

# List of canonical pathways associated with differentially expressed genes at 9 months after infection

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Ingenuity Canonical Pathways	-log(p-value)	Ratio	Molecules
Acute Myeloid Leukemia Signaling	4E00	8.54E-02	RPS6KB1,PIK3CA,MAP2K2,CSF2RA,SOS2,LEF1,MAP2K5
Methionine Degradation I (to Homocysteine)	2.97E00	1.3E-01	MAT1A,AHCYL2,AHCY
Cysteine Biosynthesis III (mammalia)	2.8E00	1E-01	MAT1A,AHCYL2,AHCY
ERK5 Signaling	2.73E00	7.69E-02	RPS6KB1,YWHAE,MEF2D,WNK1,MAP2K5
Neurotrophin/TRK Signaling	2.61E00	6.67E-02	PIK3CA,NTRK2,MAP2K2,SOS2,MAP2K5
Role of Oct4 in Mammalian Embryonic Stem Cell Pluripotency	2.45E00	8.89E-02	PHC1,JARID2,SH3GLB1,ASH2L
NGF Signaling	2.43E00	5.08E-02	RPS6KB1,PIK3CA,SMPD4,MAP2K2,SOS2,BAX
FLT3 Signaling in Hematopoietic Progenitor Cells	2.43E00	6.58E-02	STAT4,RPS6KB1,PIK3CA,MAP2K2,SOS2
IL-4 Signaling	2.43E00	6.33E-02	RPS6KB1,PIK3CA,IL4R,NFAT5,SOS2
TCA Cycle II (Eukaryotic)	2.41E00	7.32E-02	OGDHL,SDHC,ACO1
Prostate Cancer Signaling	2.24E00	5.1E-02	PIK3CA,MAP2K2,PA2G4,SOS2,LEF1
Endometrial Cancer Signaling	2.23E00	7.02E-02	PIK3CA,MAP2K2,CSF2RA,SOS2,LEF1
p70S6K Signaling	2.19E00	4.65E-02	RPS6KB1,PIK3CA,IL4R,MAP2K2,YWHAE,SOS2
ErbB2-ErbB3 Signaling	2.08E00	6.67E-02	PIK3CA,MAP2K2,SOS2,Nrg1
Superpathway of Methionine Degradation	2.08E00	4.69E-02	MAT1A,AHCYL2,AHCY
Myc Mediated Apoptosis Signaling	2.06E00	6.67E-02	PIK3CA,YWHAE,SOS2,BAX
PI3K Signaling in B Lymphocytes	2.04E00	4.29E-02	PIK3CA,IL4R,NFAT5,MAP2K2,ATF1,ATF6B
ErbB4 Signaling	2.01E00	5.97E-02	PIK3CA,MAP2K2,SOS2,Nrg1
Actin Cytoskeleton Signaling	1.99E00	3.36E-02	FGD3,PIK3CA,MPRIP,MAP2K2,CYFIP1,SOS2,ARHGEF1,SSH1
IGF-1 Signaling	1.93E00	4.76E-02	RPS6KB1,PIK3CA,MAP2K2,YWHAE,SOS2
CD40 Signaling	1.93E00	5.71E-02	PIK3CA,MAP2K2,ATF1,MAP2K5
GM-CSF Signaling	1.93E00	5.88E-02	PIK3CA,MAP2K2,CSF2RA,SOS2
Non-Small Cell Lung Cancer Signaling	1.89E00	5.06E-02	PIK3CA,MAP2K2,PA2G4,SOS2
Erythropoietin Signaling	1.84E00	5.13E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2
JAK/Stat Signaling	1.84E00	5.71E-02	STAT4,PIK3CA,MAP2K2,SOS2
Fatty Acid $\alpha$ -oxidation	1.8E00	9.52E-02	TMLHE,ALDH3A1
Thyroid Cancer Signaling	1.74E00	7.14E-02	NTRK2,MAP2K2,LEF1
14-3-3-mediated Signaling	1.62E00	4.13E-02	PIK3CA,MAP2K2,YWHAE,BAX,SNCA
