

Supplementary Table 1: List of Pathways identified by Ingenuity Pathway Analysis (IPA). IPA of the genes shown to be significantly (p value < 0.05) up-regulated or down-regulated >2 -fold at 24 h vs basal was performed. To ensure gene annotations were current, Agilent probe IDs were used to interrogate the Ensembl BioMart database (www.ensembl.org/biomart/martview), and the Ensembl gene lists used in pathway and functional analyses (Ingenuity Systems): the Canonical Pathways identified are presented. The $-\log(p$ value) provides an indication of the probability for the pathway, with the pathways ranked from high (most likely) to low (less likely). The number of genes identified by microarray expression analysis relative to the number of known genes in the identified pathway is expressed as a Ratio. A positive z score indicates the pathway is activated, zero indicates no inference can be made, whilst a negative score indicates the pathway is inhibited. Molecules refers to the genes (listed by gene name) identified by the microarray known to be involved in the designated Canonical Pathway.

Ingenuity Canonical Pathways	$-\log(p$ -value)	Ratio	z -score	Molecules
Hepatic Fibrosis / Hepatic Stellate Cell Activation	11.1	0.12	0	CXCL8,CTGF,ICAM1,FGF2,COL12A1,BAMBI,MMP13,IL6,PGF,TGFBR2,VEGFA,CCL2,COL6A3,ACTA2,IL1B,LBP,SERPINE1,TNFRSF1B,MMP1,COL3A1,PDGFRB,COL7A1
Granulocyte Adhesion and Diapedesis	10.5	0.119	0	CXCL8,C5AR1,ICAM1,THY1,MMP10,CCL20,MMP13,CXCL5,CXCL6,CLDN23,CCL8,CCL2,IL1RN,SDC2,IL1B,CXCL1,TNFRSF1B,CXCL2,MMP1,HSPB1,CCL7
Role of IL-17F in Allergic Inflammatory Airway Diseases	9.3	0.25	3.162	CXCL8,TRAF3IP2,CCL2,MMP13,IL1B,CXCL1,CXCL5,IL6,CXCL6,IL11,CCL7
Role of Macrophages, Fibroblasts and Endothelial Cells in Rheumatoid Arthritis	8.76	0.081	0	CXCL8,SFRP4,SOCS1,C5AR1,ICAM1,FGF2,IL32,MMP13,IRAK3,CEBPB,JAK2,IL6,PGF,VEGFA,FZD4,NFKBIA,PLCE1,TRAF3IP2,CCL2,IL1RN,IL1B,NOS2,TNFRSF1B,MMP1,IRAK2
Role of IL-17A in Arthritis	8.3	0.179	0	CXCL8,NFKBIA,CCL2,CCL20,MMP13,CXCL1,CXCL5,PTGS2,NOS2,CXCL6,MMP1,CCL7
IL-17A Signaling in Fibroblasts	7.83	0.257	0	TRAF3IP2,NFKBIA,CCL2,CXCL5,CEBPB,IL6,NFKBIZ,MMP1,CCL7
Agranulocyte Adhesion and Diapedesis	7.55	0.095	0	CXCL8,ICAM1,C5AR1,MMP10,CCL20,MMP13,CXCL5,CXCL6,CLDN23,ACTA2,CCL8,CCL2,IL1RN,IL1B,CXCL1,CXCL2,MMP1,CCL7
Role of IL-17A in Psoriasis	7.13	0.462	0	CXCL8,S100A9,CCL20,CXCL1,CXCL5,CXCL6
Atherosclerosis Signaling	6.79	0.11	0	PLA2G16,CXCL8,ICAM1,ORM1,CCL2,IL1RN,RARRES3,IL1B,MMP13,SERPINA1,IL6,F3,MMP1,COL3A1
NF- κ B Signaling	6.37	0.089	-0.5	BMP4,BMP2,TGFBR3,TNFAIP3,IRAK3,NGF,TGFBR2,TNIP1,NFKBIA,GHR,IL1RN,FCER1G,IL1B,MAP3K8,TNFRSF1B,PDGFRB
LXR/RXR Activation	6.21	0.107	-1.387	CCL2,ORM1,IL1RN,SAA1,IL1B,SERPINA1,LBP,SAA2,PTGS2,IL6,TNFRSF1B,NOS2,CCL7
Acute Phase Response Signaling	6	0.089	2.887	SOCS1,IL6,CEBPB,SAA2,JAK2,NFKBIA,ORM1,IL1RN,SAA1,CFB,IL1B,SERPINA1,LBP,SERPINE1,TNFRSF1B
IL-6 Signaling	5.97	0.102	2.309	VEGFA,CXCL8,SOCS1,NFKBIA,TNFAIP6,IL1RN,IL1B,LBP,CEBPB,JAK2,IL6,TNFRSF1B,HSPB1
