

**Supplementary Table 3: List of Upstream Regulators identified by Ingenuity Pathway Analysis (IPA).** IPA of the genes shown to be significantly (FDR corrected P value < 0.01) up-regulated or down-regulated >2-fold at 24 h vs basal was performed. To ensure gene annotations were current, Illumina probe IDs were used to interrogate the Ensembl BioMart database ([www.ensembl.org/biomart/martview](http://www.ensembl.org/biomart/martview)), and the Ensembl gene lists used in pathway and functional analyses (Ingenuity Systems): the identified Upstream Regulators are presented. The Molecule Type for each Regulator is provided with a prediction of its activation status (np = no prediction possible). A positive z score indicates the Regulator is activated, with higher scores indicating a more activated status; conversely, a negative score indicates the Regulator is inhibited. The p value provided is an indication of the significance of overlap between the identified Regulator and the target genes found to be regulated from the microarray dataset. Target Molecules (listed by gene name) are those within the Mechanistic Network for the identified Regulator; the total number of genes for the Network are highlighted with the number of genes identified from the microarray dataset in parentheses.

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TNF	cytokine	Activated	7.561	3.9E-48	ABCC3,ACSL1,ACTA2,ADORA2A,ARHGDI3,ASS1,ATF3,BAMBI,BCL3,BIRC3,BMP2,BTG3,CCL2,CCL20,CD44,CDO1,CEBPB,CFB,CH25H,CITED2,COL3A1,CRYAB,CTSK,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,CYP26B1,ELF3,F3,FTH1,G0S2,GCH1,HK2,ICAM1,IER3,IL11,IL1B,IL1RN,IL32,IL6,IL7R,IRAK3,IRF1,LAMB3,LBP,LIF,MAFF,MGST2,MMP1,MMP10,MMP13,NFKBIA,NFKBIZ,NGF,NOD2,NOS2,NOV,OLFML2B,PI3,PLA2G16,PLAUR,PLOD2,PLPP1,PPP1R3C,PRDM1,PRSS23,PTGS2,PTPN12,PTX3,RARRES3,RGS16,RGS2,S100A9,SAA1,SAT1,SDC2,SEMA3C,SEPP1,SERPINE1,SOCS1,TAGLN,TGFBR2,TGM2,TNFAIP3,TNFRSF1B,TNIP1,TYMP,VEGFA,WISP2,WLS,WTAP	153 (16)
IL1A	cytokine	Activated	6.043	4.6E-43	ADORA2A,ALDH3A2,BIRC3,CCL2,CCL20,CCL8,CD44,CTSK,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,FGF2,FTH1,GCH1,HSD11B1,ICAM1,IL11,IL1B,IL1RN,IL32,IL6,KITLG,MMP1,MMP10,MMP13,MT2A,NFKBIA,NFKBIZ,NGF,NOS2,PDZK1IP1,PI3,PTGS2,PTX3,S100A9,SAA1,SERPINA1,SERPINE1,TNFAIP3,ZC3H12A	132 (15)
IL1B	cytokine	Activated	6.319	4.2E-33	ABCC3,ACAN,AKR1B1,ASS1,ATF3,BIRC3,CCL2,CCL20,CCL7,CEBPB,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,DDIT4,ELF3,ENPP1,FGF2,GCH1,HIF1A,HSD11B1,ICAM1,IL11,IL1B,IL1RN,IL24,IL32,IL6,IRF1,LBP,LIF,MAP3K8,MMP1,MMP13,MT2A,NFKBIA,NFKBIZ,NGF,NOS2,NRP1,ORM1,PLD1,PLXDC2,PTGS2,PTX3,RARB,RGS16,SAA1,SERPINE1,TNFAIP3,TNFAIP6,UAP1,VEGFA,ZC3H12A	142 (16)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TGFB1	growth factor		0.523	2.7E-29	ACAN,ACTA2,AQP9,BCL3,CCL2,CD44,CITED2,COL12A1,COL3A1,COL6A3,COL7A1,CTGF,CXCL2,CXCL8,DLX5,ENPP1,F3,FGF2,FSCN1,FYN,GLDN,GPER1,HSPB1,ICAM1,IL11,IL1B,IL6,IRAK2,IRF1,LIF,MMP1,MMP10,MMP13,NET1,NFKBIA,NGF,NOS2,NRP1,PLAUR,PLOD2,PRDM1,PTGS2,PTX3,S100A4,SERPINA1,SERPINE1,SLC39A8,SLC7A5,SMTN,TAGLN,TGFBR2,TGFBR3,TGIF1,TGM2,THBS1,TUBA1A,TWIST1,TYMP,VEGFA,ZEB2	162 (19)
RELA	transcription regulator	Activated	3.887	6.3E-27	ARHGDIB,BIRC3,BMP2,CCL2,CCL20,CD44,CEBPB,CFB,CITED2,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,ELF3,FSCN1,GCH1,HIF1A,ICAM1,IL1B,IL1RN,IL6,IRF1,MMP1,NAMPT,NFKBIA,NOS2,PI3,PLD1,PRDM1,PTGS2,PTX3,SAA1,SAA2,TGM2,TNFAIP3,TREM1,TWIST1,VEGFA	157 (18)
NFkB (complex)	complex	Activated	4.782	1.2E-25	BAMBI,BIRC3,BMP2,CCL2,CCL20,CCL8,CD44,CEBPB,CTGF,CXCL1,CXCL2,CXCL6,CXCL8,ELF3,F3,FTH1,G0S2,GAS6,HIF1A,HSPB1,ICAM1,IER3,IL1B,IL24,IL6,IRF1,LIF,MMP1,MMP13,NAMPT,NFKBIA,NFKBIZ,NOS2,PID1,PLD1,PTGS2,SLC11A2,SLC7A5,SOCS1,TGM2,TNFAIP3,TNIP1,TWIST1,VEGFA,WTAP	180 (18)
IFNG	cytokine	Activated	3.178	2.9E-25	ACTA2,ADORA2A,AQP9,ASS1,ATF3,AUTS2,BCL3,C5AR1,CCL2,CCL20,CD44,CEBPB,CH25H,CTGF,CTSK,CXCL1,CXCL2,CXCL6,CXCL8,FCER1G,FGF2,FTH1,GCH1,GLDN,GPER1,ICAM1,IFIT1,IL11,IL1B,IL1RN,IL32,IL6,IL7R,IRF1,JAK2,KCNMA1,LIF,MAP3K8,MMP1,MMP13,NFKBIA,NFKBIZ,NGF,NOS2,PLA2G16,PRDM1,PTGS2,PTX3,RARRES3,SLC29A1,SLC7A11,SLC7A5,SMTN,SOCS1,TGFBR2,TGFBR3,THBS1,THY1,TNFRSF1B,TREM1,TYMP,VEGFA	154 (17)
MYD88	other	Activated	4.974	6.9E-25	ACSL1,AK3,ALDH1A2,BAMBI,BCL3,CCL2,CD38,CD44,CH25H,CTSK,CXCL1,CXCL2,CXCL6,CXCL8,FBXO32,ICAM1,IL1B,IL1RN,IL32,IL6,IRF1,MAFF,MMP10,NFKBIA,NFKBIZ,NOD2,NOS2,PILRA,PTGS2,SAA1,SERPINE1,SLC7A2,SLCO3A1,SOCS1,TNFAIP3,ZC3H12A	161 (16)
IKBKB	kinase	Activated	2.849	1E-22	ATF3,BMP2,CCL2,CD44,CEBPB,CH25H,CTSK,CXCL2,CXCL6,CXCL8,FS CN1,FYN,GCH1,HK2,ICAM1,IL11,IL1B,IL1RN,IL6,MYO1D,NFKBIA,NGF,NOS2,PTGS2,PTX3,RGS16,S100A4,SEMA3C,SOCS1,TGFBR2,TNFRSF1B,TWIST1,UACA,VEGFA	136 (18)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TP53	transcription regulator		-0.493	1.7E-22	ACTA2,AKR1B1,ALDH1A2,ASS1,ATF3,BCL3,BIRC3,CITED2,CNN3, COL3A1,CRYAB,CTGF,CXCL1,CXCL8,DDIT4,DSTN,FGF2,FHL1,FYN, GAS6,GLIPR1,GPX3,GSN,HIF1A,HK2,HSPB1,HYAL1,ID3,IDH1,IER3,IL1B, IL6,KCNMA1,KIAA0101,KITLG,LIF,LIMA1,LIMK2,LPP,MAP3K8,MGST2, MMP13,MYOF,AMPT,NDRG2,NFKBIA,NOS2,NRP1,PDGFRB,PGM3, PLA2G16,PLAUR,PLOD2,PQLC3,PRDM1,PRRX2,PTGS2,PTPN12,RRAD, S100A4,SAT1,SEMA3C,SERPINE1,SLC2A12,TGFBR2,TGM2,THBS1, THY1,TNFRSF1B,TPD52L1,TWIST1,VEGFA,ZC3H12A,ZEB2	166 (17)
TREM1	transmembrane receptor	Activated	3.099	7.6E-22	ATF3,CCL20,CCL7,CEBPB,CFB,CXCL1,CXCL2,CXCL5,CXCL8,F3,GREM 1, IL1B,IL6,IRF1,LIF,MAFF,MAP3K8,MMP1,MMP10,MT1M,NFKBIA,NOD2, PIM2,PLD1,PTGS2,RGS16,RHOU,RRAD,SPINK1,THBS1,TMEM158,YRD	156 (15)
P38 MAPK	group	Activated	2.844	4.8E-20	ATF3,CCL2,CCL8,CD44,CD82,CEBPB,COL3A1,CTGF,CTSK,CXCL6, CXCL8,DIO2,FBXO32,ICAM1,IER3,IL1B,IL32,IL6,MMP1,MMP13,NGF, NOS2,PTGS2,PTPN12,RRAD,SDC2,SERPINE1,THBS1,TNIP1,TREM1, VEGFA	139 (19)
TLR7	transmembrane receptor	Activated	3.63	8.4E-20	ATF3,CCL2,CCL20,CD38,CD44,CEBPB,CXCL1,CXCL2,CXCL8,FCMR, FGF2,ICAM1,IER3,IFIT1,IL1B,IL6,IRF1,KCNMA1,NFKBIA,PLAT,PTX3, SOCS1,TNFAIP3,ZC3H12A	137 (14)
TLR4	transmembrane receptor	Activated	4.152	1.9E-19	ATF3,BAMBI,CCL2,CCL20,CCL8,CD38,CD44,CFB,CITED2,CTSK,CXCL2, CXCL6,CXCL8,FBXO32,ICAM1,IL1B,IL6,IRAK3,IRF1,MMP1,NFKBIA, NFKBIZ,NOD2,NOS2,PLAT,PTGS2,RGCC,RGS16,SLC7A11,SLCO3A1,SO CS1, ST3GAL1,TNFAIP3,TREM1,ZC3H12A	140 (17)
STAT3	transcription regulator	Activated	3.385	3.9E-19	ACTA2,BCL3,C5AR1,CCL2,CCL20,CD9,CEBPB,COL3A1,CXCL2,CXCL6, CXCL8,FCER1G,FSCN1,GLIPR1,HIF1A,HIST2H2AA3/HIST2H2AA4,HK2, ICAM1,IFIT1,IL1B,IL1RN,IL6,IRF1,JAK2,LBP,NAMPT,NFKBIZ,NOS2, PRDM1,PTGS2,PTPN2,SAA1,SOCS1,TAGLN,TNFRSF1B,TWIST1,VEGFA	126 (17)
TICAM1	other	Activated	4.385	1.4E-18	ACSL1,AK3,BCL3,CCL2,CD38,CFB,CH25H,CXCL2,CXCL6,CXCL8,ICAM1, IFIT1,IL1B,IL6,IRF1,MAFF,NFKBIA,NFKBIZ,PILRA,PTGS2,SERPINE1, SLC7A2,SOCS1,TNFAIP3	158 (17)
FAS	transmembrane receptor		0.238	1.8E-18	BIRC3,CCL2,CD44,COL3A1,COL6A3,CTGF,CXCL1,CXCL2,CXCL8,ICAM1 , IER3,IL1B,IL6,IRF1,MME,MMP1,MMP13,NFKBIA,NOS2,PLD1,SERPINE1,	155 (18)
PDGF BB	complex	Activated	3.825	4.1E-18	ACTA2,ATF3,BCL3,CCL2,CCL8,CD44,CEBPB,CTGF,CXCL8,F3,GFPT2 ,IER3,IL1B,IL6,LIF,NAMPT,PTGS2,RGS2,TAGLN,TGM2,THBS1,TNFAIP3, VEGFA	151 (19)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
Cg	complex	Activated	3.485	4.4E-18	ACTA2,AKR1C3,BMP2,BTG3,CCL2,CEBPB,CNPY4,CXCL8,ESM1,FHL1,FYN,G0S2,HIF1A,HK2,HSD11B1,ICAM1,IER3,IL11,IL1B,LIF,MARCH3,MMP1,NOS2,NRP1,PLAT,PLAUR,PRLR,PTGS2,PTX3,RGS2,SFRP4,STEAP1,TGFBR3,TMEM158,TNFAIP6,VEGFA	139 (18)
IL6	cytokine	Activated	4.201	8.1E-18	ABCC3,BCL3,BMP2,C5AR1,CCL2,CCL20,CD82,COL3A1,CTSK,CXCL2,CXCL6,ICAM1,IL1RN,IL6,IL7R,IRF1,LBP,MMP10,MMP13,NAMPT,NFKBIA,NOS2,ORM1,PTGS2,SAA1,SERPINA1,SLC39A14,SLC40A1,SOCS1,STAT4,TGM2,THBS1,TNFRSF1B,VEGFA	152 (15)
Alpha catenin	group	Inhibited	-3.55	9.3E-18	BCL3,BIRC3,COL3A1,COL6A3,CXCL2,CXCL6,IL1B,IL6,IRF1,MMP13,NFKBIA,NFKBIZ,NOV,PTGS2,PTX3,S100A9,SAA1,STEAP2,TGM2,TNFAIP3,TNFAIP6,TWIST1,ZEB2	82 (7)
JUN	transcription regulator	Activated	3.213	1.3E-17	BIRC3,CCL2,CCL8,CD44,CXCL1,CXCL5,CXCL8,DIO2,FTH1,ICAM1,IL1B,IL24,IL6,IL7R,LIF,MMP1,MMP10,MMP13,MT2A,NFKBIA,NFKBIZ,NGF,NOS2,PLAUR,PTGS2,PTX3,SAA1,SERPINE1,VEGFA	154 (17)
TAB1	enzyme	Inhibited	-2.883	1.4E-17	BIRC3,CCL20,CFB,CH25H,CXCL8,GCH1,IFIT1,IL1B,IL6,MMP13,PTGS2,RGS2,SAA1	153 (18)
IL4	cytokine	np	1.549	1.6E-17	ACSL1,ACTA2,ASS1,BCL3,CCL2,CCL20,CD38,CD44,CITED2,CRIP1,CTSK,CXCL6,CXCL8,GPM6B,HSD11B1,ICAM1,IER3,IL1B,IL1RN,IL24,IL6,IL7R,IRF1,KITLG,MMP1,MMP10,NFKBIA,NKX3-1,NOS2,PIM2,PLD1,PLOD2,PMP22,PRDM1,SLC29A1,SOCS1,STAT4,THY1	152 (14)
IL13	cytokine	np	-1.161	2.5E-17	ACSL1,ALDH1A2,ATF3,CCL2,CCL20,CTGF,CTSK,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,G0S2,GAS6,GAS7,GPX3,GSN,HSD11B1,IL1B,IL1RN,IRAK3,KITLG,MMP13,NOS2,PID1,SERPINA1,SLC43A3,SOCS1,TGM2,THBS1,TNFRSF1B	154 (15)
ERBB2	kinase	np	1.919	3.1E-17	ACSL4,BCL3,BIRC3,CCL20,CD82,CD9,CEBPB,COL6A3,COL7A1,CTGF,CXCL8,CYP4B1,ELF3,FSCN1,GAS6,GHR,GPX3,HIF1A,IL6,MMP1,MMP10,MMP13,NET1,NRP1,PLAUR,PTGS2,SERPINE1,SMTN,SRPX,STK17B,TA	163 (23)
SMARCA4	transcription regulator	np	1.846	4.7E-17	AHNAK,ANGPTL2,ARHGDI3,BAMBI,BMP4,CCL2,CD44,COL7A1,CTGF,CYP4B1,EBF1,F3,GPR68,ICAM1,ID3,IER3,IFIT1,IL11,IL1B,IL6,IL7R,IRF1,MAFF,MMP1,MT1H,NFKBIZ,NRP1,PLAT,PLAUR,PTX3,RGS2,SDC2,SEPP1,SERPINB7,SLC40A1,SLC43A3,SPINK1,SRPX,ST3GAL1,TAGLN,THY1,TRIM1	
IRAK4	kinase	np	1.197	2.2E-16	ATF3,BIRC3,CCL20,CXCL2,CXCL6,CXCL8,IL1B,IL6,IRF1,LIF,MAP3K8,NFKBIA,NFKBIZ,NOS2,RGS16,SOCS1,TNFAIP3,ZC3H12A	138 (13)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
DUSP1	phosphatase	Inhibited	-2.334	8.2E-16	BMP2,CIDEA,COL3A1,CXCL2,CXCL8,IER3,IL1B,IL1RN,IL6,NOS2,NRP1,PLAT,PRDM1,PTGS2,S100A9,SERPINE1,SOCS1,WISP2	160 (20)
IKBKG	kinase	Activated	2.985	1.2E-15	BMP2,CEBPB,CH25H,CLDN23,CXCL2,CXCL6,CXCL8,GCH1,HK2,ICAM1,IL11,IL1B,IL1RN,IL6,NGF,PTX3,RGS16,SEMA3C,TNFAIP3,TNFRSF1B,VEGFA	93 (13)
IL17A	cytokine	Activated	3.698	1.8E-15	ACTA2,CCL2,CCL20,CEBPB,CTGF,CXCL1,CXCL2,CXCL5,CXCL6,CXCL8,ICAM1,IL1B,IL1RN,IL6,MMP13,NFKBIZ,NOS2,NRP1,PTGS2,RGS16,S100	169 (20)
ERK	group	Activated	2.694	4.2E-15	CCL2,COL3A1,CTGF,CXCL2,CXCL6,CXCL8,DIO2,FGF2,ICAM1,IL1B,IL6,LIF,MMP1,MMP13,NFKBIZ,PK4,PRDM1,PTGS2,RARB,SERPINE1,TGM2,THBS1	142 (19)
CHUK	kinase	Activated	3.368	4.9E-15	BMP2,CEBPB,CH25H,CLDN23,CXCL2,CXCL6,CXCL8,GCH1,HK2,ICAM1,IL11,IL1RN,IL6,NFKBIA,NGF,PTGS2,PTX3,RGS16,SEMA3C,TNFRSF1B,TWIST1, VEGFA	100 (12)
MAP3K7	kinase	np	-1.244	9.7E-15	BIRC3,CCL20,CFB,CH25H,CXCL8,GCH1,IFIT1,IL1B,IL6,MMP13,RGS2,SAA1, SERPINE1	154 (18)
WNT5A	cytokine	np	0.53	1.2E-14	ARHGDI1,CCL2,CD38,CXCL1,CXCL2,CXCL6,CXCL8,IL1B,IL6,LAMB3,MMP10,MMP13,NOS2,PGF	170 (17)
TNFRSF1A	transmembrane receptor	Activated	3.662	2.3E-14	ABCC3,CCL2,CCL20,CD44,CTGF,CXCL1,CXCL2,CXCL8,DIO2,GHR,ICAM1,IL1B,IL24,IL6,LBP,MMP13,SAA1,SERPINE1,VEGFA	132 (16)
NR3C2	ligand-dependent nuclear receptor	np	0.196	3.1E-14	CNN3,COL3A1,CTGF,DDIT4,GHR,GPX3,IL1B,IL6,MT1H,NDRG2,NFIA,PGF, PTGS2,RGS2,RRAD,SEMA3C,SERPINE1,VEGFA	
NR3C1	ligand-dependent nuclear receptor	Inhibited	-2.145	3.3E-14	BIRC3,C1QTNF1,CCL2,CD38,CEBPB,CIDEA,CRYAB,CXCL2,CXCL8,DDIT4,DNER,GLIPR1,GPX3,HSD11B1,ICAM1,IDH1,IER3,IL11,IL1B,IL24,IL6,IL7R,IRF1,MMP13,NAMPT,NFKBIA,NOD2,NOS2,PRLR,PTGS2,RGS2,SCG2,SEMA3C,SERPINA1,SERPINE1,STK17B,THBS1,TNFAIP3,TNFAIP6,TNFRSF1B,TNFRSF21,TRAF3IP2	182 (20)
COL18A1	other	Inhibited	-3.023	6E-14	CCL2,DDIT4,F3,FGF2,HIF1A,ICAM1,ID3,IL6,MMP1,NOS2,NRP1,PTGS2,SERPINE1,THBS1,TNFRSF21,VEGFA	176 (23)
