1B,JUN	
IL27RA		transmembrane receptor		-1.414	bias	7,01E-03	CD44,CD86,FAS,IL1B	166 (17)
pentoxifylline		chemical drug		-1.091	bias	7,01E-03	Ccl2,ICAM1,IL1B,NFKBIA	147 (16)
NR1I2		ligand-dependent nuclear receptor		-0.218		7,07E-03	ALAS1,ANG,CEBPA,CYP3A7,GSTP1,Hamp1/Hamp2,HMGS2,JUN,PGD	83 (8)
FFAR3		G-protein coupled receptor		1.039		7,14E-03	BCL11A,CCR7,GBP6,ICAM1,IL1B,RCN1	

spironolactone		chemical drug	Inhibited	-2.418	bias	7,14E-03	BMP4,CASP3,Ccl2,CCR7,ICAM1,IL1B	151 (16)
BCL2		transporter		-0.562	bias	7,28E-03	CASP3,FAS,GAP43,GZMA,ICAM1,IL1B,NFKBIA	178 (18)
miR-155-5p (miRNAs w/seed UAAUGCUCU)		mature microRNA	Inhibited	-2.945	bias	7,35E-03	AMIGO2,Ccl2,IL1B,PLXND1,POLE4,RAB27B,SERPINE1,SLC30A1,TRIP13	146 (12)
dalfampridine		chemical drug	Activated	2.191	bias	7,48E-03	GADD45B,HK2,JUN,KLF4,SLC2A3	176 (12)
pravastatin		chemical drug				7,48E-03	CD40,ICAM1,IL1B,RHO,SDC4	150 (15)
metformin		chemical drug		-0.500	bias	7,64E-03	BMP2,CASP3,FTH1,GADD45B,NFKBIA,PARP14,RUNX2,SERPINE1,SOD2	176 (15)
uranyl nitrate		chemical toxicant		1.912		7,64E-03	Cd24a,Clec2d (includes others),CSR1,ESD,FBP1,FTL,RACK1	
TGFB2		growth factor		-0.116	bias	7,64E-03	BMP4,CD40,CD86,DOCK4,FAS,JAG1,SERPINE1	209 (19)
CP-55940		chemical reagent				7,70E-03	CSF1,JUN,NFKBIA,TNFAIP3	86 (7)
DLL4		other		0.000		7,70E-03	GATA3,MCM3,RELB,Tcf7	
TWIST2		transcription regulator		0.000	bias	7,70E-03	BCL11A,CD44,IL1B,KLF6	
SUMO3		other		1.067		7,70E-03	CAV2,CXCL16,HMGA1,RNASE4	
tempol		chemical drug		-1.000	bias	7,70E-03	BMP4,ICAM1,SERPINE1,SOD2	171 (18)
temozolomide		chemical drug		-0.283		7,70E-03	CASP3,FAS,NFKBIA,SOD2	195 (20)
11,12-epoxyelicosatrienoic acid		chemical - endogenous mammalian				7,76E-03	CD44,ICAM1,NFKBIA	100 (9)
ssRNA40		chemical reagent				7,76E-03	CD83,CD86,IL1B	144 (16)
WLS		other				7,76E-03	BMP4,Ccl2,IL36G	
MSR1		transmembrane receptor				7,76E-03	ACOD1,CD40,IL1B	138 (15)
GDF15	0,675	growth factor				7,76E-03	GDF15,RND3,SERPINE1	153 (9)
TFAM		transcription regulator				7,76E-03	FABP5,HK1,IL1B	
HOXD3		transcription regulator				7,76E-03	JUP,SDC1,SERPINE1	
CCND3		kinase				7,76E-03	CEBPA,KLK3,MCM3	114 (7)
IL11RA		transmembrane receptor				7,76E-03	Ccl2,Ccl8,CLCA1	
THZ1		chemical - kinase inhibitor				7,76E-03	BIRC3,CD2,IQSEC1	
sulfasalazine		chemical drug				7,76E-03	ICAM1,IL1B,NFKBIA	193 (21)
2,4-dinitrofluorobenzene		chemical toxicant				7,76E-03	Ccl2,ICAM1,IL1B	117 (7)
CD28	5,675	transmembrane receptor	Activated	2.339	bias	7,76E-03	BCL2A1,CASP3,CD28,CD86,CXCR3,GATA3,GZMA,HK2,HOMER2,IL1B	166 (18)
3,4,5,3',4'-pentachlorobiphenyl		chemical toxicant		1.461	bias	8,01E-03	BMP4,CD44,CYP3A7,GSTP1,JUN,NQO1	122 (10)
plicamycin		chemical drug		0.114	bias	8,02E-03	GJB2,ID1,Marcks,SERPINE1,SERPINE2,SLC11A2,WWC1	147 (7)
PTGES		enzyme				8,03E-03	Ccl2,CXCL14,CYBA,IL1B,SERPINE1	137 (7)
chloroquine		chemical drug		-1.498		8,03E-03	CD40,CD83,CD86,IL1B,RUNX2	190 (20)
CLOCK		transcription regulator		-0.239		8,12E-03	AHNK2,CD86,CEBPA,DTX4,GADD45B,HMGCS2,Hspa1b,ICAM1,ID1,MAPK4	
EZF1		transcription regulator		1.269	bias	8,16E-03	BMP4,CASP3,CCNA2,CD44,CD9,CEBPA,FAS,HMGA1,Hspa1b,ICAM1	221 (21)
NR1H4		ligand-dependent nuclear receptor		0.233		8,23E-03	APOA1,Ccl2,CEBPA,FABP5,FAS,GSTA3,IL1B,KLF4,SDC1	198 (16)
nicotinic acetylcholine receptor		complex				8,40E-03	ID1,JUN	137 (7)
triamcinolone hexacetonide		chemical drug				8,40E-03	ICAM1,IL1B	
ANKRD42		transcription regulator				8,40E-03	CSF3,IL1B	

SFRP5		transmembrane receptor				8,40E-03		Ccl2,IL1B	96 (7)
valine		chemical - endogenous mammalian				8,40E-03		CD83,SOD2	
lgoratimod		chemical drug				8,40E-03		Ccl2,CSF3	144 (14)
Sfk		group				8,40E-03		ICAM1,IL1B	196 (24)
HNRNPR		other				8,40E-03		Cald1,Nes	
TSC22D1		transcription regulator				8,40E-03		IL1B,SERPINE1	103 (10)
C6		other				8,40E-03		Ccl2,IL1B	
CHGA		other				8,40E-03		IL1B,SERPINE2	146 (7)
ERBIN		other				8,40E-03		Nrg1,SERPINE1	
KLKB1		peptidase				8,40E-03		ICAM1,KLF4	
TSPO		transmembrane receptor				8,40E-03		ICAM1,SOD2	
teasaponin		chemical - endogenous non-mammalian				8,40E-03		IL1B,NFKBIA	
WNT10B		other				8,40E-03		CEBPA,RUNX2	130 (7)
PILRA		other				8,40E-03		Ccl2,IL1B	82 (7)
nicorandil		chemical drug				8,40E-03		CASP3,JUN	111 (7)
thenoyltrifluoroacetone		chemical reagent				8,40E-03		BIRC3,SERPINE1	
AR-A014418		chemical reagent				8,40E-03		CD44,GDF15	
6-methylsulfinylhexyl isothiocyanate		chemical reagent				8,40E-03		GSTP1,NQO1	45 (3)
zimelidine		chemical drug				8,40E-03		DEPP1,HPN	
7SK		other				8,40E-03		Cald1,Nes	
manidipine		chemical drug				8,40E-03		IL1B,JUN	142 (9)
polyphosphate		chemical - endogenous mammalian				8,40E-03		BMP2,ICAM1	
BAR501		chemical reagent				8,40E-03		Ccl2,IL1B	
cyclosporin		biologic drug				8,40E-03		ICAM1,LAMA2	
miR-30c-5p (and other miRNAs w/seed GUAAACA)		mature microRNA	Inhibited	-2.580	bias	8,41E-03		CPNE8,JUN,PTGFRN,PTPRK,RAB27B,RUNX2,SLC12A4	
BMPR1A		kinase		1.981	bias	8,45E-03		Hamp/Hamp2,ID1,ID3,SERPINE1	173 (14)
TFAP4		transcription regulator		-0.762		8,45E-03		CD44,CLDN4,GDF15,ID1	
NEDD9		other	Activated	2.000	bias	8,45E-03		BMP2,GDF15,LRP1,SERPINE1	
propofol		chemical drug		-1.982	bias	8,45E-03		CASP3,CD14,IL1B,SOD2	175 (13)
IFNL1		cytokine	Activated	2.219	bias	8,47E-03		CCR7,CD40,CD83,MLKL,OASL,SP110	172 (17)
FGF19		growth factor				8,47E-03		AMY2A,BTG3,FABP5,FBP1,ID1,Saa3	
ITGB1		transmembrane receptor		1.175		8,53E-03		ADAM19,ICAM1,IL1B,ITGA9,ITGB7,JUN,SERPINE1,TNFAIP3	196 (21)
PKD1		ion channel		-1.406		8,54E-03		CAVIN1,Ccl2,CLDN10,CXCL16,IL1RL1,KLK3,MCUB,Nrg1,RUNX2,YAP1	93 (7)
Smad2/3		group				8,60E-03		APOA1,GATA3,ID1,RUNX2,SERPINE1	
mitomycin C		chemical drug	Activated	2.207	bias	8,60E-03		CASP3,FAS,ITPRIPL2,JUN,NQO1	188 (18)
MED12		transcription regulator				8,91E-03		BMP4,GDF15,POLE4	
ITGAM		transmembrane receptor				8,91E-03		CD28,CD86,IL1B	156 (19)

ACKR1		G-protein coupled receptor				8,91E-03	ICAM1,IFI16,TNFAIP3	
SOCS6		other				8,91E-03	CEBPD,IL1B,Vnn3	113 (10)
MSX1		transcription regulator				8,91E-03	BMP2,BMP4,RUNX2	
NLRCS		transcription regulator				8,91E-03	CD40,HLA-A,IL1B	142 (17)
2-mercaptoacetate		chemical drug				8,91E-03	CD68,ICAM1,IL1B	
alendronic acid		chemical drug				8,91E-03	ENPP1,ID1,IL1B	91 (7)
nickel		chemical toxicant				8,91E-03	CD86,ICAM1,SERPINE1	116 (10)
PIK3R1		kinase	0,000	bias		8,95E-03	CD44,CXCL12,ICAM1,IL1B,SERPINE1,SOD2	171 (16)
MAFB		transcription regulator	0,277	bias		8,95E-03	AKR1B10,ALCAM,CD28,CXCL12,IL7R,OLFML2B	
homocysteine		chemical - endogenous mammalian	1,370	bias		8,95E-03	APOA1,Ccl2,CXCL12,ID1,IL1B,Saa3	207 (19)
ZEB1		transcription regulator				9,20E-03	GATA3,KRT19,LAMC2,SERPINE1,XDH	
PLAUR		transmembrane receptor				9,24E-03	ANG,Ccl2,FOSL1,JUN	188 (18)
ABL1		kinase	1,921	bias		9,24E-03	BMP2,CCNA2,CSF1,FAS	204 (21)
pimagedine		chemical drug				9,24E-03	CASP3,GADD45B,ICAM1,SERPINE1	86 (7)
tetraethylammonium		chemical drug	-1,982	bias		9,24E-03	EFHD2,FTH1,GSTO1,HSPB1	
prednisolone		chemical drug	-1,554	bias		9,37E-03	BIRC3,CASP3,Ccl2,CD86,CEBPD,FAS,GAB1,IL1B,SOD2,TNFAIP3	145 (15)
PRDM5		transcription regulator				9,45E-03	APOBEC3B,CYP3A7,GADD45B,NOTCH2,RUNX2,TINAGL1	
ERBB4		kinase	0,447			9,45E-03	ADAM19,CXCL12,GAP43,JUN,RASA3,SERPINE2	191 (17)
NUPR1		transcription regulator	0,688	bias		9,57E-03	APOBEC3B,BUB1,CCNA2,CD68,FCHSD2,GDF15,HK2,KLF4,KLF6,LHFPL2	
PP1		chemical - kinase inhibitor	-1,953	bias		1,01E-02	CXCL16,IL1B,JUN,SERPINE1	
HOTAIR		other	0,819			1,01E-02	GDF15,ICAM1,LAMB3,LAMC2	
LGR4		transmembrane receptor	-1,091	bias		1,01E-02	CD14,HSD17B13,IL1B,OAT	
RCE1		peptidase				1,01E-02	Ccl2,CXCL12,FLT3,RCN1	
SRC		kinase	Activated	2,547	bias	1,01E-02	CAVIN1,CSF3,FOSL1,ICAM1,ID1,JUN,KLK3	
PARPBP		other				1,02E-02	KRT8,TIAM1,TST	
CaMKII		complex				1,02E-02	BIRC3,CD44,IL1B	
IKK (complex)		complex				1,02E-02	BIRC3,ICAM1,IL1B	
SALL4		transcription regulator				1,02E-02	CD44,CEBPA,KRT19	
IgG1		complex				1,02E-02	CD14,CD40,CD86	
IL2RA		transmembrane receptor				1,02E-02	CD86,GZMA,JUN	
miR-218-5p (and other miRNAs w/seed UGUGCUU)		mature microRNA				1,02E-02	CASP3,LAMB3,RUNX2	
STK4		kinase				1,02E-02	FAS,IL7R,YAP1	
IGFBP5		other				1,02E-02	RUNX2,SERPINE1,SFN	
PLA2G6		enzyme				1,02E-02	Ccl2,MRC1,RUNX2	
SFTPD		other				1,02E-02	Ccl2,CD14,IL1B	
GADD45A		other				1,02E-02	IL1B,JUN,NEK2	
CCN3		growth factor				1,02E-02	BMP4,RUNX2,SERPINE1	



