

List of Canonical pathways found at 3 months after infection

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Ingenuity Canonical Pathways	-log(p-value)	Ratio	Molecules
Dolichyl-diphosphoglucosaccharide Biosynthesis	3.94E00	1.28E-01	ALG3,ALG6,DPAGT1,ALG13,ALG1
Estrogen Receptor Signaling	3.54E00	1.32E-01	CCNH,POLR2D,TAf6,TAf7,GTf2A1,TAf13,MNAT1,NR3C1,SMARCA4,DDX5,CDK8,MED17,NCOA2,POLR2H,TAf3,MED24,ESR1,MED4
E1F2 Signaling	3.53E00	1.15E-01	null,RPS2,RPS19,PPP1CB,E1F3J,RPL14,RPL21,null,PIK3R4,RPLP0,RPS11,RPS12,null,RPL18A,RPL28,RPL35,RPS15,RPL19,RPS3,RPL29,RPL13,RPS14,RPSA
Assembly of RNA Polymerase II Complex	3.38E00	1.79E-01	CCNH,POLR2D,TAf6,DR1,POLR2H,TAf3,TAf7,TAf13,MNAT1,GTf2A1
UDP-D-xylose and UDP-D-glucuronate Biosynthesis	2.49E00	2.86E-01	UXS1,UGDH
Glucocorticoid Receptor Signaling	2.15E00	8.5E-02	POLR2D,TAf7,GTf2A1,PIK3R4,MNAT1,TAf13,NR3C1,SMARCA4,PTGES3,HMGB1,NCOA2,POLR2H,TAf3,CHUK,CREBZF,SMAD2,CCNH,TAf6,MAPK14,CSN2,HSP90AA1,NPPA,HLTF,ESR1,UBE2T
4-aminobutyrate Degradation I	2.03E00	2E-01	SUCLG2,ABAT
N-acetylglucosamine Degradation I	2.03E00	2.5E-01	GMPD1,GMPD2
Ethanol Degradation II	2.02E00	1.4E-01	ACSL3,RDH14,ALDH3A2,ACSS1,ADHFE1,ALDH7A1
Oxidative Ethanol Degradation III	1.97E00	1E-01	ACSL3,ALDH3A2,ACSS1,ALDH7A1
UDP-N-acetyl-D-glactosamine Biosynthesis II	1.93E00	1.25E-01	GMPD1,PGM3,GMPD2
Aryl Hydrocarbon Receptor Signaling	1.91E00	9.32E-02	CCNE2,CYP1A1,PTGES3,SMARCA4,TGM2,RB1,NCOA2,ALDH3A2,GSTM4,HSP90AA1,NFIB,ALDH3B1,ESR1,CDK2,ALDH7A1
Nucleotide Excision Repair Pathway	1.89E00	1.71E-01	CCNH,ERCC1,POLR2D,POLR2H,MNAT1,RAD23B
NF-kB Signaling	1.86E00	9.71E-02	HDAC2,FGFR2,PIK3R4,IGF2R,DDR1,TANK,FGFR3,CSNK2A2,BCL10,CARD10,FGFR4,LTA,PDGFRA,TLR7,CHUK,TRAF5,MAP3K3
Ethanol Degradation IV	1.78E00	1.38E-01	ACSL3,ALDH3A2,ACSS1,ALDH7A1
Phenylethylamine Degradation I	1.75E00	1.82E-01	AOC3,ALDH3A2
N-acetylglucosamine Degradation II	1.75E00	1.67E-01	GMPD1,GMPD2
Regulation of e1F4 and p70S6K Signaling	1.71E00	8.62E-02	null,RPS2,RPS19,E1F3J,ITGA5,PIK3R4,RPS11,RPS12,PPP2CB,null,MAPK14,RPS15,RPS3,RPS14,RPSA
Factors Promoting Carcinogenesis in Vertebrates	1.6E00	1.06E-01	SMAD2,CCNE2,MAPK14,AXIN1,FZD9,BMP7,PRKD3,WNT11,CDK2,MEP1
CD40 Signaling	1.6E00	1.14E-01	TANK,MAPK14,ATF1,LTA,TRAF5,CHUK,MAPKAPK2,PIK3R4
Telomerase Signaling	1.59E00	1.07E-01	PPP2CB,RB1,HDAC2,HDAC11,TERF2IP,ABL1,HSP90AA1,PIK3R4,TERF1,PTGES3,ELF1
Lysine Degradation V	1.54E00	7.14E-02	PIFOX,ALDH7A1
2-oxobutanoate Degradation I	1.54E00	1.18E-01	DLDMUT
Glutamate Degradation III (via 4-aminobutyrate)	1.54E00	1.67E-01	SUCLG2,ABAT
Acetate Conversion to Acetyl-CoA	1.54E00	1.92E-01	ACSL3,ACSS1
