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Table S6: Differentially expressed genes included in the IPA canonical pathways significantly activated or inhibited by ibuprofen in interleukin 1β - treated chondrocytes

Canonical pathway	adj. p	z-score	Genes
Integrin Signaling	4.37E-08	**4.95**	ITGAM,TSPAN2,VCL,ITGA3,NEDD9,RHOC,ITGB2,RAP1A,ITGB7,FYN,GIT1,ITGB3,RAP2B,RAPGEF1,RND3,RAP2A,CAPN2,FGFR3,ITGB5,RRAS2,PAK1,ITGAX,ITGA11,ACTN1,ITGA9,ACTR3,PLCG2,ABL1,CAV1,CAPN5,NCK2,MYLK,RAP1B,TTN,ITGA5
Actin Cytoskeleton Signaling	0.0022	**4.24**	FGF1,GNA13,VCL,ITGA3,FGF18,LBP,RAP1A,GIT1,RAP2B,TIAM2,RAP2A,FGFR3,RRAS2,FLNA,PAK1,MSN,ACTN1,ACTR3,CSK,MYLK,RAP1B,TTN,PDGFA,ITGA5,TMSB10/TMSB4X
PI3K Signaling in B Lymphocytes	0.00032	**3.44**	PLCD1,CALM1,NFATC2,RRAS2,RAP1A,CAMK2A,PLCD3,ATF3,PLCG2,NFKB2,ABL1,FYN,ITPR3,BCL10,PLCB3,RAP1B,RAP2B,RAP2A,LYN
Agrin Interactions at Neuromuscular Junction	0.0037	**3.32**	RRAS2,ITGA3,PAK1,RAP1B,NRG1,ITGB3,ITGB2,RAP2B,RAP1A,ITGA5,RAP2A
IL-8 Signaling	7.08E-07	**3.29**	ITGAM,GNA13,MMP2,GNG11,RHOC,ITGB2,LASP1,PLD1,RAP1A,VCAM1,FLT1,ITGB3,RAP2B,PRKCH,VEGFC,RND3,RAP2A,FGFR3,HBEGF,ITGB5,RRAS2,VEGFA,ITGAX,HMOX1,PRKCD,GNB5,CCND1,BCL2,RAP1B,GNG2,ICAM1
ERK5 Signaling	0.0083	**3.16**	GNA13,RRAS2,MAP3K8,RAP1B,RAP2B,RAP1A,FOSL1,MAP3K3,MEF2A,RAP2A
Glioblastoma Multiforme Signaling	1.32E-06	**3.14**	WNT5A,RHOC,RAP1A,FZD7,FZD1,CDKN1A,PLCB3,RAP2B,CDK6,RND3,RAP2A,FGFR3,PLCD1,RRAS2,PDGFRA,WNT5B,IGF1,FZD4,FZD9,PLCD3,PLCG2,PRKCD,ITPR3,CCND1,RAP1B,PDGFA,WNT9A
Paxillin Signaling	4.27E-06	**3.05**	FGFR3,ITGAM,ITGB5,RRAS2,VCL,ITGA3,PAK1,ITGAX,ITGA11,ACTN1,ITGB2,ITGA9,RAP1A,ITGB7,CSK,NCK2,RAP1B,ITGB3,RAP2B,ITGA5,RAP2A
ErbB2-ErbB3 Signaling	0.029	**3.00**	FGFR3,RRAS2,CCND1,STAT5A,RAP1B,NRG1,RAP2B,RAP1A,RAP2A
FcγRIIB Signaling in B Lymphocytes	0.025	**3.00**	FGFR3,DOK1,CACNB1,RRAS2,RAP1B,RAP2B,RAP1A,RAP2A,LYN,PLCG2
Renal Cell Carcinoma Signaling	0.0016	**3.00**	FGFR3,TGFB1,RRAS2,VEGFA,PAK1,EGLN3,RAP1A,HIF1A,RAP1B,RAP2B,RAPGEF1,ETS1,RAP2A
Bladder Cancer Signaling	6.31E-06	**3.00**	FGFR3,FGF1,RRAS2,MMP2,DAPK1,VEGFA,FGF18,THBS1,MMP13,RAP1A,ABL1,CCND1,CDKN1A,RAP1B,MMP10,RAP2B,VEGFC,RAP2A
14-3-3-mediated Signaling	0.0058	**2.89**	FGFR3,PLCD1,RRAS2,RAP1A,TUBB4B,PLCD3,PLCG2,TUBB2A,PRKCD,TUBA1A,PLCB3,RAP1B,TUBA1B,RAP2B,PRKCH,RAP2A
PKCθ Signaling in T Lymphocytes	0.030	**2.84**	FGFR3,NFATC2,RRAS2,FCER1G,RAP1A,CAMK2A,PLCG2,NFKB2,FYN,CACNB1,BCL10,MAP3K8,RAP1B,RAP2B,MAP3K3,RAP2A
Calcium Signaling	0.0083	**2.84**	TP63,HDAC5,ATP2B4,SLC8B1,CALM1,NFATC2,PRKAR2B,RCAN3,TPM4,ATP2B1,RAP1A,CAMK2A,PRKAR1A,CACNB1,ITPR3,RAP1B,PRKAR1B,RAP2B,HDAC9,MEF2A,RAP2A
Thrombin Signaling	0.0025	**2.83**	FGFR3,PLCD1,GNA13,RRAS2,GNG11,RHOC,RAP1A,CAMK2A,PLCD3,PLCG2,NFKB2,PRKCD,ITPR3,GNB5,MYLK,PLCB3,RAP1B,GNA14,RAP2B,GNG2,PRKCH,RND3,RAP2A