DYRK1A		kinase				1,02E-02	APOA1,MCM3,SERPINE1
ELF5		transcription regulator				1,02E-02	GATA3,KLK3,KRT8
Gm21596/Hmgb1		transcription regulator				1,02E-02	CXCL12,IL1B,IL1RL1
probucol		chemical drug				1,02E-02	BMP2,CYBA,SERPINE1
agmatine		chemical - endogenous mammalian				1,02E-02	BMP2,BMP4,ICAM1
fluticasone propionate		chemical drug		0.000		1,02E-02	CD83,CD86,GADD45B,GJB2,IL1B,ITGB7,OLFM2B,SDC4,SERPINE1
WT1		transcription regulator		0.734		1,03E-02	BCL2A1,CSF1,IL1B,JUP,KLF4,LRP1,PIR,SDC1,SERPINE1,SLC2A3
MMP12		peptidase				1,05E-02	Ccl8,IL6ST,NFKBIA,PLS3,VCL
gemcitabine		chemical drug				1,05E-02	Ccl2,CXCL12,FAS,FOSL1,IL1B
4-phenylbutyric acid		chemical - endogenous mammalian		-0.816		1,05E-02	CASP3,Ccl2,CXCL12,HLA-A,PADI2,SOD2
TO-901317		chemical reagent		-1.755	bias	1,09E-02	ALAS1,ALDH2,Ccl2,FABP5,FBP1,GSTP1,HK2,HMGCS2,IL1B,MGLL
Laminin (complex)		complex				1,10E-02	BIRC3,RUNX2,SDC4,SERPINE1
SUMO2		enzyme		1.067		1,10E-02	CAV2,CXCL16,HMGA1,RNASE4
ATF1		transcription regulator				1,10E-02	FOSL1,FTH1,JUN,SOD2
SAHM1		chemical reagent	Inhibited	-2.000	bias	1,10E-02	CD44,HK2,ID1,RHOJ
UDP		chemical - endogenous mammalian				1,11E-02	Ccl2,SERPINE1
L-phenylalanine		chemical - endogenous mammalian				1,11E-02	FAS,SOD2
saikosaponin A		chemical reagent				1,11E-02	BMP4,JUN
ganglioside GM3		chemical - endogenous mammalian				1,11E-02	CD40,ICAM1
Calcineurin B		group				1,11E-02	B3GAT1,CXCR3
Cyp4a14		enzyme				1,11E-02	Ccl2,IL1B
ibudilast		chemical drug				1,11E-02	IL1B,NCS1
tectorigenin		chemical - endogenous non-mammalian				1,11E-02	ICAM1,IL1B
GPR84		G-protein coupled receptor				1,11E-02	Ccl2,IL1B
GSTK1		enzyme				1,11E-02	Ccl2,TMEM173
ADGRF5		G-protein coupled receptor				1,11E-02	Ccl2,CSF1
LTBP4		growth factor				1,11E-02	BMP4,ID1
SMAD1/5		group				1,11E-02	ID1,ID3
IL26		cytokine				1,11E-02	ICAM1,IL1B
ABCC1		transporter				1,11E-02	CYBA,NQO1
PDLIM7		other				1,11E-02	BMP2,RUNX2
CD8A	8.241	other				1,11E-02	CASP3,IL1B
SLC25A4		transporter				1,11E-02	BIRC3,SOD2
MAP3K12		kinase				1,11E-02	CASP3,JUN
CAV3		enzyme				1,11E-02	CAV2,DMD
mir-326		microRNA				1,11E-02	NOTCH2,SMO
levetiracetam		chemical drug				1,11E-02	GAP43,IL1B

SMN1/SMN2		other				1,11E-02	Ccl2,DMD
LPA		other				1,11E-02	ICAM1,SERPINE1
RASSF10		other				1,11E-02	CASP3,JUN
LY86		other				1,11E-02	CD14,CD86
CCX771		chemical reagent				1,11E-02	CD44,CXCL12
RBCK1		transcription regulator				1,11E-02	ICAM1,TNFAIP3
Ptgs2os2		other				1,11E-02	Ccl2,Saa3
ULBP1		transmembrane receptor				1,11E-02	CD83,HLA-A
niflumic acid		chemical drug				1,11E-02	CD86,FAS
NCX-4040		chemical drug				1,11E-02	GSTP1,NQO1
mechlorethamine		chemical drug				1,11E-02	CD40,IL1B
benzoic acid		chemical - endogenous mammalian				1,11E-02	CD68,IL1B
SC-58125		chemical drug				1,11E-02	FAS,GDF15
acetic acid		chemical - endogenous mammalian				1,11E-02	CASP3,JUN
aplidine		biologic drug				1,11E-02	FOSL1,JUN
N,N-dimethylarginine		chemical - endogenous mammalian				1,11E-02	ICAM1,SERPINE1
SOCS3		phosphatase		-1,687	bias	1,11E-02	Ccl2,CD40,CD86,ICAM1,IL1B,JUN
unicamycin		chemical - endogenous non-mammalia		1,553	bias	1,11E-02	BIRC3,Ccl2,CEBPD,GADD45B,Hamp/Hamp2,ICAM1,IL1B,KLF4,NFKBIA,Nrg1
12-(3-adamantan-1-yl-ureido) dodecanoic acid		chemical reagent		0,000		1,12E-02	BIRC3,CASP3,CD40,FAS,RIPK2
BSCL2		other				1,12E-02	Ccl2,CEBPA,HMGA1,IL1RL1,MGLL
NEUROG1		transcription regulator		-1,342		1,12E-02	AMIGO2,MEST,PPIC,PXDN,SLC43A3
metribolone		chemical reagent	Activated	3,360	bias	1,13E-02	BUB1,CAV2,CCNA2,FGFRL1,GDF15,HK1,HK2,HOMER2,KLK3,MGLL
NkB-RelA		complex				1,15E-02	ICAM1,IL1B,NFKBIA
PDGF-DD		complex				1,15E-02	CASP3,Ccl2,TNFRSF12A
MGP		other				1,15E-02	JAG1,Prss1 (includes others),RUNX2
resolvin D2		chemical - endogenous mammalian				1,15E-02	Ccl2,IL1B,JUN
IFNK		cytokine				1,15E-02	CD40,CD83,CD86
LTB		cytokine				1,15E-02	Ccl2,Glycam1,IL1B
hydrochloric acid		chemical - endogenous mammalian				1,15E-02	ICAM1,IL1B,JUN
lipoarabinomannan		chemical - endogenous non-mammalia				1,15E-02	CD14,ICAM1,IL1B
diallyl trisulfide		chemical - endogenous non-mammalia				1,15E-02	FAS,JUN,NQO1
ilomastat		chemical drug				1,15E-02	Ccl2,F11R,IL1B
NCOR1		transcription regulator				1,16E-02	CCNA2,CEBPA,HK1,IL1B,KLK3,PDE9A
mir-10		microRNA		-1,166	bias	1,16E-02	BMF,CD40,CD44,CD86,KLF4,SMO
phosphate		chemical - endogenous mammalian	Activated	2,449	bias	1,16E-02	BMP2,ENPP1,FOSL1,HK2,SLC34A2,STC2
JAK2		kinase	Activated	2,193	bias	1,17E-02	BLNK,Ccl2,Glycam1,ICAM1,IL1B,LYN,Saa3,SDC4
JQ1		chemical reagent	Inhibited	-2,213	bias	1,19E-02	BIRC3,Ccl2,CCNA2,MCM3,TNFAIP3

ACVR1		kinase				1,19E-02	C1R,Hamp/Hamp2,ICAM1,ID1
miR-200b-3p (and other miRNAs w/seed AAUACUG)		mature microRNA		-1,944	bias	1,19E-02	BST1,,JAG1,,PERP,PTPN13
EED		transcription regulator				1,19E-02	GATA3,KLF4,RUNX2,SCIN
SELPLG		other	Activated	2,000	bias	1,19E-02	BCL2A1,BST1,,IL1B,LAG3
CALR		transcription regulator				1,19E-02	Ccl2,CEBPA,ICAM1,VCL
GABPA		transcription regulator				1,19E-02	FAS,IL7R,NQO1,,RRAS
4-hydroxynonenal		chemical toxicant		1,091	bias	1,19E-02	ICAM1,IL1B,,JUN,SERPINE1
N-[N-(3,5-difluorophenacetyl-L-Ala)]-S-phenylglycine t-butyl ester		chemical - protease inhibitor	Inhibited	-2,000	bias	1,19E-02	CSF1,,IL1B,RELB,RND3
NCOA1		transcription regulator		1,331	bias	1,22E-02	CEBPA,CHD9,GJB2,KLK3,Muc1,,NFKBIA,NFKBIZ,SERPINE1
CDX2		transcription regulator		1,032	bias	1,22E-02	CD9,,JUN,KLF4,KRT23,LAMC2,Muc1,,SCIN,UGT1A7 (includes others)
E2F3		transcription regulator		0,478	bias	1,22E-02	CAV2,CCNA2,CD9,CXCR3,,ID3,MCM3,PLCB4,Raet1d/Raet1e,SERPINE1
HOXA9		transcription regulator		1,949	bias	1,22E-02	ENPP1,,FLT3,HIGD1A,IL7R,,JUN,L,YN,PRKD3,SDC4,SERINC2
FGF8		growth factor		0,747	bias	1,22E-02	BMP2,BMP4,,CSF3,LAMB3,RUNX2,TRIP6
CIP2A		other		-0,600	bias	1,26E-02	HK2,LASP1,,S100A16,,SCIN,SERPINE2
miR-29b-3p (and other miRNAs w/seed AGCACCA)		mature microRNA	Inhibited	-2,182	bias	1,26E-02	CAV2,KLF4,PPIC,TNFAIP3,Tpm1
TBP		transcription regulator				1,26E-02	BCL2A1,HLA-A,NFKBIA,TNFAIP3,XDH
Wnt		group				1,29E-02	CD44,CEBPA,GATA3,RUNX2
ALB		transporter		1,982	bias	1,29E-02	CASP3,Ccl2,CYBA,IL1B
RAC2		enzyme				1,29E-02	Cd24a,,IL1B,RUNX2,ZYX
TNC		other				1,29E-02	Ccl2,CD8A,CXCL12,IL1B
OGT		enzyme		-0,928		1,29E-02	DTNA,GAP43,HMGA1,,JUN,,JUP,NEK2
leukotriene B4		chemical - endogenous mammalian				1,30E-02	Ccl2,IL1B,,JUN
dexamethasone phosphate		chemical drug				1,30E-02	ID3,IL1B,NFKBIA
deoxycorticosterone acetate		chemical drug				1,30E-02	Cald1,CD68,CYBA
Clap		group				1,30E-02	Ccl2,CSF3,IL1B
daporinad		chemical drug				1,30E-02	ID1,SERPINE1,TRIP13
GRHL2		transcription regulator				1,30E-02	BMP2,CLDN4,SEMA3B
CD81	0,944	other				1,30E-02	CD86,ICAM1,ID1
IL36G	6,681	cytokine				1,30E-02	CD83,CSF3,MRC1
Cdkn1c		other				1,30E-02	CCNA2,MAL,,MCM3
AZGP1		transporter				1,30E-02	BMP4,HK2,KRT19
carvedilol		chemical drug				1,30E-02	CYBA,GAP43,IL1B
NI2+		chemical reagent				1,30E-02	BIRC3,CSF1,ICAM1
RUNX2	2,637	transcription regulator		1,726	bias	1,31E-02	BMP2,CEBPA,CEBPD,GADD45B,GALNT3,RUNX2,SERPINE1
TEAD1		transcription regulator	Activated	2,236	bias	1,34E-02	ARID5B,FJX1,LATS2,NFKBIZ,TRNP1
F3		transmembrane receptor		1,951	bias	1,34E-02	Ccl2,DOCK4,ICAM1,,IL1B,SERPINE1
uric acid		chemical - endogenous mammalian		1,178		1,35E-02	Ccl2,CD86,CSF3,ICAM1,IL1B,RELB

sodium bisulfide		chemical reagent		0,152		1,39E-02	CASP3,FAS,ICAM1,SOD2
ZMPSTE24		peptidase		-1,964	bias	1,39E-02	Ccl8,CXCL14,GADD45B,ICAM1
PPP2CA		phosphatase	Activated	2,000	bias	1,39E-02	Ccl2,GZMA,Saa3,UPP1
PRKACA		kinase		1,951	bias	1,39E-02	ALAS1,ANTXR1,ANTXR2,SDC1
dimethylnitrosamine		chemical toxicant				1,39E-02	ICAM1,IL1B,NQO1,SOD2
Ro31-8220		chemical - kinase inhibitor		-1,987	bias	1,39E-02	ICAM1,IL1B,KLK3,SERPINE1
K+		chemical - endogenous mammalian		-1,264	bias	1,39E-02	CASP3,IL1B,JUN,SLC12A4
ganglioside		chemical - endogenous mammalian				1,40E-02	Ccl2,ICAM1
16,16-dimethylprostaglandin E2		chemical - endogenous mammalian				1,40E-02	CD44,IL1B
TEAD		group				1,40E-02	CAV2,CD44
ganglioside GD3		chemical - endogenous mammalian				1,40E-02	CD40,ICAM1
desoxycorticosterone		chemical - endogenous mammalian				1,40E-02	CYBA,SERPINE1
SLC11A1		transporter				1,40E-02	Hamp/Hamp2,SLC11A2
(-)-epicatechin gallate		chemical - endogenous non-mammalia				1,40E-02	GDF15,RUNX2
APC/APC2		group				1,40E-02	JAG1,JUP
cytidyl-3'-5'-guanosine		chemical reagent				1,40E-02	CD86,IL1B
bacterial lipopolysaccharides		chemical - other				1,40E-02	IL1B,Saa3
OLFM4		other				1,40E-02	Ccl2,IL1B
FBXO42		other				1,40E-02	CSF1,ICAM1
FAT1		other				1,40E-02	IL1B,JUN
PHF8		enzyme				1,40E-02	ID1,IRAK3
MEMO1		other				1,40E-02	JUN,STC2
STK17A		kinase				1,40E-02	GSTO1,SOD2
nicotiflorin		chemical reagent				1,40E-02	ICAM1,IL1B
UNC5B		transmembrane receptor				1,40E-02	Ccl2,YAP1
SERPINB2		other				1,40E-02	CCNA2,CD14
THBD		transmembrane receptor				1,40E-02	Ccl2,IL1B
TRG		other				1,40E-02	CAV2,IL1B
DLX1		transcription regulator				1,40E-02	ARX,SERPINE1
CTS2	0,893	peptidase				1,40E-02	CD83,CD86
PTGDR		G-protein coupled receptor				1,40E-02	Ccl2,IL1B
HAS2		enzyme				1,40E-02	Ccl2,CD44
CDKN2B		transcription regulator				1,40E-02	CD86,SERPINE1
ING4		transcription regulator				1,40E-02	Ccl2,NFKBIA
FKBP5		enzyme				1,40E-02	ICAM1,KLK3
USP37		peptidase				1,40E-02	CEBPA,ZBTB16
ST6GAL1		enzyme				1,40E-02	BIRC3,SLC2A3

