

Role of Osteoblasts, Osteoclasts and Chondrocytes in Rheumatoid Arthritis	7.03E-01	5.88E-02	ACPS,IFNG,PIK3CA,MMP14,TAB2,TCF7L1,MAPK12,IL17,IL17A,COL1A1,FOXO1,IL1RN,CTNNB1,BIRC3
Regulation of IL-2 Expression in Activated and Anergic T Lymphocytes	6.95E-01	7.47E-02	PIK3CA,MAP2K2,ZAP70,TGFB2,KRAS,MAPK12
CD40 Signaling	6.89E-01	7.14E-02	TANK,PIK3CA,MAP2K2,IKBAP,MAPK12
ERK5 Signaling	6.80E-01	7.69E-02	RRAS2,RP58KA3,KRAS,WNK1,ATF2
Autoreactive Thyroid Disease Signaling	6.84E-01	6.96E-02	PRK1,HLA-A,TPO,TCGA
TNFR1 Signaling	6.84E-01	7.69E-02	TANK,CASP8,PAK6,BIRC3
CD44 Receptor Signaling	6.84E-01	7.14E-02	UBO1,UBP,COPIN,ALDH8A1
RAA Signaling	6.83E-01	6.33E-02	KPN3,MAPK12
Phosphatidylinositol Biosynthesis II (Non-plastic)	6.83E-01	6.06E-02	GPAM,MBOAT2
Cervical Cancer Signaling	6.84E-01	7.34E-02	MTOR,PIK3CA,RRAS2,MAP2K2,MSH2,KRAS,TCF7L1,CGA,CTNNB1
Hypoxia Signaling in the Cardiovascular System	6.49E-01	7.58E-02	HSP90AB1,HSP90AA1,UBE2V2,UBE2J1,ATF2
Proline Biosynthesis I (From Arginine)	6.49E-01	5E-02	LAT
Pentose Phosphate Pathway (Oxidative Branch)	6.49E-01	5.09E-02	PGD
Tetrahydrofolate Salvage from 5,10-methylenetetrahydrofolate	6.49E-01	1E-01	MTHFD2
Protein Degradation	6.49E-01	6.33E-02	CPD1
2-Acylaldehyde Degradation I	6.49E-01	5.88E-02	MUT
Phenylalanine Degradation I (Aerobic)	6.49E-01	6.33E-02	PCBD1
D-myo-inositol (1,4,5)-trisphosphate Degradation	6.49E-01	6.7E-02	IMR1,INPP5F
Gq12/13 Signaling	6.37E-01	6.35E-02	PI3K,PIK3CA,RRAS2,MAP2K2,KRAS,MAPK12,CTNNB1,RASA1
Tetraspanin Signaling	6.32E-01	6.8E-02	PIK3CA,RRAS2,MAP2K2,HSP90AB1,HDAC7,HSP90AA1,KRAS
Oxidant N Signaling	6.19E-01	6.97E-02	RRAS2,MAP2K2,KRAS
Inhibition of Angiogenesis by TSP1	6.19E-01	7.69E-02	CD47,MAPK12,GUCY1B3
Interferon Signaling	6.19E-01	6.33E-02	IFNG,PTK2,FAK1
Remodeling of Epithelial Adherent Junctions	6.14E-01	7.49E-02	MET,NME1,CTNNB1,ACTN3,TUBB2B
Neurotrophin/Trk Signaling	6.14E-01	6.67E-02	PIK3CA,RRAS2,MAP2K2,KRAS,ATF2
Synaptic Locus Tern Potentiation	6.12E-01	6.2E-02	RRAS2,CAMK2D,MAP2K2,KRAS,PLC11,RAP1A,GRINA,ATF2
1D-myo-inositol Hexakisphosphate Biosynthesis II (Mammalian)	6.11E-01	7.14E-02	INPP5F,TPKA
D-myo-inositol (1,3,4)-trisphosphate Biosynthesis	6.11E-01	6E-02	INPP5F,TPKA
DNA Damage-Induced 14-3-3 Signaling	6.11E-01	5.2E-02	RAD17,ATR