Regulation of Cellular Mechanics by Calpain Protease	1.42E00	9.72E-02	RB1,CAPNS1,ITGA5,null,CNGA1,ACTN1,CDK2
TCA Cycle II (Eukaryotic)	1.42E00	9.76E-02	DLIDH3A,FDH3B
DNA Double-Strand Break Repair by Non-Homologous End Joining	1.38E00	1.58E-01	WRN,LIG4,XRCC1
NAD Biosynthesis from 2-amino-3-carboxymuconate Semialdehyde	1.38E00	1.18E-01	NADSYN1,ABL1
Acetyl-CoA Biosynthesis I (Pyruvate Dehydrogenase Complex)	1.38E00	1.82E-01	DLAT,DLDD
Estrogen-mediated S-phase Entry	1.36E00	1.43E-01	RB1,CCNE2,ESR1,CDK2
Role of BRCA1 in DNA Damage Response	1.28E00	1.08E-01	RB1,ATF1,C19orf40,RF5,HLTF,FANCL,SMARCA4
Integrin Signaling	1.28E00	8.21E-02	RAA1,TSAPIN7,ARPC5L,MYLK2,ABL1,ITGA6,PPP1CB,ITGA5,NCK1,PIK3R4,ARHGAP5,PARV6,CAPNS1,WASL,ZYX,ITGA7,ACTN1
Protein Ubiquitination Pathway	1.26E00	7.94E-02	UBE2M,USP5,USP39,UBE3B,UBE2D2,PSMD6,DNAJC10,HSPD1,USP33,SMURF1,USP3,ANAPC4,USP8,PSME1,HSP90AA1,UBE2E3,DNAJB6,NEDD4L,BIRC3,AMFR,UBE2I
Inositol Pyrophosphates Biosynthesis	1.25E00	1.25E-01	IP6K3,PP1PK2
Antiproliferative Role of TOB in T Cell Signaling	1.25E00	1.54E-01	SMAD2,RB1,CCNE2,CDK2
Methylthiopropionate Biosynthesis	1.25E00	2E-01	ADI1
Histamine Biosynthesis	1.25E00	3.33E-01	HDC
CDK5 Signaling	1.24E00	9.57E-02	PPP2CB,DRD1,CDK5,ITGA6,ABL1,DRD5,PPP1CB,CACNA1A,PRKAR1A
Hereditary Breast Cancer Signaling	1.19E00	8.59E-02	RB1,POLR2D,HDAC2,HDAC11,C19orf40,POLR2H,RF5,PIK3R4,HLTF,FANCL,SMARCA4
Activation of IRF by Cytosolic Pattern Recognition Receptors	1.19E00	9.72E-02	TANK,LTA,SIKE1,MAVS,STAT2,CHUK,IFNAR1
Amnoid Processing	1.17E00	1.07E-01	CSNK2A2,MAPK14,CAPNS1,CDK5,PSENEN,PRKAR1A
TNFR2 Signaling	1.15E00	1.21E-01	TANK,LTA,CHUK,BIRC3
Intrinsic Prothrombin Activation Pathway	1.15E00	1.14E-01	KLK1,COL2A1,COL10A1,COL3A1
AMPK Signaling	1.15E00	7.19E-02	PPP2CB,MAPK14,PPM1B,STRADA,LIPE,NOS3,PIK3R4,HLTF,ADRB3,PFKFB2,SMARCA4,PRKAR1A
mTOR Signaling	1.14E00	7.62E-02	RHEB,PLD3,RPS2,RPS19,E1F3J,PIK3R4,RICTOR,RPS11,RPS12,PPP2CB,null,RPS15,RPS3,PRKD3,RPS14,RPSA
Human Embryonic Stem Cell Pluripotency	1.11E00	7.64E-02	FGFR3,SMAD2,S1PR2,AXIN1,FGFR4,PDGFRA,FGFR2,FZD9,BMP7,PIK3R4,WNT11,BMP1
Cyclins and Cell Cycle Regulation	1.11E00	8.99E-02	PPP2CB,RB1,CCNE2,CCNH,HDAC2,HDAC11,ABL1,CDK2
Granzyme A Signaling	1.05E00	1.5E-01	HLTF,SET,ANP32A
Prostate Cancer Signaling	1.04E00	8.16E-02	RB1,CCNE2,SRDS1,ABL1,HSP90AA1,CHUK,PIK3R4,CDK2
Androgen Signaling	1.01E00	6.94E-02	CCNH,POLR2D,NCOA2,GNAO1,HSP90AA1,POLR2H,MNAT1,GTf2A1,PRKD3,PRKAR1A
Basal Cell Carcinoma Signaling	9.99E-01	9.59E-02	STK36,GLIS2,AXIN1,FZD9,BMP7,WNT11,BMP1
Small Cell Lung Cancer Signaling	9.74E-01	7.87E-02	RB1,CCNE2,ABL1,TRAF5,CHUK,PIK3R4,CDK2
Prostanoid Biosynthesis	9.72E-01	1.25E-01	PTGS1,PTGES3