COCH		other				1,40E-02	Ccl2,IL1B
IL2RA1		transmembrane receptor				1,40E-02	Hamp/Hamp2,SOD2
cyclic guanosine monophosphate-adenosine monophosphate		chemical - endogenous non-mammalia				1,40E-02	CD86,IL1B
asbestos		chemical toxicant				1,40E-02	FOSL1,JUN
6-aminonicotinamide		chemical reagent				1,40E-02	Ccl2,Saa3
sulindac sulfone		chemical - endogenous mammalian				1,40E-02	NQO1,PRKG1
bupivacaine		chemical drug				1,40E-02	FOSL1,HPGDS
ketorolac		chemical drug				1,40E-02	Ccl2,NFKBIA
SR1078		chemical reagent				1,40E-02	Ccl2,PADI2
miR-182 inhibitor		chemical reagent				1,40E-02	CASP3,NFKBIA
2,4-dinitrobenzenesulfonic acid		chemical reagent				1,40E-02	CD86,ICAM1
YBX1		transcription regulator		1,982	bias	1,42E-02	Ccl2,ID1,IRF5,KLF4,SLC2A3,STC2
ITGB3		transmembrane receptor		0,200	bias	1,42E-02	CD40,CSF1,IL1B,RUNX2,SERPINE1
CHD7		enzyme				1,45E-02	JAG1,PERP,POLE4
Smad		complex				1,45E-02	ID1,ID3,SERPINE1
BCL2L11		other				1,45E-02	CASP3,Ccl2,IL1B
mir-124		microRNA				1,45E-02	CASP3,Ccl2,RUNX2
BTG2		transcription regulator				1,45E-02	IL1B,NQO1,SOD2
BAG1		other				1,45E-02	Hspa1b,JUN,KLK3
hemocyanin		biologic drug				1,45E-02	CD14,CD83,CD86
amitriptyline		chemical drug				1,45E-02	DEPP1,HPN,SLC2A3
piceatannol		chemical - endogenous non-mammalia				1,45E-02	FAS,ICAM1,IL1B
kaempferol		chemical toxicant				1,45E-02	ICAM1,JUN,RUNX2
roscovitine		chemical drug		-1,954	bias	1,50E-02	CD44,CEBPA,Raet1d/Raet1e,RALA
EGR3		transcription regulator		1,980		1,50E-02	ESD,ID3,JUN,PLXND1
TEAD3		transcription regulator	Activated	2,000	bias	1,50E-02	ARID5B,FJX1,NFKBIZ,TRNP1
ABCA1		transporter		-1,009		1,50E-02	APOA1,Ccl2,CSF3,IL1B
N-acetylsphingosine		chemical reagent		1,969	bias	1,50E-02	Ccl2,JUN,SERPINE1,SOD2
clopidogrel		chemical drug		-1,342		1,50E-02	ATOH8,BMF,CXCL12,DHRS3,STC2
thyroid hormone		chemical - endogenous mammalian		-1,342		1,53E-02	CAMK4,CCNA2,CD2,ID1,OAT,PGD,RTN1,SERPINE2,TCEA3
DMD	1,365	other				1,55E-02	BLNK,DMD,FTH1,Marcks,PADI2,PTGFRN,SCIN,SERPINB1,SYNC,WWC1
PC-SPES		chemical drug				1,56E-02	CCNA2,CD9,FTL,ID1,IL1B,KLK3
LCK	1,108	kinase				1,59E-02	CCNA2,CD2,GADD45B,JUN,NOTCH2
ID1	1,349	transcription regulator		1,360	bias	1,59E-02	DTX4,GATA3,ICAM1,IFI16,RUNX2
sulindac sulfide		chemical drug		1,460		1,59E-02	ESD,GDF15,KRT19,NQO1,STC2
ADRA1D		G-protein coupled receptor				1,61E-02	CEBPD,FABP5,IL6ST,JUN
herbimycin		chemical - kinase inhibitor		-1,118	bias	1,61E-02	ICAM1,IL1B,SERPINE1,SOD2

Sb202190		chemical - kinase inhibitor		-1,980	bias	1,61E-02	Ccl2,CD86,ICAM1,IL1B,MAPK6,SERPINE1,XDH
Trp53cor1		other				1,61E-02	Ccl2,IL1B,PERP
CXCL10		cytokine				1,61E-02	Ccl2,CXCR3,IL1B
LTBP1		other				1,61E-02	BMF,GATA3,SERPINE1
FGF9		growth factor				1,61E-02	BMP4,CSF3,RUNX2
HMGB2		transcription regulator				1,61E-02	CSF3,IL1B,RUNX2
K-252		chemical - kinase inhibitor				1,61E-02	CD14,JUN,SOD2
geranylgeranyl pyrophosphate		chemical - endogenous mammalian				1,61E-02	BMP2,ICAM1,IL1B
linolenic acid		chemical - endogenous mammalian				1,61E-02	ICAM1,NFKBIA,SERPINE1
CEBPD	0,429	transcription regulator		0,447	bias	1,63E-02	BCL2A1,Ccl2,CD14,CEBPD,IL1B,Saa3
linoleic acid		chemical - endogenous mammalian		0,468	bias	1,68E-02	APOA1,Ccl2,ICAM1,IL1B,NFKBIA
ATM		kinase				1,68E-02	FAS,GADD45B,JUN,SERPINE1,TNFAIP3
ETS2		transcription regulator	Activated	2,236	bias	1,68E-02	BMP4,CSF3,ICAM1,JUN,PLA2G16
1L-6-hydroxymethyl-chiro-inositol 2-(R)-2-O-methyl-3-O-octadecylcarbonate		chemical - kinase inhibitor				1,73E-02	CXCL16,GDF15
THOC5		other				1,73E-02	APOA1,CEBPA
DPY30		other				1,73E-02	ID1,ID3
ADCY7		enzyme				1,73E-02	IL1RL1,IRAK2
FOXP1		transcription regulator				1,73E-02	GZMA,SERPINB1
SEMA4D		transmembrane receptor				1,73E-02	CD40,RRAS
ITGA4		transmembrane receptor				1,73E-02	IL1B,TNFAIP3
AMBP		transporter				1,73E-02	Ccl2,IL1B
SPRY4-IT1		other				1,73E-02	F11R,ZNF703
FRMD6		other				1,73E-02	BMP2,RASSF4
HLA-G		other				1,73E-02	CD8A,FAS
LUM		other				1,73E-02	FAS,IL1B
LY9	2,405	other				1,73E-02	CD81,ZBTB16
Igkv1-117		other				1,73E-02	JUN,RELB
Sry		transcription regulator				1,73E-02	IL1B,SOD2
NFKBIE		transcription regulator				1,73E-02	CSF3,ICAM1
PA2G4		transcription regulator				1,73E-02	GDF15,KLK3
HBB		transporter				1,73E-02	ICAM1,SERPINE1
COP1		enzyme				1,73E-02	FAS,ICAM1
S100P		other				1,73E-02	KRT19,KRT8
CYBA	1,652	enzyme				1,73E-02	SERPINE1,SOD2
zileuton		chemical drug				1,73E-02	Ccl2,ICAM1
astressin 2B		biologic drug				1,73E-02	Ccl2,SLC2A3
polymyxin B		biologic drug				1,73E-02	APOBEC3B,IL1B

S-equal		chemical drug				1,73E-02	CD86,SERPINE1
formononetin		chemical - endogenous non-mammalia				1,73E-02	BMP2,CD86
lysophosphatidylinositol		chemical - endogenous mammalian	Activated	2,000	bias	1,73E-02	CSF3,ICAM1,IL1B,SOD2
JAK3		kinase				1,73E-02	CSF3,GATA3,IL7R,LAG3
E2F2		transcription regulator				1,78E-02	CCNA2,ID1,MCM3,Rae1d/Rae1e,SERPINE1
PSEN1		peptidase		-0,762		1,78E-02	AMY2A,BASP1,C1R,CASP3,CD9,CTS2,GADD45B,GSTP1,HK1,IL1B
glutamine		chemical - endogenous mammalian	Inhibited	-2,000	bias	1,79E-02	FABP5,HK1,ICAM1,JUN,KLF4,NFKBIA
tetrodotoxin		chemical drug				1,79E-02	AMIGO2,FAS,ID1
PRKDC		kinase				1,79E-02	BIRC3,KLK3,PREX1
CTSS		peptidase				1,79E-02	CASP3,FAS,IL1B
miR-23		microRNA				1,79E-02	PTK2B,RUNX2,SOD2
ICOSLG/LOC102723996		other				1,79E-02	CD28,IL1B,IL1RL1
PTPN22		phosphatase				1,79E-02	IL1B,LAG3,MRC1
ESRRB		ligand-dependent nuclear receptor				1,79E-02	HK2,Hspa1b,POLE4
ozone		chemical toxicant				1,79E-02	Ccl2,IL1B,JUN
PML		transcription regulator		-1,066		1,81E-02	APOA1,FAS,FTL,HSPB1,IL1B,JUP,NQO1,TNFAIP3
isoproterenol		chemical drug		1,860	bias	1,81E-02	ALDH3B1,CSF3,DHRS3,FOSL1,IL1B,JUN,PRKD3,SOD2
FGFR2		kinase				1,81E-02	BMP4,FAS,ICAM1,IL1B,MEST,RUNX2,TSPAN8
EPAS1		transcription regulator	Activated	2,404	bias	1,84E-02	BIRC3,CEBPA,GADD45B,SERPINE1,SLC11A2,SLC2A3,SOD2,STC2,TNFAIP3,YAP1
SCARB1		transporter		-1,387		1,85E-02	APOA1,CD68,ICAM1,IL1B
ITGA5		transmembrane receptor				1,85E-02	CD40,CD44,IL1B,JUN
RETN		other		1,067	bias	1,85E-02	APOA1,FABP5,ICAM1,SERPINE1
TEAD2		transcription regulator	Activated	2,000	bias	1,85E-02	ARID5B,FJX1,NFKBIZ,TRNP1
ATF4		transcription regulator				1,93E-02	GDF15,JAG1,JUN,KLF4,SOD2,STC2,TNFRSF12A,XDH
STAT4		transcription regulator	Activated	2,800	bias	1,94E-02	GATA3,Hspa1b,LRP1,Ms4a4b (includes others),RCN3,SERPINB1,SERPINE1,SLC2A3,STC2,Tcf7
N-corr		group				1,95E-02	Ccl8,CXCL14,DHRS3,GSTP1,IL1B,ZNF703
Mir122a,b		group				1,97E-02	Ccl2,CD68,IL1B
CDH11		other				1,97E-02	CD9,JUP,PTK2B
USP7		peptidase				1,97E-02	BMF,KLK3,PDE9A
PLA2R1		transmembrane receptor				1,97E-02	ALDH2,BDH2,SOD2
FABP4		transporter				1,97E-02	Ccl2,FABP5,IL1B
CD47		transmembrane receptor				1,97E-02	CSF1,FTL,IL1B
imipramine		chemical drug				1,97E-02	DEPP1,HPN,SLC2A3
BTNL2		transmembrane receptor		1,342	bias	1,97E-02	GJB2,Hspa1b,IL1RL1,SPECC1,XDH
triadimefon		chemical toxicant		1,000	bias	1,98E-02	ALAS1,CYP3A7,GSTA3,TST
fish oils		chemical drug				1,98E-02	APOA1,Ccl2,CEBPA,IL1B
SQSTM1		transcription regulator				1,98E-02	IL1B,JUN,NFKBIA,NQO1

CUL3		enzyme		-0.849		1.98E-02	NQO1,PLS3,Prss1 (includes others),TCEA3
ADRA1A		G-protein coupled receptor				1.98E-02	CEBPD,FABP5,IL6ST,JUN
FOXO3		transcription regulator		1.597		2.04E-02	ANXA3,BMP2,FABP5,GADD45B,HMGCS2,ICAM1,JAG1,LCP2,NFKBIA,NTN4
9-hydroxy-(S)-10,12-octadecadienoic acid		chemical - endogenous mammalian				2.07E-02	SERPINE1
acetoacetyl-coenzyme A		chemical - endogenous mammalian				2.07E-02	IL1B
endocannabinoid		chemical - endogenous mammalian				2.07E-02	APOA1
GPSM3		other				2.07E-02	IL1B
COMMD5		other				2.07E-02	NOTCH2
rasburicase		biologic drug				2.07E-02	Ccl2
BDNF-AS		other				2.07E-02	CASP3
BMP2/4		group				2.07E-02	Hamp/Hamp2
Patched		group				2.07E-02	SMO
IRAK1/4		group				2.07E-02	IL1B
glutethimide		chemical drug				2.07E-02	ALAS1
G-Actin		group				2.07E-02	JUN
acridine half-mustard		chemical toxicant				2.07E-02	ANTXR2
WSX1-gp130		complex				2.07E-02	GATA3
bovine testicular hyaluronidase		biologic drug				2.07E-02	CD44
PMM2		enzyme				2.07E-02	ICAM1
NLRP2		other				2.07E-02	ICAM1
Il1bos		other				2.07E-02	IL1B
PELI3		enzyme				2.07E-02	IL1B
WFDC1		other				2.07E-02	ICAM1
CMPK2		kinase				2.07E-02	IL1B
PPIP5K1		phosphatase				2.07E-02	RUNX2
SV2B		transporter				2.07E-02	SYT1
SNORD21		other				2.07E-02	HLA-A
IDO2		enzyme				2.07E-02	CD40
FNDC3B		other				2.07E-02	RUNX2
CLPX		enzyme				2.07E-02	ALAS1
DAGLA		enzyme				2.07E-02	IL1B
UBN1		transcription regulator				2.07E-02	CCNA2
canakinumab		biologic drug				2.07E-02	IL1B
DEPDC1		transcription regulator				2.07E-02	TNFAIP3
SGMS2		enzyme				2.07E-02	APOA1
MYADM		other				2.07E-02	ICAM1
MACROD1		enzyme				2.07E-02	NFKBIA