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CREB Signaling in Neurons	0.0019	**2.83**	FGFR3,PLCD1,GNA13,CALM1,RRAS2,PRKAR2B,GNG11,RAP1A,CAMK2A,PLCD3,PLCG2,PRKAR1A,PRKCD,CACNB1,ITPR3,GNB5,PLCB3,RAP1B,PRKAR1B,GNA14,RAP2B,GNG2,PRKCH,RAP2A
HGF Signaling	1.15E-06	**2.83**	FGFR3,RRAS2,ITGA3,PAK1,IL6,ELF3,RAP1A,PLCG2,ETS2,PRKCD,CCND1,MAP3K8,ELF4,CDKN1A,RAP1B,RAP2B,PRKCH,RAPGEF1,ETS1,ITGA5,MAP3K3,RAP2A
Non-Small Cell Lung Cancer Signaling	0.0029	**2.83**	FGFR3,ABL1,ITPR3,RRAS2,CCND1,RAP1B,RAP2B,CDK6,RAP1A,RASSF5,RARB,RAP2A
α-Adrenergic Signaling	5.37E-06	**2.71**	CALM1,RRAS2,PRKAR2B,GNG11,RAP1A,PLCG2,PRKAR1A,PRKCD,ITPR3,GNB5,GYS1,RAP1B,PRKAR1B,RAP2B,GNG2,PRKCH,ADRA2A,RAP2A
Endothelin-1 Signaling	0.0098	**2.68**	FGFR3,PLCD1,GNA13,RRAS2,PLD1,RAP1A,HMOX1,PLCD3,PLCG2,PRKCD,NOS2,ITPR3,PLCB3,RAP1B,GNA14,ABHD3,RAP2B,PRKCH,PLA2G4A,RAP2A
Mouse Embryonic Stem Cell Pluripotency	0.0052	**2.67**	FGFR3,RRAS2,ID1,JAK2,TCF4,JAK1,RAP1A,FZD7,FZD4,FZD9,FZD1,RAP1B,RAP2B,RAP2A
NF-κB Activation by Viruses	0.00089	**2.67**	FGFR3,ITGB5,RRAS2,ITGA3,ITGB2,RAP1A,NFKB2,PRKCD,RAP1B,ITGB3,RAP2B,PRKCH,ITGA5,RAP2A
Macropinocytosis Signaling	4.27E-07	**2.67**	FGFR3,ITGB5,RRAS2,PAK1,RAB34,ITGB2,RAP1A,ITGB7,PLCG2,PRKCD,CSF1,ABI1,RAP1B,ITGB3,RAP2B,PRKCH,PDGFA,ITGA5,RAP2A
CXCR4 Signaling	0.0048	**2.67**	FGFR3,GNA13,RRAS2,GNG11,PAK1,RHOC,RAP1A,PRKCD,ITPR3,GNB5,PLCB3,RAP1B,GNA14,RAP2B,GNG2,PRKCH,RND3,RAP2A,LYN
p70S6K Signaling	0.0026	**2.67**	FGFR3,PLCD1,RRAS2,JAK1,PLD1,RAP1A,PLCD3,PLCG2,AGT,PRKCD,PPP2R5A,PLCB3,RAP1B,RAP2B,PRKCH,RAP2A,LYN
cAMP-mediated signaling	0.0034	**2.56**	ADRB2,ADORA2A,CALM1,PRKAR2B,CNR1,PDE1B,PDE5A,PDE4B,RAP1A,CAMK2A,PRKAR1A,AKAP12,CREM,DUSP1,PDE4D,RGS2,PRKAR1B,PKIG,PDE3A,ADRA2A,PTGIR,AKAP6,DUSP4,S1PR1
ErbB4 Signaling	0.014	**2.53**	FGFR3,PRKCD,RRAS2,RAP1B,NRG1,RAP2B,PRKCH,RAP1A,RAP2A,PLCG2
Chemokine Signaling	0.013	**2.53**	CCL7,CALM1,RRAS2,PLCB3,RAP1B,RAP2B,RAP1A,CAMK2A,RAP2A,PLCG2
Actin Nucleation by ARP-WASP Complex	0.00078	**2.53**	RRAS2,ITGA3,NCK2,RAP1B,RHOC,RAP2B,RAP1A,ACTR3,ITGA5,RND3,RAP2A
Regulation of Cellular Mechanics by Calpain Protease	5.25E-05	**2.53**	RRAS2,VCL,ITGA3,ACTN1,RAP1A,CAPN5,CCND1,RAP1B,RAP2B,CDK6,ITGA5,RAP2A,CAPN2
Synaptic Long Term Potentiation	0.00011	**2.52**	PLCD1,CALM1,RRAS2,PRKAR2B,RAP1A,CAMK2A,PLCD3,PLCG2,PRKAR1A,PRKCD,ITPR3,PPP1R3C,PLCB3,RAP1B,PRKAR1B,GNA14,RAP2B,PRKCH,RAP2A
Cardiac Hypertrophy Signaling	0.00015	**2.50**	ADRB2,GNA13,CALM1,TGFB1,PRKAR2B,GNG11,RHOC,IL6,RAP1A,MAP3K8,PLCB3,PRKAR1B,GNA14,RAP2B,MAP3K3,RND3,RAP2A,FGFR3,PLCD1,RRAS2,IGF1,PLCD3,PLCG2,PRKAR1A,GNB5,RAP1B,GNG2,ADRA2A,MEF2A