Glycine Betaine Degradation	9.72E-01	8.7E-02	SARDH,PIFOX
Epoxyqualene Biosynthesis	9.58E-01	1.11E-01	SOLE
B-alanine Degradation I	9.58E-01	1E-01	ABAT
Spermine Biosynthesis	9.58E-01	1.43E-01	null
Choline Degradation I	9.58E-01	1.43E-01	ALDH7A1
GDP-L-fucose Biosynthesis II (from L-fucose)	9.58E-01	1.11E-01	PPGT
Cysteine Biosynthesis/Homocysteine Degradation	9.58E-01	1.25E-01	CBS
FGF Signaling	9.46E-01	8.7E-02	FGFR3,MAPK14,PTPN11,FGFR4,FGFR2,MAPKAPK2,PIK3R4,FGF1
RAR Activation	9.45E-01	7.41E-02	SMAD2,CCNH,RDH14,RDH11,MNAT1,SMARCA4,CSNK2A2,MAPK14,PNRC1,RDH5,MAPKAPK2,HLTF,PRKD3,PRKAR1A
Triacylglycerol Biosynthesis	9.43E-01	8.7E-02	AGPAT5,AGPAT2,DGAT2,LPIN2
Role of JAK2 in Hormone-like Cytokine Signaling	9.07E-01	1.11E-01	SH2B1,PTPN11,PTPN1,HLTF
Cell Cycle G1/S Checkpoint Regulation	8.86E-01	9.09E-02	RB1,CCNE2,HDAC2,HDAC11,ABL1,CDK2
Cell Cycle Regulation by BTG Family Proteins	8.73E-01	1.15E-01	PPP2CB,RB1,CCNE2,CDK2
Noradrenaline and Adrenaline Degradation	8.73E-01	7.69E-02	RDH14,ALDH3A2,ADHFE1,ALDH7A1
PTEN Signaling	8.63E-01	7.41E-02	FGFR3,CSNK2A2,MAGI1,FGFR4,PDGFRA,ITGA5,FGFR2,CHUK,IGF2R,DDR1
Cleavage and Polyadenylation of Pre-mRNA	8.38E-01	1.67E-01	PAPOLA,CSTF2
Hematopoiesis from Multipotent Stem Cells	8.38E-01	1.67E-01	CSF3,IL7
Role of JAK1, JAK2 and TYK2 in Interferon Signaling	8.18E-01	1.11E-01	IFNGR2,STAT2,IFNAR1
NADH Repair	7.95E-01	1.11E-01	CARKD
Glutathione Biosynthesis	7.95E-01	9.09E-02	GCLC
Glutathione Redox Reactions II	7.95E-01	1.43E-01	GSR
D-glucuronate Degradation I	7.95E-01	7.69E-02	CRYL1
Spermidine Biosynthesis I	7.95E-01	1.25E-01	null
Hypoxia Signaling in the Cardiovascular System	7.93E-01	9.09E-02	UBE2M,UBE2D2,HSP90AA1,UBE2E3,NOS3,UBE2I
Purine Nucleotides De Novo Biosynthesis II	7.81E-01	4.65E-02	ADSS,ADSSL1
Histamine Degradation	7.81E-01	6.9E-02	ALDH3A2,ALDH7A1
Role of JAK family kinases in IL-6-type Cytokine Signaling	7.8E-01	1.11E-01	MAPK14,PTPN11,OSMR
tRNA Charging	7.8E-01	4.94E-02	DARS,DARS2,VARS,NARS2
Germ Cell-Sertoli Cell Junction Signaling	7.73E-01	7.32E-02	MAP3K12,WASL,MAPK14,AXIN1,FER,ITGA6,ZYX,LAMC3,CLINT1,PIK3R4,MAP3K3,ACTN1
Mitotic Roles of Polo-Like Kinase	7.5E-01	8.57E-02	PPP2CB,ANAPC4,PLK4,PRC1,HSP90AA1,RAD21

NAD biosynthesis II (from tryptophan)	7.3E-01	5.88E-02	NADSYN1,ABL1
Androgen Biosynthesis	7.3E-01	7.69E-02	null,SRD5A1
Superpathway of Citrulline Metabolism	7.3E-01	5.26E-02	ARG2,NOSS3
γ-glutamyl Cycle	7.3E-01	7.41E-02	GCLC,GSAOT
Fatty Acid α-oxidation	7.3E-01	9.52E-02	ALDH3A2,ALDH7A1
Remodeling of Epithelial Adherens Junctions	7.29E-01	8.82E-02	RALA,ARPCSL,ZYX,MAPRE2,CLIP1,ACTN1