CCDC22		other				2.07E-02	BIRC3
MLLT11		other				2.07E-02	CD44
COMMD9		other				2.07E-02	NOTCH2
KIF26B		other				2.07E-02	NQO1
CLIC1		ion channel				2.07E-02	IL1B
TCFL5		transcription regulator				2.07E-02	CD2
PHF10		other				2.07E-02	CASP3
DSC2		other				2.07E-02	CD44
TMEM123	0,505	other				2.07E-02	CD40
DPP3		peptidase				2.07E-02	NQO1
FANK1		transcription regulator				2.07E-02	JUN
Testosterone-AR dimer		complex				2.07E-02	KLK3
CELSR3		G-protein coupled receptor				2.07E-02	Nrg1
gataparsen		biologic drug				2.07E-02	CASP3
tandutinib		chemical drug				2.07E-02	ID1
FAS-AS1		other				2.07E-02	FAS
Oxi-4503		chemical drug				2.07E-02	CXCL12
black cohosh extract		chemical drug				2.07E-02	SERPINE1
GTPase		group				2.07E-02	BMP2
EIF3I		translation regulator				2.07E-02	SERPINE1
ACBD3		other				2.07E-02	SLC11A2
PRCC		other				2.07E-02	SERPINE1
cabazitaxel		chemical drug				2.07E-02	KLK3
DYNLRB1		other				2.07E-02	SERPINE1
NFE2L3		transcription regulator				2.07E-02	NQO1
FGF6		growth factor				2.07E-02	CSF3
COL6A3		other				2.07E-02	WWC1
RAB27A		enzyme				2.07E-02	CD44
MED7		transcription regulator				2.07E-02	TNFAIP3
LINC00672		other				2.07E-02	LASP1
SLC52A1		transporter				2.07E-02	ICAM1
miR-615-5p (and other miRNAs w/seed GGGGUCC)		mature microRNA				2.07E-02	KRT19
miR-690 (miRNAs w/seed AAGGCUA)		mature microRNA				2.07E-02	CEBPA
Mir690		microRNA				2.07E-02	CEBPA
mir-1301		microRNA				2.07E-02	KLF6
mir-613		microRNA				2.07E-02	RTKN
AQUAPORIN		group				2.07E-02	IL1B

CAMK2		group				2.07E-02	BIRC3	
EPST11		other				2.07E-02	NFKBIA	
Raet1d/Raet1e	3,853	other				2.07E-02	HLA-A	
RNF14		transcription regulator				2.07E-02	KLK3	
PLXNB1		transmembrane receptor				2.07E-02	KLK3	
COL4A2		other				2.07E-02	FAS	
AXIN2		other				2.07E-02	BMP4	
PSMA1		peptidase				2.07E-02	GSTP1	
RNF7		enzyme				2.07E-02	JUN	
CTNNA1		other				2.07E-02	VCL	
SART3		other				2.07E-02	KLK3	
MED21		transcription regulator				2.07E-02	TNFAIP3	
Uox		enzyme				2.07E-02	IL1B	
B3GAT2		enzyme				2.07E-02	B3GAT1	
PRDM14		transcription regulator				2.07E-02	POLE4	
PDPN		other				2.07E-02	CD44	
JAM2		other				2.07E-02	CXCL12	
RPN2		enzyme				2.07E-02	GSTP1	
FAP		peptidase				2.07E-02	Cc2	
VPS4B		transporter				2.07E-02	CASP3	
ZC3H8		transcription regulator				2.07E-02	GATA3	
cytarabine/Idarubicin		chemical drug				2.07E-02	CEBPA	
GDF10		growth factor				2.07E-02	SERPINE1	
F12		peptidase				2.07E-02	IL1B	
birinapant		biologic drug				2.07E-02	MLKL	
quercetin-3-methyl ether		chemical reagent				2.07E-02	IL1B	
quercetin-3,4'-dimethyl ether		chemical reagent				2.07E-02	IL1B	
CDKL2		kinase				2.07E-02	CD44	
SRRM1		other				2.07E-02	CD44	
HIST1H4B		other				2.07E-02	Hspa1b	
minozac free base		chemical reagent				2.07E-02	IL1B	
IGHMBP2		enzyme				2.07E-02	APOA1	
Rhodobacter sphaeroides lipopolysaccharide		chemical - endogenous non-mammalia				2.07E-02	IL1B	
3M-052		chemical drug				2.07E-02	Cc2	
ETP-46464		chemical reagent				2.07E-02	OASL	
ISCU		other				2.07E-02	FTH1	
sintokamide A		chemical reagent				2.07E-02	KLK3	

ertebel		chemical drug				2.07E-02		IL1B
metabolite		chemical - endogenous mammalian				2.07E-02		NQO1
lipophosphoglycan		chemical - endogenous non-mammalian				2.07E-02		IL1B
3-hydroxybutyric acid		chemical - endogenous mammalian				2.07E-02		IL1B
SC-19220		chemical reagent				2.07E-02		ICAM1
bathophenanthroline		chemical reagent				2.07E-02		CP
RO31-9790		chemical - protease inhibitor				2.07E-02		GAP43
AZ10606120		chemical reagent				2.07E-02		CD86
fluorescein		chemical drug				2.07E-02		CASP3
{3-(1,4-dihydroimidazo[4,5-c]pyrazol-5-yl)-4-methylphenyl}-3-(3-(4-methyl-1H-imidazol-1-yl)-5-(trifluoromethyl)phenyl)ur		chemical - kinase inhibitor				2.07E-02		Ccl2
pentachlorophenol		chemical toxicant				2.07E-02		NQO1
SDM25N		chemical reagent				2.07E-02		CD86
L18-muramyl dipeptide		chemical reagent				2.07E-02		ACOD1
anti-miR-32 inhibitor		chemical reagent				2.07E-02		KLF4
1-methylspermidine		chemical reagent				2.07E-02		AMY2A
leucyl-leucine-methyl ester		biologic drug				2.07E-02		IL1B
2-methoxy-5-(2',3',4'-trimethoxyphenyl)-2,4,6-cycloheptatrien-1-one		chemical reagent				2.07E-02		JUN
carbon		chemical reagent				2.07E-02		GSTP1
17S-hydroperoxy-docosahexaenoic acid		chemical - endogenous mammalian				2.07E-02		IL1B
UMP		chemical - endogenous mammalian				2.07E-02		IL1B
cladribine		chemical drug				2.07E-02		IL1B
2'-fucosyllactose		chemical - endogenous mammalian				2.07E-02		ICAM1
P2y Receptor		group				2.07E-02		SLC2A3
ferric citrate		chemical drug				2.07E-02		FTH1
tetracycline		chemical drug	Activated	2.000		2.08E-02		CSF1,JAG1,MAL,SERPINE1,SOD2
triptolide		chemical drug		-0.277	bias	2.08E-02		CASP3,CXCL12,FAS,ICAM1,JUN
coal tar		chemical drug				2.08E-02		GSTP1,NQO1
METTL3		enzyme				2.08E-02		CD9,SERPINE2
APOL1		transporter				2.08E-02		IFNGR2,IL1B
Adaptor protein 1		complex				2.08E-02		CD44,SOD2
T 0070907		chemical reagent				2.08E-02		Ccl2,CEBPA
PLCL2		enzyme				2.08E-02		ID1,RUNX2
Atrial Natriuretic Peptide		group				2.08E-02		NPR2,SERPINE1
Kallikrein		group				2.08E-02		Ccl2,ICAM1
astragaln		chemical - endogenous non-mammalian				2.08E-02		ICAM1,IL1B
Mcpt4		peptidase				2.08E-02		Ccl2,CLDN4
TXK		kinase				2.08E-02		CD44,ZBTB16

DYRK1B		kinase				2,08E-02	CP,SOD2
miR-208a-3p (and other miRNAs w/seed UAAGACG)		mature microRNA				2,08E-02	CD14,RUNX2
MAFF		transcription regulator				2,08E-02	GSTP1,NQO1
IL17RB		transmembrane receptor				2,08E-02	Ccl2,CSF3
VLDLR		transporter				2,08E-02	SERPINE1,TNFAIP3
ENTPD1		enzyme				2,08E-02	CD86,SERPINE1
CHRNA3		transmembrane receptor				2,08E-02	CASP3,GATA3
HIST2H3C		other				2,08E-02	IL1B,RND3
sevoflurane		chemical drug				2,08E-02	CASP3,IL1B
ferric ammonium citrate		chemical drug				2,08E-02	FTH1,FTL
8-chlorophenylthio-adenosine 3',5'-cyclic monophosphate		chemical - kinase inhibitor	1,982	bias		2,12E-02	BIRC3,CASP3,CEBPD,LPIN2
IFN type 1		group	1,969	bias		2,12E-02	Ccl2,IFI16,OASL,XDH
EPHB4		kinase	1,000	bias		2,12E-02	BMP2,BMP4,GATA3,Nes
IGFBP2		other				2,12E-02	CASP3,CHD9,GDF15,PTGFRN
ARNTL		transcription regulator	0,591	bias		2,12E-02	CEBPA,HMGCS2,IL1B,NQO1
LMNB1		other				2,12E-02	Ccl2,CXCL12,FLT3,RCN1
brefeldin A		chemical - endogenous non-mammalian	-0,130			2,12E-02	CD44,GADD45B,HLA-A,KLF4
GRP		growth factor				2,17E-02	CTRB2,JUN,KLK3
ACTL6A		other				2,17E-02	CCNA2,FAS,SFN
DLL1		enzyme				2,17E-02	CD86,GATA3,JAG1
CHADL		other				2,17E-02	Ccl2,FAS,STEAP4
CFLAR		other				2,17E-02	CSF3,GATA3,IL1B
PD 123319		chemical drug				2,17E-02	Ccl2,CYBA,SERPINE1
chrysotile asbestos		chemical toxicant				2,17E-02	CLCA1,CTSZ,IL1B
deoxyribovalenol		chemical toxicant				2,17E-02	CLDN4,ICAM1,IL1B
stearic acid		chemical - endogenous mammalian				2,17E-02	ICAM1,IL1B,NFKBIA
GnRH analog		biologic drug	0,577			2,18E-02	ACOT7,BCL2A1,CASP3,CD40,FAS,GAB1,GSTO1,JUN,NFKBIA,PLA2G16
GNA12		enzyme	0,447	bias		2,19E-02	CCNA2,GSTA3,GSTP1,LAMB3,VCL
PAX3		transcription regulator				2,21E-02	BMP4,FLT3,JD3,IL7R,LAMB3,MEST,PTPN14,PXDN,SFN
FOXP3		transcription regulator	0,447	bias		2,21E-02	HLA-A,IGSF3,IL1RL1,IL1R,LATS2,TNFAIP3
SRC (family)		group	1,969	bias		2,26E-02	BMP2,Ccl2,ICAM1,ID1
RTN4		other				2,26E-02	GAP43,JUN,NQO1,Tpm1
CCN2		growth factor	1,148	bias		2,31E-02	BCL2A1,CD44,JUN,SDC4,SERPINE1,Tpm1
RXRA		ligand-dependent nuclear receptor	0,000			2,33E-02	APOA1,Ccl8,CCNA2,CEBPA,CEBPD,CLMN,FABP5,FTL,HMGCS2,IL1B
etanercept		biologic drug				2,37E-02	CD83,ICAM1,IL1B
LPIN1		phosphatase				2,37E-02	CEBPA,IL1B,LPIN2
indican		chemical - endogenous mammalian				2,37E-02	GATA3,ICAM1,IL1B

LLGL2		other				2,37E-02	CRIM1,SERPINE1,SH2D4A
Focal adhesion kinase		group				2,37E-02	ICAM1,KLK3,KRT8
CASP3	0,801	peptidase				2,37E-02	CAMK4,CASP3,RUNX2
ROCK1		kinase				2,37E-02	CD44,ICAM1,LAMA2
PRKCI		kinase				2,37E-02	CLDN4,HK1,HK2
NCOA4		transcription regulator				2,37E-02	FABP5,JAG1,KLK3
ferulic acid		chemical - endogenous non-mammalian				2,37E-02	CASP3,CSF3,IL1B
R-WIN 55,212		chemical reagent				2,37E-02	CASP3,ICAM1,IL1B
glycyrrhizic acid		chemical drug				2,37E-02	APOA1,CASP3,CD40
bardoxolone methyl		chemical drug				2,37E-02	BIRC3,Ccl2,IL1B
fucoidin		chemical reagent				2,37E-02	CASP3,CXCL12,IL1B
CD5		transmembrane receptor		0,762	bias	2,40E-02	CCR7,CD86,ICAM1,RELB
ADM		other		-1,067		2,40E-02	Ccl2,ICAM1,IL1B,PRKG1
phenethyl isothiocyanate		chemical drug				2,40E-02	BUB1,CYP3A7,GSTA3,KRT20,MAPK6,PLS3
budesonide		chemical drug		1,342		2,41E-02	BTG3,Ccl2,CSF3,JUN,PDLM1
ascorbic acid		chemical - endogenous mammalian		-0,277		2,41E-02	APOA1,BMF,FAS,RUNX2,SERPINE1
FOXM1		transcription regulator	Activated	2,582	bias	2,43E-02	CCNA2,CXCL12,CXCR3,JUN,NEK2,Nes,SOD2
halofuginone		chemical drug				2,43E-02	Cd24a,CD44,CP,HK1,PLCB4,PTGFRN,PTK2B
mocetinostat		chemical drug				2,47E-02	CASP3,IL1B
WP1066		chemical drug				2,47E-02	CD86,IL1B
TCIRG1	1,150	enzyme				2,47E-02	CD44,CD86
CLEC1B		transmembrane receptor				2,47E-02	CXCL12,LCF2
RGS2		other				2,47E-02	CEBPD,Vnn3
ALOX12		enzyme				2,47E-02	FOSL1,JUN
CST3		other				2,47E-02	IL1B,NFKBIA
PLTP		enzyme				2,47E-02	APOA1,IL1B
DDB2		other				2,47E-02	NFKBIA,SOD2
BAP1		peptidase				2,47E-02	Ccl2,MCM3
ETV6		transcription regulator				2,47E-02	CASP3,ID1
NUMBL		other				2,47E-02	CASP3,KLF4
ZBTB32		transcription regulator				2,47E-02	CSF2RB,GATA3
HSPB8		kinase				2,47E-02	BMP4,ICAM1
RIPK3		kinase				2,47E-02	Ccl2,IL1B
PAX4		transcription regulator				2,47E-02	ARX,Nes
AJUBA		transcription regulator				2,47E-02	BUB1,DOCK1
ITGA3		other				2,47E-02	SERPINE1,VCL
CDH5		other				2,47E-02	ICAM1,TIAM1