Role of Tissue Factor in Cancer	5.38	0.098	0	VEGFA,CXCL8,FYN,CTGF,PLAUR,MMP13,IL1B,LIMK2,CXCL1,JAK2,F3,MMP1
IL-17 Signaling	5.27	0.118	0	CXCL8,TRAF3IP2,CCL2,CXCL1,CXCL5,CEBPB,JAK2,PTGS2,IL6,NOS2
Role of Osteoblasts, Osteoclasts and Chondrocytes in Rheumatoid Arthritis	4.93	0.069	0	SFRP4,CTSK,BMP4,BMP2,DLX5,MMP13,IL6,GSN,NFKBIA,FZD4,IL1RN,IL1B,TNFRSF1B,BIRC3,MMP1,IL11
Hepatic Cholestasis	4.89	0.082	0	CXCL8,LIF,IRAK3,IL6,NFKBIA,SLCO3A1,IL1RN,IL1B,LBP,TNFRSF1B,ABCC3,IRAK2,IL11
TREM1 Signaling	4.87	0.12	3	CXCL8,TREM1,NOD2,ICAM1,CCL2,IL1B,JAK2,IL6,CCL7
iNOS Signaling	4.72	0.159	0	NFKBIA,LBP,JAK2,IRAK3,NOS2,IRF1,IRAK2

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
HMGB1 Signaling	4.27	0.083	3.162	CXCL8,ICAM1,LIF,CCL2,RHOA,IL1B,IL6,TNFRSF1B,SERPINE1,IL11,PLAT
Role of Cytokines in Mediating Communication between Immune Cells	4.12	0.13	0	CXCL8,IL26,IL1RN,IL32,IL1B,IL6,IL24
Dendritic Cell Maturation	4.08	0.068	2.309	STAT4,PLCE1,NFKBIA,ICAM1,IL1RN,FSCN1,IL32,FCER1G,IL1B,IL6,JAK2,TNFRSF1B,COL3A1
Aryl Hydrocarbon Receptor Signaling	4.07	0.079	0	TGM2,GSTM1,MGST2,ALDH3A2,NFIA,ALDH1A2,RARB,IL1B,NFIB,IL6,HSPB1
IL-17A Signaling in Airway Cells	3.94	0.104	1	TRAF3IP2,NFKBIA,CCL20,CXCL1,CXCL5,JAK2,IL6,CXCL6
UDP-N-acetyl-D-glucosamine Biosynthesis II	3.87	0.5	0	PGM3,UAP1,GFPT2
Hematopoiesis from Pluripotent Stem Cells	3.57	0.128	0	KITLG,CXCL8,LIF,FCER1G,IL6,IL11
Bladder Cancer Signaling	3.57	0.092	0	VEGFA,CXCL8,FGF2,THBS1,MMP10,MMP13,MMP1,PGF
Differential Regulation of Cytokine Production in Macrophages and T Helper Cells by IL-17A and IL-17F	3.48	0.222	0	CCL2,IL1B,CXCL1,IL6
Inhibition of Angiogenesis by TSP1	3.35	0.147	0	VEGFA,TGFBR2,FYN,SDC2,THBS1
IL-8 Signaling	3.34	0.061	2.887	VEGFA,CXCL8,ICAM1,ANGPT1,RHOA,LIMK2,CXCL1,PTGS2,IRAK3,PLD1,PGF,IRAK2
STAT3 Pathway	3.3	0.096	-1.89	TGFBR2,SOCS1,GHR,PTPN2,TGFBR3,JAK2,PDGFRB
Coagulation System	3.29	0.143	0.447	PLAUR,SERPINA1,SERPINE1,F3,PLAT
Toll-like Receptor Signaling	3.26	0.095	1.633	NFKBIA,IL1RN,TNFAIP3,IL1B,LBP,IRAK3,IRAK2
Interferon Signaling	3.23	0.139	-0.447	SOCS1,IFIT1,PTPN2,JAK2,IRF1
UDP-N-acetyl-D-galactosamine Biosynthesis II	2.98	0.273	0	HK2,PGM3,UAP1
LPS/IL-1 Mediated Inhibition of RXR Function	2.91	0.054	1	GSTM1,MGST2,IL1RN,ALDH3A2,ALDH1A2,ACSL4,IL1B,LBP,TNFRSF1B,ABCC3,ABCC4,ACSL1
Type I Diabetes Mellitus Signaling	2.89	0.073	1.89	SOCS1,NFKBIA,FCER1G,IL1B,JAK2,TNFRSF1B,NOS2,IRF1
Role of Hypercytokinemia/hyperchemokinaemia in the Pathogenesis of Influenza	2.87	0.116	0	CXCL8,CCL2,IL1RN,IL1B,IL6
Glucocorticoid Receptor Signaling	2.85	0.049	0	CXCL8,ICAM1,CEBPB,JAK2,IL6,TGFBR2,NFKBIA,CCL2,IL1RN,IL1B,PTGS2,NOS2,SERPINE1,MMP1
Death Receptor Signaling	2.7	0.076	-0.378	TNFRSF21,NFKBIA,ACTA2,TNFRSF1B,BIRC3,ARHGDI1,HSPB1
PPAR Signaling	2.67	0.075	-1.89	NFKBIA,IL1RN,IL1B,PTGS2,TNFRSF1B,CITED2,PDGFRB
TNFR2 Signaling	2.66	0.138	0	NFKBIA,TNFAIP3,TNFRSF1B,BIRC3
Colorectal Cancer Metastasis Signaling	2.5	0.049	2.887	VEGFA,TGFBR2,FZD4,RHOA,MMP10,MMP13,JAK2,PTGS2,IL6,NOS2,MMP1,PGF
Citrulline-Nitric Oxide Cycle	2.45	0.4	0	ASS1,NOS2