PPARα/RXRα Activation	7.26E-01	6.81E-02	CAND1,PPARA,SMAD2,PLCB4,MAPK14,NCOA6,ACOX1,HSP90AA1,CHUK,MED24,TGS1,ABCA1,PRKAR1A
Mechanisms of Viral Exit from Host Cells	7.24E-01	8.89E-02	VPS36,XPO1,PRKD3,CHMP3
Transcriptional Regulatory Network in Embryonic Stem Cells	7.24E-01	1E-01	L1CAM,SKIL,SET,SMARCA1
Cell Cycle Control of Chromosomal Replication	7.11E-01	9.68E-02	MCM5,CDK5,CDK2
Dopamine-DARPP32 Feedback in cAMP Signaling	7.07E-01	6.56E-02	PPP2CB,PLCB4,DRD1,ATF1,CDK5,CSNK1G3,CAMKK1,DRD5,PPP1CB,PRKD3,CACNA1A,PRKAR1A
Telomere Extension by Telomerase	6.83E-01	1.18E-01	TERF2IP,TERF1
CDP-diacylglycerol Biosynthesis I	6.83E-01	7.41E-02	AGPAT5,AGPAT2
The Visual Cycle	6.83E-01	7.14E-02	RDH11,RDH5
2-ketoglutarate Dehydrogenase Complex	6.82E-01	1.11E-01	DL2
Branched-chain α-keto acid Dehydrogenase Complex	6.82E-01	1.11E-01	DL2
Heme Biosynthesis from Uroporphyrinogen-III I	6.82E-01	9.09E-02	FECH
Methylmalonyl Pathway	6.82E-01	8.33E-02	MUT
Myo-inositol Biosynthesis	6.82E-01	1.25E-01	IMPAD1
Arginine Degradation I (Arginase Pathway)	6.82E-01	7.69E-02	ARG2
RANK Signaling in Osteoclasts	6.84E-01	7.37E-02	MAP3K12,MAPK14,TRAF5,CHUK,PIK3R4,BIRC3,MAP3K3
Sonic Hedgehog Signaling	6.49E-01	9.09E-02	STK3,GLIS2,PRKAR1A
D-myo-inositol (1,4,5,6)-Tetrakisphosphate Biosynthesis	6.48E-01	6.47E-02	MTMR6,PTPN11,NUDT11,PCDC1,PPP1R8,NUDT9,PTPN1,SET,THTPA
D-myo-inositol (3,4,5,6)tetrakisphosphate Biosynthesis	6.48E-01	6.47E-02	MTMR6,PTPN11,NUDT11,PCDC1,PPP1R8,NUDT9,PTPN1,SET,THTPA
D-myo-inositol-5-phosphate Metabolism	6.42E-01	6.41E-02	MTMR6,PLCB4,PTPN11,NUDT11,PCDC1,PPP1R8,NUDT9,PTPN1,SET,THTPA
Granzyme B Signaling	6.41E-01	1.25E-01	ENDOG,DFFA
Phosphatidylglycerol Biosynthesis II (Non-plastidic)	6.41E-01	6.06E-02	AGPAT5,AGPAT2
Death Receptor Signaling	6.38E-01	7.81E-02	TANK,INFRSF25,CHUK,CFLAR,BIRC3
3-phosphoinositide Degradation	6.29E-01	6.37E-02	MTMR6,INPP4B,PTPN11,NUDT11,PCDC1,PPP1R8,NUDT9,PTPN1,SET,THTPA
Superpathway of Inositol Phosphate Compounds	6.23E-01	5.73E-02	PPP1R8,NUDT9,PIK3R4,SET,MTMR6,PLCB4,IP6K3,PTPN11,NUDT11,PCDC1,PTPN1,THTPA,PIIP5K2
Fatty Acid β-oxidation I	6.2E-01	6.67E-02	ACSL3,HSD17B4,ACADM
Superpathway of Methionine Degradation	6.2E-01	4.69E-02	CBS,DL2,MUT
Caveolar-mediated Endocytosis Signaling	6.18E-01	7.06E-02	PTPN11,ITGA6,ABL1,ITGA5,COPB1,ITGA7
RAN Signaling	6.02E-01	8.33E-02	KPNA3,XPO1
Putrescine Degradation III	6.02E-01	6.67E-02	ALDH3A2,ALDH7A1
Tetrahydrofolate Salvage from 5,10-methylenetetrahydrofolate	5.97E-01	1E-01	MTHFD1L
Lysine Degradation II	5.97E-01	5.26E-02	ALDH7A1
Citrulline-Nitric Oxide Cycle	5.97E-01	6.25E-02	NOSS3
Folate Polyglutamylation	5.97E-01	5.88E-02	MTHFD1L