PTEN Signaling	1.62E00	3.76E-02	RPS6KB1,PIK3CA,NTRK2,MAP2K2,SOS2
Dolichol and Dolichyl Phosphate Biosynthesis	1.56E00	7.69E-02	DHDDS
PI3K/AKT Signaling	1.53E00	3.47E-02	RPS6KB1,PIK3CA,MAP2K2,YWHAE,SOS2
Melanocyte Development and Pigmentation Signaling	1.52E00	4.4E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2
ErbB Signaling	1.51E00	4.6E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2
Estrogen Receptor Signaling	1.48E00	3.68E-02	MED13,MAP2K2,SOS2,ERCC2,MNAT1
Neuregulin Signaling	1.46E00	3.92E-02	RPS6KB1,MAP2K2,GRB7,SOS2
CNTF Signaling	1.44E00	5.45E-02	RPS6KB1,PIK3CA,MAP2K2
IL-2 Signaling	1.42E00	5.17E-02	PIK3CA,MAP2K2,SOS2
Ovarian Cancer Signaling	1.42E00	3.52E-02	RPS6KB1,PIK3CA,MAP2K2,PA2G4,LEF1
VEGF Signaling	1.41E00	3.88E-02	PIK3CA,MAP2K2,YWHAE,SOS2
Neurotrophin Signaling	1.41E00	3.21E-02	PIK3CA,NTRK2,ACVR1,S1PR1,LEF1
NRF2-mediated Oxidative Stress Response	1.39E00	3.12E-02	PIK3CA,MAP2K2,PRDX1,GSTM3,MAP2K5,EPHX1
L-carnitine Biosynthesis	1.38E00	7.69E-02	TMLHE
D-glucuronate Degradation I	1.38E00	7.69E-02	DCXR
Inosine 5'-phosphate Biosynthesis II	1.38E00	6.25E-02	ATIC
Oxidized GTP and dGTP Detoxification	1.38E00	9.09E-02	DDX6
S-adenosyl-L-methionine Biosynthesis	1.38E00	1.25E-01	MAT1A
Nur77 Signaling in T Lymphocytes	1.38E00	4.76E-02	MEF2D,SIN3B,MAP2K5
Chronic Myeloid Leukemia Signaling	1.37E00	3.81E-02	PIK3CA,MAP2K2,PA2G4,SOS2
EGF Signaling	1.36E00	4.84E-02	RPS6KB1,PIK3CA,SOS2
Phospholipase C Signaling	1.36E00	2.69E-02	PEBP1,NFAT5,MPRIP,MAP2K2,MEF2D,SOS2,ARHGEF1
Glioma Signaling	1.35E00	3.57E-02	PIK3CA,MAP2K2,PA2G4,SOS2
Mouse Embryonic Stem Cell Pluripotency	1.35E00	4.04E-02	PIK3CA,MAP2K2,SOS2,LEF1
ERK/MAPK Signaling	1.33E00	2.91E-02	PIK3CA,MAP2K2,ATF1,MOS,SOS2,HSPB1
T Cell Receptor Signaling	1.33E00	3.67E-02	PIK3CA,NFAT5,MAP2K2,SOS2
Cholecystokinin/Gastrin-mediated Signaling	1.27E00	3.77E-02	MAP2K2,MEF2D,SOS2,MAP2K5
Glioblastoma Multiforme Signaling	1.27E00	3.05E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2,LEF1
Heme Biosynthesis from Uroporphyrinogen-III I	1.26E00	9.09E-02	FECH
Role of JAK1 and JAK3 in $\gamma$ c Cytokine Signaling	1.25E00	4.48E-02	PIK3CA,IL4R,FES
Rac Signaling	1.25E00	3.28E-02	RPS6KB1,PIK3CA,MAP2K2,CYFIP1