Aggrin Interactions at Neuromuscular Junction	5.99E-01	7.25E-02	PTK2,RRAS2,PAK6,KRAS,MAPK12
Anil-Hydrocarbon Receptor Signaling	5.95E-01	5.99E-02	ALDH1L2,HSP90AB1,KRAS,RRAS2,TGFB2,HSP90AA1,ATR,ALDH8A1,SMARCA4
CCR5 Signaling in Macrophages	5.92E-01	5.26E-02	GNB5,GN2,GNB1L,MAPK12,GN27
Growth Hormone Signaling	5.92E-01	6.58E-02	PIK3CA,GHR,IGF1R,RP58KA3,SOC34
Arginine Biosynthesis IV	5.77E-01	4.17E-02	LAT
Superpathway of Serine and Glycine Biosynthesis I	5.77E-01	5.56E-02	UBAC2
Chondroitin and Dermatan Biosynthesis	5.77E-01	7.69E-02	C3GALNACT2
Glycine Cleavage Complex	5.77E-01	6.67E-02	AMT
UDP-N-acetyl-D-glucosamine Biosynthesis II	5.77E-01	6.67E-02	JAP1
Exonuclease Biosynthesis	5.77E-01	5.56E-02	CYPS1A1
Phospholipase C Signaling	5.74E-01	6.38E-02	PLD3,GNB5,RP58KA3,KRAS,RAP1A,GN27,RRAS2,MAP2K2,HDAC7,ZAP70,GN2,MARK3,GNB1L
LVB-Induced MAPK Signaling	5.69E-01	7.27E-02	MTOR,PIK3CA,RP58KA3,MAPK12
IL-2 Signaling	5.69E-01	6.14E-02	IFNG,PRF1,HLA-A,MYD88,IRF1,SOC34,MAPK12
Integrin Signaling	5.59E-01	5.8E-02	PTK2,ARHGAP3,PIK3CA,RRAS2,CAPNS1,MAP2K2,PAK6,TPSAB1,KRAS,TPSAB1,RAP1A,ACTN3
CR1/CR2/CR3 Signaling	5.51E-01	6.13E-02	PIK3CA,GNB5,KRAS,CXCL12,GN27,GN27
IL-3 Signaling	5.51E-01	6.79E-02	PIK3CA,RRAS2,MAP2K2,FOXO1,KRAS
PEDF Signaling	5.51E-01	6.41E-02	PIK3CA,RRAS2,KRAS,MAPK12,TCF12
EMC signaling pathway	5.51E-01	6.29E-02	RRAS2,MAP2K2,KRAS,MAPK12,ATF2
Thrombospondin Signaling	5.3E-01	6.55E-02	PIK3CA,RRAS2,MAP2K2,KRAS
Role of CHK Proteins in Cell Cycle Checkpoint Control	5.3E-01	7.02E-02	RAD17,ATM,N,ULK1,ATR
Type II Diabetes Mellitus Signaling	5E-01	6.58E-02	IFNG,PRF1,HLA-A,MYD88,IRF1,SOC34,MAPK12
Nox3 Signaling	5E-01	6.89E-02	FURIN,PRPFJ1,GN27
Epithelial Adhesion Junction Signaling	5E-01	7.25E-02	MET,RRAS2,MAP2K2,KRAS,TCF7L1,CTNNB1,RAP1A,ACTN3,TUBB2B
Protein Signaling	5.21E-01	6.25E-02	PIK3CA,RRAS2,MAP2K2,KRAS,SOC34
PC-Epsilon IR Signaling	5.19E-01	5.88E-02	PIK3CA,RRAS2,MAP2K2,INPP5F,FCERT1,KRAS,MAPK12
Role of MNDC8 in Mammalian Embryonic Stem Cell Pluripotency	5.19E-01	6.14E-02	PIK3CA,RR1,RRAS2,MAP2K2,KRAS,TCF7L1,CTNNB1
EGF Signaling	5.13E-01	6.45E-02	MTOR,PIK3CA,MAPK12,RASA1
Cisplatin-Induced Multiforme Signaling	5.12E-01	5.49E-02	MTOR,PIK3CA,RRAS2,MAP2K2,FOXO1,IGF1R,KRAS,PLCL1,CTNNB1