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
RAR Activation	2.41	0.053	0	VEGFA,DHRS3,TNIP1,AKR1C3,BMP2,ALDH1A2,RARB,JAK2,MMP1,CITED2
Oncostatin M Signaling	2.4	0.118	2	MT2A,MMP13,JAK2,MMP1
Role of JAK2 in Hormone-like Cytokine Signaling	2.4	0.118	0	SOCS1,GHR,JAK2,PRLR
Retinoate Biosynthesis I	2.4	0.118	0	DHRS3,AKR1C3,BMP2,ALDH1A2
Production of Nitric Oxide and Reactive Oxygen Species in Macrophages	2.37	0.052	3.162	NFKBIA,ORM1,PPP1R3C,RHOA,SERPINA1,MAP3K8,JAK2,TNFRSF1B,NOS2,IRF1
Role of Pattern Recognition Receptors in Recognition of Bacteria and Viruses	2.29	0.058	2	PTX3,CXCL8,NOD2,C5AR1,LIF,IL1B,IL6,IL11
Prolactin Signaling	2.28	0.072	1.342	FYN,SOCS1,CEBPB,JAK2,PRLR,IRF1
Axonal Guidance Signaling	2.2	0.038	0	MME,FYN,BMP4,BMP2,MMP10,MMP13,LIMK2,NGF,TUBB2B,PGF,VEGFA,PLCE1,TUBA1A,FZD4,SDC2,SEMA3C,NRP1
Estrogen Biosynthesis	2.19	0.103	0	AKR1C3,CYP4B1,CYP4X1,HSD17B14
Inhibition of Matrix Metalloproteases	2.19	0.103	0	SDC2,MMP10,MMP13,MMP1
HIF1 α Signaling	2.16	0.061	0	VEGFA,MMP10,MMP13,HIF1A,NOS2,MMP1,PGF
Oxidative Ethanol Degradation III	2.14	0.143	0	ALDH3A2,ALDH1A2,ACSL1
Inflammasome pathway	2.14	0.143	0	CXCL8,NOD2,IL1B
p38 MAPK Signaling	2.12	0.06	1.134	TGFBR2,IL1RN,IL1B,IRAK3,TNFRSF1B,HSPB1,IRAK2
PPAR α /RXR α Activation	2.11	0.051	0.378	TGFBR2,PLCE1,GHR,NFKBIA,TGFBR3,IL1B,BCL3,JAK2,IL6
Fatty Acid α -oxidation	2.08	0.136	0	ALDH3A2,ALDH1A2,PTGS2
Differential Regulation of Cytokine Production in Intestinal Epithelial Cells by IL-17A and IL-17F	2.03	0.13	0	CCL2,IL1B,CXCL1
Putrescine Degradation III	2.03	0.13	0	ALDH3A2,ALDH1A2,SAT1
Airway Pathology in Chronic Obstructive Pulmonary Disease	2.02	0.25	0	CXCL8,MMP1
IL-10 Signaling	2	0.074	0	NFKBIA,IL1RN,IL1B,LBP,IL6
Role of JAK1, JAK2 and TYK2 in Interferon Signaling	1.98	0.125	0	SOCS1,PTPN2,JAK2
IL-17A Signaling in Gastric Cells	1.93	0.12	0	CXCL8,CCL20,CXCL1
Role of JAK family kinases in IL-6-type Cytokine Signaling	1.93	0.12	0	SOCS1,JAK2,IL6
Ethanol Degradation IV	1.93	0.12	0	ALDH3A2,ALDH1A2,ACSL1
GDP-glucose Biosynthesis	1.92	0.222	0	HK2,PGM3
T Helper Cell Differentiation	1.88	0.069	0	STAT4,TGFBR2,FCER1G,IL6,TNFRSF1B
Graft-versus-Host Disease Signaling	1.87	0.083	0	IL1RN,FCER1G,IL1B,IL6

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Antioxidant Action of Vitamin C	1.84	0.058	0	PLA2G16,PLCE1,NFKBIA,RARRES3,JAK2,PLD1
IL-15 Production	1.83	0.111	0	JAK2,IL6,IRF1
Glucose and Glucose-1-phosphate Degradation	1.82	0.2	0	HK2,PGM3
Adipogenesis pathway	1.82	0.052	0	EBF1,BMP4,FZD4,FGF2,BMP2,HIF1A,CEBPB
Glycogen Degradation II	1.74	0.182	0	PGM3,TYMP
Semaphorin Signaling in Neurons	1.73	0.076	0	FYN,RHOA,LIMK2,NRP1
Germ Cell-Sertoli Cell Junction Signaling	1.72	0.046	0	TGFBR2,TUBA1A,ACTA2,RHOA,MAP3K8,LIMK2,GSN,TUBB2B
Human Embryonic Stem Cell Pluripotency	1.68	0.049	0	TGFBR2,BMP4,FZD4,FGF2,BMP2,NGF,PDGFRB
JAK/Stat Signaling	1.66	0.06	1.342	STAT4,SOCS1,CEBPB,JAK2,IL6
IL-12 Signaling and Production in Macrophages	1.64	0.048	0	STAT4,ORM1,SERPINA1,MAP3K8,CEBPB,NOS2,IRF1