SMAD4	transcription regulator	np	0.673	8.4E-14	ANGPT1,BMP2,BMP4,CCL20,CITED2,CTGF,FSCN1,ICAM1,IER3,IL1B,IRAK3,NAMPT,NFKBIA,PDGFRB,PILRA,PTGS2,PTX3,SERPINE1,THBS1,TNFAIP6, VEGFA	143 (17)
ESR1	ligand-dependent nuclear receptor	np	-0.355	8.6E-14	AHNAK,AQP9,ASS1,BMP2,BMP4,CCL2,CCL20,CEBPB,CXCL8,DDIT4,GHR,GP1R,GREM1,HIF1A,IER3,IL1B,IL6,LBP,MALL,MMP1,NOS2,PRLR,PRSS23,PTGS2,PTX3,SERPINE1,SLC2A12,SLC39A8,SLC7A11,SLC7A2,SLC7A5, SULF1,TNFAIP3,TNFAIP6,VEGFA,WISP2	135 (17)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
EZH2	transcription regulator	Activated	2.811	1.2E-13	BIRC3,BMP4,C15orf48,CD82,CXCL1,CXCL2,CXCL8,GPR68,IL11,IL24,IL6,NFKBIA,PIM2,PRICKLE1,PTGS2,RARRES3,S100A4,SA A1,SA A2,SERPINA1, TWIST1,VEGFA	129 (12)
ERK1/2	group	Activated	2.683	2.8E-13	AKR1C3,CCL2,CCL8,CD44,CEBPB,COL3A1,CTGF,CXCL8,F3,FGF2,ICAM1,IFIT1,IL11,IL1B,IL6,MMP1,MMP13,NAMPT,NOS2,PTGS2,SERPINE1,TREM1,VEGFA	132 (16)
PI3K (complex)	complex	Activated	3.467	3.8E-13	ABCC4,CEBPB,CXCL8,FBXO32,HIF1A,IFIT1,IL1B,IL1RN,IL6,IL7R,MMP13,NOS2,PRDM1,PTGS2,PTPN12,RGS2,SERPINE1,TGM2,TNFAIP3,TREM1,	152 (18)
CEBPA	transcription regulator	Activated	2.122	4.4E-13	ACSL1,AKR1B1,AKR1C3,ASS1,CCL20,CEBPB,CXCL8,FHL1,G0S2,GCH1,GLIPR1,HSD11B1,IER3,IL1RN,IL6,KCNMB1,MT2A,NRP1,PLOD2,PPP1R3C,PRDM1,PRLR,PTGS2,PTX3,RGS2,S100A9,SA A1,SERPINE1,THBS1,TNFAIP6	120 (10)
ECSIT	transcription regulator	Activated	3.241	5E-13	BCL3,CD44,CXCL8,IER3,IL1B,IL1RN,IL6,NFKBIA,PLAUR,PTGS2,TNFAIP3	96 (13)
HIF1A	transcription regulator	Activated	2.346	7.6E-13	ACTA2,CD44,CTGF,CXCL2,CXCL8,FHL1,FSCN1,FYN,GPER1,HIF1A,HIST2H2AC,HK2,HSPB1,IL1B,IL6,NOS2,NOV,PIM2,PLOD2,PTGS2,SCG2,SERPINE1,SLC25A37,SLC29A1,SLC40A1,SULF1,VEGFA	174 (24)
HMOX1	enzyme		-1.669	8.2E-13	ANGPT1,CCL2,CXCL1,CXCL5,CXCL8,ICAM1,ID3,IL1B,IL1RN,IL6,NOS2,PTGS2,THBS1,TYMP,VEGFA	176 (22)
FOXL2	transcription regulator	Activated	3.05	1.6E-12	ATF3,BMP2,CCL20,CH25H,CXCL2,CYP26B1,ICAM1,IER3,IL11,LIF,MAFF,PTGS2,RGS2,TNFAIP3	
NFKB1	transcription regulator	Activated	2.301	1.7E-12	BAMBI,BMP2,CCL20,CD82,CFB,CXCL2,CXCL8,ELF3,FSCN1,IL1B,IL1RN,IL6,IRF1,MAP3K8,NFKBIA,NOS2,PI3,PTGS2,PTX3,VEGFA	126 (16)
IL10RA	transmembrane receptor	Inhibited	-4.041	2.9E-12	ACSL1,ASS1,BMP2,BMP4,CFB,DDIT4,FHL1,GAS6,GHR,GSTM1,IL1RN,IRF1,KITLG,NAMPT,NDRG2,NOS2,NOV,P3H2,PLA2G16,PMP22,RIPK3,SCIN,SLC2A6,SLC7A11,SORBS2,TGM2,TREM1	
OSM	cytokine	Activated	3.004	3.1E-12	ABCC3,ABCC4,ACTA2,CCL2,CCL20,CXCL2,HIF1A,IL1B,IL6,LBP,MMP1,MMP10,MMP13,SERPINA1,VEGFA	175 (19)
Jnk	group	Activated	3.119	3.4E-12	ACTA2,ALDH1A2,BIRC3,CCL2,COL3A1,CTGF,CXCL6,CXCL8,FBXO32,ICAM1,IL1B,IL6,MMP1,MMP13,NOS2,PTGS2,SERPINE1,TGM2	159 (17)
PPARG	ligand-dependent nuclear receptor	np	0.117	6E-12	ACSL1,ACSL4,ACTA2,ALDH1A2,CCL2,CIDEA,CXCL2,CXCL6,CXCL8,CYP4B1,DHRS3,HK2,ICAM1,IDH1,IL1B,IL6,INSIG2,LAMB3,NOS2,PDK4,PID1,PRDM1,PTGS2,RGL1,SA A1,SERPINA1,SERPINE1,SOCS1,TGFBR2,VEGFA	132 (17)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
EGFR	kinase	Activated	3.006	6E-12	CEBPB,CTGF,CXCL8,F3,ICAM1,IL1B,IL6,IRF1,MMP1,MMP13,NOS2,PLAUR,PTGS2,SERPINE1,TGM2,TNFAIP6,VEGFA,ZEB2	165 (19)
HGF	growth factor	Activated	2.309	7.1E-12	ACTA2,BIRC3,CCL2,CD44,COL3A1,CTGF,CTSK,CXCL2,CXCL8,ELF3,ICAM1,IL6,MMP1,PLAUR,PTGS2,PTPN2,S100A9,THBS1,VEGFA	136 (18)
IL1R1	transmembrane receptor	Activated	2.758	1.4E-11	ABCC3,CXCL1,CXCL2,CXCL8,ICAM1,IL1B,IL6,LBP,NOS2,ORM1,PTGS2,SAA1	136 (16)
TNFSF12	cytokine	Activated	3.211	1.6E-11	CCL2,CXCL2,CXCL6,CXCL8,FBXO32,ICAM1,IL1B,IL6,MMP1,MMP10,MM P13,NFKBIA,PTX3,S100A9	151 (17)
SP1	transcription regulator	np	1.192	2.1E-11	ACSL1,ACTA2,ATF3,BMP4,CCL2,CCL20,CD79B,CEBPB,CITED2,COL7A1,CRYAB,CXCL8,CYBRD1,FGF2,GHR,HIF1A,HK2,PLAUR,PRLR,PTGS2,SERPINE1,SLC11A2,SLC22A4,SLC2A12,SLC39A8,SOCS1,TGFBR2,VEGFA,ZEB2	186 (18)
EP300	transcription regulator	np	1.732	2.4E-11	ADORA2A,ANGPT1,CCL2,CNN3,CRIM1,CXCL8,DHRS3,EVI2A,FNDC3B,HSD11B1,ID3,IL6,IL7R,MAP3K8,MME,MMP1,NKX3-1,NOS2,PDGFRB,PDK4,PRLR,PTGS2,RGL1,SLC7A11,STAT4,TNFAIP3	145 (19)
MYC	transcription regulator	np	-0.686	2.6E-11	ABCC3,ABCC4,ACAN,ACSL4,ANGPT1,CD44,COL3A1,COL6A3,CRYAB,CS PG4,DDIT4,EBF1,FBXO32,FTH1,GAMT,HIF1A,HK2,HSPB1,IDH1,LAMB3,NFKBIA,NGF,NRP1,PCDH18,PDGFRB,PLAUR,PMP22,PRDM1,SAT1,SE RPINE1,SHMT1,SLC22A4,SLC7A5,SMS,ST3GAL1,THBS1,THY1,VEGFA,WLS	168 (13)
TP73	transcription regulator	np	0.124	3.2E-11	ACTA2,ATF3,CCL2,CNN3,CRYAB,CXCL1,CXCL2,DDIT4,DHRS3,FGF2,IL 1B,IL6,MINOS1-BL1/NBL1,MMP13,MT1B,PIEZO2,PMP22,SAT1,SERPINA1,	185 (19)
CEBPB	transcription regulator	np	1.67	3.8E-11	ACTA2,AKR1C3,CDO1,CEBPB,CXCL8,FBXO32,FHL1,HSD11B1,IER3,IL1 1RA,IL1B,IL24,IL6,MMP1,MMP10,NFE2L1,NOS2,NRP1,PDK4,PI3,PLAUR,PRLR,PTGS2,SAA2,SERPINE1	149 (17)
CD40LG	cytokine	Activated	3.564	4.8E-11	BIRC3,CCL2,CCL20,CXCL8,GCH1,ICAM1,IL1B,IL6,IRF1,NAMPT,NFKBIA,NOS2,PRDM1,PTGS2,TNFAIP3,VEGFA	135 (14)
TLR3	transmembrane receptor	Activated	3.279	6E-11	ATF3,CCL20,CD38,CFB,CTSK,CXCL2,CXCL8,GCH1,IER3,IFIT1,IL1B,IL6,IRF1,MAP3K8,NFKBIZ,NOS2,PTGS2,PTX3,RARB,SERPINE1,TNFRSF1B	154 (15)
FSH	complex	Activated	2.42	7.7E-11	ACTA2,ALDH3A2,CH25H,CTGF,DHRS3,DLX5,DNAJB9,HK2,HSD11B1,IL1RN,IL6,MINOS1-NBL1/NBL1,MT1H,MT2A,MT3,PLPP1,PRLR,PTGS2,RGS16,TGFBR3,THBS1,TNFAIP3,TNFAIP6,TPM2,TUBA1A,VEGFA	116 (10)
EGF	growth factor	Activated	3.026	9.8E-11	ACSL4,CD44,CEBPB,CXCL8,ELF3,HIF1A,MMP10,NGF,PTGS2,PTPN12,S100A4,SERPINA1,SERPINE1,ST3GAL1,TGFBR2,VEGFA	158 (19)
PTGS2	enzyme	Activated	3.268	1E-10	ANG,ANGPT1,BIRC3,CCL2,CXCL5,CXCL8,ICAM1,IL11,IL1B,IL6,MMP1,N OS2,PTGS2,ST3GAL1,TGM2,TNFAIP6,VEGFA	160 (17)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
EHF	transcription regulator	np	1.994	1.3E-10	BMP4,CCL20,GPR68,IL1RN,IL6,MMP1,PLAT,PLAUR,S100A9,SAA1,SAA2, SERPINE1,THY1,VEGFA	
CLDN7	other	np	-1.069	1.6E-10	ARHGDIB,CA12,CCL20,CTGF,CXCL8,F3,HIST2H2AA3/HIST2H2AA4, HIST2H2AC,MT2A,PANX2,PLA2G16,PLGRKT,PQLC3,SERPINE7	
STAT6	transcription regulator	np	1.123	1.8E-10	ACSL1,BCL3,CCL20,CD38,CRIP1,CXCL2,GPM6B,IL1RN,IL24,IL6,IRF1,JA K2,MMP13,NFKBIA,PDK4,PIM2,PLD1,PTGS2,SERPINA1,SOCS1,STAT4	151 (16)
IL18	cytokine	Activated	3.546	2.2E-10	CCL2,CCL20,CD44,CXCL8,ICAM1,IL1B,IL6,MMP1,MMP13,NFKBIZ,NOS2, PTGS2,TGFBR2,VEGFA	162 (19)
IL10	cytokine	np	-1.106	2.8E-10	ACTA2,BCL3,CCL20,CD44,CXCL2,CXCL6,CXCL8,ICAM1,IL1B,IL1RN,IL24 ,IL6,NOS2,PTGS2,SOCS1,TNFRSF1B,TWIST1,VEGFA	138 (17)
GSK3B	kinase	Activated	2.225	2.9E-10	BIRC3,CCL2,CD82,CXCL6,HIF1A,IL1B,IL6,NFKBIZ,NOS2,PMP22,PTGS2, SERPINE1	153 (19)
F7	peptidase	Activated	2.053	3.9E-10	CTGF,CXCL2,CXCL8,F3,IL1B,LIF,MMP13,PLAUR,VEGFA	87 (7)
ARRB2	other		-1.432	3.9E-10	CXCL2,F3,HIF1A,IL1B,IL6,NFKBIZ,PTGS2,SERPINE1,VEGFA	165 (20)
NLRP12	other	Inhibited	-2.922	3.9E-10	BCL3,CXCL2,CXCL6,CXCL8,ICAM1,IL1B,IL1RN,IL6,NOS2	152 (17)
TGFA	growth factor	Activated	2.433	4.8E-10	BIRC3,CCL20,CEBPB,CXCL2,CXCL8,IL6,PTGS2,SERPINA1,SERPINE1, VEGFA	157 (20)
NEUROG1	transcription regulator	np	-0.577	5.5E-10	ASS1,CD82,COL3A1,CXCL1,GFPT2,GREM1,IL6,S100A4,SCG2,SLC43A3, SULF1,THBS1	
SPI1	transcription regulator	np	0.308	6E-10	CD79B,CTSK,EBF1,EPB41L2,FTH1,IL1B,IL1RN,IL24,IL7R,IRAK3,MME,MT 1B,MT1H,MT2A,NOS2,PTGS2,TREM1	60 (5)
TLR9	transmembrane receptor	Activated	2.941	6.5E-10	ATF3,CD38,CXCL8,FCMR,GCH1,IER3,IFIT1,IL1B,IL6,IRF1,NAMPT,NFKBI Z, NOS2,PRDM1,PTGS2,SERPINE1,SOCS1,TNFRSF1B,UAP1	151 (17)
PRKCD	kinase	Activated	3.45	6.8E-10	BIRC3,CCL20,CEBPB,CXCL8,ICAM1,IL1B,IL1RN,IL32,IL6,LAMB3,LIF,MM P13,NFKBIA,NOS2,SERPINE1,SOCS1,VEGFA	142 (16)
IL1RN	cytokine	Inhibited	-3.098	7.8E-10	ACTA2,ATF3,CCL20,CD44,HSD11B1,ICAM1,IL1B,IL32,IL6,IRF1,LIF,MMP1 , PTGS2,SERPINE1	163 (15)
F2	peptidase		1.961	8.3E-10	CD44,CTGF,CXCL8,ICAM1,IL1B,IL6,MMP1,NOS2,PTGS2	152 (17)
TREM2	transmembrane receptor	Inhibited	-2.383	8.4E-10	CXCL2,IL1B,IL6,NFKBIA,PTGS2,TNFAIP3,TREM1	
FGF2	growth factor	np	1.544	8.5E-10	ACTA2,CCL20,FGF2,FTH1,ID3,IL6,MMP1,S100A4,SCG2,SERPINE1,SPIN K1, ST3GAL1,TAGLN,TGFBR3,VEGFA	134 (18)
AR	ligand-dependent nuclear receptor	np	1.057	1.1E-09	ABCC4,AK3,AKR1C3,COL3A1,DNAJB9,GSN,GSTM1,IL6,KITLG,MME,NK X3-1,PIGA,PLAT,PLOD2,SERPINE1,SLC39A8,SLC7A11,SLCO3A1,SMTN, SPINK1,TGFBR2,THBS1,TMEM158,TPD52L1,TWIST1,VEGFA	91 (7)



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
KRAS	enzyme	Activated	2.211	1.1E-09	ABCC4,BIRC3,CD44,CEBPB,COL3A1,CRYAB,CXCL8,FTH1,GSN,HIF1A,IL1B,IL1B,LAMB3,MINOS1-NBL1/NBL1,MMP10,NOS2,PLAT,PLD1,S100A4, TGFBR2,THBS1,THY1	174 (21)
NOD2	other	Activated	2.492	1.2E-09	ACSL1,CCL2,CXCL2,CXCL8,ICAM1,IL1B,IL6,NFKBIA,NOS2,SLC2A6,TWIST1	90 (15)
MIF	cytokine	Activated	3.516	1.3E-09	ACTA2,CD44,CXCL2,CXCL8,HIF1A,ICAM1,IL11,IL1B,IL6,IL7R,MMP1,MMP13,NOS2	164 (20)
APOE	transporter	np	-0.726	1.7E-09	ACTA2,BMP4,C5AR1,CD44,CTGF,CTSK,F3,GPX3,HSD11B1,ICAM1,IL1B,IL1RN,IL6,NOS2,PTGS2,PTX3,S100A9,SERPINE1,STAT4,THY1	145 (16)
AGER	transmembrane receptor	Activated	2.607	1.9E-09	CCL2,CTSK,F3,ICAM1,IFIT1,IL1B,IL6,PTGS2,S100A9,SERPINE1,VEGFA	163 (19)
IGF1	growth factor	np	1.262	2.4E-09	ACTA2,BMP2,BMP4,CXCL8,F3,FBXO32,GHR,HIF1A,IL1B,IL6,MMP13,PLAUR,PRLR,SERPINE1,THY1,TWIST1,VEGFA	148 (18)
CTNNB1	transcription regulator	np	1.24	2.8E-09	ALDH1A2,ALDH3A2,BMP2,BMP4,CCL7,CD44,CRIP1,CTGF,CXCL8,DIO2,ENPP1,FCER1G,GHR,GREM1,ID3,IL1B,MME,MMP1,NDRG2,NOS2,OSBP L1A,PMP22,PRDM1,PTGS2,SAA1,SEMA3C,SERPINA1,SERPINE1,SMS,VEGFA	166 (19)
TLR2	transmembrane receptor	Activated	3.264	3E-09	ATF3,CCL2,CXCL2,CXCL8,ICAM1,IL1B,IL1RN,IL6,IRF1,MMP13,NOS2,PTGS2,SLC40A1,SLC7A11,SOCS1	136 (17)
F3	transmembrane receptor	np	1.225	3E-09	ANGPT1,CXCL8,F3,ICAM1,IL1B,IL6,VEGFA	90 (9)
NREP	other	np	-0.416	3E-09	ACTA2,COL3A1,FGF2,PDGFRB,TAGLN,TGFBR2,VEGFA	
VCAN	other	Inhibited	-2.882	3.3E-09	ANG,ASS1,CCL20,CEBPB,CIDEA,CXCL2,CXCL6,F3,ICAM1,IL1RN,LBP,NFKBIA,OLFML2B,RGS2,VEGFA	96 (12)
estrogen receptor	group	np	-0.59	3.8E-09	CD44,CLDN23,COL12A1,COL7A1,CTGF,CXCL1,CXCL8,ICAM1,IL6,MMP1	154 (18)
TGFBR2	kinase	np	-0.169	3.9E-09	ACTA2,C5AR1,CD44,CTGF,CXCL2,CXCL6,ICAM1,IL1B,MMP10,MMP13,MYOF,NFIB,NRP1,SERPINE1,TGFBR2,TGIF1,VEGFA	153 (18)
IFNLR1	transmembrane receptor	np		4.1E-09	ATF3,CCL20,CXCL2,CXCL6,IL1B,IL6,LIF,PTGS2,THBS1,TNFAIP3	104 (11)
PPRC1	transcription regulator	Activated	3.101	5.2E-09	CCL20,CXCL8,DDIT4,ESM1,HK2,LAMB3,NAMPT,NFKBIZ,PTGS2,SPINK1	
Immunoglobulin	complex	Activated	3.273	5.3E-09	BCL3,CCL2,CCL7,CCL8,CXCL2,F3,IL1B,IRF1,MAFF,NFKBIA,NOS2	135 (16)
Ap1	complex	np	1.412	5.3E-09	CXCL8,DLX5,F3,IL6,MMP1,MMP13,MT2A,NGF,PRDM1,S100A4,SERPINE1	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
IFNAR1	transmembrane receptor	np	1.387	6.1E-09	ATF3,CCL20,CH25H,CXCL2,CXCL6,IL1B,IL6,LIF,NOS2,PLAT,PTGS2,SOCS1,THBS1,TNFAIP3	123 (15)
PIK3R1	kinase	Activated	2.36	6.4E-09	CXCL8,F3,GCH1,HIF1A,ICAM1,IL1B,IL6,NFE2L1,NOS2,PDGFRB,PTGS2	167 (20)
CREBBP	transcription regulator	np		6.6E-09	ADORA2A,ANGPT1,CD44,CNN3,CRIM1,CXCL8,DHRS3,EVI2A,FNDC3B,HSD11B1,IL6,IL7R,IRF1,MAP3K8,PDGFRB,PTGS2,RGL1,RGS2,SLC7A11,STAT4,TAGLN,TNFAIP3,TWIST1	66 (5)
EGR1	transcription regulator	Activated	3.012	6.9E-09	ACTA2,ATF3,CCL2,CD44,CXCL2,CXCL6,CXCL8,F3,ICAM1,IL1B,SERPINE1,SOCS1,THBS1,VEGFA	137 (14)
CCL2	cytokine	np	1.182	7.6E-09	ACTA2,CCL2,CXCL8,ICAM1,IL1B,IL6,MMP1,SERPINE1,SLC40A1	160 (18)
PDLIM2	other	np	1.941	9.2E-09	CCL2,CITED2,CXCL8,FOXRED2,FXVD6,GHR,GSTM1,MME,PRUNE2,SLC40A1,SLC43A3,STAT4,TAGLN	