GHR1 Signaling	5.09E-01	5.33E-02	PI3K,PIK3CA,CAMK2D,MAP2K2,PAK6,KRAS,MAPK12,ATF2
IL-4 Signaling	5.07E-01	6.33E-02	MTOR,PIK3CA,RRAS2,INPP5F,KRAS
IL-6 Signaling	5.07E-01	6.33E-02	MTOR,PIK3CA,RRAS2,RP58KA3,MAPK12,IFN1,IFN1R,IFN1R1,EIF3J,RP18A,KRAS,EIF2AK3
IL-7 Signaling	5.02E-01	5.5E-02	PIK3CA,RP16,RP14,RRAS2,MAP2K2,RP132,RP127,EIF3J,RP18A,KRAS,EIF2AK3
Differential Regulation of Cytokine Production in Intestinal Epithelial Cells by IL-17A and IL-17F	4.94E-01	6.7E-02	IFNG,IL17A
Mitochondrial Dysfunction	4.93E-01	4.84E-02	CXCL17,FURIN,UCP2,PRDX5,ATP5A1,NDUFA12,NDUFA3,MAPK12,NDUFA7
Role of PKR in Interferon Induction and Antiviral Response	4.91E-01	6.52E-02	IFNG,TAB2,ATF2
Transcriptional Regulatory Network in Embryonic Stem Cells	4.89E-01	6.33E-02	RR1,TCF7L1,SOX2
Systemic Lupus Erythematosus Signaling	4.89E-01	5.2E-02	PTPRC,MTOR,PRPF18,RNP33,PIK3CA,RRAS2,IL1RN,HLA-A,CD72,PRPF48,CREM,KRAS,SNRPD3
Histidine Degradation III	4.73E-01	5.66E-02	MTHFD2
Springverlein Metabolism	4.73E-01	6.29E-02	PCBD1
Tumorigenic Function of Hepatic Natural Killer Cells	4.7E-01	6.33E-02	CASP8,PRF1
AMPK Signaling	4.69E-01	4.79E-02	KAT5B,MTOR,PIK3CA,PP1M1B,CHRN1,PP1M1A,MAPK12,SMARCA4
ATM Signaling	4.67E-01	5.66E-02	SMC3,ULK1,MAPK12,ATF2
VDR/RXR Activation	4.59E-01	6.17E-02	CXCL10,IFNG,FOXO1,PPAR,TCF2
ERK4 Signaling	4.59E-01	6.97E-02	PIK3CA,RRAS2,MAP2K2,KRAS
IL-12 Signaling and Production in Macrophages	4.5E-01	5.13E-02	STAT4,ALOX15,IFNG,PIK3CA,MAP2K2,MYD88,TGFB2,MAPK12
Triacylglycerol Degradation	4.47E-01	6.29E-02	LPL,ND32
Linear Cancer Resilience by Statinm1	4.43E-01	3.11E-02	PIK3CA,RRAS2,CAMK2D,MAP2K2,GNB5,KRAS,TRPC5,GN2,GNB1L,GN27,TUBB2B
IL-6 Signaling	4.43E-01	5.85E-02	COL1A1,PIK3CA,RRAS2,MAP2K2,IL1RN,KRAS,MAPK12
Retinon Signaling	4.41E-01	6E-02	PIK3CA,GNB5,GN2,GNB1L,PCD4,RAP1A,GN27,GUCY1B3
Chk1/Chk2 DNA Damage Checkpoint Regulation	4.38E-01	6.25E-02	PRKDC,KAP1,ATR
RhoA Signaling	4.34E-01	5.83E-02	PTK2,ARHGAP3,KTNT1,SEPT7,IGF1R,RDX,ARHGAP12
CD38 MAPK Signaling	4.34E-01	5.99E-02	IL1RN,TCF7L1,TAB2,RP58KA3,TGFB2,MAPK12,ATF2
Calcium Transport I	4.32E-01	7.69E-02	ATP2A2
Retinon Transformations I	4.32E-01	3.12E-02	MTHFD2
Gap Junction Signaling	4.3E-01	6.11E-02	PIK3CA,RRAS2,MAP2K2,CSNK1G3,KRAS,PLC11,CTNNB1,GUCY1B3,TUBB2B