Xenobiotic Metabolism Signaling	5.72E-01	6.35E-02	CYP1A1,SULT1C4,GCLC,CES2,FMO5,PIK3R4,SOD3,PTGES3,CUL3,PPP2CB,MAP3K12,MAPK14,ALDH3A2,GSTM4,HSP90AA1,ALDH3B1,MAP3K3,PRKD3,ALDH7A1
Retinoate Biosynthesis I	5.67E-01	8.11E-02	RDH14,RDH11,RDH5
Cardiomyocyte Differentiation via BMP Receptors	5.66E-01	1E-01	BMP7,NPPA
Differential Regulation of Cytokine Production in Macrophages and T Helper Cells by IL-17A and IL-17F	5.66E-01	1.11E-01	CSF3,IL17A
Tryptophan Degradation X (Mammalian, via Tryptamine)	5.66E-01	6.9E-02	ALDH3A2,ALDH7A1
Valine Degradation I	5.66E-01	5.71E-02	ABAT,DL2
Pyridoxal 5'-phosphate Salvage Pathway	5.63E-01	6.94E-02	null,CDK8,CDK5,MAPK6,CDK2
Molecular Mechanisms of Cancer	5.54E-01	5.82E-02	SMAD2,CONE2,RALA,STK36,AXIN1,ABL1,FZD9,PSENEN,PIK3R4,RB1,SYNGAP1,PLCB4,MAPK14,PTPN11,GNAO1,BMP7,CFLAR,PRKD3,BIRC3,CDK2,BMP1,PRKAR1A
Role of Wnt/GSK-3β Signaling in the Pathogenesis of Influenza	5.53E-01	7.41E-02	NCOA2,AXIN1,CSNK1G3,FZD9,IFNAR1,WNT11
Chronic Myeloid Leukemia Signaling	5.48E-01	6.67E-02	RB1,HDAC2,PTPN11,HDAC11,ABL1,CHUK,PIK3R4
TWEAK Signaling	5.43E-01	7.89E-02	INFRSF25,CHUK,BIRC3
GADD45 Signaling	5.33E-01	9.09E-02	CCNE2,CDK2
DNA damage-induced 14-3-3σ Signaling	5.33E-01	9.52E-02	CCNE2,CDK2
Dendritic Cell Maturation	5.3E-01	5.8E-02	PLCB4,MAPK14,LTA,COL2A1,CD58,COL10A1,STAT2,CHUK,PIK3R4,IFNAR1,DDR1,COL3A1
Sertoli Cell-Sertoli Cell Junction Signaling	5.3E-01	6.15E-02	MAP3K12,MAPK14,CLDN12,CLDN4,AXIN1,TJP3,ITGA5,CLINT1,NOSS3,MAP3K3,ACTN1,PRKAR1A
Urea Cycle	5.3E-01	5E-02	ARG2
Chondroitin and Dermatan Biosynthesis	5.3E-01	7.69E-02	CSGALNACT2
Ceramide Biosynthesis	5.3E-01	6.25E-02	SPTLC1
Arginine Degradation VI (Arginase 2 Pathway)	5.3E-01	6.25E-02	ARG2
Glycine Cleavage Complex	5.3E-01	6.67E-02	DL2
Superoxide Radicals Degradation	5.3E-01	1.25E-01	SOD3
UDP-N-acetyl-D-glucosamine Biosynthesis II	5.3E-01	5.88E-02	PGM3
GDP-glucose Biosynthesis	5.3E-01	5.88E-02	PGM3
Interferon Signaling	5.19E-01	8.33E-02	IFNGR2,STAT2,IFNAR1
Angiopoietin Signaling	5.13E-01	6.76E-02	PTPN11,CHUK,NCK1,NOS3,PIK3R4
3-phosphoinositide Biosynthesis	5.03E-01	5.71E-02	MTMR6,PTPN11,NUDT11,PCDC1,PPP1R8,NUDT9,PTPN1,PIK3R4,SET,THTPA
Production of Nitric Oxide and Reactive Oxygen Species in Macrophages	5.01E-01	5.71E-02	PPARA,PPP2CB,MAP3K12,MAPK14,CLU,IFNGR2,PPP1CB,ARG2,CHUK,PIK3R4,PRKD3,MAP3K3
IL-17A Signaling in Fibroblasts	4.97E-01	7.5E-02	MAPK14,CHUK,IL17A
CD27 Signaling in Lymphocytes	4.86E-01	7.02E-02	MAP3K12,TRAF5,CHUK,MAP3K3
HGF Signaling	4.83E-01	6.67E-02	MAP3K12,PTPN11,PIK3R4,PRKD3,MAP3K3,CDK2,ELF1
PXR/RXR Activation	4.82E-01	5.75E-02	PPARA,ALDH3A2,CES2,NR3C1,PRKAR1A
JAK/Stat Signaling	4.82E-01	7.14E-02	PIAS2,PTPN11,PTPN1,STAT2,PIK3R4