IREB2		translation regulator				2.47E-02	FTH1,FTL
ELN		other				2.47E-02	CD86,IL1B
PLCL1		enzyme				2.47E-02	ID1,RUNX2
ACO1		enzyme				2.47E-02	FTH1,FTL
pentyleneetetrazol		chemical drug				2.47E-02	IL1B,JUN
toremifene		chemical drug				2.47E-02	CD86,KLK3
D-sphingosine		chemical - endogenous mammalian				2.47E-02	Ccl2,SERPINE1
KT5720		chemical - kinase inhibitor				2.47E-02	NFKBIA,PRKG1
tin protoporphyrin IX		chemical reagent				2.47E-02	CD86,Hamp/Hamp2
cucurbitacin B		chemical - endogenous non-mammalian				2.47E-02	CASP3,CCNA2
fatty acid		chemical - endogenous mammalian	1.519	bias	2.50E-02	APOA1,Ccl2,IL1B,LPIN2,NFKBIA,SERPINE1	
TET2		enzyme	-0.378	bias	2.51E-02	Ccl2,CLEC4D,IFI16,IL1B,PLS3,RND3,ZBTB16	
NR4A1		ligand-dependent nuclear receptor	-1.615	bias	2.53E-02	CEBPA,CSF1,CXCL12,FBP1,HK2,ICAM1,IL1B,JUP,KRT8,NFKBIA	
R5020		chemical reagent	1.969	bias	2.53E-02	BIRC3,CEBPA,LAMC2,NFKBIA,ZBTB16	
CDK9		kinase			2.55E-02	ALAS1,NFKBIA,STC2,TNFAIP3	
ZEB2		transcription regulator	-1.000	bias	2.55E-02	GZMA,IL7R,KRT19,Tcf7	
AKT2		kinase			2.55E-02	BUB1,Ccl2,IRAK3,NQO1	
VAV1		transcription regulator			2.59E-02	BCL2A1,JUN,RALA	
IFRD1		other			2.59E-02	CTSZ,HK1,LAMA2	
THBS4		other			2.59E-02	Ccl2,CD40,ICAM1	
fluvoxamine		chemical drug			2.59E-02	CCR7,HTR7,RACK1	
ERN1		kinase	1.404	bias	2.60E-02	ANG,Ccl2,CEBPD,FAS,IL1B,JUN,TINAGL1	
SPARC		other	-1.353		2.60E-02	CEBPD,CLDN4,NOTCH2,PLET1,SERPINE1,SLC34A2	
GAST		other	1.342	bias	2.65E-02	Hamp/Hamp2,JAG1,JUN,MCM3,NFKBIA	
berberine		chemical drug	0.686	bias	2.71E-02	BIRC3,CASP3,CD40,CD86,ICAM1,IL1B	
alefacept		biologic drug	-1.982	bias	2.71E-02	CD2,CD8A,CYBA,IL7R	
oblimersen		biologic drug	Activated	2.000	bias	2.71E-02	CEBPD,GADD45B,IFI16,OASL
CAT		enzyme	-1.067	bias	2.71E-02	BCL2A1,Ccl2,CLCA1,SERPINE1	
PLAG1		transcription regulator	0.000	bias	2.71E-02	KRT19,LILRB3,PIR,PPIC	
mir-24		microRNA	-0.404		2.71E-02	CXCR3,GATA3,SERPINE1,Tcf7	
CLEC11A		growth factor			2.71E-02	CXCL12,IL1B,RUNX2,ZYX	
anisomycin		chemical - endogenous non-mammalian	1.966	bias	2.71E-02	IL1RL1,JUN,SDC1,SERPINE1	
SP110	2,929	transcription regulator		-0.378		2.78E-02	BMP4,DMD,PANX1,PERP,RIPK2,TAB3,YAP1
CARD9		other			2.81E-02	Ccl2,CSF3,IL1B	
IHH		enzyme			2.81E-02	BMP4,RUNX2,SMO	
PRKCZ		kinase			2.81E-02	CASP3,JUN,NFKBIA	
BECN1		other			2.81E-02	BMF,IL1B,SOD2	

CORT		other				2,81E-02	Ccl2,CCR7,IL1B
N-(3-(aminomethyl)benzyl)acetamide		chemical reagent				2,81E-02	CASP3,FAS,RIPK2
hymecromone		chemical drug				2,81E-02	CASP3,CD44,FAS
IFNA1/IFNA13		cytokine	1,131	bias	2,87E-02		CD40,CD83,CD86,IL1B
EBI3		cytokine	1,982	bias	2,87E-02		CD86,HLA-A,ICAM1,LAG3
MDGA2		other				2,88E-02	BCL2A1,FAS
FH		enzyme				2,88E-02	LTBP2,NQO1
CRBN		enzyme				2,88E-02	IL1B,JUN
harmine		chemical - endogenous non-mammalia				2,88E-02	BMP2,RUNX2
SOX5		transcription regulator				2,88E-02	BMP6,RUNX2
miR-210-3p (miRNAs w/seed UGUGCGU)		mature microRNA				2,88E-02	FGFRL1,RAD52
mir-127		microRNA				2,88E-02	IL1B,MRC1
HLA-A	1,061	other				2,88E-02	HLA-A,LAG3
XRCC5		enzyme				2,88E-02	KLK3,XDH
CD180		other				2,88E-02	BCL2A1,CD86
NLRC4		other				2,88E-02	CD86,IL1B
FRS2		other				2,88E-02	BMP4,CD44
PLA2G2E		enzyme				2,88E-02	IL1B,SERPINE1
UGCG		enzyme				2,88E-02	CASP3,ICAM1
PON1		phosphatase				2,88E-02	CD86,ICAM1
SDC1	1,625	enzyme				2,88E-02	Ccl2,GALNT3
CRY1		enzyme				2,88E-02	CEBPA,IL1B
CDK7		kinase				2,88E-02	STC2,TNFAIP3
DUSP14		phosphatase				2,88E-02	NFKBIZ,Vnn3
BHLHE41		transcription regulator				2,88E-02	GATA3,HK2
HSPA1A/HSPA1B		enzyme				2,88E-02	Hspa1b,IL1B
2'3'-cyclic guanosine monophosphate-adenosine monophosphate		chemical - endogenous mammalian				2,88E-02	CD86,IL1B
bisphenol A diglycidyl ether		chemical reagent				2,88E-02	ICAM1,SERPINE1
RV 538		chemical reagent				2,88E-02	ICAM1,IL1B
ethylenediaminetetraacetic acid		chemical drug				2,88E-02	BCL2A1,IL1B
irinotecan		chemical drug				2,88E-02	FAS,IL1B
isatoribine		chemical reagent				2,88E-02	CD40,CD86
cyclomaltoextrin		chemical drug				2,88E-02	CSF3,IL1B
topiramate		chemical drug				2,88E-02	CASP3,IL1B
CNR1		G-protein coupled receptor	0,420	bias	2,88E-02		BMP2,BMP4,Ccl2,Ccl8,CORO2A,NOD2,PTK2B
ZAP70		kinase	1,982	bias	3,04E-02		ALAS1,ANG,CCR7,CYBA
ELK1		transcription regulator	1,951	bias	3,04E-02		BMP2,FOSL1,JUN,RUNX2

Pin		other				3,04E-02	APOA1,RACK1,RALA,RRAS
FBXO32		enzyme	1,109			3,04E-02	IL1B,KRT19,OAT,SOD2,Tcf7
3M-011		chemical reagent				3,05E-02	CD40,CD83,CD86
MALAT1		other				3,05E-02	Ccl2,FRMD8,Glycam1
KEAP1		transcription regulator				3,05E-02	GSTP1,IL1B,NQO1
PDPK1		kinase				3,05E-02	CCR7,IL1B,SERPINE1
TIMP1		cytokine				3,05E-02	A4GALT,CD40,CD44
lactic acid		chemical - endogenous mammalian				3,05E-02	CXCL12,IL1B,MRC1
baflomycin A1		chemical drug				3,05E-02	CD40,CD9,NFKBIA
TGFB3		growth factor	1,709	bias		3,15E-02	ADAM19,GATA3,JUN,LTBP2,SERPINE1,SERPINE2
lithium		chemical drug	-0,447			3,18E-02	CAMK4,CASP3,FAS,JUN,NCS1
FBXW7		enzyme	-0,577	bias		3,21E-02	HSPB1,JUN,NQO1,SERPINE1
POU2AF1		transcription regulator				3,21E-02	B4GALT1,CD86,ID3,LCK
cadmium chloride		chemical toxicant				3,21E-02	CXCL12,HSPB1,JUN,KLK3
Secretase gamma		complex				3,29E-02	BATF,CD83,CD86
ZBED6		transcription regulator				3,29E-02	CRIM1,UPP1,WWC1
CHRNA7		transmembrane receptor				3,29E-02	Ccl2,ID1,IL1B
ANXA2		other				3,29E-02	ANG,FAS,JUN
DNASE2		enzyme				3,29E-02	CP,Hamp/Hamp2,Ms4a4b (includes others)
SELP		transmembrane receptor				3,29E-02	BCL2A1,BST1,IL1B
PRMT1		enzyme				3,29E-02	FTH1,FTL,MRC1
ZBTB7B		transcription regulator				3,29E-02	CD8A,GATA3,KLF4
PLAT		peptidase				3,29E-02	IL1B,JUN,SERPINE1
TYK2		kinase				3,29E-02	CSF3,Hamp/Hamp2,IL1B
CDC42		enzyme				3,29E-02	CASP3,CD86,JUN
MEIS1		transcription regulator				3,29E-02	CHD9,FLT3,RUNX2
S-nitroso-N-acetylpenicillamine		chemical reagent				3,29E-02	CXCL12,FAS,PRKG1
glycochenodeoxycholate		chemical - endogenous mammalian				3,31E-02	BCL2A1,BIRC3
MEG3		other				3,31E-02	GDF15,JUN
Rac		group				3,31E-02	BMP2,CD9
belnacasan		chemical drug				3,31E-02	Ccl2,IL1B
SGPP1		phosphatase				3,31E-02	IL1B,TGM3
NFKBID		transcription regulator				3,31E-02	CD86,CD9
TNFAIP8L2		other				3,31E-02	Ccl2,IL1B
CBS/CBSL		enzyme				3,31E-02	APOA1,CASP3
TAC4		other				3,31E-02	CD86,IL1B
COX411		enzyme				3,31E-02	SLC24A3,TSPAN8



SRSF3		other				3,31E-02	CD44,JUN
PIAS4		transcription regulator				3,31E-02	IL1B,SERPINE1
ATXN7		other				3,31E-02	BASP1,Marcks
CSF3R		transmembrane receptor				3,31E-02	CD14,CXCL12
ACVR1B		kinase				3,31E-02	KLF4,SERPINE1
CSAR2		G-protein coupled receptor				3,31E-02	Ccl2,CSF3
NPFF		other				3,31E-02	CEBPA,ID3
ST14		peptidase				3,31E-02	ICAM1,IL1B
ebufen		chemical drug				3,31E-02	ICAM1,IL1B
clasto-lactacystin beta-lactone		chemical - protease inhibitor				3,31E-02	GSTP1,MAPK6
N-(3-oxododecanoyl)-homoserine lactone		chemical reagent				3,31E-02	CSF1,IL1B
dimethyl fumarate		chemical drug				3,31E-02	CCR7,JUN
polyamines		chemical - other				3,31E-02	CD44,CEBPA
nickel chloride		chemical toxicant				3,31E-02	IL1B,JUN
spermine		chemical - endogenous mammalian				3,31E-02	IL1B,RUNX2
anti-benzo(a)pyrene-diol-epoxide		chemical toxicant				3,31E-02	GADD45B,JUN
biochanin A		chemical toxicant				3,31E-02	CD86,RUNX2
noscipine		chemical drug				3,31E-02	BIRC3,ICAM1
cyproterone acetate		chemical drug				3,31E-02	GAP43,KLK3
MAPK3		kinase		0,000	bias	3,32E-02	B4GALT1,BMP4,CD86,FOSL1,JUN
HNRNP2B1		other				3,38E-02	CP,GDF15,JUP,MEST,PLCB4,SEMA3B,SYT1
5-hydroxytryptamine		chemical - endogenous mammalian		1,954	bias	3,39E-02	APBB1IP,ICAM1,IL1B,PLIN3,RUNX2,SERPINE1
oxaliplatin		chemical drug				3,39E-02	CASP3,FAS,GAP43,GDF15
ISL1		transcription regulator		1,387		3,47E-02	BMP4,CCKAR,IL1B,LILRB3,PIRT
NFYA		transcription regulator	Activated	2,000	bias	3,47E-02	CCNA2,FTH1,GADD45B,ICAM1,JUN
MAPK1		kinase		-0,163		3,48E-02	BCL11A,Cctn4/Gm7094,GATA3,IFI16,IL1B,JUN,LAG3,OASL,PRKG1,PTPRK
USP22		peptidase				3,55E-02	BCL2A1,CSF2RB,MRC1
SETD2		enzyme				3,55E-02	ANG,JUN,SERPINE1
ABCG1		transporter				3,55E-02	Ccl2,CSF3,IL1B
PRKCQ		kinase				3,55E-02	CD44,FOSL1,GATA3
formaldehyde		chemical - endogenous mammalian				3,55E-02	FOSL1,IL1B,JUN
methylnitrosourea		chemical toxicant				3,55E-02	GSTP1,ID1,JUN
phorbol 12,13-dibutyrate		chemical - endogenous non-mammalian				3,55E-02	APOA1,Ccl2,SERPINE1
AIRE		transcription regulator				3,58E-02	AKR1B10,BMP2,BMP4,KLK3
ursolic acid		chemical drug				3,58E-02	CASP3,GDF15,IL1B,SOD2
SBDS		other				3,62E-02	GADD45B,GAP43,ID1,IFI16,ZNRF1
MAPT		other				3,62E-02	ANXA6,BASP1,C1R,CASP3,GSTP1,HK1,IL1B,JUN,Prss1 (includes others),SERPINE1