IFNB1	cytokine	np	0.364	9.9E-09	CCL2,COL12A1,CRYAB,CXCL2,CXCL8,FGF2,IFIT1,IL24,IL6,IRF1,MGST2,NOD2,NOS2,PKK4,SLC39A14,SOCS1,THBS1	116 (15)
TMEM173	other	np	1.89	1E-08	C15orf48,CXCL2,GAS7,HOPX,IL1B,IL6,LIF,NOS2,RGS16	138 (18)
JAG2	growth factor	np	-1.744	1E-08	BMP2,CCL20,CEBPB,CXCL1,CXCL5,CXCL6,IL1B,IL1RN,IL6	
JUND	transcription regulator	np		1E-08	F3,FTH1,IL11,MMP1,MMP13,NOS2,SAT1,SOCS1,VEGFA	128 (14)
Pkc(s)	group	np	1.574	1.1E-08	ATF3,CCL2,COL3A1,CXCL8,F3,FGF2,GPER1,IL6,MMP1,NOS2,PTGS2,RGS2,SERPINE1,VEGFA	153 (19)
Mek	group	Activated	2.634	1.2E-08	CXCL8,GPER1,HIF1A,HSPB1,IER3,IL1B,IL6,MAFF,MMP13,NGF,PDGFRB,PTGS2,SEMA3C,SERPINE1,SLC43A3,TNFAIP3	165 (21)
LIF	cytokine	np	1.508	1.4E-08	AHNAK,CD9,CEBPB,CXCL2,ELF3,HK2,IL1B,IL6,IRF1,PLD1,PTGS2,RHOU,SOCS1	137 (19)
NRIP1	transcription regulator	np	1.091	1.5E-08	CIDEA,CYP4B1,IL1B,IL6,PKK4,PTGS2,PTX3,RARB,SLC16A10,TNFAIP6	
RBPJ	transcription regulator	Inhibited	-2.168	1.8E-08	BMP2,CD44,FGF2,GDF5,IL1B,IL6,IL7R,KITLG,LIF,MMP13,NGF,PGF,PRDM1,VEGFA	73 (6)
FOS	transcription regulator	Activated	2.271	1.8E-08	AKR1C3,CCL2,CD44,CXCL8,DIO2,ESM1,F3,FTH1,ICAM1,IL11,MMP1,MM P10,MMP13,NET1,NGF,PLD1,PRDM1,PTGS2,PTPN12,S100A9,SERPINE1,TREM1,VEGFA	98 (12)
EGLN1	enzyme	np	0.895	1.9E-08	CCL20,HIF1A,ICAM1,IL1B,IL6,MMP13,NGF,PTGS2,TGFB2,VEGFA	160 (14)
POU2F1	transcription regulator	np		2E-08	ACSL1,CDO1,CXCL8,DDIT4,GAS6,GPX3,GSTM1,ICAM1,IDH1,IL6,SEPP1,SLC7A11	
TBK1	kinase	Activated	2.211	2.2E-08	CXCL2,CXCL8,ICAM1,IFIT1,IL6,NFKBIZ,PTGS2,RGCC,SLCO3A1,VEGFA,ZC3H12A	109 (14)
BMP4	growth factor	np	-1.495	2.3E-08	ACTA2,BMP2,BMP4,DLX5,GREM1,IL6,NOS2,TAGLN,TGM2,VEGFA	156 (17)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
MAPK9	kinase	np	1.993	2.6E-08	BIRC3,BMP4,CCL2,CEBPB,DIO2,GSTM1,HIF1A,IL11,IL1B,IL6,LIF,PLAT,PTX3,SERPINA1,TNFAIP3	130 (17)
TERT	enzyme	np	1.414	2.7E-08	ATF3,CXCL8,FGF2,IFIT1,IL1B,IL6,MMP1,MMP10,NFKBIA	137 (16)
SQSTM1	transcription regulator	np	-0.523	3.4E-08	CITED2,CXCL2,IL1B,IL6,IRF1,NFKBIA,NOS2,PLAT,RGCC	92 (15)
GNA13	enzyme	np		3.5E-08	ACTA2,CXCL8,PTGS2,TAGLN,VEGFA	61 (6)
NFE2L2	transcription regulator	np	1.108	4E-08	ABCC3,ANG,COL3A1,CTGF,CTSK,CXCL2,CXCL6,CXCL8,DSTN,FTH1,GHR,GSTM1,IL1B,IL1RN,IL6,NFE2L1,NOS2,PTGS2,SAA1,SCG2,SERPINE1,	148 (19)
BCL6	transcription regulator	Inhibited	-2.184	4.2E-08	ACAN,BCL3,CD44,CD79B,EPB41L2,FGF2,FTH1,IL1B,IL24,IL6,IL7R,PRDM1,SERPINE1	104 (8)
APP	other	Activated	2.915	4.2E-08	BMP4,CCL20,CDK5RAP2,CTGF,CXCL2,DSTN,FGF2,GHR,GPM6B,HIST1H2BD,IL1B,IL6,LBP,MME,NOS2,NRP1,PLAT,PRLR,PTGS2,SERPINE1,SLC11A2,SLC7A11,SOCS1,TUBA1A,TUBB2B	140 (15)
KLF6	transcription regulator	np	1.428	4.3E-08	ATF3,CCL2,CXCL2,CXCL8,IL1B,NFKBIA,NOS2,PTGS2,VEGFA	146 (17)
MAPK8	kinase	np	1.334	4.5E-08	ACSL4,BIRC3,BMP4,CEBPB,DIO2,GSTM1,IL1B,IL6,LIF,PTGS2,PTX3,TNFAIP3	139 (19)
NOTCH1	transcription regulator	Activated	2.058	4.7E-08	ACTA2,BMP2,CD44,CD82,ICAM1,IL6,IRF1,NOS2,RHO,SOCS1,TAGLN,TGFBR2,TGFBR3	144 (20)
ACVRL1	kinase	np	-1.671	4.7E-08	CXCL8,PLAT,PLAUR,SERPINE1,TAGLN,VEGFA	
PRKCA	kinase	Activated	2.375	4.8E-08	ARHGDI3,CCL2,CXCL2,ID3,MMP1,NOS2,PLD1,PTGS2,S100A9,SERPINE1,VEGFA	159 (19)
PGF	growth factor	Activated	2.4	5E-08	CCL2,CCL20,CXCL8,IL1B,IL6,JAK2,SERPINE1	127 (18)
GJA1	transporter		-1.091	5E-08	BMP2,BMP4,IL1B,NOS2,NOV,THBS1,VEGFA	76 (7)
RET	kinase	Activated	2.8	5.4E-08	CCL2,CCL20,CXCL8,IL1B,IL6,MMP1,MMP10,PLAUR,S100A9	157 (20)
FOSL1	transcription regulator	Activated	2.213	6.8E-08	CD44,CXCL8,IL6,MMP1,MMP10,MMP13,PLAUR,SERPINE1	15 (3)
MAP2K3	kinase	Activated	2.182	6.8E-08	CCL8,CTSK,ICAM1,IL1B,IL6,NOS2,SERPINE1,VEGFA	152 (16)
ADORA2B	g-protein coupled receptor	np	1.429	6.8E-08	CXCL2,CXCL8,HIF1A,IL1B,IL6,PDE5A,SERPINE1,VEGFA	155 (22)
NOS3	enzyme	np	-0.877	7.2E-08	CTGF,F3,ICAM1,IL6,NOS2,PDE5A,PTGS2	150 (17)
EIF2AK2	kinase	np	1.289	7.5E-08	CEBPB,CXCL8,IFIT1,IL1B,IL6,IRF1,MT1M,NFKBIA,NOS2,TNFAIP3,TUBA1A	119 (15)
GH1	growth factor	np	1.103	7.7E-08	ACSL1,AKR1B1,ATF3,BMP2,BMP4,COL3A1,FTH1,GHR,IRF1,NDRG2,NOS2,PLA2G16,PRLR,TUBA1A	116 (10)
CTSB	peptidase	np	1.445	8.1E-08	ACTA2,CXCL2,IL1B,NOS2,PLAUR,VEGFA	130 (17)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
FBXO32	enzyme	Inhibited	-2.449	8.1E-08	CCL20,CXCL2,CXCL6,IL1B,IL6,PTGS2	
Hdac	group	np	-0.35	8.5E-08	ATF3,BMP2,CXCL8,FBXO32,HIF1A,IL6,MT1B,MT1H,NRP1,PGF,RARB,SEMA3C,TGFBR2,ZEB2	58 (4)
AHR	ligand-dependent nuclear receptor	np	0.407	8.6E-08	ACTA2,ATOH8,COL12A1,COL3A1,COL6A3,GAS6,HIF1A,IL1B,IL6,INSIG2,LBP,PDGFRB,PLAT,PTGS2,SAA1,SERPINE1,SLC16A10,TGFBR2,THBS1,VEGFA	197 (22)
IL27	cytokine	Activated	2.343	8.7E-08	CCL2,CCL20,CCL7,CXCL8,ICAM1,IL1B,IL1RN,IL6,IRF1,PRDM1,SOCS1	150 (16)
MAP3K14	kinase	Activated	2.789	1E-07	BIRC3,CD44,CXCL8,IL26,IL6,IL7R,NFKBIA,PTGS2,TNFAIP6	110 (16)
mir-223	microna	np	0.832	1.1E-07	ACTA2,C15orf48,C5AR1,IL1RN,MMP13,MYO1D,MYOF,NDRG2,NFIA,S100A9,SLC11A2,SLC29A1,SLC40A1	
PTH	other	np	0.978	1.1E-07	ANGPT1,CXCL2,IL11,IL6,MMP1,MMP13,RGS2,SFRP4,TMEM119,WISP2	156 (21)
PTEN	phosphatase	np	-1.103	1.2E-07	ACSL1,ANGPT1,CA12,CEBPB,CXCL2,CXCL8,F3,G0S2,HIF1A,IL1B,IL6,ME,NKX3-1,NOS2,PDGFRB,PTGS2,STEAP1,VEGFA	181 (19)
PADI2	enzyme	Activated	2.219	1.3E-07	CXCL2,CXCL6,CXCL8,IL6,PTGS2,TNFRSF1B	74 (7)
IL1	group	Activated	2.605	1.4E-07	CCL2,CXCL8,IL6,MMP1,MMP10,MMP13,PTGS2	163 (19)
TXN	enzyme	np	1.382	1.4E-07	CD38,HIF1A,ICAM1,IL1B,NFKBIA,NOS2,VEGFA	106 (17)
F2RL1	g-protein coupled receptor	np	1.239	1.4E-07	ACTA2,CTGF,CXCL8,IL1B,IL6,LIF,NOS2	115 (17)
IL32	cytokine	np	1.629	1.4E-07	CXCL1,CXCL8,ICAM1,IL1B,IL6,MMP13,NOS2,PTGS2	123 (16)
BMP7	growth factor		-1.816	1.5E-07	ACTA2,CCL2,CD44,CIDEA,CXCL8,DLX5,IL1B,IL6,MMP13	152 (16)
NFKBIA	transcription regulator	Activated	2.213	1.6E-07	CXCL2,CXCL8,ICAM1,IL1B,IL6,LIF,NOS2,PTGS2,S100A9,VEGFA	169 (18)
TCR	complex	Activated	2.079	1.7E-07	ADORA2A,BCL3,BIRC3,CD38,CD44,CXCL8,HIF1A,ID3,IFIT1,IL7R,MAP3K8,NFKBIA,NRP1,PRDM1,SOCS1,STAT4,TNFAIP3	142 (18)
CD14	transmembrane receptor	Activated	2.199	1.8E-07	CCL2,CXCL2,ICAM1,IFIT1,IL1B,IL6,PTGS2,SOCS1	94 (12)
ZFP36	transcription regulator	np		1.8E-07	CXCL2,ICAM1,IER3,IL1B,PRDM1,PTGS2,S100A9,SOCS1	137 (14)
TANK	other	Activated	2.018	1.9E-07	CXCL2,CXCL8,IL6,NFKBIZ,PTGS2,RGCC,ZC3H12A	140 (17)
PGR	ligand-dependent	np	1.281	2E-07	ACSL1,AKR1C3,BIRC3,CCL8,CD44,CEBPB,F3,GAS6,GPER1,HIF1A,ICAM1,IER3,NET1,NFKBIA,PTGS2	142 (17)
TCF7L2	transcription regulator	np	0.531	2.1E-07	ACSL1,ALDH1A2,ALDH3A2,AQP9,BMP4,CPD,CTGF,EVI2A,FBXO32,FTH1,GSN,ID3,IDH1,MMP1,PIGA,PLAT,PRICKLE1,SDC2,STK17B,VEGFA,WISP2	38 (3)
XDH	enzyme	np	0.186	2.1E-07	ACTA2,CEBPB,CTGF,HIF1A,IL1B,SERPINE1	
mir-146	microna	Inhibited	-2.412	2.1E-07	CCL2,CCL7,CXCL8,IL1B,IL6,SOCS1	123 (11)
CCL5	cytokine	Activated	2.934	2.1E-07	C5AR1,CCL2,CD44,CXCL2,CXCL8,IL1B,IL6,NAMPT,PLAUR	124 (16)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
APC	enzyme	np		2.2E-07	CD44,CXCL2,HIF1A,HK2,ID3,IL6,MMP10,NOS2,PKD4,PTGS2,VEGFA	121 (12)
IKBKE	kinase	np	1.91	2.3E-07	BIRC3,CXCL8,IFIT1,IL6,MMP13,NFKBIA,NOS2,PTGS2	148 (16)
WISP2	growth factor	np	0.152	2.3E-07	CD44,CTGF,HIF1A,LAMB3,SERPINE1,TGFBR2,TGFBR3,TWIST1	
SMAD7	transcription regulator	np	-1.008	2.3E-07	ACTA2,CITED2,CTGF,ICAM1,ID3,IL1B,NFKBIA,TAGLN	143 (14)
IL12B	cytokine	np	1.726	2.6E-07	CXCL8,ICAM1,IL1B,IL6,MAP3K8,NOS2,S100A9,SOCS1,STAT4	149 (18)
ABCB4	transporter	np	-0.346	2.6E-07	ACTA2,CCL20,CTGF,ELF3,MMP13,PDGFRB,SERPINE1	
miR-155-5p (miRNAs w/seed UAAUGCU)	mature microRNA	Inhibited	-2.754	2.9E-07	CCL20,CXCL1,CXCL2,CXCL8,IL1B,IL6,SERPINE1,SOCS1	
MGEA5	enzyme	np	0	2.9E-07	ACSL4,AHNAK2,ASS1,CCL2,CCL20,CD44,CEBPB,CH25H,CXCL6,CXCL8,FSCN1,GAS6,GPER1,GSN,PLA2G16,PLCE1,SOCS1,TGFBR2,TGFBR3,THBS1,TPD52L1,TUBA1A	90 (7)
TIRAP	other	Activated	2.204	3.2E-07	CXCL2,CXCL6,CXCL8,ICAM1,IL6,PTGS2	154 (17)
TNFRSF18	transmembrane receptor	np	-0.485	3.2E-07	CCL2,CXCL8,ICAM1,IL6,NOS2,PTGS2	163 (19)
SAMSN1	other	Activated	2.111	3.2E-07	CITED2,CXCL2,IL6,IRF1,NFKBIZ,PLAT,PTGS2,RGCC,SLCO3A1,SOCS1,ZC3H12A	
INSR	kinase	np	0	3.5E-07	ACSL1,ACSL4,ATF3,CCL2,COL6A3,CTGF,FHL1,GCH1,IDH1,IER3,IL11,IL6,	142 (17)
LTBR	transmembrane receptor	np	1.151	3.5E-07	ACTA2,CCL20,GPM6B,ICAM1,IL6,NOS2,PDGFRB,SERPINA1	88 (11)
IgG	complex	np	-0.166	3.6E-07	CCL2,CD9,CEBPB,COL3A1,HSPB1,IL1B,IL1RN,IL6,PLAUR,PTGS2,SERPINB7,SERPINE1,TNFAIP3,VEGFA	145 (23)
mir-515	microRNA	np	-1.104	4.1E-07	CXCL8,HIF1A,IL6,SERPINE1,TGFBR2	72 (6)
CAMP	other	Activated	2.168	4.3E-07	CCL2,CCL20,CCL7,CXCL1,CXCL8,IL1B,IL1RN,IL6,NOS2	114 (16)
HMGB1	transcription regulator	np	1.951	4.6E-07	CCL2,CXCL8,HIF1A,ICAM1,IFIT1,IL6,PTGS2	154 (20)
IL17RA	transmembrane receptor	np	1.529	4.6E-07	CCL20,CXCL2,CXCL6,IL1B,IL6,MMP13,S100A9	120 (16)
ASXL1	transcription regulator	np	-1.89	4.6E-07	G0S2,HK2,HSD11B1,HYAL1,RARB,SERPINE1,VEGFA	
KLK5	peptidase	Activated	2.449	4.7E-07	CCL20,CXCL2,ICAM1,IL1B,IL6,S100A9	
IL36A	cytokine		1.987	4.7E-07	CCL20,CXCL1,CXCL6,CXCL8,IL1B,IL6	144 (14)
JUNB	transcription regulator	Activated	2.566	5E-07	ATF3,COL7A1,CXCL2,FTH1,IL6,MMP1,MMP10,MMP13,PLAUR,SERPINE1	18 (3)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ITGB1	transmembrane receptor	np	1.744	5E-07	ACTA2,CCL2,CXCL8,IL1B,NOS2,PLAUR,PTGS2,THBS1,VEGFA	165 (19)
MMP9	peptidase	np	0.343	5.3E-07	CD44,CXCL2,CXCL6,ICAM1,IL6,MMP13,SERPINA1,VEGFA	146 (18)
CD44	enzyme		1.652	6E-07	BIRC3,CD44,CIDEA,COL3A1,CXCL6,IL1B,IL1RN,IL6,IRAK3,MMP13,SERPINA1,STEAP1,THBS1,THY1,TWIST1	145 (21)
ATF4	transcription regulator	Activated	2.776	6.2E-07	ATF3,CEBPB,DDIT4,FYN,GCH1,PMP22,PRRX2,PTGS2,PTX3,SLC6A9,SLC7A5,VEGFA	
IL11	cytokine	Inhibited	-2.425	6.8E-07	ACAN,CXCL8,IL1B,IL6,MMP1,MMP13	42 (3)
IRF1	transcription regulator	np	1.156	7.3E-07	CCL2,CCL20,CXCL2,CXCL8,IL1B,IL6,NOS2,PLA2G16,PTGS2,RARRES3,SOCS1	82 (10)
IRAK2	kinase	Activated	2.2	7.3E-07	CXCL2,CXCL8,IL1B,IL6,NOS2	145 (15)
mir-373	microna	np	-0.819	7.3E-07	CD44,CXCL8,IL6,SERPINE1,TGFBR2	
LY6E	other	Inhibited	-2.213	7.3E-07	CXCL8,IL1B,IL6,IRAK2,NFKBIA	79 (9)
LBP	transporter	np		7.3E-07	IFIT1,IL1B,IL1RN,IL6,LBP	49 (4)
IL5	cytokine	np	0.796	7.4E-07	AK3,ASS1,CCL2,CITED2,CRIP1,IER3,NOS2,PMP22,PRDM1,S100A4,SLC39A8,SLC7A5,SOCS1,THY1,TUBB2B	
E2F3	transcription regulator	np	-0.389	7.6E-07	AKR1C3,CA12,CCL20,CD9,CXCL1,ELF3,FGF2,KIAA0101,MT1B,MT1H,SERPINE1,THBS1	
PRL	cytokine	np	-0.557	7.8E-07	AKR1C3,CNN3,COL3A1,CPD,ID3,IFIT1,IL6,IRF1,MINOS1-NBL1/NBL1,MME,NOS2,PARM1,PK4,PRLR,SOCS1,SPINK1	119 (14)
S100A8	other	np	0.75	8.2E-07	ATF3,BCL3,CCL2,CCL20,CXCL2,CXCL8,DDIT4,ICAM1,IL1B,IL6,KCNMA1,NFKBIA,NOS2,WISP2	137 (13)
SYVN1	transporter	np	1.387	9E-07	ABCC3,ABCC4,CD44,CSPG4,DIO2,F3,HSPB1,IL7R,IRAK2,MYOF,SLC43A3,SLC7A2,SLC7A5	
PTGER4	g-protein coupled receptor	np	-1.052	9E-07	CCL2,CCL20,CH25H,CITED2,CXCL8,IL1B,IL6,IRF1,MAFF,MMP13,NOS2,PTGS2,SHISA3	148 (19)
KIAA1524	other	np	-1.807	9.3E-07	CFB,CRYAB,IER3,PDGFRB,PK4,PLAUR,SAT1,SCIN,SLC22A4	
FBN1	other	np	0.115	9.6E-07	COL3A1,COL6A3,CTGF,MMP1,SERPINE1,TGFBR2	145 (13)
CD40	transmembrane receptor	Activated	2.206	9.8E-07	BIRC3,CCL2,CD44,CXCL8,ICAM1,IL1B,IL1RN,IL6,IRF1,NFKBIA,NOS2,PRDM1,VEGFA	112 (17)
PI3K (family)	group	Activated	2.251	1.1E-06	BIRC3,CCL2,CXCL8,FBXO32,HIF1A,IL6,NOS2,PTGS2,SERPINE1,VEGFA	148 (18)
VDR	transcription regulator	np	0.554	1.1E-06	ABCC3,CXCL8,F3,ICAM1,IL1RN,IL6,NGF,PTGS2,SOCS1,STAT4	126 (17)
GFI1	transcription regulator	Inhibited	-2.813	1.1E-06	BCL3,CXCL8,ICAM1,IL1B,IL6,IL7R,IRAK2,IRF1,NFKBIA,SERPINA1	131 (12)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