Role of JAK1 and JAK3 in γ -Cytokine Signaling	4.29E-01	5.97E-02	PIK3CA,RRAS2,KRAS,IL7
IKK α Signaling	4.22E-01	5.66E-02	IKK α ,NEMO,MAPK12
Senescent Cell-Secreted Cell Signaling	4.19E-01	5.99E-02	RRAS2,MAP2K2,KRAS,MAPK12,CTNNB1,GUCY1B3,ACTN3,TUBB2B,DCLN,ATF2
Activation of IRF by Cytosolic Pattern Recognition Receptors	4.12E-01	5.66E-02	TANK,IKBAP,MAPK12,ATF2
IL-17A Signaling in Neutrophils	4.12E-01	5.66E-02	PIK3CA,MAP2K2,MAPK12,IL17A
Pyridoxal 5-phosphate Salvage Pathway	4.12E-01	6.48E-02	CDK18,MAP2K2,PRPF48,GRK6
IL-1 β Production	4.09E-01	6.45E-02	PTK2,TRK
TCF-3 Signaling	3.97E-01	6.45E-02	PIK3CA,MAP2K2,TGFB2,KRAS,MAPK12
Ketovays	3.97E-01	5.2E-02	HADHA
CAMP-mediated signaling	3.97E-01	6.67E-02	AKAP12,CAMK2D,MAP2K2,MC1R,CXCR2,CREM,RGS14,PRK41,RAP1A,PTGER4,AKAP11,ATF2
Non-Small Cell Lung Cancer Signaling	3.87E-01	5.06E-02	PIK3CA,RRAS2,MAP2K2,KRAS
Role of PI3K/AKT Signaling in the Pathogenesis of Influenza	3.87E-01	5.14E-02	KPN3,IFNG,PIK3CA,MAPK2
TNF α Signaling	3.85E-01	6.09E-02	TANK,BIRC3
Intrinsic Prothrombin Activation Pathway	3.85E-01	5.71E-02	COL1A1,SE,RPNC1
Superpathway of Cholesterol Biosynthesis	3.87E-01	2.33E-02	HADHA,CYPS1A1
Some Hepatob Signaling	3.87E-01	6.09E-02	LYR3B,ARRB2
Ketogenesis	3.85E-01	4.76E-02	HADHA
Pentose Phosphate Pathway	3.85E-01	4.38E-02	PGS
Erythropoietin Signaling	3.64E-01	5.13E-02	PIK3CA,RRAS2,MAP2K2,KRAS
Mitotic Roles of Polo-Like Kinase	3.64E-01	5.71E-02	SMC3,HSP90AB1,CDC26,HSP90AA1
RAMK Signaling in Osteoclasts	3.59E-01	5.26E-02	PIK3CA,MAP2K2,TAB2,MAPK12,BIRC3
IL-10 Signaling	3.59E-01	5.13E-02	CCR1,IL1RN,ARG2,MAPK12
Macrophage-Induced Signaling	3.5E-01	5.26E-02	MET,PIK3CA,RRAS2,KRAS
Superpathway of Methionine Degradation	3.5E-01	3.12E-02	CDOT,MUT
Paraneoplastic Adenocarcinoma Signaling	3.5E-01	4.89E-02	PTPRC,PIK3CA,CAMK2D,ZAP70,PLEKHA4,ICOSLG
T Helper Cell Differentiation	3.42E-01	5.66E-02	STAT4,IFNG,ICOSLG,IL17A
Hematopoiesis from Multipotent Stem Cells	3.39E-01	6.33E-02	IL7
Glucanase Degradation	3.39E-01	4.17E-02	HADHA
Oleate Biosynthesis II (Animals)	3.38E-01	5.66E-02	UHP2P
Viral Entry via Endocytic Pathways	3.38E-01	6.09E-02	MYO5B,ARRB2
Regulation of eIF4 and PROSRK Signaling	3.35E-01	4.57E-02	MTOR,PIK3CA,RRAS2,MAP2K2,EIF3J,RP18A,KRAS,MAPK12