Glucose and Glucose-1-phosphate Degradation	4.75E-01	4.56E-02	PGM3
Paxillin Signaling	4.71E-01	6.31E-02	MAPK14,ITGA6,ITGA5,NCK1,PIK3R4,ITGA7,ACTN1
Role of Osteoblasts, Osteoclasts and Chondrocytes in Rheumatoid Arthritis	4.61E-01	5.88E-02	AXIN1,ITGA5,FZD9,PIK3R4,IL7,SMURF1,IL17A,MAPK14,BMP7,TRAF5,CHUK,BIRC3,WNT11,BMP1
Phototransduction Pathway	4.52E-01	6.15E-02	ARR3,null,CNGA1,PRKAR1A
Polyamine Regulation in Colon Cancer	4.48E-01	6.9E-02	PSME1,AZIN1
Pyrimidine Ribonucleotides Interconversion	4.48E-01	5.88E-02	CMPK1,CTPS1
LPS/IL-1 Mediated Inhibition of RXR Function	4.45E-01	5.86E-02	PPARA,ACSL3,SULT1C4,ALDH3A2,ACOX1,GSTM4,XPO1,ALDH3B1,CES2,FMO5,HMGCS1,ABCA1,SOD3,ALDH7A1
April Mediated Signaling	4.37E-01	6.96E-02	MAPK14,TRAF5,CHUK
Lymphotxin β Receptor Signaling	4.36E-01	6.56E-02	LTA,TRAF5,CHUK,PIK3R4
Role of IL-17A in Arthritis	4.36E-01	6.35E-02	MAPK14,MAPKAPK2,PIK3R4,IL17A
Sphingosine and Sphingosine-1-phosphate Metabolism	4.29E-01	4.76E-02	SGPP1
Sucrose Degradation V (Mammalian)	4.29E-01	5.26E-02	KHK
Histidine Degradation III	4.29E-01	5.56E-02	MTHFD1L
Citrulline Biosynthesis	4.29E-01	3.85E-02	ARG2
Differential Regulation of Cytokine Production in Intestinal Epithelial Cells by IL-17A and IL-17F	4.23E-01	8.7E-02	CSF3,IL17A
Dopamine Degradation	4.23E-01	5.41E-02	ALDH3A2,ALDH7A1
Thrombopoietin Signaling	4.21E-01	6.35E-02	MPL,PTPN11,PIK3R4,PRKD3

Neuregulin Signaling	4.19E-01	5.88E-02	ERBB2,PTPN11,CDK5,ITGA5,HSP90AA1,PRKD3
IL-17 Signaling	4.13E-01	6.76E-02	MAPK14,TIMP1,MAPKAPK2,PIK3R4,IL17A
BMP Signaling pathway	4.13E-01	6.25E-02	MAPK14,BMP7,SMURF1,PRKAR1A,BMP1
Hepatic Fibrosis / Hepatic Stellate Cell Activation	4.1E-01	6.16E-02	SMAD2,IL4R,TIMP1,PDGFRA,IFNGR2,FGFR2,IFNAR1,COL3A1,FGF1
Actin Nucleation by ARP-1/WASP Complex	4.07E-01	6.06E-02	WASL,ARPC5L,ITGA5,NCK1
Toll-like Receptor Signaling	4.07E-01	6.45E-02	PPARA,MAPK14,TLR7,CHUK
Role of PKR in Interferon Induction and Antiviral Response	4.01E-01	6.52E-02	MAPK14,TRAF5,CHUK
B Cell Activating Factor Signaling	4.01E-01	6.67E-02	MAPK14,TRAF5,CHUK
Tumorcidal Function of Hepatic Natural Killer Cells	4.01E-01	8.33E-02	ENDOG,DDFA
Pyrimidine Ribonucleotides De Novo Biosynthesis	4.01E-01	4.17E-02	CMPK1,CTPS1
LPS-stimulated MAPK Signaling	4E-01	6.1E-02	MAPK14,ATF1,CHUK,PIK3R4,PRKD3
NF-kB Activation by Viruses	4E-01	6.1E-02	ITGA6,ITGA5,CHUK,PIK3R4,PRKD3
Prolactin Signaling	4E-01	6.25E-02	PTPN11,CSN2,PIK3R4,PRKD3,NR3C1
Pancreatic Adenocarcinoma Signaling	3.94E-01	5.83E-02	SMAD2,RB1,PLD3,RALA,ABL1,PIK3R4,CDK2
Leukocyte Extravasation Signaling	3.93E-01	5.97E-02	ARHGAP5,WASL,MAPK14,CLDN12,PTPN11,CLDN4,TIMP1,FER,ABL1,PIK3R4,PRKD3,ACTN1