Regulation of eIF4 and p70S6K Signaling	1.25E00	2.86E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2,RPS12
Integrin Signaling	1.24E00	2.9E-02	PIK3CA,MPRIP,MAP2K2,GRB7,SOS2,TNK2
Antiproliferative Role of Somatostatin Receptor 2	1.24E00	4.23E-02	PIK3CA,MAP2K2,SSTR2
Aldosterone Signaling in Epithelial Cells	1.21E00	2.98E-02	PIK3CA,MAP2K2,SOS2,HSPB1,AHCY
Gas Signaling	1.18E00	3.31E-02	RAPGEF2,MAP2K2,CNR1,ADD1
Pyruvate Fermentation to Lactate	1.17E00	1.11E-01	LDHB
Folate Polyglutamylation	1.17E00	5.88E-02	FPGS
GDNF Family Ligand-Receptor Interactions	1.16E00	4.11E-02	PIK3CA,MAP2K2,SOS2
B Cell Receptor Signaling	1.15E00	2.94E-02	RPS6KB1,PIK3CA,NFAT5,MAP2K2,SOS2
T Helper Cell Differentiation	1.14E00	4.17E-02	STAT4,IL4R,CXCR5
Glucocorticoid Receptor Signaling	1.13E00	2.38E-02	PIK3CA,NFAT5,MAP2K2,SOS2,ERCC2,CCL3,MNAT1
Renal Cell Carcinoma Signaling	1.13E00	4.05E-02	PIK3CA,MAP2K2,SOS2
Triacylglycerol Biosynthesis	1.11E00	4.35E-02	LPPR2,AGPAT1
IL-6 Signaling	1.1E00	3.23E-02	PIK3CA,MAP2K2,SOS2,HSPB1
Pentose Phosphate Pathway (Non-oxidative Branch)	1.09E00	7.69E-02	RPE
Interferon Signaling	1.09E00	5.56E-02	PSMB8,BAX
G $\alpha$ 12/13 Signaling	1.09E00	3.17E-02	PIK3CA,MAP2K2,MEF2D,ARHGEF1
p38 MAPK Signaling	1.09E00	3.42E-02	RPS6KB1,ATF1,MEF2D,HSPB1
LPS-stimulated MAPK Signaling	1.08E00	3.66E-02	PIK3CA,MAP2K2,ATF1
Prolactin Signaling	1.08E00	3.75E-02	PIK3CA,MAP2K2,SOS2
Nucleotide Excision Repair Pathway	1.07E00	5.71E-02	ERCC2,MNAT1
VEGF Family Ligand-Receptor Interactions	1.04E00	3.57E-02	PIK3CA,MAP2K2,SOS2
Role of NFAT in Regulation of the Immune Response	1.04E00	2.53E-02	PIK3CA,NFAT5,MAP2K2,MEF2D,SOS2
PDGF Signaling	1.03E00	3.53E-02	PIK3CA,MAP2K2,SOS2
Inositol Pyrophosphates Biosynthesis	1.03E00	6.25E-02	PPIP5K1
Antigen Presentation Pathway	1.03E00	5E-02	HLA-A,PSMB8
RAR Activation	1.02E00	2.65E-02	NSD1,PIK3CA,PNRC1,ERCC2,MNAT1
Reelin Signaling in Neurons	1.01E00	3.66E-02	PIK3CA,CNR1,ARHGEF1
Regulation of IL-2 Expression in Activated and Anergic T Lymphocytes	1.01E00	3.37E-02	NFAT5,MAP2K2,SOS2
Ceramide Signaling	9.94E-01	3.37E-02	PIK3CA,SMPD4,S1PR1
Docosahexaenoic Acid (DHA) Signaling	9.88E-01	4.08E-02	PIK3CA,BAX

Calcium Signaling	9.73E-01	2.36E-02	TRPC2,MICU1,NFAT5,MEF2D,ATP2A2
Sphingomyelin Metabolism	9.73E-01	6.25E-02	SMPD4