CD27 Signaling in Lymphocytes	3.29E-01	5.26E-02	MAP2K2,IKBAP,MAPK12
TWIK Signaling	3.29E-01	5.99E-02	CAPNS1,MAPK12,MAPK12
B Cell Development	3.19E-01	6.06E-02	PTPRC,IL7
Semaphorin Signaling in Neurons	3.14E-01	5.77E-02	PTK2,RET,PAK6
mTOR Signaling	3.13E-01	7.45E-02	MTOR,PIK3CA,PLD3,RRAS2,RP58KA3,EIF3J,RP18A,KRAS,GNB1L
Fatty Acid Activation	3.13E-01	5.29E-02	SLC27A2
Choline Biosynthesis III	3.13E-01	5.56E-02	PLD3
Cholesterol Biosynthesis I	3.13E-01	2.5E-02	CYPS1A1
Bile Acid Biosynthesis, Neutral Pathway	3.13E-01	1.72E-02	SO2P
Cholesterol Biosynthesis I (via 26-ethylsterols)	3.13E-01	2.5E-02	CYPS1A1
Hamamine Degradation	3.13E-01	3.45E-02	ALDH8A1
Cholesterol Biosynthesis III (via Desmosterol)	3.13E-01	2.5E-02	CYPS1A1
Insulin Receptor Signaling	3.09E-01	6.09E-02	MTOR,PIK3CA,RRAS2,MAP2K2,FOXO1,INPP5F,KRAS
Circadian Rhythm Signaling	3.04E-01	5.41E-02	GRINA,ATF2
TWIK Signaling	3.04E-01	5.26E-02	CASP8,BIRC3
Ethanol Degradation II	3.04E-01	4.65E-02	RDH14,ALDH8A1
NF- κ B Activation by Viruses	3.02E-01	4.89E-02	PIK3CA,RRAS2,KRAS,IKBAP
Leptin Signaling in Obesity	2.93E-01	4.89E-02	PIK3CA,MAP2K2,F,COX1,PLCL1
Mevalonate Pathway I	2.9E-01	3.57E-02	HADHA
Fatty Acid oxidation	2.9E-01	4.76E-02	ALDH8A1
IL-8 Signaling	2.9E-01	5E-02	PIK3CA,BCL3
Role of JAK2 in Hormone-like Cytokine Signaling	2.9E-01	5.66E-02	GHR,SOC34
G-Protein-Coupled Receptor Signaling	2.89E-01	4.79E-02	PIK3CA,CAMK2D,RRAS2,MC1R,MAP2K2,CXCR2,RGS14,KRAS,PRK41,RASA1,RAP1A,PTGER4,AKAP11,ATF2
Dendritic Cell Maturation	2.83E-01	4.35E-02	STAT4,COL1A1,PIK3CA,HLA-A,MYD88,IL1RN,MAPK12,PLCL1,ATF2
Role of Cytokines in Mediating Communication between Immune Cells	2.81E-01	5.49E-02	IFNG,IL1RN,IL17A
Type II Diabetes Mellitus Signaling	2.8E-01	3.79E-02	MTOR,PIK3CA,CAMK2D,ZAP70,SOC34,MAPK12,SMPD3
Coupling System	2.77E-01	5.29E-02	SERPINC1,SERPIND1
IL-17A Signaling in Fibroblasts	2.77E-01	5.66E-02	MAPK12,ATF2
Sterate Biosynthesis I (Animals)	2.77E-01	4.09E-02	SLC27A2,DBT
Noradrenaline and Adrenaline Degradation	2.77E-01	3.85E-02	RDH14,ALDH8A1
HER-2 Signaling in Breast Cancer	2.75E-01	6E-02	PIK3CA,RRAS2,FOXO1,KRAS
VEGF Family Ligand-Receptor Interactions	2.75E-01	4.76E-02	PIK3CA,RRAS2,MAP2K2,KRAS
Phagolysosomes	2.71E-01	4.55E-02	COPI1,PLD3,PLCL1
Toll-like Receptor Signaling	2.71E-01	4.84E-02	LYR3B,ARRB2,MAPK12