Fatty Acid Activation	1.6	0.154	0	ACSL4,ACSL1
Glycogen Degradation III	1.6	0.154	0	PGM3,TYMP
TGF- β Signaling	1.58	0.058	0	TGFBR2,BMP4,BMP2,SERPINE1,TGIF1
Pancreatic Adenocarcinoma Signaling	1.58	0.051	2.236	VEGFA,TGFBR2,JAK2,PTGS2,PLD1,PGF
MSP-RON Signaling Pathway	1.57	0.068	0	CCL2,ACTA2,JAK2,NOS2
Communication between Innate and Adaptive Immune Cells	1.54	0.056	0	CXCL8,IL1RN,FCER1G,IL1B,IL6
Androgen Biosynthesis	1.54	0.143	0	AKR1C3,HSD17B14
Superpathway of Citrulline Metabolism	1.54	0.143	0	ASS1,NOS2
Altered T Cell and B Cell Signaling in Rheumatoid Arthritis	1.53	0.056	0	CD79B,IL1RN,FCER1G,IL1B,IL6
Regulation of the Epithelial-Mesenchymal Transition Pathway	1.52	0.042	0	TGFBR2,FZD4,FGF2,ZEB2,TWIST1,HIF1A,JAK2,PDGFRB
Phospholipases	1.5	0.065	0	PLA2G16,PLCE1,RARRES3,PLD1
Factors Promoting Cardiogenesis in Vertebrates	1.49	0.054	0	TGFBR2,BMP4,FZD4,TGFBR3,BMP2
Methylglyoxal Degradation III	1.48	0.133	0	AKR1C3,AKR1B1
PCP pathway	1.48	0.064	0	FZD4,SDC2,PRICKLE1,HSPB1
tRNA Splicing	1.47	0.081	0	PDE7B,PDE5A,PDE1A
Ethanol Degradation II	1.47	0.081	0	ALDH3A2,ALDH1A2,ACSL1
FXR/RXR Activation	1.45	0.048	0	ORM1,IL1RN,SAA1,IL1B,SERPINA1,SAA2
Type II Diabetes Mellitus Signaling	1.44	0.047	0	SOCS1,NFKBIA,ACSL4,CEBPB,TNFRSF1B,ACSL1

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
ILK Signaling	1.44	0.041	1.342	VEGFA,ACTA2,BMP2,RHOU,HIF1A,PTGS2,NOS2,PGF
PXR/RXR Activation	1.44	0.062	0	GSTM1,ALDH3A2,IL6,ABCC3
G-Protein Coupled Receptor Signaling	1.43	0.037	0	FYN,RGS2,GPER1,NFKBIA,PDE7B,RGS16,PDE5A,MAP3K8,PDE1A,ADORA2A
Chondroitin Sulfate Degradation (Metazoa)	1.43	0.125	0	HYAL1,CD44
Spermine Biosynthesis	1.42	0.5	0	SMS
Taurine Biosynthesis	1.42	0.5	0	CDO1
Glycine Degradation (Creatine Biosynthesis)	1.42	0.5	0	GAMT
Glycine Biosynthesis I	1.42	0.5	0	SHMT1
Eicosanoid Signaling	1.4	0.06	0	PLA2G16,AKR1C3,RARRES3,PTGS2
TR/RXR Activation	1.39	0.051	0	AKR1C3,COL6A3,BCL3,HIF1A,DIO2
γ -linolenate Biosynthesis II (Animals)	1.38	0.118	0	ACSL4,ACSL1
Dermatan Sulfate Degradation (Metazoa)	1.38	0.118	0	HYAL1,CD44
Mitochondrial L-carnitine Shuttle Pathway	1.38	0.118	0	ACSL4,ACSL1
MIF Regulation of Innate Immunity	1.36	0.073	0	NFKBIA,PTGS2,NOS2
Wnt/ β -catenin Signaling	1.34	0.041	1.633	TGFBR2,SFRP4,FZD4,APPL2,TGFBR3,RARB,CD44
Tec Kinase Signaling	1.33	0.041	1.89	TNFRSF21,STAT4,FYN,ACTA2,RHOU,FCER1G,JAK2
Caveolar-mediated Endocytosis Signaling	1.32	0.056	0	FYN,ACTA2,ITGA11,ITGA10
Role of MAPK Signaling in the Pathogenesis of Influenza	1.3	0.056	0	PLA2G16,CCL2,RARRES3,PTGS2
Xenobiotic Metabolism Signaling	1.29	0.035	0	GSTM1,MGST2,ALDH3A2,ALDH1A2,IL1B,MAP3K8,IL6,NOS2,ABCC3,CITED2
Leukocyte Extravasation Signaling	1.29	0.038	1.633	CLDN23,ICAM1,ACTA2,CD44,MMP13,MMP10,THY1,MMP1
Histamine Degradation	1.29	0.105	0	ALDH3A2,ALDH1A2
Ephrin Receptor Signaling	1.29	0.04	1	VEGFA,FYN,ANGPT1,SDC2,LIMK2,JAK2,PGF
Mouse Embryonic Stem Cell Pluripotency	1.27	0.047	-0.447	BMP4,LIF,FZD4,JAK2,ID3
Cardiomyocyte Differentiation via BMP Receptors	1.25	0.1	0	BMP4,BMP2