Mechanisms of Viral Exit from Host Cells	9.69E-01	4.44E-02	CHMP2A,SH3GLB1
Neuroprotective Role of THOP1 in Alzheimer's Disease	9.69E-01	3.7E-02	YWHAE,HLA-A
Regulation of the Epithelial-Mesenchymal Transition Pathway	9.65E-01	2.62E-02	PIK3CA,MAP2K2,SOS2,LEF1,MAP2K5
TGF-β Signaling	9.58E-01	3.37E-02	MAP2K2,SOS2,ACVR1
Insulin Receptor Signaling	9.44E-01	2.82E-02	RPS6KB1,PIK3CA,MAP2K2,SOS2
EIF2 Signaling	9.36E-01	2.5E-02	RPL15,PIK3CA,MAP2K2,SOS2,RPS12
Melanoma Signaling	9.34E-01	4.35E-02	PIK3CA,MAP2K2
UV-Induced MAPK Signaling	9.34E-01	4.76E-02	SMPD4,MAP2K2
IL-12 Signaling and Production in Macrophages	9.26E-01	2.56E-02	STAT4,PIK3CA,MAP2K2,MST1
Pathogenesis of Multiple Sclerosis	9.25E-01	1.11E-01	CCL3
Calcium Transport I	9.25E-01	7.69E-02	ATP2A2
Heme Biosynthesis II	9.25E-01	4.35E-02	FECH
FAK Signaling	9.13E-01	2.94E-02	PIK3CA,MAP2K2,SOS2
3-phosphoinositide Degradation	9.09E-01	2.53E-02	DUSP23,PIIP5K1,PPP4R1,MTMR3
PAK Signaling	9.02E-01	2.83E-02	PIK3CA,MAP2K2,SOS2
UVA-Induced MAPK Signaling	9.02E-01	3.26E-02	RPS6KB1,PIK3CA,SMPD4
Thrombin Signaling	9E-01	2.43E-02	RPS6KB1,PIK3CA,MPRIP,MAP2K2,ARHGGEF1
Virus Entry via Endocytic Pathways	8.91E-01	3.03E-02	PIK3CA,HLA-A,CXADR
Crosstalk between Dendritic Cells and Natural Killer Cells	8.91E-01	3.16E-02	HLA-A,TNFSF10,CCR7
MSP-RON Signaling Pathway	8.85E-01	4E-02	PIK3CA,MST1
Aryl Hydrocarbon Receptor Signaling	8.84E-01	2.48E-02	GSTM3,BAX,ALDH3A1,HSPB1
Communication between Innate and Adaptive Immune Cells	8.71E-01	2.75E-02	HLA-A,CCL3,CCR7
HMGB1 Signaling	8.5E-01	3.03E-02	PIK3CA,MAP2K2,MAP2K5
Pentose Phosphate Pathway	8.43E-01	4.35E-02	RPE
3-phosphoinositide Biosynthesis	8.22E-01	2.27E-02	PIK3CA,DUSP23,PIIP5K1,PPP4R1
Mitochondrial Dysfunction	8.14E-01	2.15E-02	NDUFA11,UQCRRF51,SDHC,SNCA
Assembly of RNA Polymerase II Complex	8.11E-01	3.57E-02	ERCC2,MNAT1
Purine Nucleotides De Novo Biosynthesis II	8.09E-01	2.38E-02	ATIC
Amotrophic Lateral Sclerosis Signaling	8.02E-01	2.56E-02	PIK3CA,BAX,RAB5B
CD27 Signaling in Lymphocytes	7.98E-01	3.51E-02	MAP2K2,MAP2K5
HGF Signaling	7.93E-01	2.86E-02	PIK3CA,MAP2K2,SOS2
Telomerase Signaling	7.84E-01	2.91E-02	PIK3CA,MAP2K2,SOS2
Histamine Degradation	7.77E-01	3.45E-02	ALDH3A1
UVB-Induced MAPK Signaling	7.72E-01	3.64E-02	RPS6KB1,PIK3CA