INHA	growth factor	np	-0.552	1.1E-06	ACTA2,ADAMTSL2,COL3A1,CTGF,CYP26B1,KITLG,PRLR,PRSS23,PTGS2, PTX3,SFRP4	47 (4)
PLA2G4A	enzyme	Activated	2.173	1.2E-06	CXCL8,IL1B,IL6,NOS2,PTGS2	66 (7)
miR-31-5p (and other miRNAs w/seed GGCAAGA)	mature microrna	np	-1.643	1.2E-06	BAMBI,CXCL1,CXCL5,CXCL8,IL1B	
NAMPT	cytokine	Activated	2.39	1.3E-06	CCL20,CXCL2,CXCL8,IL6,MMP1,NAMPT	105 (12)
CHI3L1	enzyme	np		1.3E-06	NAMPT,SERPINE1,SLC39A14,TGFBR2,TMEM158,VEGFA	
TNFRSF1B	transmembrane receptor	np	1.865	1.4E-06	ABCC3,ICAM1,LBP,MMP13,NOS2,SAA1,SERPINE1,TYMP	168 (18)
RELB	transcription regulator	np	0.771	1.4E-06	BIRC3,CCL20,IL1B,IL6,NFKBIA,NOS2,PTGS2,STAT4	92 (10)
CDKN2A	transcription regulator	np	1.356	1.4E-06	CCL2,CEBPB,CXCL6,EBF1,IL11,IL1B,IL6,MMP1,PDGFRB,PTGS2,SERPI NE1,TNFRSF1B,VEGFA	176 (21)
TSC22D1	transcription regulator	Activated	2	1.4E-06	CXCL8,IL1B,IL6,SERPINE1	83 (5)
TPSAB1/TP SB2	peptidase	np	1.98	1.4E-06	CXCL2,IL1B,IL6,MMP13	
IL18RAP	transmembrane receptor	np		1.4E-06	CXCL8,IL32,IL6,PTGS2	87 (7)
NR1H3	ligand-dependent	Inhibited	-2.108	1.5E-06	CIDEA,DIO2,HSD11B1,IL1B,IL1RN,IL6,NFKBIA,NOS2,PTGS2,SLC16A10	124 (13)
TCF	group	np		1.5E-06	ALDH3A2,BMP4,CD44,DIO2,ID3,MME,SAA1,SEMA3C,SERPINA1,SERPI NE1	89 (7)
HNRNPA2B 1	other	np		1.6E-06	CA12,CRIP1,DNER,FHL1,FSCN1,GSN,HYAL1,IL6,PDE1A,PLOD2,SERPI NA1, SRPX,TWIST1	
BMP2	growth factor	np	-0.538	1.7E-06	ACTA2,BTG3,DLX5,GREM1,MMP13,TAGLN,TGM2,TMEM119,VEGFA	117 (13)
HDAC3	transcription regulator	np		1.7E-06	BIRC3,CD82,CXCL2,CXCL8,ICAM1,IL6,NFKBIA,PTGS2,RARB	109 (12)
N-cor	group	np		1.7E-06	ACSL1,CXCL2,DHRS3,IDH1,MMP13,PID1,PTGS2,RARB,RGL1,SOCS1	100 (7)
CDK9	kinase	np	1.741	1.8E-06	CXCL2,CXCL8,IL6,NFKBIA,PKD4,TNFAIP3	16 (2)
IL12 (complex)	complex	np	1.002	1.9E-06	CCL2,CCL20,CD44,CXCL6,IL6,IRF1,NOS2,PRDM1,RRAD,STAT4,TGFBR 2	136 (18)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
SP3	transcription regulator	np		1.9E-06	ACSL1,ACTA2,ATF3,CCL20,CITED2,COL7A1,GHR,PLAUR,PRLR,PTGS2,SLC39A8,TGFBR2,VEGFA	148 (11)
LCN2	transporter	Activated	2.221	1.9E-06	CCL20,CXCL2,CXCL6,HIF1A,IL1B,IL1RN,IL6,NOS2	87 (10)
IFNGR1	transmembrane receptor	np	1.067	1.9E-06	CCL20,CXCL6,ICAM1,IL1B,IL6,IRF1,PDGFRB	143 (14)
NR1H2	ligand-dependent	np	-1.96	1.9E-06	CIDEA,DIO2,HSD11B1,IL1B,IL1RN,IL6,NFKBIA,NOS2,PTGS2,SLC16A10	119 (16)
Histone h3	group	np		2E-06	BMP4,BTG3,CCL2,CD9,CSPG4,CXCL8,GHR,ICAM1,IL1B,IL6,MEIS1,MTUS1,NFKBIA,NOS2,PRDM1,PRLR,PTGS2,RARB,TAGLN,TNFAIP3,VEGFA,WLS	170 (16)
Lymphotoxin	complex	Activated	2.219	2E-06	CCL2,ICAM1,IL1B,IL6,MMP1	
PTAFR	g-protein coupled receptor	np	0.747	2E-06	CXCL2,CXCL8,IL1B,IL6,PTGS2	106 (11)
ELF3	transcription regulator	np	0.371	2E-06	CCL20,ELF3,IL6,MMP13,TGFBR2	95 (10)
Lh	complex	Activated	3.063	2E-06	ACTA2,DHRS3,HK2,HSD11B1,IL6,MT3,PLAT,PLPP1,PTGS2,PTX3,RGS16,THBS1,TNFAIP3,TPM2,TUBA1A,VEGFA	123 (9)
TGM2	enzyme	np	1.777	2.3E-06	AQP9,BIRC3,C5AR1,CCL2,CXCL8,FCER1G,HIF1A,IFIT1,IL1B,IL6,MT2A,PDGFRB,RARRES3,SLC7A2,THBS1,TNIP1	121 (12)
Akt	group	np	1.091	2.3E-06	CD44,CEBPB,CIDEA,COL3A1,CXCL8,HIF1A,IL6,IL7R,PTGS2,SERPINE1,THBS1	160 (19)
SPHK1	kinase	np	1.6	2.4E-06	BIRC3,CTGF,CXCL8,IL6,PTGS2,SERPINE1	171 (22)
WNT3A	cytokine	np	-0.2	2.5E-06	ACTA2,CEBPB,CTGF,DDIT4,IL6,NOS2,PRICKLE1,RHOU,SLC7A2,THBS1,TMEM158,VEGFA	112 (12)
CD38	enzyme	np	0.139	2.6E-06	AK3,ASS1,CITED2,CRIP1,ICAM1,IL6,PRDM1,S100A4,SLC39A8,SLC7A5,SOCS1,THY1,TUBB2B	
PF4	cytokine	Activated	2.213	3E-06	ACTA2,CCL2,CXCL8,IL1B,IL6	161 (18)
NT5E	phosphatase		-1.387	3E-06	COL3A1,IL1B,IL6,MMP13,SERPINE1	63 (6)
ZC3H12A	enzyme	Inhibited	-2.201	3E-06	CCL2,IL1B,IL6,NOS2,TNFRSF1B	155 (17)
TLR5	transmembrane receptor	Activated	2.419	3.1E-06	ATF3,CCL20,CXCL2,CXCL8,ICAM1,IL6	132 (17)
ICAM1	transmembrane receptor	np	1.452	3.1E-06	ACTA2,CXCL2,ICAM1,IL1B,IL6,VEGFA	147 (18)
Nr1h	group	np	-1.468	3.2E-06	ALDH1A2,BCL3,CXCL1,CXCL8,IL1B,IL6,INSIG2,NFKBIZ,NOS2,PTGS2,THBS1,THY1	44 (4)
BMP6	growth factor	np	1.331	3.2E-06	ACTA2,CD44,CTGF,DLX5,ID3,PMP22,PTGS2,TAGLN,VEGFA	91 (7)
HS6ST1	enzyme	np	1.999	3.3E-06	CXCL8,FGF2,IL6,VEGFA	87 (7)



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
SLC16A3	transporter	np	1.944	3.3E-06	HK2,IL1B,IL6,NOS2	
TXNIP	other	np	1.891	3.5E-06	DDIT4,G0S2,ICAM1,IL1B,IL6,PTGS2,VEGFA	128 (16)
ELK1	transcription regulator	np	0.928	3.5E-06	BMP2,INSIG2,MMP13,SLC7A11,TAGLN,THBS1,TPD52L1	
TP63	transcription regulator	Activated	2.634	3.6E-06	CD82,CITED2,CXCL8,DDIT4,F3,HK2,ID3,IER3,IL1B,IL6,MMP13,PI3,PTPN12,S100A4,TAGLN,THBS1,THY1	170 (16)
SOCS1	other	np	-0.638	3.7E-06	CD44,CXCL2,IFIT1,IL1B,IL6,IRF1,JAK2,NOS2,PTGS2,SOCS1	136 (17)
MARK2	kinase	np	1.633	4.1E-06	CD44,CXCL2,IRF1,NFKBIZ,PTGS2,SLCO3A1	
LGALS1	other	np	-0.522	4.2E-06	ACTA2,ANG,CXCL2,F3,IL6,PTX3,SERPINE1	111 (10)
BIRC3	enzyme	Activated	2.159	4.5E-06	CCL2,CXCL1,CXCL8,IL1B,IL6	100 (15)
XIAP	enzyme	np	1.982	4.5E-06	CXCL1,CXCL8,IL6,PTGS2,SERPINE1	141 (21)
PSMD10	transcription regulator	np	1.342	4.5E-06	ANGPT1,CXCL1,CXCL8,ICAM1,PLD1	
IRAK3	kinase	np	0.512	4.5E-06	CXCL2,IL6,NFKBIA,SOCS1,TNFAIP3	91 (9)
CD28	transmembrane receptor	np	-1.448	4.7E-06	CXCL2,CXCL8,FYN,IL6,IL7R,IRF1,NFKBIA,PRDM1,PTGS2,SLC7A5,TNFAIP3,TNFRSF1B	135 (15)
IL7	cytokine	np	0.031	5E-06	CTSK,EBF1,IL24,IL6,IL7R,MMP13,SOCS1	
MAP3K8	kinase	np	1.471	5.1E-06	CCL20,COLEC12,CXCL2,CXCL8,FSCN1,IER3,IL1B,IL6,PLAT,PTGS2,STK17B,TUBB2B	141 (16)
ASXL2	other	np	1.633	5.2E-06	G0S2,HK2,HSD11B1,HYAL1,SERPINE1,VEGFA	101 (7)
CXCR4	g-protein coupled receptor	np	1.165	5.2E-06	CCL2,CXCL8,DLX5,F3,IL6,MMP13	163 (20)
ATF1	transcription regulator	np		5.2E-06	CEBPB,FTH1,NOS2,PTGS2,TGFBR2,THBS1	36 (4)
FOXO1	transcription regulator	np	0.403	5.4E-06	AFF3,AQP9,CCL20,CD79B,CTGF,CTSK,CXCL8,EBF1,EFHD1,FBXO32,IER3,IL6,IL7R,MMP1,NAMPT,NKX3-1,PRDM1	118 (9)
HSPB3	other	np		5.6E-06	CCL2,CXCL8,ICAM1	
HSPB6	other	np		5.6E-06	CCL2,CXCL8,ICAM1	87 (7)
mir-155	microna	np	-1.391	6E-06	CEBPB,HK2,IL1B,IL6,NOS2,SERPINE1,SOCS1	144 (19)
PLG	peptidase	Activated	2.048	6.3E-06	CCL2,COLEC12,F3,FYN,IL1B,IL6,PTGS2,SERPINE1	167 (20)
RIPK1	kinase	Activated	2.186	6.4E-06	CCL2,CXCL1,CXCL2,CXCL8,IL6	148 (16)
BIRC2	enzyme	np	0.831	6.4E-06	BIRC3,CCL2,CXCL1,CXCL8,IL6	135 (17)
MSR1	transmembrane receptor	np	-0.832	6.4E-06	CXCL2,IFIT1,IL1B,IL6,NOS2	103 (16)
Growth hormone	group	np	0.666	6.5E-06	BMP4,CEBPB,CITED2,IER3,NFKBIA,PK4,SOCS1,TGFBR2,ZEB2	31 (3)
NLRC4	other	Activated	2	6.5E-06	CXCL2,CXCL6,IL1B,NOS2	148 (16)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
PSMB10	peptidase	np	1	6.5E-06	IL6,NFKBIA,NOS2,TNFAIP3	78 (7)
PSMB8	peptidase	np	1	6.5E-06	IL6,NFKBIA,NOS2,TNFAIP3	78 (7)
PIAS4	transcription regulator	np	-1.732	6.5E-06	CXCL2,IL1B,IRF1,SERPINE1	73 (7)
CITED2	transcription regulator	Inhibited	-2.216	6.6E-06	CXCL1,CXCL8,HIF1A,IL6,MMP1,VEGFA	
CREB1	transcription regulator	Activated	2.384	6.9E-06	ADORA2A,ATF3,CEBPB,CH25H,CXCL8,DIO2,IL6,MMP13,NOS2,PTGS2,RGS2,VEGFA	139 (9)
STK40	kinase	np	-1.994	7.1E-06	CCL2,CXCL1,CXCL5,CXCL8,IL1B,PTGS2,ST3GAL1	95 (10)
MET	kinase	Activated	2.154	7.2E-06	CD44,CITED2,HSPB1,IL6,NFKBIZ,PTGS2,SLCO3A1,TGIF1,VEGFA	132 (19)
LIPE	enzyme	np		7.3E-06	ACSL1,ANGPT1,ATF3,CDO1,CEBPB,CITED2,G0S2,KITLG,NET1,RARB,R	
SMAD3	transcription regulator	np	-0.969	7.4E-06	ACTA2,BMP2,CCL2,COL3A1,CTGF,IL1B,IL6,MMP1,MMP13,NET1,PTGS2,SERPINE1	146 (20)
PPIF	enzyme	np	1.265	7.4E-06	CCL2,CCL20,CITED2,CXCL2,CXCL6,GDF5,IL6,LIF,PK4,PDZRN3	86 (7)
Map3k7	kinase	np	0.446	8.2E-06	BMP4,IL1B,IL6,NFKBIZ,NGF,NOD2,PTGS2,S100A9	158 (19)
AGT	growth factor	np	1.692	8.4E-06	CTGF,CXCL2,F3,FGF2,ICAM1,IL6,VEGFA	138 (19)
SAA	group	Activated	2.195	9E-06	F3,ICAM1,IL1RN,MMP1,MMP13	138 (14)
P2RX7	ion channel	np	1.949	9E-06	CCL2,CCL20,IL1B,IL6,NOS2	131 (17)
BID	other	np	1.387	9E-06	C5AR1,CTSK,CXCL8,IL1B,IL6	67 (6)
SCARB1	transporter	np	0	9E-06	CCL2,DDIT4,FBXO32,IL1B,IL6	165 (19)
SOD1	enzyme	np		9.7E-06	ASS1,BMP4,CRYAB,FTH1,GSTM1,HSPB1,IL1B,IL6,SLC11A2,SLC40A1,STAT4,TGFBR2,TNFAIP3	115 (13)
ARHGAP21	other	np	1.89	9.9E-06	CITED2,CXCL2,IRF1,NFKBIZ,PLAT,PTGS2,SLCO3A1	
Gsk3	group	np	1.309	9.9E-06	CXCL8,ICAM1,IL1B,IL6,NOS2,TNFAIP3,TWIST1	112 (17)
CSF1	cytokine	np	1.412	0.00001	CCL2,CTSK,CXCL6,GPR68,IL1B,IL6,TNFAIP3,TNFRSF1B,VEGFA	118 (16)
BSCL2	other	np		1.1E-05	ACSL1,AKR1C3,GREM1,IER3,IL6,MMP13,NOS2,PTGS2	
STAT5A	transcription regulator	np		1.2E-05	AKR1C3,BIRC3,C15orf48,CEBPB,CXCL5,HIST2H2AA3/HIST2H2AA4,IL24,IL6,IL7R,LAMB3,PRDM1,PRSS23,RARRES3,SBSPON,SOCS1,TGFBR2	136 (12)
BMX	kinase	Activated	2	1.2E-05	COL3A1,CXCL8,IL6,TNFRSF1B	175 (24)
HSPB8	kinase	np	1	1.2E-05	BMP4,CCL2,CXCL8,ICAM1	88 (7)
ATG16L1	enzyme	np	-1.964	1.2E-05	CXCL2,IL1B,IL6,NFKBIA	118 (17)
EPAS1	transcription regulator	np	-0.236	1.2E-05	CITED2,CTGF,CYBRD1,FHL1,SERPINE1,SLC11A2,SLC29A1,SLC40A1,SLC7A5,VEGFA,WISP2	
FGF1	growth factor	np	1.195	1.2E-05	AKR1B1,CTGF,GSTM1,PRICKLE1,RHO,SLC7A2,TGM2,THBS1	
SOCS6	other	np	1.342	1.2E-05	CXCL2,IL1B,PLAT,PTGS2,RGCC	
PRKG1	kinase	np	-1.387	1.2E-05	ACTA2,COL3A1,CTGF,SERPINE1,TAGLN	76 (7)
PROC	peptidase	Inhibited	-2.207	1.2E-05	CXCL2,IL1B,IL6,NOS2,SERPINE1	137 (22)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
BCL3	transcription regulator	Inhibited	-2.207	1.3E-05	CD82,CXCL8,ICAM1,IL1B,IRF1,PKD4	80 (8)
SPP1	cytokine	np	1.225	1.3E-05	ANGPT1,CCL2,CD44,IL1B,IL6,NDRG2,NOS2,PTGS2,TGFBR2,VAT1	164 (19)
PRKAA2	kinase	np	0.711	1.3E-05	ACTA2,ARHGDIB,CIDEA,GALM,HIF1A,IL6,NDRG2,NFIB,NFKBIA,TGM2	144 (14)
MAPKAPK2	kinase	np	1.067	1.4E-05	CITED2,CXCL8,HSPB1,ICAM1,IL6,NFKBIA,PLAT	84 (10)
CD3	complex	Inhibited	-2.435	1.5E-05	BIRC3,CCL20,CD44,CXCL8,HIF1A,IL6,IRF1,NFKBIA,PTGS2,TGM2,THY1, TNFAIP3,VEGFA	116 (13)
TRAF6	enzyme	Activated	2.362	1.5E-05	CCL2,CXCL2,CXCL8,ICAM1,IL1B,IL6	163 (18)
ALDH1A2	enzyme	np	-0.647	1.5E-05	ATF3,CD44,COL3A1,CTGF,FGF2,RARB	93 (7)
FCGR2A	transmembrane receptor	Activated	2.177	1.6E-05	CCL2,CXCL2,IL1B,IL6,VEGFA	94 (16)
TGIF1	transcription regulator	Activated	2	1.9E-05	CXCL2,IL1B,IL6,RARB	
CYP2J2	enzyme	np	-1	1.9E-05	CXCL6,IL1B,IL6,NFKBIA	78 (8)
HIF3A	transcription regulator	np	-1.091	1.9E-05	PDGFRB,PLAUR,RARB,VEGFA	
UCP2	transporter	np	-1.948	1.9E-05	HK2,IL1B,IL6,NOS2	118 (17)
FCGR1A	transmembrane receptor	np		1.9E-05	F3,IL1B,IL1RN,IL6	126 (12)
DICER1	enzyme	Inhibited	-2.164	1.9E-05	CD44,CXCL8,ICAM1,ID3,IL1B,MT2A,PMP22,RGCC,SERPINA1,SERPINE1, SFRP4,SLC40A1,THBS1	114 (16)
C5	cytokine	Activated	2.409	2.1E-05	CXCL2,CXCL8,F3,IL1B,IL6,MMP1,SERPINE1	174 (18)
SOCS3	phosphatase	np	-1.743	2.1E-05	ATF3,IFIT1,IL1B,IL6,IRF1,NOS2,SOCS1	124 (19)
IL1RL2	transmembrane receptor	np		2.2E-05	CCL20,CXCL1,CXCL8	73 (7)
PARG	enzyme	np		2.2E-05	IL1B,NOS2,PTGS2	64 (7)
MUC2	other	np		2.2E-05	IL1B,IL6,PTGS2	
A4GALT	enzyme	np		2.2E-05	IL6,IRF1,NOS2	
PLA2G2A	enzyme	np		2.2E-05	CD44,CXCL8,IL6	
PELI2	other	np		2.2E-05	CXCL2,CXCL8,IL6	148 (15)
HS6ST2	enzyme	np		2.2E-05	CXCL8,FGF2,IL6	87 (7)
PRKAA1	kinase	np	1.247	2.2E-05	ACTA2,ARHGDIB,ATF3,GALM,IL6,NDRG2,NFIB,NFKBIA,TGM2	154 (13)
LPL	enzyme	np	1.607	2.2E-05	CCL2,IL1B,IL6,PKD4,THBS1,VEGFA	89 (9)
ENG	transmembrane receptor	np	-0.06	2.2E-05	ACTA2,CTGF,SERPINE1,TGFBR2,THBS1,TWIST1	115 (13)
PRKCE	kinase	Activated	2.586	2.4E-05	BIRC3,CEBPB,IL6,NOS2,PTGS2,RGS2,VEGFA	127 (17)
PTPRJ	phosphatase	np	1.89	2.4E-05	CITED2,CXCL2,IL6,NFKBIZ,PLAT,PTGS2,ZC3H12A	133 (15)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ATM	kinase	np	1.72	2.7E-05	CTGF,CXCL8,IL6,SERPINE1,TGM2,TNFAIP3	161 (22)