The Visual Cycle	1.25	0.1	0	DHRS3,AKR1C3
Thyronamine and Iodothyronamine Metabolism	1.25	0.333	0	DIO2
Tetrahydrobiopterin Biosynthesis I	1.25	0.333	0	GCH1

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Thyroid Hormone Metabolism I (via Deiodination)	1.25	0.333	0	DIO2
Tetrahydrobiopterin Biosynthesis II	1.25	0.333	0	GCH1
Sertoli Cell-Sertoli Cell Junction Signaling	1.24	0.039	0	CLDN23,TUBA1A,ACTA2,TGFBR3,MAP3K8,NOS2,TUBB2B
CD40 Signaling	1.2	0.051	0	ICAM1,NFKBIA,TNFAIP3,PTGS2
Glutathione Redox Reactions I	1.18	0.091	0	GPX3,MGST2
TNFR1 Signaling	1.17	0.061	0	NFKBIA,TNFAIP3,BIRC3
Relaxin Signaling	1.15	0.04	0	VEGFA,NFKBIA,PDE7B,PDE5A,PDE1A,NOS2
Spermine and Spermidine Degradation I	1.13	0.25	0	SAT1
Phenylethylamine Degradation I	1.13	0.25	0	ALDH3A2
L-cysteine Degradation I	1.13	0.25	0	CDO1
Acetate Conversion to Acetyl-CoA	1.13	0.25	0	ACSL1
NRF2-mediated Oxidative Stress Response	1.1	0.036	0	GSTM1,MGST2,ACTA2,DNAJB9,ABCC4,MAFF,FTH1
Bupropion Degradation	1.08	0.08	0	CYP4B1,CYP4X1
Tryptophan Degradation X (Mammalian, via Tryptamine)	1.08	0.08	0	ALDH3A2,ALDH1A2
HIPPO signaling	1.08	0.047	0	WWC1,PPP1R3C,CD44,AMOT
Unfolded protein response	1.07	0.056	0	CD82,CEBPB,DNAJB9
Role of NANOG in Mammalian Embryonic Stem Cell Pluripotency	1.06	0.041	0	BMP4,LIF,FZD4,BMP2,JAK2
Phospholipase C Signaling	1.05	0.034	0	TGM2,FYN,PLCE1,CD79B,AHNAK,RHOU,FCER1G,PLD1
Acetone Degradation I (to Methylglyoxal)	1.05	0.077	0	CYP4B1,CYP4X1
Trehalose Degradation II (Trehalase)	1.03	0.2	0	HK2
Galactose Degradation I (Leloir Pathway)	1.03	0.2	0	GALM
dTMP De Novo Biosynthesis	1.03	0.2	0	SHMT1
Folate Polyglutamylation	1.03	0.2	0	SHMT1
Crosstalk between Dendritic Cells and Natural Killer Cells	1.03	0.045	0	ACTA2,FSCN1,IL6,TNFRSF1B
Sperm Motility	1.03	0.04	-2	PLA2G16,SLC16A10,PLCE1,RARRES3,PDE1A
PI3K Signaling in B Lymphocytes	0.995	0.039	0	FYN,PLCE1,ATF3,NFKBIA,CD79B
Glutathione-mediated Detoxification	0.972	0.069	0	GSTM1,MGST2
Induction of Apoptosis by HIV1	0.964	0.05	0	NFKBIA,TNFRSF1B,BIRC3

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Arginine Biosynthesis IV	0.959	0.167	0	ASS1
Urea Cycle	0.959	0.167	0	ASS1
NAD Biosynthesis III	0.959	0.167	0	NAMPT
ERK5 Signaling	0.917	0.048	0	LIF,MAP3K8,NGF
Fatty Acid β -oxidation I	0.901	0.063	0	ACSL4,ACSL1
Superpathway of Serine and Glycine Biosynthesis I	0.896	0.143	0	SHMT1
Hypoxia Signaling in the Cardiovascular System	0.887	0.046	0	VEGFA,NFKBIA,HIF1A
Cholecystokinin/Gastrin-mediated Signaling	0.885	0.04	0	IL1RN,RHOU,IL1B,PTGS2
RANK Signaling in Osteoclasts	0.885	0.04	0	NFKBIA,MAP3K8,GSN,BIRC3
MIF-mediated Glucocorticoid Regulation	0.879	0.061	0	NFKBIA,PTGS2
VEGF Signaling	0.863	0.039	1	VEGFA,ACTA2,HIF1A,PGF
TWEAK Signaling	0.858	0.059	0	NFKBIA,BIRC3
Remodeling of Epithelial Adherens Junctions	0.845	0.044	0	TUBA1A,ACTA2,TUBB2B
Salvage Pathways of Pyrimidine Deoxyribonucleotides	0.842	0.125	0	TYMP
Ovarian Cancer Signaling	0.838	0.035	0	VEGFA,FZD4,CD44,PTGS2,PGF
B Cell Development	0.838	0.057	0	IL7R,CD79B