Gap Junction Signaling	7.64E-01	2.27E-02	PIK3CA,MAP2K2,SOS2,MAP2K5
Role of IL-17A in Arthritis	7.59E-01	3.17E-02	PIK3CA,MAP2K2
Cdc42 Signaling	7.51E-01	2.3E-02	FGD3,MPRIP,HLA-A,TNK2
Thrombopoietin Signaling	7.47E-01	3.17E-02	PIK3CA,MAP2K2
Pancreatic Adenocarcinoma Signaling	7.25E-01	2.5E-02	PIK3CA,MAP2K2,PA2G4
CDP-diacylglycerol Biosynthesis I	7.2E-01	3.7E-02	AGPAT1
fMLP Signaling in Neutrophils	7.16E-01	2.33E-02	PIK3CA,NFAT5,MAP2K2
Renin-Angiotensin Signaling	7.16E-01	2.4E-02	PIK3CA,MAP2K2,SOS2
Death Receptor Signaling	7.11E-01	3.12E-02	TNFSF10,HSPB1
Huntington's Disease Signaling	7.1E-01	2.08E-02	PIK3CA,VTI1A,SOS2,BAX,SNCA
Molecular Mechanisms of Cancer	7.09E-01	1.85E-02	PIK3CA,MAP2K2,PA2G4,SOS2,ARHGGEF1,LEF1,BAX
Natural Killer Cell Signaling	7.09E-01	2.59E-02	PIK3CA,MAP2K2,SOS2
Fc Epsilon RI Signaling	7.09E-01	2.56E-02	PIK3CA,MAP2K2,SOS2
Role of NANOG in Mammalian Embryonic Stem Cell Pluripotency	7.09E-01	2.63E-02	PIK3CA,MAP2K2,SOS2
Sphingosine-1-phosphate Signaling	7.09E-01	2.5E-02	PIK3CA,SMPD4,S1PR1
Cardiac Hypertrophy Signaling	7.04E-01	2.05E-02	RPS6KB1,PIK3CA,MAP2K2,MEF2D,HSPB1
Induction of Apoptosis by HIV1	7E-01	3.08E-02	SLC25A3,BAX
Oxidative Ethanol Degradation III	6.95E-01	2.5E-02	ALDH3A1
Parkinson's Signaling	6.95E-01	6.25E-02	SNCA
Corticotropin Releasing Hormone Signaling	6.93E-01	2.21E-02	MAP2K2,CNR1,MEF2D
Role of BRCA1 in DNA Damage Response	6.89E-01	3.08E-02	ATF1,FANCL
IL-15 Signaling	6.79E-01	2.99E-02	PIK3CA,MAP2K2
RAN Signaling	6.72E-01	4.17E-02	CSE1L
Phosphatidylglycerol Biosynthesis II (Non-plastidic)	6.72E-01	3.03E-02	AGPAT1
Putrescine Degradation III	6.72E-01	3.33E-02	ALDH3A1
CCR3 Signaling in Eosinophils	6.7E-01	2.36E-02	PIK3CA,MPRIP,MAP2K2
Calcium-induced T Lymphocyte Apoptosis	6.68E-01	2.86E-02	MEF2D,ATP2A2
IL-17A Signaling in Airway Cells	6.58E-01	2.78E-02	PIK3CA,MAP2K2
CD28 Signaling in T Helper Cells	6.56E-01	2.27E-02	PIK3CA,NFAT5,MAP2K2
PKCθ Signaling in T Lymphocytes	6.56E-01	2.1E-02	PIK3CA,NFAT5,SOS2
Differential Regulation of Cytokine Production in Macrophages and T Helper Cells by IL-17A and IL-17F	6.5E-01	5.56E-02	CCL3
Tryptophan Degradation X (Mammalian, via Tryptamine)	6.5E-01	3.45E-02	ALDH3A1
Ethanol Degradation IV	6.5E-01	3.45E-02	ALDH3A1
RhoA Signaling	6.49E-01	2.5E-02	MPRIP,RAPGEF2,ARHGGEF1