GAPDH	enzyme	np	1.698	2.7E-05	CCL2,CCL20,CXCL1,ENPP1,FCER1G,RIPK3	
TNFAIP3	enzyme	np	-1.458	2.7E-05	CXCL8,ICAM1,IL1B,IL6,NFKBIA,TNFAIP3	102 (14)
FOXO3	transcription regulator	np	-0.059	2.7E-05	CTGF,CXCL8,FBXO32,IER3,IL6,MMP13,NAMPT,NFKBIA,SLC40A1	164 (14)
DOCK8	other	Activated	2.121	2.7E-05	CITED2,IL6,IRF1,NFKBIZ,PLAT,PTGS2,SLCO3A1,SOCS1	
SOX2	transcription regulator	np	0.785	2.7E-05	AMOT,ANGPT1,ATF3,BMP4,CITED2,CTGF,DLX5,ELF3,HOPX,KITLG,MEIS1,NRP1,PCDH18,PRDM1,VEGFA,WLS	22 (2)
RNASE1	enzyme	Activated	2.213	2.8E-05	CCL2,CCL7,CCL8,CXCL5,IL6	
IL36B	cytokine	np	1.993	2.8E-05	CCL20,CXCL1,CXCL8,IL1B,IL6	144 (14)
REN	peptidase	np	1.458	2.8E-05	CTGF,F3,FGF2,ICAM1,IL6	106 (12)
MIR17HG	other	np	-0.277	2.8E-05	ACTA2,FZD4,TAGLN,TGFBR2,TNFAIP3	
IGF1R	transmembrane receptor	np	0.431	2.9E-05	ABCC4,ACSL1,ACTA2,CD38,CEBPB,COL3A1,FTH1,GPER1,IL6,PLAT,PTGS2,S100A4,SCG2,TWIST1	171 (22)
HDAC1	transcription regulator	Activated	2	2.9E-05	ACAN,CD44,CTSK,CXCL8,IL24,IL6,MME,NFKBIA,NKX3-1,PTGS2,S100A9,TGFBR2,TGM2	121 (15)
AREG	growth factor	np	1.951	2.9E-05	CCL20,IL6,PTGS2,TNFAIP6	98 (13)
Tnf receptor	group	np	-0.106	2.9E-05	CCL20,CXCL8,IL6,SERPINE1	96 (12)
CST3	other	np	-1.067	2.9E-05	CTSK,FGF2,IL1B,NFKBIA	
BPIFA1	other	np	-1.98	2.9E-05	CCL20,CXCL2,IL1B,IL6	
NOD1	other	np		2.9E-05	CXCL2,CXCL8,IL1B,IL6	141 (15)
BCL10	transcription regulator	np		2.9E-05	CD44,CXCL2,CXCL8,IL6	127 (16)
TSC2	other	np	0.419	3E-05	ATF3,CRIP1,CRYAB,GSN,HIF1A,HK2,HSPB1,PDGFRB,PKD4,TAGLN	
CTGF	growth factor	np	1.132	3.4E-05	ACAN,CD44,HIF1A,KITLG,MMP13,SERPINE1,SFRP4,VEGFA	78 (7)
IL12 (family)	group	Activated	2.2	3.6E-05	BCL3,CD44,IRF1,NFKBIZ,STAT4	138 (15)
ALB	transporter	np	1.989	3.6E-05	ACTA2,CXCL8,IL6,NOS2,VEGFA	157 (16)
SEMA7A	transmembrane receptor	np	-0.447	3.6E-05	COL3A1,CTGF,FGF2,NOV,WISP2	
FASLG	cytokine	np		3.6E-05	CCL2,CD44,IL1B,IL6,STAT4	131 (18)
NUPR1	transcription regulator	Activated	2.711	3.7E-05	ATF3,CEBPB,CITED2,CNPY4,COL3A1,CXCL5,CXCL8,GCH1,HILPDA,HK2,LIF,MMP10,NFIB,PMP22,SAT1,SERPINE1,SIPA1L2,SLC16A10,SLC2A12,SLC39A8,TMEM158,TNIP1,UAP1	
IRS1	enzyme	np		3.7E-05	CEBPB,CIDEA,COL3A1,COL6A3,COL7A1,FBXO32,FHL1,NRP1,RHOU,VEGFA	112 (12)
SASH1	other	Activated	2.121	3.7E-05	CITED2,IL6,IRF1,NFKBIZ,PLAT,PTGS2,SLCO3A1,SOCS1	
EIF2AK3	kinase	Activated	2.207	3.8E-05	ANG,ATF3,BIRC3,CEBPB,DNAJB9,FGF2,GCH1,PRDM1,VEGFA	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
MAP2K1/2	group	np	1.118	4.1E-05	ATF3,CTGF,HK2,HSPB1,IL1B,NOS2,VEGFA	170 (19)
PPARA	ligand-dependent nuclear receptor	np	0.106	4.1E-05	ACSL1,ADTRP,ALDH3A2,AQP9,ASS1,CEBPB,CIDEA,G0S2,HIF1A,HILPD A, IL6,INSIG2,LAMB3,NFKBIA,NOS2,PKD4,SAA1,SAT1,VEGFA	140 (12)
NOS2	enzyme	np	1.382	4.2E-05	CXCL2,HIF1A,IL1B,IL1RN,IL32,IL6,NFKBIA,NOS2,PTGS2,SLC40A1,THY1, VEGFA	131 (15)
PPARGC1A	transcription regulator	np	-0.59	4.2E-05	CEBPB,CIDEA,FBXO32,GAS6,HK2,IL6,INSIG2,PKD4,PTGS2,SLC39A14, SOCS1,VEGFA	172 (17)
INSIG1	other	Inhibited	-3	4.2E-05	ACSL4,CXCL2,CXCL6,IL6,NFKBIZ,PLD1,S100A9,STAT4,STEAP2	
ETS1	transcription regulator	np	1.438	4.3E-05	ARHGDIB,BMP4,CD44,CTGF,IL24,IL7R,MMP1,MMP13,PRDM1,SERPINE 1, ZEB2	
LPAR1	g-protein coupled receptor	np	0.927	4.4E-05	CTGF,CXCL8,IL6,PTGS2	103 (13)
mir-145	microna	np	-0.713	4.4E-05	ACTA2,FSCN1,IL6,TAGLN	
FRS2	kinase	np		4.4E-05	ACTA2,BMP4,CD44,TAGLN	
C5AR1	g-protein coupled receptor	Activated	2.415	4.4E-05	C5AR1,CXCL2,FCER1G,IL1B,IL6,MMP1	80 (11)
RC3H1	enzyme	np		4.5E-05	CCL20,CXCL2,CXCL6,IL1B,TNFRSF1B	
SCD	enzyme	np	-1.915	4.6E-05	ATF3,CEBPB,CXCL8,DIO2,IL1B,IL6,NOS2	120 (16)
MED1	transcription regulator	np		0.00005	BCL3,CD79B,CIDEA,EBF1,GHR,LIF,PRDM1,PRLR,RARB,THBS1	
IL12A	cytokine	np	0.398	5.2E-05	FGF2,ICAM1,IL1B,IL6,SOCS1,STAT4	141 (17)
PTGER2	g-protein coupled receptor	np	1.756	5.4E-05	CXCL8,IL1B,IL6,NOS2,PTGS2,THBS1,TNFAIP6,TREM1,VEGFA	116 (17)
FLT4	transmembrane receptor	np		5.4E-05	IL1B,IL6,SOCS1	
PROK2	other	np		5.4E-05	HIF1A,IL1B,VEGFA	82 (7)
LUM	other	np		5.4E-05	CXCL2,IL1B,IL6	
OTUD7B	peptidase	np		5.4E-05	ACTA2,CXCL8,ICAM1	67 (7)
LPAR2	g-protein coupled receptor	np		5.4E-05	CXCL8,IL6,PTGS2	101 (11)
SENP6	peptidase	np		5.4E-05	CXCL8,ICAM1,IL6	89 (9)
PLAA	other	np		5.4E-05	IL32,IL6,PTGS2	79 (7)
PILRA	other	np		5.4E-05	CXCL2,IL1B,IL6	
S100A7	other	np		5.4E-05	CXCL1,CXCL8,IL11	
IL17F	cytokine	np		5.4E-05	CCL2,CXCL1,CXCL5	88 (7)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TAF4B	transcription regulator	np		5.6E-05	CTGF,IER3,MMP13,NFKBIA,TNFAIP3	
ATG7	enzyme	np	-0.13	6E-05	ACTA2,CXCL8,IL1B,IL6,NFKBIA,S100A4	112 (16)
SOX11	transcription regulator	np	-0.761	6.1E-05	BMP2,BMP4,CD9,EBF1,FCMR,HILPDA,PRDM1,TUBA1A	
CDKN1A	kinase	np	-1.34	6.1E-05	ACTA2,CCL2,CTSK,IL1B,IL6,KIAA0101,LIMA1,MMP1	139 (16)
IL1RAP	transmembrane receptor	Activated	2	6.2E-05	CCL20,CXCL1,CXCL8,IL6	73 (7)
PDE5A	enzyme	Activated	2	6.2E-05	IL1B,IL6,NOS2,S100A9	
IL-1R	group	np	1.974	6.2E-05	COL3A1,CXCL2,IL1B,IL6	159 (18)
BDKRB2	g-protein coupled receptor	np	1.96	6.2E-05	CD44,CTGF,ICAM1,PTGS2	
FCER1G	transmembrane receptor	np	1.951	6.2E-05	CXCL8,IL1B,IL1RN,IL6	172 (21)
S1PR2	g-protein coupled receptor	np	0.991	6.2E-05	ACTA2,F3,ICAM1,PTGS2	74 (7)
BMP15	growth factor	np	0.762	6.2E-05	ID3,PTGS2,PTX3,TNFAIP6	16 (3)
Ras	group	np		6.2E-05	CXCL8,MMP13,PTGS2,VEGFA	116 (15)
CRYAB	other	np		6.2E-05	ACAN,BMP2,FBXO32,MME	
TNFRSF12A	transmembrane receptor	np		6.2E-05	CCL2,CXCL8,IL6,MMP1	73 (7)
STAT4	transcription regulator	np	1.709	6.6E-05	BCL3,CXCL2,IL6,MAP3K8,PRDM1,RRAD,TWIST1	128 (13)
TFAP2A	transcription regulator	np		6.6E-05	BIRC3,COL7A1,CXCL1,CXCL2,PLA2G16,VEGFA,WISP2	
Histone h4	group	np		6.6E-05	BTG3,CXCL8,IL1B,IL6,IRF1,PRLR,PTGS2,RARB,TAGLN,TGFBR2	146 (14)
IRF4	transcription regulator	np	-0.406	6.7E-05	CCL20,IL1B,IL1RN,IL6,IL7R,IRF1,JAK2,PRDM1	123 (17)
TIMP1	cytokine	np	0.447	6.9E-05	CD38,CD44,MME,PLAT,PLAUR	
ADAMTS12	peptidase	np	-1.432	6.9E-05	IL11,IL6,MMP13,S100A9,TAGLN	
NOTCH3	transcription regulator	np		6.9E-05	ACTA2,NOS2,PDGFRB,PTX3,SMTN	
FOSL2	transcription regulator	np		6.9E-05	CXCL8,DIO2,F3,MMP1,NOS2	
Gm-csf	group	np	1.953	0.00007	BCL3,CXCL8,IL1B,IL6,MMP1,PTGS2	161 (19)
EIF3E	other	np	0.64	0.00007	ANGPT1,CXCL1,FGF2,SAA1,THBS1,ZEB2	
PTK2	kinase	np	-0.155	0.00007	ACTA2,CSPG4,IL6,LPP,PDGFRB,THBS1	44 (4)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ATF3	transcription regulator	np	-1.959	0.00007	ATF3,BIRC3,CD82,GSN,IL6,SERPINE1	139 (12)
SRF	transcription regulator	np	-1.262	7.3E-05	ACTA2,BMP2,CTGF,DSTN,FHL1,G0S2,GSN,IL26,MEIS1,MGST2,PTGS2,S100A9,SMTN,TAGLN	
IFN alpha/beta	group	np	1.254	7.3E-05	CCL2,GAS7,IL6,IRF1,MMP10,SOCS1,TREM1	115 (11)
GLI1	transcription regulator	np	0.598	8.2E-05	C11orf96,CMBL,DIO2,FHL1,IL6,MAN1C1,PCDH18,PDZRN3,S100A9,VEGFA	
LDL	complex	np	0.936	8.2E-05	CTGF,IL1B,IL6,NAMPT,PLAT,SERPINE1,SOCS1	165 (19)
STK11	kinase	Inhibited	-2.578	8.2E-05	CCL2,HIF1A,IL6,NOS2,PTGS2,SERPINE1,VEGFA	112 (18)
SYK	kinase		0.796	8.4E-05	CCL2,CITED2,CXCL8,IL6,RGCC	137 (18)
SERPINE1	other		-0.277	8.4E-05	ACTA2,CXCL2,FGF2,IL6,TGFBR2	124 (17)
PLK2	kinase		-0.447	8.4E-05	CITED2,IL1B,IRF1,PLAT,RGCC	
ADA	enzyme	Inhibited	-2.184	8.4E-05	CXCL2,HIF1A,IL6,PDE5A,SERPINE1	72 (6)
ID3	transcription regulator	np	-0.447	8.5E-05	BCL3,CD44,CEBPB,DTX2,FCER1G,HIF1A,ICAM1,IL7R,JAK2,STAT4,TGFBR3	80 (7)
EPHX2	enzyme	np	1.982	8.6E-05	CXCL6,ICAM1,IL1B,IL6	151 (20)
Cdk	group	np	1.98	8.6E-05	CCL2,CXCL2,CXCL8,IL6	
MAPK13	kinase	np	1.214	8.6E-05	CITED2,IL1B,IL6,MAP3K8	
ITGAM	transmembrane receptor	np	0.514	8.6E-05	CXCL8,IL1B,IL6,PTGS2	146 (17)
HIC1	transcription regulator	np	-0.378	9.2E-05	ACTA2,AHNAK2,CA12,CDO1,LIF,NOV,SLC7A11	
RNA polymerase II	complex	np		9.2E-05	CA12,CXCL2,CXCL8,GHR,ICAM1,IL1B,IL1RN,IL6,MEIS1,NFKBIA,NOS2,PTGS2,RARB	85 (5)
STAT1	transcription regulator	Activated	2.849	9.2E-05	CCL2,CCL20,CH25H,CXCL2,FCER1G,HIF1A,ICAM1,IFIT1,IL6,IRF1,NOS2,PDGFRB,SOCS1	132 (16)
Tlr	group	Activated	2.374	9.3E-05	CCL2,CXCL8,IL1B,IL6,NFKBIA,SOCS1	152 (16)
CNR1	g-protein coupled receptor	np	-0.093	1E-04	BMP2,BMP4,FGF2,IL6,NDP,NOD2,PDGFRB,PLD1,PTGS2,SLC29A1	
NFATC2	transcription regulator	Activated	2.124	0.0001	CITED2,CRYAB,IRF1,NFKBIZ,PLAT,PLD1,PTGS2,SLCO3A1,SOCS1	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
let-7a-5p (and other miRNAs w/seed GAGGUAG)	mature microRNA	np	0.345	0.0001	ACTA2,COL3A1,PRDM1,S100A4,THBS1	
CIDEA	other		-0.447	0.0001	CCL2,CIDEA,DIO2,IL6,SERPINE1	75 (7)
S100A6	transporter	Inhibited	-2.236	0.0001	ATF3,CCL20,CXCL2,CXCL8,TNFAIP3	
INHBA	growth factor	np	-0.677	0.0001	ACTA2,CCL2,CTGF,PLOD2,S100A9,TAGLN,VEGFA	141 (15)
MDM2	transcription regulator	np	-0.243	0.00011	ADIRF,ATF3,CXCL8,HIF1A,HIST2H2AA3/HIST2H2AA4,IL1RN	
SMPD2	enzyme	np		0.00011	IL1B,IL6,NOS2	94 (10)
HSPB2	other	np		0.00011	CCL2,CXCL8,ICAM1	
PRTN3	peptidase	np		0.00011	CCL2,CXCL8,IL6	108 (12)
PTGES3	enzyme	np		0.00011	ABCC3,HIF1A,PMP22	
DACH1	transcription regulator	np		0.00011	CXCL8,IL6,SERPINE1	
SPDEF	transcription regulator	np	0.447	0.00011	BIRC3,COL6A3,CTGF,HIF1A,PLAUR,SDC2,SERPINE1	
TLR1	transmembrane receptor	np	1.974	0.00012	CXCL8,IL1B,IL6,TNFAIP3	157 (17)
IL17C	cytokine	np	1.969	0.00012	CCL20,IL1B,IL6,S100A9	
ELANE	peptidase	np	1.067	0.00012	CXCL2,CXCL8,IL1B,SERPINA1	91 (13)
TNFAIP2	other	np	1	0.00012	CITED2,IRF1,PLAT,SLCO3A1	
HEXIM1	transcription regulator	np	-1.131	0.00012	ANGPT1,FGF2,HIF1A,MMP13	
PYCARD	transcription regulator	np		0.00012	ACTA2,CXCL8,IL1B,IL6	105 (16)
IL36G	cytokine	np		0.00012	CCL20,CXCL1,CXCL8,IL6	73 (7)
RNASE2	enzyme	Activated	2.197	0.00012	CCL2,CCL7,CCL8,CXCL5,IL6	
CASP1	peptidase	np	0.315	0.00012	ACTA2,CXCL2,IL1B,IL6,NOS2	156 (16)
CYLD	transcription regulator	np	0.145	0.00012	FCER1G,IL1B,IL6,IL7R,SERPINE1	160 (18)
ID2	transcription regulator	np	-0.447	0.00013	BCL3,CD44,CEBPB,DTX2,FCER1G,HIF1A,ICAM1,IL7R,JAK2,STAT4,TGFBR3	80 (7)
RAF1	kinase	Activated	2.197	0.00015	IL1B,IL6,MMP1,MMP13,NGF	165 (20)
VEGFA	growth factor	np	0.761	0.00015	ANGPT1,F3,FGF2,ICAM1,IL1B,MMP13,NRP1,VEGFA	161 (18)
C5	other	np	1.98	0.00015	C5AR1,CXCL2,IL1B,IL6	150 (13)



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
Gm21596/Hmgb1	transcription regulator	np	1.98	0.00015	HIF1A,IL1B,IL6,NOS2	190 (23)
HSPD1	enzyme	np	1.944	0.00015	CXCL2,ICAM1,IL1B,IL6	131 (18)
FKBP4	enzyme	np	1.718	0.00015	LIF,NKX3-1,NOS2,PDK4	
CXCL2	cytokine	np	1.701	0.00015	CXCL2,ICAM1,IL1B,IL6	162 (19)
PPP2R5C	other	Inhibited	-2	0.00015	BCL3,BIRC3,CXCL8,TNFAIP3	74 (10)
Hmgb1	transcription regulator	np		0.00015	IL1B,IL6,NOS2,SCG2	105 (10)
PLAU	peptidase	np	1.756	0.00016	F3,ICAM1,IL1B,IL6,PLAUR,S100A9	125 (19)
IL33	cytokine	np	1.475	0.00016	CXCL2,CXCL8,IL1B,IL6,NFKBIA,NOS2	92 (12)
SELPLG	other	Activated	2.236	0.00017	CCL2,CXCL2,CXCL8,IL1B,PLAUR	132 (14)
KRT17	other	Activated	2.236	0.00017	CXCL2,CXCL6,IL1B,IL6,MMP13	
PRKCB	kinase	np	1.969	0.00017	IL6,NOS2,PTGS2,SERPINE1,TGFBR2	153 (18)
TAF4	transcription regulator	np		0.00017	CTGF,GAS6,GREM1,HOPX,IL1RN,MAFF,MMP13,THBS1	
Fcer1	complex	Activated	2.429	0.00018	CCL2,CXCL8,FYN,IL1B,IL1RN,IL6	111 (16)
PAF1	other	np	0.816	0.00018	BAMBI,BIRC3,CITED2,NFKBIZ,PLAUR,SERPINE1	
let-7	microna	np	0.082	0.00018	ACTA2,COL3A1,PTGS2,S100A4,STARD13,THBS1	
HTR7	g-protein coupled receptor	np		0.00019	IL1B,IL6,THBS1	43 (4)