MAP4K4		kinase	Inhibited	-2.449	bias	3.64E-02	ALDH3B1,CEBPA,H6PD,MGLL,PLCB4,ST3GAL4
BDNF		growth factor		1.779	bias	3.64E-02	ACOT7,BMP2,CASP3,CAV2,CP,FTL,GAP43,JUN,SEMA3E,SOD2
STAT5B		transcription regulator		0.302		3.70E-02	BIRC3,BMF,CASP3,FAS,GADD45B,Glycam1,GSTP1,Hamp/Hamp2,KRT19,NQO1
Lh		complex		0.911	bias	3.72E-02	DHRS3,HK2,MAPK6,PLIN3,RUNX2,SOD2,TNFAIP3,TNFRSF12A,UPP1,VCL
cyclic GMP		chemical - endogenous mammalian				3.77E-02	SERPINE1,VCL
fluoride		chemical - endogenous mammalian				3.77E-02	FAS,RUNX2
lonafarnib		chemical drug				3.77E-02	BCL2A1,BIRC3
PPARα-RXRα		complex				3.77E-02	APOA1,NFKBIA
CLCN5		ion channel				3.77E-02	Ccl2,SLC34A2
IGFBP7		transporter				3.77E-02	CASP3,SOD2
TAP1		transporter				3.77E-02	HLA-A,IL1B
AIMP1		cytokine				3.77E-02	ICAM1,IL1B
PNN		other				3.77E-02	GDF15,JUN
CAPN3		peptidase				3.77E-02	FTH1,SOD2
SLC2A1		transporter				3.77E-02	NQO1,SERPINE1
BDKRB2		G-protein coupled receptor				3.77E-02	CD44,ICAM1
TREX1		enzyme				3.77E-02	IFI16,OASL
PARK7		enzyme				3.77E-02	ICAM1,SOD2
PDE5A		enzyme				3.77E-02	IL1B,PRKG1
SPINT1		other				3.77E-02	PTK7,Tcf7
L-685,458		chemical - protease inhibitor				3.77E-02	ID1,PTPRK
Mn(III)-tetrakis-(4-benzoic acid) porphyrin		chemical reagent				3.77E-02	CLDN4,SERPINE1
lauric acid		chemical - endogenous mammalian				3.77E-02	CD40,CD86
IL1R1		transmembrane receptor		1.718	bias	3.77E-02	Ccl2,CXCL12,ICAM1,IL1B
FLI1		transcription regulator		1.969	bias	3.77E-02	Ccl2,CSF3,CXCR3,RACK1
8-bromoguanosine 3',5'-cyclic monophosphate		chemical - kinase inhibitor				3.81E-02	BMP2,CD8A,SLC12A4
TARDBP		transcription regulator				3.81E-02	CASP3,Ccl2,IL1B
IGFBP3		other				3.81E-02	ICAM1,IL1B,SERPINE1
GTF2B		transcription regulator				3.81E-02	BCL2A1,NFKBIA,TNFAIP3
parthenolide		chemical drug				3.81E-02	Ccl2,IL1B,SOD2
ZFH3		transcription regulator				3.93E-02	APOA1,GSTP1,HLA-A,ID3,Nes
STK11		kinase		-0.711		3.94E-02	ALCAM,Ccl2,CCNA2,CSF3,DOCK4,FOSL1,GADD45B,ID1,RASGRP1,SERPINE1
3-deazaneplanocin		chemical drug		0.687	bias	3.96E-02	FAS,KLF6,LAMB3,NOTCH2
UCHL1		peptidase		1.000		3.96E-02	ANXA6,DOCK10,MAPK6,SH2D4A
GSK3B		kinase	Activated	2.433		4.04E-02	BCL2A1,BIRC3,Ccl2,IL1B,NFKB1Z,SERPINE1
SOX4		transcription regulator	Activated	2.813	bias	4.05E-02	2610035D17RIK,CD2,LCK,PPIC,RNASE4,SERPINE2,TAX1BP3,TIAM1
POU2F2		transcription regulator	Activated	2.000	bias	4.09E-02	DEPP1,FJX1,JUN,LCK,TNFRSF12A

flutamide		chemical drug		-0.784	bias	4,09E-02	B4GALNT1,CASP3,Ccl2,IL6ST,NGO1
phorbol esters		chemical - other	Activated	2,219	bias	4,09E-02	CD44,HK2,IL1B,JUN,SOD2
6-hydroxydopamine		chemical toxicant		1,980	bias	4,09E-02	CASP3,GAP43,IL1B,JUN,SOD2
RNASE2		enzyme				4,09E-02	CD83,CD86,CSF1
TANK		other				4,09E-02	NFKBIZ,Vnn3,ZC3H12A
CAMK4	1,814	kinase				4,09E-02	CAMK4,CSRP1,JUN
CD4		transmembrane receptor				4,09E-02	FAS,ID3,LCK
THBS1		other				4,09E-02	Ccl2,IL1B,LRP1
POSTN		other				4,09E-02	Ccl2,CLCA1,RUNX2
diphosphoryl lipid A		chemical toxicant				4,10E-02	IL1B
gentamicin C1		chemical drug				4,10E-02	CD44
syringin		chemical - endogenous non-mammalian				4,10E-02	IL1B
Cop9 Signalosome		complex				4,10E-02	JUN
CD8		complex				4,10E-02	LCK
Pdgfra-Pdgfrb		complex				4,10E-02	CSF1
endrin		chemical toxicant				4,10E-02	CEBPA
enkephalin, methionine		biologic drug				4,10E-02	MRC1
T-type Calcium Channel		complex				4,10E-02	ENPP1
Rps15a-ps4		other				4,10E-02	NFKBIA
MBNL3		other				4,10E-02	CD44
SLC27A4		transporter				4,10E-02	CEBPA
ADRM1		other				4,10E-02	NFKBIA
POPD2		other				4,10E-02	IL1B
SUCNR1		G-protein coupled receptor				4,10E-02	IL1B
Snhg5		other				4,10E-02	KLF4
SLC9A9		transporter				4,10E-02	FTH1
GSTZ1		enzyme				4,10E-02	NGO1
Hsf3		other				4,10E-02	PROM2
C1QL4		other				4,10E-02	CEBPA
GPR4		G-protein coupled receptor				4,10E-02	ICAM1
LBH		transcription regulator				4,10E-02	IL1B
METTL8		enzyme				4,10E-02	CEBPA
BATF2		other				4,10E-02	JUN
lauroylcarnitine		chemical - endogenous mammalian				4,10E-02	CLDN4
VANGL2		other				4,10E-02	SDC4
CTDSPL2		phosphatase				4,10E-02	ID1
SV2A		transporter				4,10E-02	SYT1

Raet1a		other				4,10E-02	HLA-A
AKNA		transcription regulator				4,10E-02	CD40
ginkgetin		chemical - endogenous non-mammalia				4,10E-02	CASP3
HIP1		other				4,10E-02	KLK3
LY 518674		chemical drug				4,10E-02	APOA1
Inflammasome (Nalp3, Asc, Casp1)		complex				4,10E-02	IL1B
ETV7		transcription regulator				4,10E-02	BMP6
clusterin antisense oligonucleotide		biologic drug				4,10E-02	KLK3
AP1M1		transporter				4,10E-02	HLA-A
FAIM2		other				4,10E-02	CASP3
IVNS1ABP		other				4,10E-02	SOD2
HLTF		transcription regulator				4,10E-02	SERPINE1
ZNF224		transcription regulator				4,10E-02	TNFAIP3
CELA1		peptidase				4,10E-02	HLA-A
cyproconazole		chemical drug				4,10E-02	GADD45B
MLIP		other				4,10E-02	HK1
CALU		other				4,10E-02	GDF15
NMB		other				4,10E-02	JUN
LAMA3		other				4,10E-02	IL1B
ARIH2		enzyme				4,10E-02	IL1B
mir-338		microRNA				4,10E-02	RUNX2
miR-483-5p (miRNAs w/seed AGACGGG)		mature microRNA				4,10E-02	ALCAM
mir-652		microRNA				4,10E-02	JAG1
MIR585		microRNA				4,10E-02	CASP3
miR-1298-5p (and other miRNAs w/seed UCAUUCG)		mature microRNA				4,10E-02	LAMB3
Zingiber officiale ginger extract		chemical drug				4,10E-02	IL1B
NUBP1		other				4,10E-02	FTH1
HIF1A-AS1		other				4,10E-02	CASP3
N-acetylcytidine		chemical - endogenous mammalian				4,10E-02	IL1B
BORCS8-MEF2B		transcription regulator				4,10E-02	JUN
STK38L		kinase				4,10E-02	YAP1
NBR1		other				4,10E-02	GATA3
abiraterone		chemical drug				4,10E-02	KLK3
NOXO1		other				4,10E-02	SOD2
IFI30		enzyme				4,10E-02	HLA-A
SIGLEC11		other				4,10E-02	IL1B
OSTF1		transcription regulator				4,10E-02	RUNX2

FGB		other				4,10E-02	ICAM1	
poly-L-glutamic acid-peptid 1 conjugate QM56		chemical reagent				4,10E-02	Ccl2	
cyclo(iso-Asp-GR)-LLIILAKLAKLAKLAK		chemical reagent				4,10E-02	CASP3	
SLC7A11		transporter				4,10E-02	IL1B	
VANGL1		other				4,10E-02	JUN	
PLEKHA1		other				4,10E-02	CD86	
ING2		transcription regulator				4,10E-02	SERPINE1	
RBM3		other				4,10E-02	CD44	
MYBPC1		other				4,10E-02	Ccl2	
CD8B		other				4,10E-02	IL1B	
PLEKHA2		other				4,10E-02	CD86	
PATZ1		transcription regulator				4,10E-02	KLK3	
ENC1		peptidase				4,10E-02	NQO1	
FOXL1		transcription regulator				4,10E-02	SDC1	
DRP2		other				4,10E-02	DMD	
FGF5		growth factor				4,10E-02	CSF3	
SMC1A		transporter				4,10E-02	POLE4	
FRAT1		other				4,10E-02	JUN	
14,15-epoxyeicosa-5(Z)-enoic acid		chemical reagent				4,10E-02	Ccl2	
IPO9		transporter				4,10E-02	PTK2B	
nitrosonifedipine		chemical reagent				4,10E-02	ICAM1	
CRTAP		other				4,10E-02	SERPINE1	
Acp5		phosphatase				4,10E-02	IL1B	
Sf1		other				4,10E-02	Ccl2	
APOC1		transporter				4,10E-02	CASP3	
CDK11B		kinase				4,10E-02	KLK3	
NLRP1		other				4,10E-02	IL1B	
RNF11		enzyme				4,10E-02	SERPINE1	
CLEC2D		transmembrane receptor				4,10E-02	CD83	
COPS6		other				4,10E-02	SFN	
ZFYVE16		transporter				4,10E-02	SERPINE1	
N-acetyl-lysyltyrosylcysteine-amide		chemical reagent				4,10E-02	XDH	
ATB-346		chemical drug				4,10E-02	IL1B	
E-c-HDMAPP		chemical reagent				4,10E-02	BCL2A1	
verticillin A		chemical reagent				4,10E-02	FAS	
hydroxyl radical		chemical toxicant				4,10E-02	KLF4	
trimellitic anhydride		chemical toxicant				4,10E-02	IL1B	

amsacrine		chemical drug				4,10E-02	JUN
sarpogrelate		chemical drug				4,10E-02	SERPINE1
methiohepin		chemical drug				4,10E-02	SERPINE1
sibutramine		chemical drug				4,10E-02	SERPINE1
2,5-hexanedione		chemical toxicant				4,10E-02	FAS
hexaarginine-neomycin B conjugate		chemical reagent				4,10E-02	CD8A
oxazepam		chemical drug				4,10E-02	GADD45B
3,3'-iminodipropionitrile		chemical toxicant				4,10E-02	Ccl2
glliclazide		chemical drug				4,10E-02	SLC2A3
chalcone-24		chemical reagent				4,10E-02	BIRC3
trichosanthin		chemical drug				4,10E-02	JAG1
terpenoid		chemical - endogenous mammalian				4,10E-02	LRP1
urushiol		chemical - endogenous non-mammalia				4,10E-02	IL1B
phenol		chemical - endogenous mammalian				4,10E-02	IL1B
sodium fluoride		chemical drug				4,10E-02	ICAM1
calton		chemical - other				4,10E-02	GSTP1
echium oil		chemical drug				4,10E-02	IL1B
procaterol		chemical drug				4,10E-02	ICAM1
Z-VVAD-FMK		chemical reagent				4,10E-02	IL1B
verteporfin		chemical drug				4,10E-02	YAP1
KT 5926		chemical - kinase inhibitor				4,10E-02	CD14
aluminum		chemical drug				4,10E-02	RUNX2
tyrphostin B56		chemical - kinase inhibitor				4,10E-02	ICAM1
tibolone		chemical drug				4,10E-02	SERPINE1
flunisolide		chemical drug				4,10E-02	ICAM1
fluorocitric acid		chemical reagent				4,10E-02	IL1B
1-phenazinecarboxylic acid		chemical - endogenous non-mammalia				4,10E-02	ICAM1
HOXD10		transcription regulator		0,000		4,17E-02	CD44,ICAM1,NCS1,SERPINE1
rotenone		chemical toxicant		0,832		4,17E-02	BIRC3,CASP3,IL1B,SOD2
interferon beta-1a		biologic drug				4,17E-02	GADD45B,GSTP1,LILRB3,MAL,NFKBIA,SERPINE1
CREM		transcription regulator		1,131		4,18E-02	CAMK4,CD86,CD8A,GADD45B,Marcks,MEST,Tpm1
aldosterone		chemical - endogenous mammalian	Activated	2,578	bias	4,18E-02	BMP2,Ccl2,CYBA,ICAM1,NFKBIA,SERPINE1,ZBTB16
epothilone B		chemical drug				4,25E-02	FAS,SFN
selumetinib		chemical drug				4,25E-02	JUN,RUNX2
DPH5		enzyme				4,25E-02	IL1B,NFKBIA
MDK		growth factor				4,25E-02	Cald1,Ccl2
NUP62		transporter				4,25E-02	PERP,WWC1