PPARα/RXRα Activation	6.45E-01	2.09E-02	MAP2K2,SOS2,ACVR1,CYP2C18
Angiotensin Signaling	6.38E-01	2.7E-02	PIK3CA,GRB7
Role of PI3K/AKT Signaling in the Pathogenesis of Influenza	6.38E-01	2.7E-02	PIK3CA,MAP2K2
D-myo-inositol (1,4,5,6)-Tetrakisphosphate Biosynthesis	6.35E-01	2.14E-02	DUSP23,PIIP5K1,PPP4R1
D-myo-inositol (3,4,5,6)-tetrakisphosphate Biosynthesis	6.35E-01	2.14E-02	DUSP23,PIIP5K1,PPP4R1
Dendritic Cell Maturation	6.34E-01	1.93E-02	STAT4,PIK3CA,HLA-A,CCR7
Role of MAPK Signaling in the Pathogenesis of Influenza	6.28E-01	2.9E-02	MAP2K2,BAX
Gai Signaling	6.28E-01	2.27E-02	CNR1,SOS2,S1PR1
Colorectal Cancer Metastasis Signaling	6.19E-01	1.94E-02	PIK3CA,MAP2K2,SOS2,LEF1,BAX
Role of NFAT in Cardiac Hypertrophy	6.12E-01	1.93E-02	PIK3CA,MAP2K2,MEF2D,SOS2
Agrin Interactions at Neuromuscular Junction	6.1E-01	2.9E-02	Nrg1,UTRN
Macropinocytosis Signaling	6.1E-01	2.63E-02	PIK3CA,RAB34
Growth Hormone Signaling	6.01E-01	2.63E-02	RPS6KB1,PIK3CA
Chemokine Signaling	6.01E-01	2.74E-02	MPRIP,MAP2K2
Melatonin Signaling	5.92E-01	2.56E-02	MAP2K2,MAP2K5
IL-8 Signaling	5.91E-01	1.95E-02	RPS6KB1,PIK3CA,MAP2K2,BAX
Superpathway of Inositol Phosphate Compounds	5.91E-01	1.75E-02	PIK3CA,DUSP23,PIIP5K1,PPP4R1
IL-3 Signaling	5.83E-01	2.7E-02	PIK3CA,MAP2K2
Small Cell Lung Cancer Signaling	5.83E-01	2.25E-02	PIK3CA,PA2G4
IL-17 Signaling	5.74E-01	2.7E-02	PIK3CA,MAP2K2
BMP signaling pathway	5.74E-01	2.5E-02	FST,MAP2K2
Caveolar-mediated Endocytosis Signaling	5.66E-01	2.38E-02	HLA-A,RAB5B
NF-κB Activation by Viruses	5.66E-01	2.44E-02	PIK3CA,CXCR5
Protein Kinase A Signaling	5.63E-01	1.76E-02	NFAT5,MAP2K2,ATF1,YWHAE,ADD1,LEF1,MTMR3

Differential Regulation of Cytokine Production in Intestinal Epithelial Cells by IL-17A and IL-17F	5.58E-01	4.35E-02	CCL3
Gluconeogenesis I	5.58E-01	2.13E-02	ME3
Leptin Signaling in Obesity	5.58E-01	2.41E-02	PIK3CA,MAP2K2
Breast Cancer Regulation by Stathmin1	5.56E-01	1.93E-02	PIK3CA,MAP2K2,SOS2,ARHGEF1
Protein Ubiquitination Pathway	5.45E-01	1.87E-02	HLA-A,USP20,PSMB8,USP34,HSPB1
Tumoricidal Function of Hepatic Natural Killer Cells	5.42E-01	4.17E-02	BAX
Dopamine Degradation	5.42E-01	2.63E-02	ALDH3A1
HER-2 Signaling in Breast Cancer	5.42E-01	2.5E-02	PIK3CA,SOS2
G-Protein Coupled Receptor Signaling	5.41E-01	1.83E-02	PIK3CA,MAP2K2,CNR1,SOS2,S1PR1