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ERK/MAPK Signaling	1.91E-05	**2.50**	ITGA3,PRKAR2B,PPARG,ELF3,RAP1A,ETS2,FYN,PPP2R5A,DUSP1,PPP1R3C,PRKAR1B,RAP2B,RAPGEF1,PLA2G4A,DUSP4,RAP2A,FGFR3,KSR1,RRAS2,PAK1,DUSP2,PLCG2,PRKAR1A,PRKCD,ELF4,RAP1B,ETS1,ITGA5
fMLP Signaling in Neutrophils	0.0012	**2.50**	FGFR3,CALM1,NFATC2,RRAS2,GNG11,RAP1A,ACTR3,NFKB2,PRKCD,ITPR3,GNB5,PLCB3,RAP1B,RAP2B,GNG2,PRKCH,RAP2A
PAK Signaling	0.00013	**2.50**	FGFR3,ARHGAP10,EPHB3,RRAS2,ITGA3,PDGFRA,PAK1,EPHA3,RAP1A,NCK2,MYLK,RAP1B,GIT1,RAP2B,PDGFA,ITGA5,RAP2A
Rac Signaling	0.026	**2.50**	FGFR3,RRAS2,ITGA3,PAK1,PLD1,RAP1A,ACTR3,NFKB2,CDK5R1,RAP1B,RAP2B,ITGA5,RAP2A
IL-3 Signaling	0.0018	**2.50**	FGFR3,RRAS2,JAK2,PAK1,JAK1,RAP1A,PRKCD,STAT5A,RAP1B,RAP2B,PRKCH,RAPGEF1,RAP2A
Acute Myeloid Leukemia Signaling	0.0017	**2.50**	FGFR3,PML,RRAS2,TCF4,JUP,RAP1A,NFKB2,CCND1,PIM1,STAT5A,KITLG,RAP1B,RAP2B,RAP2A
Telomerase Signaling	0.0011	**2.50**	FGFR3,HDAC5,TEP1,RRAS2,ELF3,RAP1A,ETS2,ABL1,PPP2R5A,ELF4,CDKN1A,RAP1B,RAP2B,ETS1,HDAC9,RAP2A
Wnt/Ca+ pathway	5.25E-05	**2.50**	PLCD1,NFATC2,WNT5A,WNT5B,FZD7,CAMK2A,FZD4,FZD9,PLCD3,PLCG2,NFKB2,FZD1,PLCB3
PTEN Signaling	0.00087	**-2.67**	FGFR3,RRAS2,ITGA3,PDGFRA,TGFBR3,RAP1A,NFKB2,NGFR,CCND1,BCL2,FLT1,CDKN1A,RAP1B,CNKSR3,RAP2B,ITGA5,RAP2A

adj. p = FDR-corrected p-value

z-score = IPA z-score. z > 2 denotes activation and z < -2 inhibition of the pathway.

Red = upregulated genes

Blue = downregulated genes