LY96		transmembrane receptor				4,25E-02	CD40,CD86
mir-204		microRNA				4,25E-02	IL1B,RUNX2
FCGR1A		transmembrane receptor				4,25E-02	CSF1,IL1B
HDAC9		transcription regulator				4,25E-02	CEBPA,JUN
STIM1		ion channel				4,25E-02	GSTO1,NQO1
10-nitrooleate		chemical - endogenous mammalian				4,25E-02	Ccl2,ICAM1
CR2		transmembrane receptor				4,25E-02	FAS,IL1B
BCL10		transcription regulator				4,25E-02	CD44,TNFAIP3
CNR2		G-protein coupled receptor				4,25E-02	Ccl2,IL1B
Cux1		transcription regulator				4,25E-02	Ccl8,CD8A
101.10 peptide		chemical reagent				4,25E-02	Ccl2,IL1B
3-aminobenzamide		chemical toxicant				4,25E-02	ICAM1,IL1B
2-acetylaminofluorene		chemical toxicant				4,25E-02	JAG1,NOTCH2
allyl sulfide		chemical drug				4,25E-02	CASP3,GSTA3
concanamycin A		chemical drug				4,25E-02	ICAM1,NFKBIA
mevastatin		chemical drug				4,25E-02	BMP4,KLF4
indole		chemical - endogenous mammalian				4,25E-02	CGN,TJP3
farnesyl pyrophosphate		chemical - endogenous mammalian				4,25E-02	ICAM1,SERPINE1
tetrandrine		chemical drug				4,25E-02	CASP3,JUN
REST		transcription regulator	-1,400	bias	4,30E-02	B3GAT1,CEBPA,CXCL12,GAP43,Nes,OAT,SYT1	
arsenic trioxide		chemical drug	1,672		4,34E-02	BCL2A1,CD44,FAS,FTH1,MAPK4,MAPK6,MCM3,NFKBIA,NQO1,PIR	
CDKN1A		kinase	-0,116	bias	4,35E-02	BUB1,CASP3,CCNA2,FAS,IL1B,JAG1,MCM3,SERPINE1,SOD2	
rasagiline		chemical drug			4,37E-02	FAS,Marcks,RACK1	
NSD2	0,462	enzyme			4,37E-02	ITGB7,JUN,RRAS	
KRT14		other			4,37E-02	CXCL14,GJB2,KRT8	
APR-246		chemical drug			4,37E-02	CD81,GADD45B,VCL	
CIDEA		other			4,37E-02	Ccl2,SDC1,SERPINE1	
ethylene glycol tetraacetic acid		chemical reagent			4,37E-02	BIRC3,CD83,CD86	
NR4A3		ligand-dependent nuclear receptor			4,37E-02	BIRC3,CEBPA,FBP1,NQO1	
PLN		transporter			4,37E-02	APOA1,RACK1,RALA,RRAS	
25-hydroxycholesterol		chemical reagent	1,000		4,37E-02	FOSL1,IL1B,JUN,NFKBIA	
ATF2		transcription regulator	1,969	bias	4,42E-02	BCL2A1,CCNA2,IL1RL1,JUN,SOD2	
LIPE		enzyme			4,46E-02	CEBPA,CP,IL1RL1,JUP,RUNX2,SDC4	
BMI1		transcription regulator			4,59E-02	FAS,HK2,MCM3,SFN	
FOLR1		transporter			4,59E-02	BASP1,BIRC3,CD9,CLCA1,ST3GAL4	
KLF3		transcription regulator	-1,155	bias	4,59E-02	ALDH3B1,ANXA6,ARHGFE3,GSTP1,ITGB7,LILRB3,NEURL3,PARP3,PDLIM1,PTP4A2	
pregnenolone carbonitrile		chemical drug			4,67E-02	ALAS1,HMGCS2,UGT1A7 (includes others)	

INPP5D		phosphatase				4,67E-02	CD86,FAS,IRAK3
ATP7B		transporter				4,67E-02	CP,FABP5,TRIP13
SERPINE2	1,374	other				4,67E-02	Ccl2,Ccl8,IL1B
JAG2		growth factor				4,67E-02	BMP2,IL1B,JAG1
cyclopamine		chemical reagent				4,67E-02	CD14,FAS,SMO
RORC		ligand-dependent nuclear receptor				4,69E-02	CD28,GADD45B,GSTP1,IL1B,LPIN2,SLC2A3,ZBTB16
3-deoxy-2-octulosonic acid(2)-lipid A		chemical - endogenous non-mammalian				4,75E-02	Ccl2,IL1B
pCPT-cAMP		chemical - kinase inhibitor				4,75E-02	JUN,PRKG1
Sod		group				4,75E-02	Ccl2,ICAM1
triclosan		chemical drug				4,75E-02	JUN,NQO1
Angiotensin II receptor type 1		group				4,75E-02	GAP43,SERPINE1
ZC3H14		other				4,75E-02	BATF,Vnn3
PPP1R1B		phosphatase				4,75E-02	CASP3,CD44
SMYD3		enzyme				4,75E-02	CEBPD,NEURL1
HSPB1	1,504	other				4,75E-02	Ccl2,IL1B
UCP2		transporter				4,75E-02	HK2,IL1B
TNFRSF21		transmembrane receptor				4,75E-02	CASP3,CD28
INHBB		growth factor				4,75E-02	Hamp/Hamp2,SERPINE1
PHB2		transcription regulator				4,75E-02	BMP2,IL6ST
IL-17f dimer		complex				4,75E-02	CSF3,IL1B
PHLPP1		enzyme				4,75E-02	CEBPD,Vnn3
PSMB8		peptidase				4,75E-02	NFKBIA,TNFAIP3
LBP		transporter				4,75E-02	CD14,IL1B
mir-515		microRNA				4,75E-02	CD44,SERPINE1
mir-7		microRNA				4,75E-02	KLf4,SLC2A3
LAMA5		other				4,75E-02	Ccl2,CSF3
KLF10		transcription regulator				4,75E-02	GATA3,SERPINE1
DDX17		enzyme				4,75E-02	FOSL1,JUN
Mir200		group				4,75E-02	JUN,LRP1
CCAT2		other				4,75E-02	CASP3,LATS2
GAB1	1,515	other				4,75E-02	CASP3,IL1B
C5		other				4,75E-02	Ccl2,IL1B
batimastat		chemical - protease inhibitor				4,75E-02	ANG,SDC4
cerulenin		chemical drug				4,75E-02	Ccl2,IL1B
pyruvaldehyde		chemical - endogenous mammalian				4,75E-02	ICAM1,NQO1
bombesin		chemical - endogenous mammalian				4,75E-02	KLK3,ZBTB16
SMAD2		transcription regulator		-0.317	bias	4,77E-02	CRISPLD2,GADD45B,Hamp/Hamp2,RUNX2,SERPINE1



CD3E		transmembrane receptor				4.81E-02	FAS,JUN,LCP2,NFKBIA
SGK1		kinase	Activated	2,000	bias	4.81E-02	CEBPA,SLC2A3,SLC34A2,SMO
sulindac		chemical drug				4.81E-02	CCNA2,IL1B,NQO1,SERPINB1
INS		other		1,432		4.82E-02	APOA1,Ccl2,FADS3,FAS,FOSL1,ICAM1,JUN
cocaine		chemical drug	Activated	2,415	bias	4.85E-02	Ccl2,FOSL1,GADD45B,ICAM1,JUN,LAMC2,MEST,Tpm1
PXR ligand-PXR-Retinoic acid-RXR $\alpha$		complex				4.97E-02	ALAS1,CYP3A7,UGT1A7 (includes others)
FOXP1		transcription regulator				4.97E-02	DMD,GAP43,JUN
propranolol		chemical drug				4.97E-02	HK2,ICAM1,NFKBIA
miR-124-3p (and other miRNAs w/seed AAGGCAC)		mature microRNA	Inhibited	-2,978	bias	5.00E-02	B4GALT1,BTG3,Ccl2,CDC47,CEBPA,F11R,JAG1,LITAF,TSC22D4
NR3C2		ligand-dependent nuclear receptor		1,954		5.89E-02	BCL2A1,BMP4,Ccl2,ICAM1,IL1B,SERPINE1
DNMT3A		enzyme	Inhibited	-2,000		2.09E-01	BLNK,IRF5,PLCB4,SDC4,Tcf7

245 common elements in MIN6 E2F1 Flag -R1 and MIN6 E2F1 Flag -R2:

	Protein name	Spectral Count
E2F1	Transcription factor E2F1: 47 kDa	116
Eef1a2	Elongation factor 1-alpha 2: 50 kDa	72
Cad	CAD protein: 236 kDa	30
Cct3	T-complex protein 1 subunit gamma: 61 kDa	28
E2f1	Transcription factor E2F1: 46 kDa	28
Mcm2	DNA replication licensing factor MCM2: 102 kDa	26
Trim28	Transcription intermediary factor 1-beta: 89 kDa	26
Cct2	T-complex protein 1 subunit beta: 57 kDa	24
Tubb1	Tubulin beta-1 chain: 50 kDa	24
Mcm7	DNA replication licensing factor MCM7: 81 kDa	22
Sec31a	Protein transport protein Sec31A: 134 kDa	22
Cct8	T-complex protein 1 subunit theta: 60 kDa	22
Tuba4a	Tubulin alpha-4A chain (Fragment): 11 kDa	22
Cct6a	T-complex protein 1 subunit zeta: 58 kDa	21
Aars	Alanine--tRNA ligase, cytoplasmic: 107 kDa	20
Stip1	Stress-induced-phosphoprotein 1: 63 kDa	20
Cct7	T-complex protein 1 subunit eta: 60 kDa	20
Aldoat1	Fructose-bisphosphate aldolase: 45 kDa	20
Cct5	T-complex protein 1 subunit epsilon: 60 kDa	19
Dync1h1	Cytoplasmic dynein 1 heavy chain 1: 532 kDa	18
Copa	Coatomer subunit alpha: 138 kDa	18
KRT9	Keratin, type I cytoskeletal 9: 62 kDa	18
Hnrnpc	Heterogeneous nuclear ribonucleoproteins C1/C2: 34 kDa	18
Gstp1	Glutathione S-transferase P 1: 24 kDa	18
Tcp1	T-complex protein 1 subunit alpha: 60 kDa	18
Pcbp1	Poly(rC)-binding protein 1: 37 kDa	18
Ddx17	Probable ATP-dependent RNA helicase DDX17: 72 kDa	18
Ruvb2	RuvB-like 2: 51 kDa	18
Mthfd1	C-1-tetrahydrofolate synthase, cytoplasmic: 101 kDa	18
Rpl7	60S ribosomal protein L7: 31 kDa	17
Hnrnpa1	Heterogeneous nuclear ribonucleoprotein A1: 39 kDa	17
Mcm6	DNA replication licensing factor MCM6: 93 kDa	16
Copg1	Coatomer subunit gamma-1: 98 kDa	16
Atp6v1b2	V-type proton ATPase subunit B, brain isoform: 57 kDa	16
Dhx9	ATP-dependent RNA helicase A: 150 kDa	16
Mcm4	DNA replication licensing factor MCM4: 97 kDa	16
Mcm5	DNA replication licensing factor MCM5: 82 kDa	16
Nsf	Vesicle-fusing ATPase: 83 kDa	15
Hdac6	Histone deacetylase 6: 126 kDa	15
Kif5b	Kinesin-1 heavy chain: 110 kDa	15
Hnrnpab	Heterogeneous nuclear ribonucleoprotein A/B: 36 kDa	15
Mthfd1	C-1-tetrahydrofolate synthase, cytoplasmic: 82 kDa	15
Hnrmpu	Heterogeneous nuclear ribonucleoprotein U: 88 kDa	14
Tln1	Talin-1: 270 kDa	14
Nono	Non-POU domain-containing octamer-binding protein: 55 kDa	14