D-myo-inositol-5-phosphate Metabolism	5.34E-01	1.91E-02	DUSP23,PPIP5K1,PPP4R1
Nitric Oxide Signaling in the Cardiovascular System	5.26E-01	2.02E-02	PIK3CA,ATP2A2
Bupropion Degradation	5.13E-01	3.03E-02	CYP2C18
Hepatic Fibrosis / Hepatic Stellate Cell Activation	5.12E-01	2.05E-02	IL4R,BAX,CCR7
Acetone Degradation I (to Methylglyoxal)	5E-01	2.78E-02	CYP2C18
Glutathione-mediated Detoxification	4.87E-01	2.27E-02	GSTM3
TR/RXR Activation	4.77E-01	2.08E-02	PIK3CA,NXPH2
FGF Signaling	4.77E-01	2.2E-02	PIK3CA,SOS2
Factors Promoting Cardiogenesis in Vertebrates	4.64E-01	2.13E-02	ACVR1,LEF1
CDK5 Signaling	4.64E-01	2.13E-02	NTRK2,MAP2K2
RANK Signaling in Osteoclasts	4.64E-01	2.11E-02	PIK3CA,MAP2K2
Role of p14/p19ARF in Tumor Suppression	4.63E-01	3.12E-02	PIK3CA
Bladder Cancer Signaling	4.57E-01	2.2E-02	MAP2K2,PA2G4
Apoptosis Signaling	4.57E-01	2.11E-02	MAP2K2,BAX
4-1BB Signaling in T Lymphocytes	4.51E-01	2.78E-02	MAP2K2
Tec Kinase Signaling	4.33E-01	1.66E-02	STAT4,PIK3CA,TNFSF10
Xenobiotic Metabolism Signaling	4.31E-01	1.67E-02	PIK3CA,MAP2K2,GSTM3,ALDH3A1,MAP2K5
Circadian Rhythm Signaling	4.3E-01	2.7E-02	PER3
Ethanol Degradation II	4.3E-01	2.33E-02	ALDH3A1
p53 Signaling	4.27E-01	2.08E-02	PIK3CA,BAX
SAPK/JNK Signaling	4.21E-01	1.96E-02	PIK3CA,SOS2
PPAR Signaling	4.21E-01	1.9E-02	MAP2K2,SOS2
Systemic Lupus Erythematosus Signaling	4.21E-01	1.6E-02	PIK3CA,NFAT5,HLA-A,SOS2
IL-9 Signaling	4.2E-01	2.5E-02	PIK3CA
Oncostatin M Signaling	4.2E-01	2.86E-02	MAP2K2
Axonal Guidance Signaling	4.11E-01	1.49E-02	PIK3CA,PLXNC1,NFAT5,NTRK2,FES,MAP2K2,SOS2
Noradrenaline and Adrenaline Degradation	4.1E-01	1.92E-02	ALDH3A1
Signaling by Rho Family GTPases	4E-01	1.58E-02	PIK3CA,MAP2K2,CYFIP1,ARHGEF1
Neuropathic Pain Signaling In Dorsal Horn Neurons	3.89E-01	1.85E-02	PIK3CA,NTRK2
Paxillin Signaling	3.89E-01	1.8E-02	PIK3CA,SOS2
April Mediated Signaling	3.82E-01	2.33E-02	NFAT5
Estrogen Biosynthesis	3.82E-01	2.04E-02	CYP2C18
Acute Phase Response Signaling	3.79E-01	1.68E-02	PIK3CA,MAP2K2,SOS2
HIF1 $\alpha$ Signaling	3.79E-01	1.87E-02	PIK3CA,LDHB
Netrin Signaling	3.74E-01	1.75E-02	NFAT5
B Cell Activating Factor Signaling	3.66E-01	2.22E-02	NFAT5
CREB Signaling in Neurons	3.64E-01	1.48E-02	PIK3CA,MAP2K2,SOS2