Dopamine Degradation	0.838	0.057	0	ALDH3A2,ALDH1A2
Stearate Biosynthesis I (Animals)	0.838	0.057	0	ACSL4,ACSL1
IGF-1 Signaling	0.831	0.038	0	SOCS1,CTGF,NOV,JAK2
Epithelial Adherens Junction Signaling	0.821	0.034	0	TGFBR2,TUBA1A,ACTA2,TGFBR3,TUBB2B
Glioma Invasiveness Signaling	0.819	0.043	0	CD44,RHOU,PLAUR
Endothelin-1 Signaling	0.816	0.032	0	PLA2G16,PLCE1,RARRES3,PTGS2,NOS2,PLD1
Role of JAK1 and JAK3 in γ Cytokine Signaling	0.806	0.042	0	IL7R,SOCS1,JAK2
Chemokine Signaling	0.806	0.042	0	CCL2,LIMK2,CCL7
Complement System	0.799	0.054	0	C5AR1,CFB
Prostanoid Biosynthesis	0.795	0.111	0	PTGS2
Sucrose Degradation V (Mammalian)	0.795	0.111	0	GALM
Pregnenolone Biosynthesis	0.795	0.111	0	CYP26B1
Folate Transformations I	0.795	0.111	0	SHMT1

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Basal Cell Carcinoma Signaling	0.793	0.042	0	BMP4,FZD4,BMP2
Paxillin Signaling	0.761	0.035	0	ACTA2,ITGA11,ITGA10,PTPN12
Nitric Oxide Signaling in the Cardiovascular System	0.761	0.035	1	VEGFA,PDE5A,PDE1A,PGF
Glycine Betaine Degradation	0.753	0.1	0	SHMT1
Role of PKR in Interferon Induction and Antiviral Response	0.746	0.05	0	NFKBIA,IRF1
Thyroid Cancer Signaling	0.746	0.05	0	CXCL1,NGF
Retinol Biosynthesis	0.746	0.05	0	DHRS3,AKR1C3
Noradrenaline and Adrenaline Degradation	0.746	0.05	0	ALDH3A2,ALDH1A2
IL-15 Signaling	0.745	0.04	0	CXCL8,JAK2,IL6
BMP signaling pathway	0.745	0.04	0	BMP4,BMP2,GREM1
Clathrin-mediated Endocytosis Signaling	0.744	0.031	0	VEGFA,ORM1,ACTA2,FGF2,SERPINA1,PGF
HGF Signaling	0.742	0.035	0	ELF3,MAP3K8,PTGS2,IL6
mTOR Signaling	0.738	0.03	2	VEGFA,DDIT4,RHO, HIF1A,PLD1,PGF
Angiotensin Signaling	0.733	0.039	0	TNIP1,NFKBIA,ANGPT1
Molecular Mechanisms of Cancer	0.731	0.027	0	TGFBR2,FYN,BMP4,FZD4,NFKBIA,BMP2,RHO, HIF1A,JAK2,BIRC3
Erythropoietin Signaling	0.711	0.038	0	SOCS1,NFKBIA,JAK2
Regulation of IL-2 Expression in Activated and Anergic T Lymphocytes	0.711	0.038	0	TGFBR2,FYN,NFKBIA
Gaq Signaling	0.709	0.031	0	RGS2,NFKBIA,RHO, RGS16,PLD1
PTEN Signaling	0.707	0.034	2	TGFBR2,GHR,TGFBR3,PDGFRB
Growth Hormone Signaling	0.689	0.037	0	SOCS1,GHR,JAK2
Hematopoiesis from Multipotent Stem Cells	0.682	0.083	0	KITLG
Histidine Degradation VI	0.682	0.083	0	CYP26B1
phagosome formation	0.681	0.033	0	PLCE1,RHO, FCER1G,FCAMR
PI3K/AKT Signaling	0.665	0.032	2	NFKBIA,MAP3K8,JAK2,PTGS2
Small Cell Lung Cancer Signaling	0.659	0.036	0	NFKBIA,RARB,PTGS2
Protein Kinase A Signaling	0.657	0.026	-1.667	TGFBR2,PLCE1,NFKBIA,PDE7B,PTPN2,PPP1R3C,PDE5A,PTGS2,PDE1A,PTPN12
Gap Junction Signaling	0.652	0.03	0	PLCE1,NOV,TUBA1A,ACTA2,TUBB2B
Choline Biosynthesis III	0.651	0.077	0	PLD1
Bile Acid Biosynthesis, Neutral Pathway	0.651	0.077	0	AKR1C3
Leukotriene Biosynthesis	0.623	0.071	0	MGST2

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Phenylalanine Degradation IV (Mammalian, via Side Chain)	0.623	0.071	0	ALDH3A2
VEGF Family Ligand-Receptor Interactions	0.62	0.034	0	VEGFA,PGF,NRP1
RhoGDI Signaling	0.619	0.029	-1.342	ACTA2,CD44,RHO,LIMK2,ARHGDI1B