INOS Signaling in Splanchnic Muscle Cells	2.7E-01	3.24E-02	SNTA1
Calcium Signaling	2.69E-01	2.5E-02	CAMK2D,MYD88,CHRN1B1,TRPC5,SLC8A1,ATP2A2,RAP1A,GRINA,ATF2
Amniotic Lateral Sclerosis Signaling	2.63E-01	4.27E-02	PIK3CA,CAPNS1,BIRC3,CACNA2A,GRINA
Glutamate Receptor Signaling	2.62E-01	4.35E-02	GN27,GN27,GRINA
Regulation of the Epithelial-Mesenchymal Transition Pathway	2.61E-01	7.71E-02	MET,PIK3CA,RRAS2,MAP2K2,TGFB2,RRP1,KRAS,TCF7L1,JAG1
β 7OSK Signaling	2.59E-01	4.67E-02	MTOR,PIK3CA,RRAS2,MAP2K2,KRAS,PLCL1
Oxipamine-DRK2 Feedback in cAMP Signaling	2.58E-01	4.35E-02	CANXG5,CREM,PLCL1,ATP2A2,GUCY1B3,CACNA2A,GRINA,ATF2
Role of Wnt/PCP Signaling in the Pathogenesis of Influenza	2.58E-01	5.49E-02	IFNG,CN1G3,TCF7L1,CTNNB1
Antigen Presentation Pathway	2.53E-01	5E-02	IFNG,HLA-A
Atherosclerosis Signaling	2.53E-01	4.41E-02	COL1A1,ALOX15,IFNG,IL1RN,PL,ALOX5
Death Receptor Signaling	2.52E-01	4.89E-02	TANK,CASP8,BIRC3
Extrinsic Prothrombin Activation Pathway	2.52E-01	5E-02	SERPINC1
Mannanose Resect in Leukocytes	2.52E-01	4.17E-02	MSH2
Oxidative Ethanol Degradation III	2.52E-01	2.5E-02	ALDH8A1
Induction of Apoptosis by HIV-1 Receptors	2.48E-01	4.89E-02	IKBAP,MAPK12,BIRC3
Ceramide Signaling	2.43E-01	4.49E-02	PIK3CA,RRAS2,KRAS,SMPD3
RNA Charging	2.42E-01	2.47E-02	IVARS,IARS
L-carnitine Biosynthesis II (Animals)	2.3E-01	4.17E-02	SLC27A2
Mitochondrial L-carnitine Shuttle Pathway	2.3E-01	4.55E-02	SLC27A2
Putrescine Degradation III	2.30E-01	3.33E-02	ALDH8A1
IL-6 Cell Activating Factor Signaling	2.21E-01	4.44E-02	IKBAP,MAPK12
Neuroprotective Role of THCP1 in Alzheimer's Disease	2.21E-01	3.7E-02	IFNG,HLA-A
Cardiomyocyte Differentiation via BMP Receptors	2E-01	5E-02	ATF2
Differential Regulation of Cytokine Production in Macrophages and T Helper Cells by IL-17A and IL-17F	2E-01	5.66E-02	IL17A

Tryptophan Degradation X (Mammalian, via Tryptamine)	2.2E-01	3.45E-02	ALDH3A1
Ethanol Degradation IV	2.2E-01	3.45E-02	ALDH3A1
Superpathway of Geranylgeranylphosphate Biosynthesis I (via Mevalonate)	2.2E-01	2.78E-02	HADHA
Endoplasmic Reticulum Stress Pathway	2.2E-01	5.56E-02	EIF2AK3
CaMKKs Signaling	2.05E-01	4.55E-02	ATR
DNA Methylation and Transcriptional Repression Signaling	1.93E-01	4.35E-02	RBBP7