Fc $\gamma$ R1IB Signaling in B Lymphocytes	3.58E-01	1.69E-02	PIK3CA
iCOS-iCOSL Signaling in T Helper Cells	3.54E-01	1.63E-02	PIK3CA,NFAT5
Cell Cycle: G2/M DNA Damage Checkpoint Regulation	3.43E-01	2.08E-02	YWHAE
Role of Tissue Factor in Cancer	3.41E-01	1.74E-02	RPS6KB1,PIK3CA
Androgen Signaling	3.36E-01	1.39E-02	ERCC2,MNAT1
Role of Hypercytokinemia/hyperchemokineemia in the Pathogenesis of Influenza	3.35E-01	2.27E-02	CCL3
Role of IL-17F in Allergic Inflammatory Airway Diseases	3.35E-01	2.13E-02	MAP2K2
Clathrin-mediated Endocytosis Signaling	3.22E-01	1.54E-02	PIK3CA,SH3GLB1,RAB5B
Graft-versus-Host Disease Signaling	3.22E-01	2E-02	HLA-A
Type II Diabetes Mellitus Signaling	3.15E-01	1.24E-02	PIK3CA,SMPD4
Hereditary Breast Cancer Signaling	3.15E-01	1.56E-02	PIK3CA,FANCL
Autoimmune Thyroid Disease Signaling	3.15E-01	1.64E-02	HLA-A
Ephrin A Signaling	3.08E-01	1.92E-02	PIK3CA
P2Y Purigenic Receptor Signaling Pathway	3.03E-01	1.45E-02	PIK3CA,MAP2K2
mTOR Signaling	3E-01	1.42E-02	RPS6KB1,PIK3CA,RPS12
Nicotine Degradation III	2.96E-01	1.41E-02	CYP2C18
Semaphorin Signaling in Neurons	2.84E-01	1.92E-02	FES
Melatonin Degradation I	2.79E-01	1.56E-02	CYP2C18
Lymphotoxin $\beta$ Receptor Signaling	2.73E-01	1.64E-02	PIK3CA
GNRH Signaling	2.71E-01	1.33E-02	MAP2K2,SOS2
Actin Nucleation by ARP-WASP Complex	2.63E-01	1.52E-02	SOS2
Glioma Invasiveness Signaling	2.58E-01	1.67E-02	PIK3CA
Glutamate Receptor Signaling	2.58E-01	1.45E-02	SLC38A1
AMPK Signaling	2.57E-01	1.2E-02	RPS6KB1,PIK3CA
Superpathway of Melatonin Degradation	2.53E-01	1.27E-02	CYP2C18
TREM1 Signaling	2.48E-01	1.41E-02	CCL3
Nicotine Degradation II	2.48E-01	1.2E-02	CYP2C18
Serotonin Degradation	2.48E-01	1.32E-02	ALDH3A1
Cell Cycle: G1/S Checkpoint Regulation	2.39E-01	1.52E-02	PA2G4
Estrogen-Dependent Breast Cancer Signaling	2.35E-01	1.39E-02	PIK3CA
Pyridoxal 5'-phosphate Salvage Pathway	2.3E-01	1.37E-02	MAP2K2
Retinoic acid Mediated Apoptosis Signaling	2.26E-01	1.45E-02	TNFSF10
Mitotic Roles of Polo-Like Kinase	2.14E-01	1.43E-02	PLK3
Remodeling of Epithelial Adherens Junctions	2.14E-01	1.49E-02	RAB5B
IL-10 Signaling	2.1E-01	1.28E-02	IL4R
CCR5 Signaling in Macrophages	2.06E-01	1.05E-02	CCL3
Basal Cell Carcinoma Signaling	2.03E-01	1.37E-02	LEF1
PEDF Signaling	1.99E-01	1.28E-02	PIK3CA