Cellular Effects of Sildenafil (Viagra)	0.618	0.031	0	PLCE1,ACTA2,PDE5A,PDE1A
Apoptosis Signaling	0.611	0.034	0	NFKBIA,TNFRSF1B,BIRC3
Integrin Signaling	0.608	0.027	-0.816	FYN,ACTA2,ITGA11,RHO,ITGA10,GSN
PKC θ Signaling in T Lymphocytes	0.603	0.03	2	FYN,NFKBIA,FCER1G,MAP3K8
cAMP-mediated signaling	0.597	0.027	-1.633	RGS2,GPER1,PDE7B,PDE5A,PDE1A,ADORA2A
Regulation of Actin-based Motility by Rho	0.593	0.033	0	ACTA2,RHO,GSN
Acute Myeloid Leukemia Signaling	0.593	0.033	0	KITLG,IDH1,PIM2
IL-1 Signaling	0.593	0.033	0	NFKBIA,IRAK3,IRAK2
Cardiac β -adrenergic Signaling	0.582	0.03	-1	PDE7B,PPP1R3C,PDE5A,PDE1A
CD27 Signaling in Lymphocytes	0.578	0.039	0	NFKBIA,MAP3K8
Fc γ Receptor-mediated Phagocytosis in Macrophages and Monocytes	0.576	0.032	0	FYN,ACTA2,PLD1
Systemic Lupus Erythematosus Signaling	0.575	0.027	0	CD79B,IL1RN,FCER1G,IL1B,IL6,PIM2
Extrinsic Prothrombin Activation Pathway	0.573	0.063	0	F3
Ubiquinol-10 Biosynthesis (Eukaryotic)	0.573	0.063	0	CYP26B1
Nicotine Degradation III	0.555	0.037	0	CYP4B1,CYP4X1
CTLA4 Signaling in Cytotoxic T Lymphocytes	0.527	0.03	0	FYN,FCER1G,JAK2
Cardiac Hypertrophy Signaling	0.524	0.026	0	TGFBR2,PLCE1,RHO,MAP3K8,IL6,HSPB1
Wnt/Ca ⁺ pathway	0.523	0.035	0	PLCE1,FZD4
phagosome maturation	0.522	0.028	0	ATP6V0E2,CTSK,TUBA1A,TUBB2B
Synaptic Long Term Depression	0.51	0.027	-1	PLA2G16,PLCE1,RARRES3,NOS2
Role of NFAT in Cardiac Hypertrophy	0.508	0.026	0.447	TGFBR2,PLCE1,LIF,IL6,IL11
Retinoic acid Mediated Apoptosis Signaling	0.484	0.033	0	RARB,IRF1

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Activation of IRF by Cytosolic Pattern Recognition Receptors	0.474	0.032	0	NFKBIA,IL6
Melatonin Degradation I	0.474	0.032	0	CYP4B1,CYP4X1
Nicotine Degradation II	0.465	0.032	0	CYP4B1,CYP4X1
Polyamine Regulation in Colon Cancer	0.459	0.046	0	SAT1
Pyridoxal 5'-phosphate Salvage Pathway	0.457	0.031	0	MAP3K8,LIMK2
Gas Signaling	0.456	0.028	0	RGS2,GPER1,ADORA2A
Amyotrophic Lateral Sclerosis Signaling	0.444	0.027	0	VEGFA,BIRC3,PGF
Corticotropin Releasing Hormone Signaling	0.444	0.027	0	VEGFA,PTGS2,NOS2
Glioblastoma Multiforme Signaling	0.437	0.025	-1	PLCE1,FZD4,RHO,PDGFRB
Lymphotoxin β Receptor Signaling	0.432	0.03	0	NFKBIA,CXCL1
Superpathway of Melatonin Degradation	0.432	0.03	0	CYP4B1,CYP4X1
Tumoricidal Function of Hepatic Natural Killer Cells	0.429	0.042	0	ICAM1
Rac Signaling	0.407	0.026	0	CD44,LIMK2,PLD1
Aldosterone Signaling in Epithelial Cells	0.402	0.024	0	CRYAB,PLCE1,DNAJB9,HSPB1
Lipid Antigen Presentation by CD1	0.402	0.039	0	FCER1G
Antiproliferative Role of TOB in T Cell Signaling	0.402	0.039	0	TGFBR2
Tight Junction Signaling	0.397	0.024	0	TGFBR2,CLDN23,ACTA2,TNFRSF1B
D-myo-inositol (1,4,5)-Trisphosphate Biosynthesis	0.389	0.037	0	PLCE1
Sphingosine-1-phosphate Signaling	0.38	0.025	0	PLCE1,RHO,PDGFRB
RhoA Signaling	0.38	0.025	0	ACTA2,LIMK2,PLD1
Gustation Pathway	0.38	0.025	0	PDE7B,PDE5A,PDE1A
Serotonin Degradation	0.379	0.027	0	ALDH3A2,ALDH1A2
Intrinsic Prothrombin Activation Pathway	0.366	0.035	0	COL3A1
Dopamine Receptor Signaling	0.359	0.026	0	GCH1,PPP1R3C