Assembly of RNA Polymerase I Complex	3.89E-01	7.69E-02	POLR1B
Leucine Degradation I	3.89E-01	3.85E-02	ACADM
Heme Biosynthesis II	3.89E-01	4.35E-02	FECH
Folate Transformations I	3.89E-01	3.12E-02	MTHFD1L
Leptin Signaling in Obesity	3.88E-01	6.02E-02	PLCB4,PTPN11,PIK3R4,GHRL,PRKAR1A
IL-17A Signaling in Gastric Cells	3.79E-01	8E-02	MAPK14,IL17A
Gluconeogenesis I	3.79E-01	4.08E-02	ME3,FBP1
Serotonin Degradation	3.79E-01	5.33E-02	RDH14,ALDH3A2,ADHFE1,ALDH7A1
Dopamine Receptor Signaling	3.76E-01	5.32E-02	PPP2CB,DRD1,DRD5,PPP1CB,PRKAR1A
Gas Signaling	3.75E-01	5.79E-02	DRD1,HTR4,DRD5,null,CNGA1,ADRB3,PRKAR1A
p53 Signaling	3.64E-01	6.25E-02	RB1,MAPK14,PIK3R4,CDK2,TP53I3,SIRT1
Epithelial Adherens Junction Signaling	3.59E-01	6.12E-02	WASL,MAGI1,ARPC5L,FER,ZYX,CLINT1,CLIP1,ACTN1,FGF1
NRF2-mediated Oxidative Stress Response	3.55E-01	5.73E-02	CUL3,GSR,MAPK14,GSTM4,GCLC,DNAJC10,UBE2E3,DNAJB6,PIK3R4,PRKD3,SOD3
Acyl-CoA Hydrolysis	3.55E-01	7.69E-02	null
Glycogen Degradation II	3.55E-01	6.25E-02	PGM3
Mineralocorticoid Biosynthesis	3.55E-01	4.76E-02	null
Glioma Signaling	3.44E-01	5.36E-02	RB1,PDGFRA,ABL1,PIK3R4,PRKD3,IGF2R
Nitric Oxide Signaling in the Cardiovascular System	3.42E-01	5.05E-02	HSP90AA1,NOS3,PIK3R4,CACNA1A,PRKAR1A
Role of RIG1-like Receptors in Antiviral Innate Immunity	3.39E-01	6.12E-02	TANK,MAVS,CHUK
iNOS Signaling	3.39E-01	5.66E-02	MAPK14,IFNGR2,CHUK
Reelin Signaling in Neurons	3.32E-01	6.1E-02	CDK5,ITGA6,ITGA5,RELN,PIK3R4
Role of JAK1 and JAK3 in yc Cytokine Signaling	3.29E-01	5.97E-02	IL4R,PTPN11,PIK3R4,IL7
Role of Oct4 in Mammalian Embryonic Stem Cell Pluripotency	3.25E-01	6.87E-02	RB1,PPP1R8,FAM208A
Glutaryl-CoA Degradation	3.25E-01	4.17E-02	HSD17B4
Ketogenesis	3.25E-01	4.76E-02	HMGCS1
Glucoctorticoid Biosynthesis	3.25E-01	4.76E-02	null
Ovarian Cancer Signaling	3.24E-01	5.63E-02	RB1,AXIN1,PTGS1,ABL1,FZD9,PIK3R4,WNT11,PRKAR1A
IL-17A Signaling in Airway Cells	3.17E-01	5.56E-02	MAPK14,CHUK,PIK3R4,IL17A
Endothelin-1 Signaling	3.1E-01	5.35E-02	PLCB4,PLD3,MAPK14,PLB1,GNAO1,PTGS1,MAPK6,NOS3,PIK3R4,PRKD3
Amyotrophic Lateral Sclerosis Signaling	3.08E-01	5.08E-02	CAPNS1,PIK3R4,BIRC3,RNF19A,CACNA1A,SSR4
Retinolic acid Mediated Apoptosis Signaling	3.06E-01	5.8E-02	PARP16,PARP4,CFLAR,IFNAR1
Superpathway of Cholesterol Biosynthesis	3.06E-01	2.33E-02	SOLE,HMGCS1
Wnt/beta-catenin Signaling	3.03E-01	5.75E-02	PPP2CB,CSNK2A2,AXIN2,PPARD,AXIN1,CSNK1G3,GNAO1,MARK2,FZD9,WNT11
TNFR1 Signaling	2.99E-01	5.77E-02	TANK,CHUK,BIRC3
Ubiquitin-10 Biosynthesis (Eukaryotic)	2.98E-01	3.45E-02	PRHOXNB
Glycogen Degradation III	2.98E-01	5.56E-02	PGM3