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Arcn1	Coatomer subunit delta: 57 kDa	14
Rpl26	60S ribosomal protein L26: 17 kDa	14
Matr3	Matrin-3: 95 kDa	14
Rpl12	60S ribosomal protein L12: 18 kDa	14
Pcbp2	Poly(rC)-binding protein 2: 38 kDa	14
Rpl7a	60S ribosomal protein L7a: 30 kDa	14
Mcm3	DNA replication licensing factor MCM3: 92 kDa	13
Hnrnp1	Heterogeneous nuclear ribonucleoprotein L (Fragment): 67 kDa	13
Eif3a	Eukaryotic translation initiation factor 3 subunit A: 162 kDa	12
Copb1	Coatomer subunit beta: 107 kDa	12
Rpl8	60S ribosomal protein L8: 28 kDa	12
Copb2	Coatomer subunit beta': 102 kDa	12
Wdr1	WD repeat-containing protein 1: 66 kDa	12
Sars	Serine--tRNA ligase, cytoplasmic: 61 kDa	12
Rps11	40S ribosomal protein S11: 15 kDa	12
Vars	Valine--tRNA ligase: 140 kDa	12
Sfpq	Splicing factor, proline- and glutamine-rich: 75 kDa	12
Cct4	T-complex protein 1 subunit delta: 58 kDa	12
Ddx1	ATP-dependent RNA helicase DDX1: 83 kDa	12
Ywhab	14-3-3 protein beta/alpha: 28 kDa	12
Rbbp7	Histone-binding protein RBBP7: 47 kDa	12
Rps19	40S ribosomal protein S19: 16 kDa	12
Tubal3	Tubulin alpha chain-like 3: 50 kDa	12
Vcp	Transitional endoplasmic reticulum ATPase: 89 kDa	11
Hsp90b1	Endoplasmic reticulum chaperone: 92 kDa	11
Phgdh	D-3-phosphoglycerate dehydrogenase: 57 kDa	11
Ruvb1	RuvB-like 1: 50 kDa	11
Rbbp4	Histone-binding protein RBBP4: 48 kDa	11
Myo5a	Unconventional myosin-Va: 212 kDa	11
Eif4a3	Eukaryotic initiation factor 4A-III: 47 kDa	11
Rrbp1	Ribosome-binding protein 1: 158 kDa	10
Dctn1	Dynactin subunit 1: 142 kDa	10
Lmna	Prelamin-A/C: 74 kDa	10
Khsrp	Far upstream element-binding protein 2: 77 kDa	10
RtcB	tRNA-splicing ligase RtcB homolog: 55 kDa	10
Iars	Isoleucine--tRNA ligase, cytoplasmic: 144 kDa	10
Hmgb1	High mobility group protein B1 (Fragment): 24 kDa	10
Cand1	Cullin-associated NEDD8-dissociated protein 1: 136 kDa	10
Lars	Leucine--tRNA ligase, cytoplasmic: 134 kDa	10
Hspa9	Stress-70 protein, mitochondrial: 73 kDa	10
Pa2g4	Proliferation-associated protein 2G4: 44 kDa	10
Rpn1	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 1: 69 kDa	10
Maob	Amine oxidase [flavin-containing] B: 59 kDa	10
Rpl28	60S ribosomal protein L28: 16 kDa	10
Paics	Multifunctional protein ADE2: 47 kDa	10
Rpl9	60S ribosomal protein L9: 22 kDa	10
Cse1l	Exportin-2: 104 kDa	10

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Name	Protein description	Weight (kDa)
Pdia3	Protein disulfide-isomerase A3: 57 kDa	10
Rpl23	60S ribosomal protein L23: 15 kDa	10
Ranbp1	Ran-specific GTPase-activating protein: 24 kDa	10
Rpl15	60S ribosomal protein L15: 24 kDa	10
Park7	Protein/nucleic acid deglycase DJ-1: 20 kDa	10
Nap1l1	Nucleosome assembly protein 1-like 1: 49 kDa	10
Ywhah	14-3-3 protein eta: 28 kDa	10
Tardbp	TAR DNA-binding protein 43: 45 kDa	10
Gm45713	Predicted gene 45713: 51 kDa	10
Npm1	Nucleophosmin: 33 kDa	10
Slc25a5	ADP/ATP translocase 2: 33 kDa	10
Hnrnpk	Heterogeneous nuclear ribonucleoprotein K: 11 kDa	10
Gm5580	Predicted pseudogene 5580: 47 kDa	10
Pgk2	Phosphoglycerate kinase 2: 45 kDa	10
Rps19	40S ribosomal protein S19: 23 kDa	10
Myef2	Myelin expression factor 2: 63 kDa	10
Rpl13a	60S ribosomal protein L13a (Fragment): 19 kDa	10
Rpl10	60S ribosomal protein L10: 25 kDa	10
Rpl10	60S ribosomal protein L10 (Fragment): 23 kDa	10
Myo5a	Unconventional myosin-Va: 216 kDa	10
Rps19	40S ribosomal protein S19 (Fragment): 19 kDa	10
Rpl3	60S ribosomal protein L3: 46 kDa	9
Pabpc4	Polyadenylate-binding protein: 72 kDa	9
Usp5	Ubiquitinyl hydrolase 1: 93 kDa	9
Hcfc1	Host cell factor 1: 215 kDa	9
Cdk1	Cyclin-dependent kinase 1: 34 kDa	9
Uap1l1	UDP-N-acetylhexosamine pyrophosphorylase-like protein 1: 57 kDa	9
Slc25a4	ADP/ATP translocase 1: 33 kDa	9
Nme1	Nucleoside diphosphate kinase A: 17 kDa	9
Myef2	Myelin expression factor 2: 61 kDa	9
Snrnp200	U5 small nuclear ribonucleoprotein 200 kDa helicase: 245 kDa	8
Eif4h	Eukaryotic translation initiation factor 4H: 27 kDa	8
P4hb	Protein disulfide-isomerase: 57 kDa	8
Eif4g1	Eukaryotic translation initiation factor 4 gamma 1: 171 kDa	8
Rpl27	60S ribosomal protein L27: 16 kDa	8
Syn1	Synapsin-1: 74 kDa	8
Rpl17	60S ribosomal protein L17: 21 kDa	8
Hint1	Histidine triad nucleotide-binding protein 1: 14 kDa	8
Tpi1	Triosephosphate isomerase: 32 kDa	8
Rpl23a	60S ribosomal protein L23a: 18 kDa	8
Serbp1	Plasminogen activator inhibitor 1 RNA-binding protein: 40 kDa	8
Napa	Alpha-soluble NSF attachment protein: 33 kDa	8
Pdia6	Protein disulfide-isomerase A6: 49 kDa	8
Atp6v1e1	V-type proton ATPase subunit E 1: 26 kDa	8
Mapre1	Microtubule-associated protein RP/EB family member 1: 30 kDa	8
Cmpk1	UMP-CMP kinase: 26 kDa	8
Papss2	Bifunctional 3'-phosphoadenosine 5'-phosphosulfate synthase 2: 70 kDa	8

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Rps10	40S ribosomal protein S10: 19 kDa	8
Kpnb1	Importin subunit beta-1: 97 kDa	8
Eef1b	Elongation factor 1-beta: 25 kDa	8
Rps5	40S ribosomal protein S5: 23 kDa	8
Psmd5	26S proteasome non-ATPase regulatory subunit 5: 56 kDa	8
Bpnt1	3'(2'),5'-bisphosphate nucleotidase 1: 33 kDa	8
Pcx	Pyruvate carboxylase: 130 kDa	8
Hmgb2	High mobility group protein B2: 24 kDa	8
Rack1	Receptor of activated protein C kinase 1: 35 kDa	8
Gspt1	Eukaryotic peptide chain release factor GTP-binding subunit ERF3A: 69 kDa	8
Rpl38	60S ribosomal protein L38: 8 kDa	8
Rnh1	Ribonuclease inhibitor: 54 kDa	8
Ppp2r1a	Serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A alpha isoform: 65 kDa	8
Pfdn1	Prefoldin subunit 1: 14 kDa	8
Rps15	40S ribosomal protein S15: 17 kDa	8
Hnrnpd	Heterogeneous nuclear ribonucleoprotein D0 (Fragment): 25 kDa	8
Gdi2	Rab GDP dissociation inhibitor beta: 51 kDa	8
Cbx3	Chromobox protein homolog 3: 21 kDa	8
Rpl24	60S ribosomal protein L24: 18 kDa	8
Ywhag	14-3-3 protein gamma: 28 kDa	8
Rps27a	Ubiquitin-40S ribosomal protein S27a: 18 kDa	8
Akr1c13	Aldo-keto reductase family 1 member C13: 37 kDa	8
Krt74	Keratin, type II cytoskeletal 74: 55 kDa	8
Rab1a	RAB1A, member RAS oncogene family: 22 kDa	8
Uba52	Ubiquitin-60S ribosomal protein L40: 15 kDa	8
Akr1c12	Aldo-keto reductase a: 37 kDa	8
Calml3	Calmodulin-like protein 3: 17 kDa	8
Npm1	Nucleophosmin: 32 kDa	8
Rplp0	60S acidic ribosomal protein P0: 34 kDa	7
Akr1b1	Aldose reductase: 36 kDa	7
Eftud2	116 kDa U5 small nuclear ribonucleoprotein component: 109 kDa	7
Sept11	Septin-11: 49 kDa	7
Rpn2	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 2: 68 kDa	7
Rps17	40S ribosomal protein S17: 16 kDa	7
Dnm2	Dynamin-2: 98 kDa	7
Pcbp3	Poly(rC)-binding protein 3: 39 kDa	7
Sept7	Septin-7: 51 kDa	7
Fubp1	Far upstream element-binding protein 1 (Fragment): 32 kDa	7
Gcn1	eIF-2-alpha kinase activator GCN1: 293 kDa	6
Eif3c	Eukaryotic translation initiation factor 3 subunit C: 106 kDa	6
Ckap5	Cytoskeleton-associated protein 5: 224 kDa	6
Smc4	Structural maintenance of chromosomes protein: 144 kDa	6
Eif3b	Eukaryotic translation initiation factor 3 subunit B: 91 kDa	6
Fen1	Flap endonuclease 1: 43 kDa	6
Map2	Microtubule-associated protein 2: 199 kDa	6
Eif2s3x	Eukaryotic translation initiation factor 2 subunit 3, X-linked: 51 kDa	6
Pdxdc1	MCG129810, isoform CRA_c: 87 kDa	6

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Dars	Aspartate--tRNA ligase, cytoplasmic: 57 kDa	6
Smc2	Structural maintenance of chromosomes protein 2: 134 kDa	6
Coro7	Coronin-7: 101 kDa	6
Yars	Tyrosine--tRNA ligase, cytoplasmic: 59 kDa	6
Ddost	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase 48 kDa subunit: 49 kDa	6
Pycr2	Pyrraline-5-carboxylate reductase 2: 34 kDa	6
Ddx6	Probable ATP-dependent RNA helicase DDX6: 54 kDa	6
Dhx15	DEAH (Asp-Glu-Ala-His) box polypeptide 15: 80 kDa	6
Prkaa1	5'-AMP-activated protein kinase catalytic subunit alpha-1: 64 kDa	6
Txnl1	Thioredoxin-like protein 1: 32 kDa	6
Nt5c3a	Cytosolic 5'-nucleotidase 3A: 37 kDa	6
Usp9x	Probable ubiquitin carboxyl-terminal hydrolase FAF-X: 290 kDa	6
Rpl35	60S ribosomal protein L35: 15 kDa	6
Psm6	Proteasome subunit alpha type-6: 27 kDa	6
Gmps	GMP synthase [glutamine-hydrolyzing]: 77 kDa	6
Bag3	BAG family molecular chaperone regulator 3: 62 kDa	6
Ipo5	Importin-5: 124 kDa	6
Rpl30	60S ribosomal protein L30: 13 kDa	6
G3bp1	Ras GTPase-activating protein-binding protein 1: 52 kDa	6
Pgls	6-phosphogluconolactonase: 27 kDa	6
Lman1	Protein ERGIC-53: 58 kDa	6
Ahcy	Adenosylhomocysteinase: 48 kDa	6
Tbcb	Tubulin-folding cofactor B: 27 kDa	6
Ddx39b	Spliceosome RNA helicase Ddx39b: 49 kDa	6
Atp2a2	Sarcoplasmic/endoplasmic reticulum calcium ATPase 2: 115 kDa	6
Idh2	Isocitrate dehydrogenase [NADP], mitochondrial: 51 kDa	6
Drg2	Developmentally-regulated GTP-binding protein 2: 41 kDa	6
Rpl18a	60S ribosomal protein L18a: 21 kDa	6
Alyref	THO complex subunit 4: 27 kDa	6
Camk2g	Calcium/calmodulin-dependent protein kinase type II subunit gamma: 60 kDa	6
Pfdn2	Prefoldin subunit 2: 17 kDa	6
Lmo7	LIM domain only 7: 193 kDa	6
Camk2d	Calcium/calmodulin-dependent protein kinase type II subunit delta: 60 kDa	6
Hspa1l	Heat shock 70 kDa protein 1-like: 71 kDa	6
Nap114	Nap114 protein: 44 kDa	6
Atp5o	ATP synthase subunit O, mitochondrial: 23 kDa	6
Rps24	40S ribosomal protein S24: 15 kDa	6
Nmral1	Nmra-like family domain-containing protein 1: 33 kDa	6
Rab1b	Ras-related protein Rab-1B: 22 kDa	6
Eef1d	Elongation factor 1-delta (Fragment): 61 kDa	6
Pebp1	Phosphatidylethanolamine-binding protein 1: 15 kDa	6
Rab10	Ras-related protein Rab-10: 23 kDa	6
Lmo7	LIM domain only 7 (Fragment): 134 kDa	6
Gm8225	Predicted gene 8225: 32 kDa	6
Rasl2-9	GTP-binding nuclear protein Ran, testis-specific isoform: 24 kDa	6
Coro1c	Coronin-1C: 53 kDa	5
Rpa1	Replication protein A subunit: 71 kDa	5

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Hadaa	Trifunctional enzyme subunit alpha, mitochondrial; 83 kDa	5
Ckb	Creatine kinase B-type: 43 kDa	5
Gars	Glycine--tRNA ligase: 82 kDa	5
Prdx2	Peroxiredoxin-2: 22 kDa	5
Gdi1	Rab GDP dissociation inhibitor alpha: 51 kDa	5
Hdac1	Histone deacetylase 1: 55 kDa	5
Prdx4	Peroxiredoxin-4 (Fragment): 26 kDa	5
Rps24	40S ribosomal protein S24: 14 kDa	5