MED28	other	np		0.00019	ACTA2,CRIP1,TAGLN	
Cebp	complex	np		0.00019	CXCL8,IL6,PRLR	
SIAH2	transcription regulator	np		0.00019	AKR1C3,ANGPT1,HIF1A	
IL1R2	transmembrane receptor	np		0.00019	CCL20,CXCL8,IL6	113 (10)
PRKRA	other	np		0.00019	IRF1,NKX3-1,THBS1	
CLIC4	ion channel	np		0.00019	CXCL2,IL1B,IL6	47 (3)
TRPA1	transporter	np		0.00019	IL1B,IL6,NGF	
FPR2	g-protein coupled receptor	np		0.00019	CCL2,CXCL8,IL6	147 (17)
THRB	ligand-dependent	np	-1.726	0.00019	CCL2,CXCL2,FZD4,GCH1,GSN,HIF1A,IL6,MMP1,PTGS2,SFRP4,TREM1	134 (18)
POU5F1	transcription regulator	np	-0.484	0.00019	ANGPT1,BIRC3,CIDEA,DLX5,HIF1A,HOPX,IL6,MEIS1,NRP1,PCDH18,TNFRSF21,TWIST1,VEGFA,WLS	
FABP4	transporter	np	1.954	0.0002	IL1B,IL6,NOS2,PTGS2	166 (17)
LIPG	enzyme	np	1.949	0.0002	CCL2,IL1B,IL6,VEGFA	121 (13)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ABL1	kinase	np	1.067	0.0002	BMP2,IER3,MMP1,VEGFA	
TWIST2	transcription regulator	np	0.152	0.0002	CD44,IL1B,TWIST1,ZEB2	
SMAD1	transcription regulator	np	-0.94	0.0002	ACTA2,CTGF,CXCL2,VEGFA	
Mt2	other	np	-1.982	0.0002	ATF3,IL1B,IL6,SERPINE1	
DDX58	enzyme	np	0.734	0.0002	AHNAK,IFIT1,IL6,IRF1,PTGS2,SOCS1	125 (15)
ADAM17	peptidase	Activated	2.189	0.0002	COL3A1,CXCL2,CXCL8,IL6,MMP13	143 (20)
ESRRG	ligand-dependent nuclear receptor	np	0.665	0.0002	FBXO32,HK2,NRP1,PDK4,VEGFA	
MSTN	growth factor	np	0.543	0.0002	ACTA2,FBXO32,HIF1A,PID1,VEGFA	87 (7)
Vegf	group	np	0.378	0.0002	ACTA2,CRTAC1,CXCL8,HOPX,ICAM1,NDP,VEGFA	96 (7)
ERN1	kinase	np	0.728	0.0002	ANG,ATF3,CEBPB,CXCL2,DNAJB9,IL1B,NOS2,PIGA,SLC25A28	
Pka	complex	np	1.973	0.00022	CD44,CTGF,IL6,IRF1,NGF,NOS2,RGS2	130 (17)
NR5A2	ligand-dependent	np	0.069	0.00024	CEBPB,ICAM1,IL1B,IL24,IL6,SAA1,TNFRSF1B	102 (7)
CLEC7A	transmembrane receptor	np	1.959	0.00025	CXCL2,IL1B,IL6,PTGS2	119 (17)
PRKCI	kinase	np	1.154	0.00025	ELF3,HK2,IL6,PTGS2	77 (7)
NCF1	enzyme	np	1.067	0.00025	ACTA2,CD44,ICAM1,SERPINE1	137 (11)
NPC2	other	np	-1.067	0.00025	AKR1C3,BMP2,PTGS2,STAT4	80 (7)
Mt1	other	np	-1.982	0.00025	ATF3,IL1B,IL6,SERPINE1	
KAT2B	transcription regulator	np		0.00025	CTGF,PRLR,PTGS2,RARB	86 (6)
ADORA2A	g-protein coupled receptor	np	-0.408	0.00025	B4GALT3,COL3A1,CXCL2,DSTN,IL6,NFKBIA,NOS2,PTGS2,VEGFA	106 (16)
S100A9	other	np	1.298	0.00026	ATF3,BCL3,CXCL8,DDIT4,IL1B,IL6,KCNMA1,MMP1,S100A9,WISP2	59 (5)
CXCL12	cytokine	np	0.79	0.00027	ACTA2,CCL2,CD44,CXCL8,DLX5,IL6,MMP13	128 (18)
HTT	transcription regulator	np	-1.215	0.00027	ADORA2A,ATF3,ATP6V0E2,CA12,CEBPB,COL6A3,CRYAB,CTGF,DIO2,EPB41L3,FHL1,FXVD6,GPX3,GSN,PLAUR,RARB,SEPP1,SERPINA1,SLC40A1,TGM2	50 (5)
VHL	transcription regulator	np	-1.06	0.00027	CA12,FTH1,HIF1A,SLC40A1,VEGFA	143 (8)
ITGB2	transmembrane receptor	np	-1.4	0.00027	ACTA2,CXCL2,IL6,TGFBR2,VEGFA	97 (10)
mir-1	microna	Inhibited	-2.236	0.00027	CCL2,CEBPB,CXCL1,FBXO32,VEGFA	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
FOLR1	transporter	np		0.00027	AK3,ARHGDI3,BIRC3,CD9,ENTPD7,OSBPL1A,PRLR,S100A4	
ESR2	ligand-dependent	np	-0.475	0.00028	BMP2,BMP4,CCL2,IL1B,MMP1,NDRG2,NKX3-1,NOS2,PTGS2,SFRP4,VEGFA	153 (18)
LGALS3	other	np	0	0.00029	COL3A1,ICAM1,IL6,ITGA10,NOS2,PRDM1,SA1	138 (16)
GPR84	g-protein coupled receptor	np		0.00029	IL1B,IL6,NOS2	
PELI1	enzyme	np		0.00029	IL1B,IL6,NOS2	114 (17)
S100a7a	other	np		0.00029	CXCL1,CXCL8,IL11	
HAS2	enzyme	np		0.00029	ACTA2,CD44,IL6	80 (9)
OGG1	enzyme	np		0.00029	CCL20,CXCL2,IL1B	
AIF1	other	np		0.00029	ACTA2,COL3A1,IL6	
PLA2G5	enzyme	np		0.00029	COL3A1,PTGS2,VEGFA	
HBB	transporter	np		0.00029	CXCL8,ICAM1,SERPINE1	
ACTN4	transcription regulator	np		0.00029	CCL2,CXCL8,IL1B	77 (6)
DEK	transcription regulator	np		0.00029	BIRC3,CXCL8,NFKBIA	77 (7)
PSEN1	peptidase	np	-0.218	0.0003	ACSL1,CD9,CXCL2,DSTN,FZD4,GPM6B,HIST1H2BD,IL1B,MME,NOS2,PDGFRB,PTGS2,SLC11A2,SOCS1,TGFBR2,TUBA1A,TUBB2B	138 (14)
Hsp70	group	np	0.063	0.00031	CXCL8,ICAM1,IL1B,IL6	130 (12)
CD47	transmembrane receptor	np	-1.667	0.00031	CTSK,IL1B,IL6,NOS2	107 (9)
TLR6	transmembrane receptor	np		0.00031	ATF3,CXCL8,IL1B,IL6	170 (20)
FANCC	other	np		0.00031	AQP9,IL1B,MYOF,NOS2,PTGS2,PTX3	148 (11)
ADRM1	other	np		0.00032	NFKBIA,NOS2	114 (6)
DAPK1	kinase	np		0.00032	CXCL8,IL1B	112 (6)
GNA14	enzyme	np		0.00032	CXCL8,IL6	
LAMA3	other	np		0.00032	IL1B,MMP1	114 (12)
LAMA4	enzyme	np		0.00032	HIF1A,VEGFA	
SIGLEC11	other	np		0.00032	IL1B,NOS2	
IL36RN	cytokine	np		0.00032	IL1B,IL6	
GPR32	g-protein coupled receptor	np		0.00032	CXCL8,IL6	72 (7)
TMEM9B	other	np		0.00032	CXCL8,IL6	
XPO1	transporter	np		0.00032	ICAM1,NOS2	
COL17A1	other	np		0.00032	CXCL8,IL6	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TRAF3IP2	other	np	1.915	0.00032	CXCL2,CXCL6,IL6,NFKBIZ,ZC3H12A	105 (12)
IL15	cytokine	Activated	2.021	0.00032	CCL2,CD44,CXCL2,IL6,IL7R,IRF1,NOS2,TGFBR2	128 (16)
KLF4	transcription regulator	np	-0.233	0.00034	ACTA2,ANGPT1,NOS2,NRP1,PCDH18,PLAUR,PRDM1,SOCS1,TAGLN,VEGFA,WLS	
miR-145-5p (and other miRNAs w/seed UCCAGUU)	mature microRNA	np	1.341	0.00036	ACTA2,AHNAK,FSCN1,MMP1,TAGLN	
RAC1	enzyme	np	0.896	0.00036	ACTA2,ATF3,IL1B,MMP1,MMP13	168 (16)
CUX1	transcription regulator	np		0.00036	ARHGDIB,CXCL1,LIMA1,THBS1,WISP2	
OSMR	transmembrane receptor	np	1.982	0.00038	BIRC3,IL6,LBP,SERPINA1	
ARRB1	other	np		0.00038	F3,NOS2,PTGS2,SERPINE1	173 (19)
PRMT1	enzyme	np		0.00038	FTH1,MT2A,RARB,SPINK1	
NEDD9	other	Activated	2.236	0.00042	BMP2,DDIT4,ELF3,PLOD2,SERPINE1	
GPS2	transcription regulator	np	0.447	0.00042	DHRS3,IDH1,PID1,RGL1,SOCS1	
KLF2	transcription regulator	Inhibited	-2.207	0.00042	CXCL2,F3,HIF1A,IL6,PTGS2	153 (13)
Fibrinogen	complex	np		0.00043	CXCL1,CXCL8,ICAM1	107 (12)
FAT1	other	np		0.00043	IL1B,IL6,PTGS2	79 (7)
MTF1	transcription regulator	np		0.00043	MMP13,MT2A,PGF	
TNFAIP8L2	other	np		0.00043	CXCL2,IL1B,IL6	119 (7)
MST1	growth factor	np		0.00043	CTGF,IL6,PTGS2	61 (6)
MAP3K3	kinase	np		0.00043	CXCL8,IL6,TNFAIP3	147 (16)
NEK6	kinase	np		0.00043	CITED2,IL6,PTGS2	
COCH	other	np		0.00043	CXCL2,IL1B,IL6	
PDCD4	other	np		0.00043	IL1B,IL6,PTGS2	79 (7)
ENTPD1	enzyme	np		0.00043	CXCL2,CXCL8,SERPINE1	
GAB1	kinase	np		0.00043	ANGPT1,IL1B,IL6	135 (14)
AZGP1	transporter	np	-0.192	0.00046	BMP4,CEBPB,FBXO32,HK2	
GAB2	other	np	-1	0.00046	ANGPT1,GSN,IL6,SERPINE1	81 (9)
LEPR	transmembrane receptor	np	1.254	0.00052	ACTA2,IL1RN,IL24,IL6,LIF,MMP13,NOS2,SERPINE1,STK17B,TGFBR2	192 (19)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
BCL2	transporter	np	1.982	0.00054	ICAM1,IL1B,IL6,PRDM1,VEGFA	109 (17)
MAPK7	kinase	np	0.849	0.00056	CXCL2,IL1B,PTGS2,VEGFA	136 (16)
IL25	cytokine	np	-0.247	0.00056	CCL2,CXCL8,IL1B,IL6	162 (20)
PDPK1	kinase	np	-1.839	0.00056	CXCL8,IL1B,IL6,SERPINE1	119 (18)
ALOX5	enzyme	np	-1.98	0.00056	CTSK,NOS2,PTGS2,SOCS1	148 (18)
HRAS	enzyme	np		0.00056	CXCL8,IL1B,IL6,PGF,TWIST1,VEGFA	133 (16)
MAPK14	kinase	np	1.715	0.00058	CCL2,IL1B,IL6,KITLG,MMP13,NOS2,PTGS2,TGM2	161 (20)
IL22	cytokine	Activated	2.219	0.00061	CXCL2,IL1B,LBP,NOS2,SAA1	112 (10)
GPX1	enzyme	np	0.418	0.00061	ACTA2,CTGF,GPX3,ICAM1,IL6	
ABCA1	transporter	np	-1.619	0.00061	IL1B,IL6,NAMPT,NOS2,PTGS2	140 (16)
PECAM1	other	np		0.00061	CD44,IL6,THBS1	119 (12)
TRPV1	ion channel	np		0.00061	IL11,IL6,PTGS2	102 (10)
RCAN1	transcription regulator	np		0.00061	CXCL8,IL6,PTGS2	130 (18)
HOXB9	transcription regulator	np		0.00061	ANGPTL2,CXCL8,FGF2	
NCF4	enzyme	np		0.00061	IL1B,IL6,ST3GAL1	
RLN2	other	np		0.00061	ACTA2,MMP13,VEGFA	
PARK7	enzyme	np		0.00061	CXCL8,HIF1A,ICAM1	74 (7)
INS	other	np	1.232	0.00062	ALDH3A2,AQP9,CIDEA,CTGF,F3,HIF1A,PTGS2,VEGFA	149 (19)
CCR2	g-protein coupled receptor	np	1.344	0.00062	CCL2,CXCL2,CXCL6,IL1B,IL6,MMP13	127 (16)
CEBPD	transcription regulator	np		0.00062	CEBPB,CXCL8,HIF1A,IL1B,IL6,NGF	140 (7)
STUB1	enzyme	np	1.225	0.00067	ACTA2,IL6,TAGLN,VEGFA	179 (18)
NFATC3	transcription regulator	np	1.199	0.00067	ACTA2,ATF3,DDIT4,PTGS2	
TRPV4	ion channel	np	1.131	0.00067	CXCL2,CXCL6,IL6,THBS1	
ANXA1	enzyme	np		0.00067	IL1B,IL6,NOS2,PTGS2	150 (17)
C3	peptidase	Activated	2.19	0.00068	CXCL2,IL1B,IL6,NOS2,VEGFA	99 (15)
EPO	cytokine	np	0	0.00074	BMP4,FGF2,IL6,PTGS2,SLC11A2,SOCS1	112 (15)
TRAF3	enzyme	np	-1.532	0.00074	BIRC3,CXCL2,IL1B,IL6,NFKBIA,TNFAIP3	118 (14)
ZFH3	transcription regulator	np		0.00075	EBF1,ID3,RGS16,RGS2,SERPINA1,TUBA1A,TUBB2B	
HMGA1	transcription regulator	np	-0.49	0.00077	ID3,IER3,KITLG,NOS2,PTGS2	129 (7)
Raf	group	np		0.00077	IER3,MAFF,SEMA3C,SLC43A3,TNFAIP3	115 (7)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ADRA1B	g-protein coupled receptor	np		0.00077	CEBPB,COL3A1,IL6,LIF,VEGFA	109 (16)
LPIN1	phosphatase	np	1.98	0.00079	IL1B,IL6,NOS2,PTGS2	163 (20)
CYBB	enzyme	np	1.091	0.00079	COL3A1,CTGF,IL1B,IL6	142 (21)
GDF9	growth factor	np	0.132	0.00079	CTGF,ID3,KITLG,PTGS2	84 (5)
AXL	kinase	np	-0.958	0.00079	IL1B,IL6,MMP1,NOS2	114 (17)
LEP	growth factor	np	1.591	0.0008	ABCC3,ASS1,F3,ICAM1,IDH1,IL1B,IL1RN,IL6,JAK2,NOS2,PTGS2,SEPP1,SERPINE1,VEGFA	122 (18)
JAK	group	np		0.00083	FBXO32,IL6,PTGS2	84 (9)
PLA2G2D	enzyme	np		0.00083	IL1B,IL6,S100A9	
HIRA	transcription regulator	np		0.00083	CXCL2,CXCL6,PGF	
NDFIP1	other	np		0.00083	IL1B,IL6,SLC11A2	161 (17)
IL21	cytokine	np	1.763	0.00086	CCL20,CD38,IL6,IL7R,NOS2,PRDM1,SOCS1	138 (18)
MAVS	other	np	0.652	0.00086	CXCL2,IFIT1,IL1B,IL6,SOCS1	95 (16)
NKX2-1	transcription regulator	np		0.00092	BTG3,IER3,KITLG,MTUS1,PGM3,PRRX2,SERPINE1,THBS1,THY1,VEGF A	
ALOX15	enzyme	np	0.626	0.00093	ICAM1,IL6,NOS2,RGS2	82 (7)
PLK4	kinase	np	0	0.00093	CITED2,IL1B,IRF1,PLAT	
PTPN6	phosphatase	np	-1.516	0.00093	CD44,IL1B,IL6,IRF1	98 (14)
Ikb	group	np		0.00094	MMP1,MMP13	
lipoxigenas	group	np		0.00094	CCL2,RGS2	
Cpla2	group	np		0.00094	PTGS2,VEGFA	127 (12)
IKK (complex)	complex	np		0.00094	BIRC3,CXCL8	12 (4)
DGKH	kinase	np		0.00094	CCL2,CXCL8	134 (11)
HMX2	transcription regulator	np		0.00094	BMP4,DLX5	
THBD	transmembrane receptor	np		0.00094	IL1B,IL6	89 (12)
DLX4	transcription regulator	np		0.00094	FGF2,VEGFA	
BAG4	other	np		0.00094	IL1B,IL6	144 (12)
FGA	other	np		0.00094	IL1B,IL6	
FGG	other	np		0.00094	IL1B,IL6	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
Orm1 (includes others)	other	np		0.00094	IL6,NOS2	
LPA	other	np		0.00094	CXCL8,SERPINE1	
TAB2	other	np		0.00094	CD82,NOS2	104 (11)
CDH4	other	np		0.00094	MMP1,PTGS2	
PIP5K1B	kinase	np		0.00094	IL1B,IL6	139 (14)
FBXL5	enzyme	np		0.00094	FTH1,SLC11A2	
LPAR3	g-protein coupled receptor	np		0.00094	CXCL8,IL6	
WRN	enzyme	np		0.00094	CXCL8,HIF1A	
BTC	growth factor	np		0.00094	CCL20,IL6	
NKRF	transcription regulator	np		0.00094	CXCL8,NOS2	
SMAD6	transcription regulator	np		0.00094	IL6,NOS2	61 (6)
CBX5	transcription regulator	np	-0.113	0.00094	AKR1C3,C15orf48,CXCL5,HIST2H2AA3/HIST2H2AA4,LAMB3,PRSS23,RARRES3,SBSPON	
CREM	transcription regulator	np		0.00094	ATF3,CEBPB,CH25H,COL3A1,DIO2,NOS2,THBS1,VEGFA	
DMD	other	np		0.00097	FBXO32,KCNMA1,MALL,NDRG2,PAMR1,PDK4,PPP1R3C,SCIN,SEPP1,WWC1	
CSF2	cytokine	Activated	2.314	0.00097	CCL2,CD38,CXCL8,ICAM1,IER3,IL1B,IL6,IRAK3,NOS2,PMP22,TGM2,TNFRSF1B	163 (18)
NR1I3	ligand-dependent	np	1.153	0.00098	ABCC3,GSTM1,ICAM1,INSIG2,MAFF,SAT1,SLC29A1	
TET2	other	np	1.414	0.001	AFF3,AHNAK,BCL3,C5AR1,IL1B,MAFF,MMP13,PDGFRB	
CBFB	transcription regulator	np	-0.447	0.00104	ICAM1,MMP13,NRP1,STAT4,TGFBR2,TGFBR3	