Guanosine Nucleotides Degradation III	2.98E-01	4.55E-02	NT5C3L
TGF-beta Signaling	2.93E-01	5.62E-02	SMAD2,MAPK14,BMP7,TGIF1,SMURF1
Ephrin A Signaling	2.87E-01	5.77E-02	PTPN11,ADAM10,PIK3R4
Retinol Biosynthesis	2.87E-01	5.17E-02	RDH11,LIPE,CES2
Ephrin Receptor Signaling	2.84E-01	4.98E-02	WASL,PTPN11,ARPC5L,AXIN1,GNAO1,ADAM10,ABL1,ITGA5,NCK1,FGF1
Salvage Pathways of Pyrimidine Ribonucleotides	2.84E-01	4.9E-02	CDK8,CDK5,MAPK6,CMPK1,CDK2
4-1BB Signaling in T Lymphocytes	2.75E-01	5.56E-02	MAPK14,CHUK
Assembly of RNA Polymerase III Complex	2.75E-01	6.25E-02	GTF3C1
Role of IL-17A in Psoriasis	2.75E-01	7.69E-02	IL17A
Fatty Acid Activation	2.75E-01	5.26E-02	ACSL3
Choline Biosynthesis III	2.75E-01	4.55E-02	PLD3
Cholesterol Biosynthesis I	2.75E-01	2.5E-02	SOLE
Cholesterol Biosynthesis II (via 24,25-dihydroxysterol)	2.75E-01	2.5E-02	SOLE
Cholesterol Biosynthesis III (via Desmosterol)	2.75E-01	2.5E-02	SOLE
HIF1a Signaling	2.75E-01	5.56E-02	MAPK14,MAPK6,HSP90AA1,EGLN3,NOS3,PIK3R4
B Cell Receptor Signaling	2.66E-01	5.29E-02	MAP3K12,MAPK14,PTPN11,CARD10,BCL10,ABL1,CHUK,PIK3R4,MAP3K3
IL-10 Signaling	2.66E-01	5.13E-02	IL4R,MAPK14,ARG2,CHUK
PI3K/AKT Signaling	2.6E-01	4.86E-02	PPP2CB,RHEB,YWHAG,ITGA5,HSP90AA1,CHUK,NOS3
T Helper Cell Differentiation	2.57E-01	5.56E-02	ICOS,IL4R,IFNGR2,IL17A
DNA Double-Strand Break Repair by Homologous Recombination	2.53E-01	5.88E-02	ABR1
Urate Biosynthesis/inosine 5-phosphate Degradation	2.53E-01	4.26E-02	NT5C3L
Mevlonate Pathway I	2.53E-01	3.57E-02	HMGCS1
Phenylalanine Degradation IV (Mammalian, via Side Chain)	2.53E-01	2.56E-02	ALDH3A2
Colanic Acid Building Blocks Biosynthesis	2.53E-01	2.78E-02	UGDH
Adenosine Nucleotides Degradation II	2.53E-01	4E-02	NT5C3L
PAK Signaling	2.5E-01	4.72E-02	WASL,PDGFRA,ITGA5,NCK1,PIK3R4
Apoptosis Signaling	2.5E-01	5.26E-02	ENDOG,CAPNS1,CHUK,BIRC3,DDFA
G Protein Signaling Mediated by Tubby	2.48E-01	4.76E-02	PLCB4,ABL1
Stearate Biosynthesis I (Animals)	2.48E-01	4.26E-02	ACSL3,null
Complement System	2.48E-01	5.71E-02	MASP2,CD46
Melatonin Signaling	2.48E-01	5.13E-02	PLCB4,GNAO1,PRKD3,PRKAR1A
Renal Cell Carcinoma Signaling	2.48E-01	5.41E-02	PTPN11,EGLN3,FH,PIK3R4
Inhibition of Angiogenesis by TSP1	2.36E-01	5.13E-02	MAPK14,NOS3
Isoleucine Degradation I	2.34E-01	3.33E-02	DLD
Coagulation System	2.24E-01	5.26E-02	PLAT,SERPIND1
Mismatch Repair in Eukaryotes	2.17E-01	4.17E-02	RFC5
Glutathione Redox Reactions I	2.17E-01	4.35E-02	GSR

Parkinson's Signaling	2.17E-01	6.25E-02	MAPK14
γ -linolenate Biosynthesis II (Animals)	2.01E-01	4.17E-02	ACSL3
Mitochondrial L-carnitine Shuttle Pathway	2.01E-01	4.55E-02	ACSL3
Cysteine Biosynthesis III (mammalia)	2.01E-01	3.33E-02	CBS