Superpathway of Inositol Phosphate Compounds	0.357	0.022	0	FYN,PLCE1,PTPN2,PTPN12,PDGFRB
Actin Cytoskeleton Signaling	0.35	0.022	0	ACTA2,FGF2,LIMK2,LBP,GSN

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
4-1BB Signaling in T Lymphocytes	0.344	0.032	0	NFKBIA
Superpathway of Methionine Degradation	0.344	0.032	0	CDO1
14-3-3-mediated Signaling	0.339	0.023	0	PLCE1,TUBA1A,TUBB2B
CD28 Signaling in T Helper Cells	0.335	0.023	0	FYN,NFKBIA,FCER1G
p70S6K Signaling	0.335	0.023	0	PLCE1,CD79B,PLD1
Cytotoxic T Lymphocyte-mediated Apoptosis of Target Cells	0.334	0.031	0	FCER1G
G Protein Signaling Mediated by Tubby	0.334	0.031	0	JAK2
Pyrimidine Ribonucleotides Interconversion	0.334	0.031	0	ENTPD7
Renal Cell Carcinoma Signaling	0.334	0.025	0	VEGFA,HIF1A
Circadian Rhythm Signaling	0.325	0.03	0	BHLHE41
Role of NFAT in Regulation of the Immune Response	0.321	0.022	0	FYN,NFKBIA,CD79B,FCER1G
B Cell Receptor Signaling	0.321	0.022	0	EBF1,NFKBIA,CD79B,MAP3K8
3-phosphoinositide Biosynthesis	0.317	0.022	0	FYN,PTPN2,PTPN12,PDGFRB
PEDF Signaling	0.317	0.024	0	NFKBIA,NGF
Pyrimidine Ribonucleotides De Novo Biosynthesis	0.316	0.029	0	ENTPD7
Leptin Signaling in Obesity	0.311	0.024	0	PLCE1,JAK2
LPS-stimulated MAPK Signaling	0.306	0.023	0	NFKBIA,LBP
Insulin Receptor Signaling	0.291	0.021	0	FYN,PPP1R3C,JAK2
OX40 Signaling Pathway	0.29	0.023	0	NFKBIA,FCER1G
IL-4 Signaling	0.29	0.023	0	SOCS1,JAK2
PDGF Signaling	0.285	0.022	0	JAK2,PDGFRB
April Mediated Signaling	0.282	0.026	0	NFKBIA
Notch Signaling	0.282	0.026	0	DTX2
ERK/MAPK Signaling	0.272	0.02	1	FYN,ELF3,PPP1R3C,HSPB1
Salvage Pathways of Pyrimidine Ribonucleotides	0.27	0.022	0	MAP3K8,LIMK2
B Cell Activating Factor Signaling	0.267	0.025	0	NFKBIA
Neuroprotective Role of THOP1 in Alzheimer's Disease	0.267	0.025	0	MME
Transcriptional Regulatory Network in Embryonic Stem Cells	0.267	0.025	0	MEIS1

Ingenuity Canonical Pathways	-log(p-value)	Ratio	z-score	Molecules
Thyroid Hormone Metabolism II (via Conjugation and/or Degradation)	0.267	0.025	0	DIO2
Prostate Cancer Signaling	0.266	0.021	0	NFKBIA,NKX3-1
D-myo-inositol-5-phosphate Metabolism	0.261	0.02	0	PLCE1,PTPN2,PTPN12
Mechanisms of Viral Exit from Host Cells	0.26	0.024	0	ACTA2
Breast Cancer Regulation by Stathmin1	0.26	0.02	0	TUBA1A,PPP1R3C,LIMK2,TUBB2B
Role of RIG1-like Receptors in Antiviral Innate Immunity	0.247	0.023	0	NFKBIA
Serotonin Receptor Signaling	0.247	0.023	0	GCH1
CDK5 Signaling	0.244	0.02	0	PPP1R3C,NGF
FAK Signaling	0.244	0.02	0	FYN,ACTA2
Triacylglycerol Biosynthesis	0.24	0.023	0	PLPP1
eNOS Signaling	0.24	0.019	0	VEGFA,AQP9,PGF
PAK Signaling	0.236	0.02	0	LIMK2,PDGFRB
IL-9 Signaling	0.234	0.022	0	BCL3
Triacylglycerol Degradation	0.234	0.022	0	PNPLA7
Virus Entry via Endocytic Pathways	0.232	0.02	0	FYN,ACTA2
Autoimmune Thyroid Disease Signaling	0.223	0.021	0	FCER1G
Primary Immunodeficiency Signaling	0.217	0.021	0	IL7R
Cancer Drug Resistance By Drug Efflux	0.212	0.02	0	PTGS2
Docosahexaenoic Acid (DHA) Signaling	0.133	0.019	0	IL1B