Hbb-b1	transporter	np	0.762	0.00106	CD44,FTH1,ICAM1,IL1B,PRLR	86 (6)
NCOA2	transcription regulator	np	0.156	0.00106	BMP2,IL1B,IL6,MMP13,PTGS2	129 (15)
LRP6	transmembrane receptor	np		0.00108	ACTA2,HK2,IL6,PRLR	
PTHLH	other	np		0.00108	ANGPT1,IL6,RGS2,SERPINE1	
NELFB	other	np		0.00109	ATF3,CTGF,VEGFA	
mir-127	microrna	np		0.00109	IL1B,IL6,NOS2	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
EREG	growth factor	np		0.00109	FGF2,IL6,PGF	
PAEP	other	np		0.00109	CXCL1,CXCL5,VEGFA	
THBS1	other	np		0.00109	IL1B,IL6,THBS1	99 (7)
PLAT	peptidase	np		0.00109	IL1B,NOS2,SERPINE1	124 (15)
EBF1	transcription regulator	np	0.762	0.00111	CD79B,DLX5,EBF1,HK2,IL6,IRF1,PPP1R3C,SOCS1	86 (8)
BTK	kinase	np	0.295	0.00112	CD38,CEBPB,CXCL8,IFIT1,IL1B,IL6,IRF1	117 (16)
RIPK2	kinase	Activated	2.439	0.00112	ACSL1,CXCL2,ICAM1,IL6,NOS2,SLC2A6	95 (13)
SIRT6	enzyme	np		0.00118	ACSL4,CXCL8,IL6,PIGA,PTGS2	162 (22)
HDAC4	transcription regulator	np	0.747	0.0012	ATF3,HIF1A,IL6,MMP13,PTGS2,RGS2,VEGFA	141 (7)
ADIPOQ	other	np	0.53	0.0012	ACSL1,CCL2,COL3A1,IL6,NFKBIA,NOS2,PTGS2	164 (20)
RUNX2	transcription regulator	np	1.775	0.00122	ACTA2,HIF1A,MMP13,PCDH18,SERPINE1,TAGLN	9 (2)
FGF8	growth factor	np	-0.655	0.00122	BMP2,BMP4,CCL2,CRIP1,CRYAB,LAMB3	
KIT	transmembrane receptor	np		0.00122	CD44,ICAM1,KITLG,LIF,MGST2,SOCS1	121 (7)
IL6R	transmembrane receptor	np	1.969	0.00125	ABCC3,MMP13,PTGS2,VEGFA	105 (11)
ANXA2	other	np	0.684	0.00125	ANG,IL6,MMP1,PTGS2	151 (16)
PTX3	other	np	0.324	0.00125	CTGF,CXCL2,IL1B,IL6	95 (11)
OLR1	transmembrane receptor	np	0	0.00125	IL6,MMP1,TGFBR2,TGFBR3	69 (7)
MMP14	peptidase	np	-0.132	0.00125	ATF3,CSPG4,IL6,VEGFA	118 (10)
SRC (family)	group	np		0.00125	BMP2,ICAM1,IL6,PTGS2	105 (14)
ZBTB20	transcription regulator	np	0.44	0.0013	GAS6,GHR,IL6,NFKBIA,PDK4	
PTPN1	phosphatase	np	0.152	0.0013	CIDEA,CXCL2,NFKBIA,NOS2,SOCS1	106 (11)
ADRA1D	g-protein coupled receptor	np		0.0013	CEBPB,COL3A1,IL6,LIF,VEGFA	125 (16)
PRDM1	transcription regulator	Inhibited	-2.219	0.00136	CXCL2,CXCL6,ID3,IL1B,IL24,IL6,PRDM1	85 (8)
TNFSF14	cytokine	np		0.0014	BIRC3,ICAM1,IL6	127 (12)
BGN	other	np		0.0014	CCL2,CXCL8,IL1B	124 (11)
MAFK	transcription regulator	np		0.0014	ABCC3,ABCC4,PRDM1	



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TACR1	g-protein coupled receptor	np		0.0014	IL1B,IL6,PTGS2	153 (18)
THY1	other	np		0.0014	MMP10,MMP13,VEGFA	
DLX3	transcription regulator	np		0.0014	ELF3,PGF,S100A9	
ADAM15	peptidase	np		0.0014	CD44,IL6,VEGFA	79 (10)
PTTG1	transcription regulator	np	1.177	0.00144	CD44,FGF2,HIF1A,VEGFA	
CHRNA7	transmembrane receptor	np	-1.987	0.00144	CXCL2,IL1B,IL1RN,IL6	152 (14)
PIK3CA	kinase	np		0.00144	NOS2,PDGFRB,THY1,TWIST1	
GTF2B	transcription regulator	np		0.00144	GHR,NFKBIA,PRLR,TNFAIP3	
NCOA3	transcription regulator	np		0.00144	FGF2,IRF1,PTGS2,RARB,TAGLN	
PARP1	enzyme	Activated	2.413	0.00153	ICAM1,IL1B,IL6,NOS2,PTGS2,SOCS1	168 (18)
ADRA1A	g-protein coupled receptor	np		0.00158	CEBPB,COL3A1,IL6,LIF,VEGFA	117 (17)
PIK3CG	kinase	np	1.235	0.00164	CTSK,ICAM1,IL1B,IL6	129 (19)
RPSA	translation regulator	np	-1.96	0.00164	IL1B,IL6,NOS2,PTGS2	142 (17)
CHADL	other	Inhibited	-2	0.00164	CRYAB,CSPG4,IL6,PTX3	
APOA1	transporter	Inhibited	-2	0.00164	ICAM1,IL1B,IL6,NOS2	125 (15)
PAX7	transcription regulator	np	-0.14	0.00165	ASS1,GCH1,ID3,MYO1D,PARM1,PRSS23	
SRC	kinase	Activated	2.105	0.00174	CXCL8,HIF1A,ICAM1,IL6,VEGFA	109 (17)
RGS10	other	np		0.00174	CCL2,CXCL2,CXCL6,IL1B,TNFRSF1B	
SIGIRR	transmembrane receptor	np		0.00175	CXCL2,IL1B,IL6	132 (11)
ITCH	enzyme	np		0.00175	CTGF,IL1B,IL6	150 (19)
BCL2L11	other	np		0.00175	CXCL2,IL1B,IL6	62 (5)
CX3CL1	cytokine	np		0.00175	HIF1A,ICAM1,IL6	164 (19)
FASN	enzyme	np		0.00175	CXCL8,IL6,PTGS2	73 (7)
ADRB1	g-protein coupled receptor	np		0.00175	COL3A1,NGF,THBS1	87 (7)
TNFRSF9	transmembrane receptor	np		0.00175	ALDH1A2,IL1B,IL6	65 (7)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
FADD	other	np	-0.816	0.00177	BIRC3,CXCL2,ICAM1,IL6,SOCS1,TNFAIP3	163 (16)
TGFBR	group	np		0.00185	ACTA2,CD44	
TNIP3	other	np		0.00185	CXCL8,IL6	61 (6)
RSPO3	kinase	np		0.00185	IL6,PTGS2	79 (7)
B3GNT2	enzyme	np		0.00185	IL1B,IL6	106 (11)
CYP2C8	enzyme	np		0.00185	IL1B,IL6	
IgG2a	complex	np		0.00185	IL1B,IL6	111 (11)
GPR132	g-protein coupled receptor	np		0.00185	ICAM1,IL6	92 (7)
KHSRP	enzyme	np		0.00185	IL1B,NOS2	90 (10)
miR-133a-3p (and other miRNAs w/seed match)	mature microRNA	np		0.00185	CTGF,FSCN1	
MB	transporter	np		0.00185	HIF1A,VEGFA	
EIF2AK1	kinase	np		0.00185	IL1B,IL6	
DNAJA3	other	np		0.00185	CXCL8,VEGFA	156 (14)
CD163	transmembrane receptor	np		0.00185	IL1B,IL6	79 (7)
IGBP1	phosphatase	np		0.00185	IRF1,NOS2	
ITGAX	transmembrane receptor	np		0.00185	CXCL8,IL1B	
PINK1	kinase	np		0.00185	HIF1A,VEGFA	140 (7)
ACOD1	enzyme	np		0.00185	IL6,TNFAIP3	101 (10)
CTSK	peptidase	np		0.00185	IL6,PTGS2	
RTKN	other	np		0.00185	BIRC3,TNFAIP3	
TNFAIP8	other	np		0.00185	IL1B,IL6	
FBLN5	other	np		0.00185	SERPINA1,TWIST1	
PPP2R5B	phosphatase	np		0.00185	SAT1,SLC22A4	
GNA15	enzyme	np		0.00185	CXCL8,IL6	
CCR5	g-protein coupled receptor	np	0.927	0.00187	CXCL2,F3,SERPINA1,TNFRSF1B	80 (7)
ZBED6	other	np	0.577	0.00187	CRIM1,DDIT4,KITLG,WWC1	
GHR	transmembrane receptor	np	-1.067	0.00187	GHR,IL1B,IL6,PRLR	116 (11)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
NCOR2	transcription regulator	np		0.00187	BIRC3,CXCL8,PTGS2,RARB	77 (8)
AKT1	kinase	np	1.698	0.0019	ACTA2,CIDEA,FBXO32,IL6,PDGFRB,SERPINE1	140 (11)
NCOA1	transcription regulator	np		0.0019	FGF2,IL6,NFKBIZ,PRLR,RARB,SERPINE1	
RETNLB	other	np	-0.128	0.00204	ACTA2,CCL2,CTGF,DNER,IL1B,STK17B	
THRA	ligand-dependent	np	-0.64	0.00204	CCL2,CXCL2,IL6,IRF1,RARB,TREM1	116 (13)
HDAC6	transcription regulator	np	-0.247	0.00212	HIF1A,IL6,NOS2,SERPINE1	185 (20)
CBX7	other	np		0.00216	BMP2,CXCL8,PRDM1	
DPH5	enzyme	np		0.00216	IL1B,IRF1,NFKBIA	
CD200	other	np		0.00216	IL1B,IL6,NOS2	141 (13)
COL2A1	other	np		0.00216	COL3A1,IL1B,MMP13	73 (6)
ANGPT1	growth factor	np		0.00216	COL3A1,ICAM1,VEGFA	87 (7)
CAPN3	peptidase	np		0.00216	FTH1,GPX3,PTGS2	
NOS1	enzyme	np		0.00216	FBXO32,HIF1A,PDE5A	
PTPN22	phosphatase	np		0.00216	IL1B,IL6,NOS2	
VTN	other	np		0.00216	F3,IL1B,SERPINE1	87 (8)
ERG	transcription regulator	np	1	0.00222	ABCC4,CDK5RAP2,CXCL1,DSTN,EPB41L3,FHL1,FYN,MYO1D,PLAUR	
NR4A2	ligand-dependent nuclear receptor	np	-1.446	0.00227	CCL20,KCNMA1,MMP1,PTX3,SLC39A8	
SIN3A	transcription regulator	np		0.00227	CTSK,FBXO32,PTGS2,RARB,S100A9	51 (4)
HSF1	transcription regulator	np	-0.906	0.00232	CRYAB,HSPB1,ICAM1,IL1B,IL6,IL7R,LIF,RARRES3,RRAD	142 (15)
UXT	transcription regulator	np	0.762	0.00239	CXCL8,NFKBIA,NKX3-1,TNFAIP3	74 (7)
MITF	transcription regulator	np	-1.219	0.00253	ACAN,CD44,CTSK,CXCL8,FBXO32,HIF1A,SEMA3C,SERPINE1	
Ren2	peptidase	np		0.00263	COL3A1,MMP13,VEGFA	62 (5)
TFEC	transcription regulator	np		0.00263	COL6A3,IL6,S100A9	
PHB2	transcription regulator	np		0.00263	BMP2,IL11,SOCS1	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
PLAUR	transmembrane receptor	np		0.00263	C5AR1,CCL2,PLAUR	
CRHR1	g-protein coupled receptor	np		0.00263	HSD11B1,KCNMA1,KCNMB1	
MAP3K1	kinase	np		0.00263	COL3A1,SERPINE1,THBS1	119 (7)
SKI	transcription regulator	np		0.00263	ACTA2,PMP22,SERPINE1	
BRD4	kinase	np		0.00266	ABCC4,BCL3,CXCL2,PIM2,PRDM1,SLC7A2	
REL	transcription regulator	np	1.342	0.00267	ACSL4,BCL3,CXCL8,ICAM1,IL6,MAP3K8,NFKBIA,NOS2,PLA2G16,TNFAIP3	76 (7)
SUMO3	other	np	1	0.00268	CD38,IL6,NOV,TNFRSF21	
MERTK	kinase	np	-0.958	0.00268	IL1B,IL6,NOS2,RGCC	108 (14)
MTOR	kinase	np	0.936	0.00274	AKR1B1,CEBPB,HIF1A,HSD11B1,HSPB1,IL6,IRF1,NOS2,SERPINA1	138 (21)
PPARD	ligand-dependent	np	-0.037	0.00285	ACTA2,ALDH3A2,CEBPB,GAS6,IL6,PKD4,PTGS2,THBS1,VEGFA	137 (21)
PIN1	enzyme	np	1	0.00299	COL3A1,IL1B,IL6,NFE2L1	129 (17)
BCL2L1	other	np	-1.067	0.00299	CD44,IL1B,THBS1,TNFRSF21	67 (7)
GMNN	transcription regulator	np	0.816	0.00302	ANGPT1,FGF2,NRP1,PCDH18,VEGFA,WLS	
PDX1	transcription regulator	np		0.00302	CD44,FGF2,IDH1,PRSS23,SCG2,TGFBR3	
TEAD	group	np		0.00304	CD44,CTGF	
C1q	complex	np		0.00304	CCL2,CXCL8	
FFAR4	g-protein coupled receptor	np		0.00304	CXCL8,PTGS2	119 (7)
WBSCR22	enzyme	np		0.00304	CXCL8,IL6	
SMAD1/5	group	np		0.00304	ID3,PLAUR	
IgG2b	complex	np		0.00304	IL1B,IL6	
SELL	transmembrane receptor	np		0.00304	IL1B,IL6	78 (7)
ANG	enzyme	np		0.00304	CCL8,IL6	
PSMB9	peptidase	np		0.00304	NFKBIA,TNFAIP3	49 (3)
ERCC4	enzyme	np		0.00304	GHR,PRLR	87 (7)
CSK	kinase	np		0.00304	IL1B,IL6	127 (16)
ETV1	transcription regulator	np		0.00304	MMP1,MMP13	
ERCC1	enzyme	np		0.00304	GHR,PRLR	87 (7)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TAF10	transcription regulator	np		0.00304	GHR,PRLR	
MAPK10	kinase	np		0.00304	CXCL8,IL6	79 (7)
BDKRB1	g-protein coupled receptor	np		0.00304	CTGF,CXCL6	92 (7)
TBXA2R	g-protein coupled receptor	np		0.00304	ICAM1,PTGS2	85 (6)
MARCO	transmembrane receptor	np		0.00304	IL1B,IL6	87 (7)
PPP2R2A	phosphatase	np		0.00304	SAT1,SLC22A4	
STX2	transporter	np		0.00304	BMP2,BMP4	79 (7)
NAA10	enzyme	np		0.00304	TGFBR3,VEGFA	
S1PR3	g-protein coupled receptor	np		0.00304	CD44,PTGS2	74 (7)
Wfdc17	other	np		0.00304	IL1B,IL6	
TBL1XR1	transcription regulator	np		0.00304	CXCL2,RARB	9 (2)
RHO	g-protein coupled receptor	np	0.447	0.00315	CD44,CEBPB,HK2,SEPP1,TNFAIP3	
CD4	transmembrane receptor	np		0.00315	F3,HIF1A,MME	90 (7)
GADD45A	other	np		0.00315	CXCL2,IL1B,IL6	142 (15)
TGFB3	growth factor	np		0.00315	PLOD2,VEGFA,ZEB2	
NCR2	transmembrane receptor	np		0.00315	CCL20,PTGS2,THBS1	
SMARCC1	transcription regulator	np		0.00315	CD79B,EBF1,IL7R	
ETS2	transcription regulator	np	0.152	0.00333	BMP4,MMP1,MMP13,PLA2G16	
GLI2	transcription regulator	np		0.0034	CXCL2,CXCL6,IL1B,IL6,MMP13	
MYOC	other	np		0.00363	CD44,DDIT4,FBXO32,FSCN1,SLC7A11,TGIF1	
KDM1A	enzyme	np		0.00367	ARHGDIB,BMP2,GLT8D2,RARB,SFRP4	
CXCL8	cytokine	np	1.312	0.0037	COL12A1,CXCL8,IL1B,PTGS2	118 (20)
MBTD1	other	np	1	0.0037	AQP9,NFKBIA,SEPP1,STAT4	
NQO1	enzyme	np	0	0.0037	BIRC3,C5AR1,NOS2,PTGS2	154 (19)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
BACH2	transcription regulator	np	-1.964	0.0037	ID3,IL6,PRDM1,S100A9	25 (3)
Smad2/3	group	np		0.00373	MMP10,SERPINE1,TGM2	
TLR8	transmembrane receptor	np		0.00373	CXCL8,IL1B,IL6	142 (16)
USP18	peptidase	np		0.00373	IL6,IRF1,SOCS1	103 (14)
BACH1	transcription regulator	np		0.00373	FTH1,MMP1,SLC7A11	
NOX4	enzyme	np		0.00373	HIF1A,SERPINE1,VEGFA	100 (11)
HNF4A	transcription regulator	np	-1.857	0.00388	ACSL1,AHNAK,CRIP1,CXCL8,FHL1,FXVD6,GALM,GSN,IL6,PRDM1,RARB, SERPINA1,TNFAIP6	
MAP2K1	kinase	np	0.602	0.00395	ATF3,CTGF,F3,MMP1,NET1	148 (16)
CASZ1	enzyme	np	1.982	0.00409	ENPP1,ITGA10,MYOF,TNFRSF1B	
TWIST1	transcription regulator	np	1.96	0.00409	CCL2,CD44,MMP1,VEGFA	
SUMO2	enzyme	np	1	0.00409	CD38,IL6,NOV, TNFRSF21	
FST	other	np	1	0.00409	ACSL1,CIDEA,SAA1,SERPINA1	
KRT14	other	np		0.00409	CXCL1,CXCL8,MMP1,MMP13	
NR1H4	ligand-dependent nuclear receptor	np	-1.118	0.0041	ABCC3,ABCC4,ACTA2,CEBPB,IL1B,IL6,RARB	125 (15)
IFNL1	cytokine	np	0.655	0.00425	ATF3,CXCL8,IFIT1,IL6,RARRES3	99 (9)
Ifn gamma	complex	np		0.00437	ICAM1,JAK2,NOS2	127 (14)
WWTR1	transcription regulator	np		0.00437	CD44,CTGF,SERPINE1	
WLS	other	np		0.00437	BMP4,CCL20,CXCL2	
PDGFB	growth factor	np		0.00437	ACTA2,PDGFRB,VEGFA	
CX3CR1	g-protein coupled receptor	np		0.00437	IL1B,IL6,NOS2	107 (11)
CRHR2	g-protein coupled receptor	np		0.00437	CXCL2,KCNMA1,KCNMB1	
DUSP5	phosphatase	np		0.00437	CH25H,IL11,PRDM1	
FSHB	other	np		0.00437	CTGF,KITLG,PLAT	
SREBF1	transcription regulator	Activated	2.386	0.00449	ACSL1,ACSL4,BHLHE41,FBXO32,GPX3,HK2,SERPINE1,VEGFA	
Agtr1b	g-protein coupled receptor	np		0.00451	NOS2,PTGS2	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
CaMKII	complex	np		0.00451	BIRC3,IL1B	89 (7)
CLEC6A	transmembrane receptor	np		0.00451	IL1B,IL6	
HLA-DQ	complex	np		0.00451	IL1B,IL6	125 (7)
PDGFRB	kinase	np		0.00451	ACTA2,PDGFRB	
AKAP12	transporter	np		0.00451	ANGPT1,HIF1A	
HYOU1	other	np		0.00451	IL6,NOS2	
MEFV	other	np		0.00451	CXCL8,IL1B	67 (7)
mir-143	microna	np		0.00451	HK2,TAGLN	
mir-150	microna	np		0.00451	CXCL2,FZD4	
AMBP	transporter	np		0.00451	CXCL2,IL1B	94 (7)
PTGIR	g-protein coupled receptor	np		0.00451	IL1B,IL6	
SRSF3	other	np		0.00451	CXCL8,VEGFA	79 (7)
IL9R	transmembrane receptor	np		0.00451	BCL3,IL6	
FCER2	transmembrane receptor	np		0.00451	CXCL8,NOS2	78 (7)
CD74	transmembrane receptor	np		0.00451	CXCL8,HIF1A	74 (7)
IKBKAP	other	np		0.00451	BMP4,VEGFA	154 (17)
F13A1	enzyme	np		0.00451	IL1B,IL6	
HBEGF	growth factor	np		0.00451	NRP1,PDK4	
VIPR1	g-protein coupled receptor	np		0.00451	IRF1,NOS2	75 (7)
SDC1	enzyme	np		0.00451	IL6,TGM2	
TBL1X	transcription regulator	np		0.00451	CXCL2,RARB	9 (3)
TARBP2	other	np		0.00451	NKX3-1,THBS1	
SERPIND1	other	np		0.00451	IL1B,IL6	
SF1	transcription regulator	np		0.00451	ACTA2,ICAM1	
SULT1E1	enzyme	np		0.00451	PTGS2,TNFAIP6	
NPPA	other	np		0.00451	IL1B,PTGS2	
ERCC3	enzyme	np		0.00451	GHR,PRLR	
IFNA2	cytokine	np	0.246	0.00458	FGF2,HIF1A,IFIT1,IL6,IRF1,SOCS1	116 (15)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
BCR (complex)	complex	Activated	2.205	0.00485	CD44,FCMR,JAK2,NAMPT,PRDM1,PTGS2	91 (10)
GATA4	transcription regulator	np	-0.537	0.00496	COL3A1,CTGF,DIO2,ECM2,FGF2,PRDM1,S100A4	
POR	enzyme	np	0.6	0.00505	ABCC3,ACSL1,ALDH1A2,GSTM1,HIF1A,PDK4,PNPLA7,TUBB2B,VEGFA	
ZMPSTE24	peptidase	np		0.00508	GHR,JAK2,SOCS1	
PIAS1	transcription regulator	np		0.00508	ACTA2,RRAD,TAGLN	
AURKB	kinase	np		0.00508	ATF3,CD82,IER3	
NOG	growth factor	np		0.00508	BMP4,ID3,MMP13	
MAP2K6	kinase	np		0.00508	CCL8,CRYAB,NOS2	
TNFSF15	cytokine	np		0.00508	BIRC3,CXCL2,CXCL8	145 (16)
PDGFC	growth factor	np		0.00508	ACTA2,PDGFRB,VEGFA	14 (3)
FOXM1	transcription regulator	np	1.016	0.00541	IL6,PLAUR,TGFBR2,TWIST1,VEGFA,ZEB2	
IRF2	transcription regulator	np	0.75	0.00543	IL1B,IL6,IRF1,PTGS2	104 (13)
Hbb-b2	other	np		0.00543	CD44,FTH1,IL1B,PRLR	
NLRP3	other	np	0.97	0.0056	ACTA2,CXCL2,IL1B,IL6,LIF	159 (18)
ZBTB16	transcription regulator	np	0.391	0.0056	BMP2,IL6,IL7R,NFKBIZ,PTGS2	12 (2)
WT1	transcription regulator	np	0	0.00582	CCL2,CSPG4,HCFC1R1,IL11,IL1B,PLAUR,SERPINE1,THBS1,VEGFA	
Fc gamma receptor	group	np		0.00585	CXCL8,IL6,NOS2	162 (19)
DCAF1	other	np		0.00585	NKX3-1,NOV,TGM2	
AMH	growth factor	np		0.00585	CXCL2,IER3,IRF1	91 (10)
NFAT5	transcription regulator	np		0.00585	DDIT4,S100A4,SLC7A2	
IL23A	cytokine	np		0.00585	IL1B,IL6,S100A9	78 (8)
MMP2	peptidase	np		0.00585	IL1RN,JAK2,SOCS1	100 (11)
DRD2	g-protein coupled receptor	np		0.00585	CRYAB,TGFBR2,VEGFA	
PCDH11Y	other	np		0.00585	BMP4,CD44,PTGS2	79 (7)
RCE1	peptidase	np		0.00593	CRIP1,CRYAB,PRRX2,WISP2	
SYK/ZAP	group	np		0.00624	IL6,PTGS2	134 (18)



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ANKRD42	transcription regulator	np		0.00624	IL1B,IL6	
TRIM38	other	np		0.00624	CXCL8,IL6	153 (19)
NLRX1	other	np		0.00624	IL1B,IL6	129 (13)
EGLN2	enzyme	np		0.00624	CXCL8,HIF1A	
S100A10	other	np		0.00624	IL6,MMP1	
TYRO3	kinase	np		0.00624	IL1B,IL6	69 (5)
HIPK1	kinase	np		0.00624	MMP10,VEGFA	
MAFF	transcription regulator	np		0.00624	ABCC3,ABCC4	
TNFRSF25	transmembrane receptor	np		0.00624	CCL2,CXCL8	114 (12)
CYP4F2	enzyme	np		0.00624	IL6,VEGFA	79 (7)
C6	other	np		0.00624	CXCL2,IL1B	
TMPO	other	np		0.00624	COL12A1,COL3A1	
MMP8	peptidase	np		0.00624	CXCL8,IL6	95 (11)
TAZ	enzyme	np		0.00624	CTGF,TAGLN	
RBCK1	transcription regulator	np		0.00624	ICAM1,TNFAIP3	
CCL11	cytokine	np		0.00624	CXCL2,IL6	58 (4)
ATF5	transcription regulator	np		0.00624	SAA1,SAA2	
MYOCD	transcription regulator	np	-0.797	0.00637	ACTA2,COL3A1,ECM2,S100A4,TAGLN	
Ccl2	cytokine	np	1.072	0.00647	CTSK,CXCL2,IL1B,IL6	136 (20)
TNFSF11	cytokine	np	-0.455	0.00647	CTSK,IL6,NFKBIA,NOS2	157 (19)
HAND2	transcription regulator	np		0.00647	COL3A1,ECM2,GREM1,S100A4	
NPM1	transcription regulator	np		0.00668	CXCL2,IL6,VEGFA	
HSP90B1	other	np		0.00668	IL1B,IL6,NOS2	122 (11)
KEAP1	transcription regulator	np		0.00668	CTSK,IL1B,IL6	60 (6)
IL4R	transmembrane receptor	np		0.00668	ACSL1,IL1B,NOS2	106 (11)
CLU	other	np		0.00668	CXCL8,IL6,NFKBIA	102 (13)
TNFSF10	cytokine	np		0.00668	CXCL8,IL1RN,NFKBIA	77 (7)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
THBS4	other	np		0.00668	COL3A1,ICAM1,MMP13	
KCNE3	ion channel	np		0.00679	AKR1C3,PRDM1,PTGS2,STAT4,TNFAIP6	
IL2	cytokine	np	1.738	0.00682	CD44,CD9,IL1B,IL26,IL6,IL7R,IRF1,NOS2,PRDM1,STK17B	151 (17)
YAP1	transcription regulator	np		0.00703	ACTA2,CTGF,FBXO32,TAGLN	
EIF4E	translation regulator	np	1.706	0.00708	CEBPB,FGF2,GPX3,HIF1A,NFKBIA,NRP1,PGF	
XBP1	transcription regulator	np	1.369	0.00713	CXCL2,DNAJB9,ICAM1,IL24,IL6,NOS2,PIGA,PRDM1,SERPINA1	107 (14)
ALDH2	enzyme	np		0.00758	SHMT1,SLC7A11,SLC7A5	
COL4A3	other	np		0.00758	COL3A1,CTGF,PTGS2	
COMMD1	transporter	np		0.00758	DDIT4,HK2,VEGFA	
RBM5	other	np	-0.254	0.00763	BIRC3,GPER1,ICAM1,IL32	
miR-146a-5p (and other miRNAs w/seed)	mature microRNA	Inhibited	-2	0.00763	CCL2,CXCL8,LBP,NOS2	151 (16)
NFKB2	transcription regulator	np		0.00763	BIRC3,BMP2,CCL20,PTGS2	92 (11)
CDKN1B	kinase	np	-0.128	0.00774	FHL1,RRAD,S100A9,SEPP1,SHMT1,TWIST1	
SIRT3	enzyme	np		0.00822	DIO2,IL1B	
LTBP4	growth factor	np		0.00822	BMP4,GREM1	
PRF1	other	np		0.00822	CD44,IL6	
TTN	kinase	np		0.00822	CRYAB,FHL1	
DCLK1	kinase	np		0.00822	TWIST1,ZEB2	
PLTP	enzyme	np		0.00822	IL1B,IL6	92 (7)
NKX2-3	transcription regulator	np		0.00822	BMP2,BMP4	
ING4	transcription regulator	np		0.00822	IL6,NFKBIA	79 (7)
TIA1	other	np		0.00822	PTGS2,VEGFA	
ERP29	transporter	np		0.00822	TWIST1,ZEB2	
CPEB1	translation regulator	np		0.00822	IL6,TWIST1	
ARF6	transporter	np		0.00822	IL1B,IL6	109 (12)

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
MSX1	transcription regulator	np		0.00822	BMP2,BMP4	
HSPG2	enzyme	np		0.00822	ACAN,ACTA2	
PHB	transcription regulator	np		0.00822	CXCL8,IL1B	121 (11)
VCP	enzyme	np		0.00822	CCL2,CXCL8	
SMAD5	transcription regulator	np		0.00822	ID3,VEGFA	
PTGER1	g-protein coupled receptor	np		0.00822	CXCL8,ICAM1	
ACE2	peptidase	np		0.00822	ACTA2,SERPINE1	
ACTG1	other	np		0.00822	ACTA2,TAGLN	
Havcr1	other	np		0.00822	IL1B,IL6	
IL6ST	transmembrane receptor	np		0.00826	IL6,ORM1,SOCS1,TNFRSF1B	84 (8)
PELP1	other	np		0.00826	BMP2,COL12A1,FYN,NKX3-1	73 (7)
RORA	ligand-dependent	np	1.667	0.0083	CH25H,IL1B,IL6,NFKBIA,PPP1R3C,S100A9,SLC16A10,SLC25A24	
CD24	other	np		0.00852	ATF3,CXCL8,ICAM1,LPP,MTUS1,THBS1	
Ciap	group	np		0.00856	CXCL2,IL1B,IL6	82 (7)
HLX	transcription regulator	np		0.00856	BMP2,CXCL8,PRDM1	
SAA1	transporter	np		0.00856	CXCL8,IL1B,IL1RN	160 (17)
HSD17B4	enzyme	np		0.00856	ACSL1,BMP2,PDK4	
HOXA9	transcription regulator	np		0.00856	CCL2,ENPP1,IL7R	
MUC1	other	np		0.00856	CXCL8,HIF1A,IL6	157 (17)
FGFR1	kinase	Activated	2.2	0.00864	BMP4,FGF2,IL11,IL6,PTGS2	128 (15)
SOX1	transcription regulator	np	1.342	0.00864	ANGPT1,NRP1,PCDH18,VEGFA,WLS	
NR1I2	ligand-dependent	np	0.16	0.00871	ABCC3,ALDH3A2,ANG,GSTM1,IL6,INSIG2,TGM2	
BAX	transporter	np		0.00892	CTSK,DNAJB9,IL6,TGM2	
PRKAA	group	np		0.0096	HSD11B1,IL6,NOS2	153 (13)
TYK2	kinase	np		0.0096	C5AR1,IL1B,IRF1	82 (7)
PDCD1	phosphatase	np		0.00961	CXCL8,IL6,NOS2,SLC7A5	124 (16)
BRD2	kinase	np		0.00961	IL1B,IL6,NFIB,STAT4	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
SOX3	transcription regulator	np	1.342	0.00969	ANGPT1,NRP1,PCDH18,VEGFA,WLS	
RORC	ligand-dependent	np		0.0102	CCL20,IL1B,IL6,PPP1R3C,S100A9,SLC16A10,SLC25A24	
IKZF1	transcription regulator	np	1	0.0103	C1QTNF1,CD79B,IL7R,KITLG,TMEM119,UACA	
IRF3	transcription regulator	np	0.447	0.0103	CCL2,CXCL8,IFIT1,IL1B,IL6,NOS2	
MAPK1	kinase	np	0.971	0.0103	CFB,COL7A1,FCMR,IFIT1,LIF,NRP1,PLD1,PTGS2,RGS16,TMEM158, TNFRSF1B	
PRNP	other	np	1	0.0103	CCL2,CD44,IL6,PLAUR	
Notch	group	np	-1.154	0.0103	IL6,NET1,TAGLN,ZEB2	
TGFBR1	kinase	np	-1.941	0.0103	ACTA2,BMP4,CTGF,PKD4	
WWC1	transcription regulator	np		0.0104	BMP2,CTGF	
OSCAR	other	np		0.0104	CXCL8,ICAM1	
NEK7	kinase	np		0.0104	PTGS2,RGCC	
STK17A	kinase	np		0.0104	MT1H,MT1M	
C1QA	peptidase	np		0.0104	C5AR1,IL6	
UNC5B	transmembrane receptor	np		0.0104	CXCL2,IL6	
TRPM2	ion channel	np		0.0104	CXCL8,NOS2	
MALT1	peptidase	np		0.0104	CD44,IL6	
TPM3	other	np		0.0104	MMP1,VEGFA	
RLIM	enzyme	np		0.0104	CTGF,SERPINE1	
LY96	transmembrane receptor	np		0.0104	CXCL2,IL6	
mir-199	microna	np		0.0104	HIF1A,NOS2	
LGALS3BP	transmembrane receptor	np		0.0104	IL6,MMP13	
ALOX15B	enzyme	np		0.0104	NKX3-1,VEGFA	
DDR1	kinase	np		0.0104	COL3A1,MMP1	
KIF3A	enzyme	np		0.0104	MMP13,VEGFA	
ERBB3	kinase	np		0.0104	PTGS2,VEGFA	
TAC1	other	np		0.0104	IL1B,IL6	
USP19	peptidase	np		0.0104	BIRC3,FBXO32	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
FHL2	transcription regulator	np		0.0104	ACTA2,PDGFRB	
RIPK3	kinase	np		0.0104	IL1B,IL6	
S1PR1	g-protein coupled receptor	np		0.0104	IL6,PTGS2	
CDK8	kinase	np		0.0104	CD44,RARB	
SMURF2	enzyme	np		0.0104	SERPINE1,TGIF1	
PTGFR	g-protein coupled receptor	np		0.0104	PRLR,PTGS2	
AEBP1	peptidase	np		0.0104	ACTA2,NOS2	
Hsp27	group	np		0.0107	CXCL8,IL6,PTGS2	
NFYB	transcription regulator	np		0.0107	FTH1,MMP13,S100A4	
CARM1	transcription regulator	np		0.0107	FTH1,ICAM1,SPINK1	
BTNL2	transmembrane receptor	np	0.447	0.0108	APPL2,CNN3,IL6,S100A4,TNFRSF1B	
CST5	other	np	-0.905	0.0109	AHNAK,CD44,COL12A1,CYBRD1,FHL1,ID3,KIAA0101,NRP1,SLC7A11,STEAP1,TGIF1	
SIRT1	transcription regulator	np	-1.242	0.0117	BIRC3,FBXO32,HIF1A,IL1B,IL6,MMP13,PKD4,RGS16	
YBX1	transcription regulator	np		0.0119	ACTA2,CXCL2,PTGS2	
BRAF	kinase	np		0.0119	BIRC3,HIF1A,MMP1	
KMT2D	transcription regulator	np	-0.726	0.0125	BTG3,CRIP1,CSPG4,EBPL,FHL1,GPRC5C,IRF1,LAMB3	
LMNB1	other	np		0.0127	CRIP1,CRYAB,PRRX2,WISP2	
BDNF	growth factor	np		0.0128	CSPG4,FSCN1,GAS6,NOS2,S100A9,THBS1	
EPHB1	kinase	np		0.0129	PTGS2,SERPINE1	
ADCY	group	np		0.0129	COL3A1,FGF2	
KDM8	other	np		0.0129	CTSK,HK2	
NQO2	enzyme	np		0.0129	NOS2,PTGS2	
LILRA2	other	np		0.0129	CXCL8,IL6	
hemoglobin	complex	np		0.0129	CXCL8,SLC40A1	
MGP	other	np		0.0129	ACTA2,TAGLN	
EIF4G2	translation regulator	np		0.0129	HIF1A,PLAT	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TAF5	transcription regulator	np		0.0129	GHR,PRLR	
LILRB4	other	np		0.0129	IL1B,IL6	
MAFG	transcription regulator	np		0.0129	ABCC3,ABCC4	
PDE3B	enzyme	np		0.0129	IL6,SERPINE1	
MTA3	enzyme	np		0.0129	CD79B,PRDM1	
TNFSF13B	cytokine	np		0.0129	CXCL6,PRDM1	
P2RY2	g-protein coupled receptor	np		0.0129	CXCL8,SERPINE1	
BCL6B	transcription regulator	np		0.0129	S100A4,VEGFA	
SFTPA1	transporter	np		0.0129	IL1B,IL6	
DDX17	enzyme	np		0.0129	NET1,S100A4	
HNRNPU	transporter	np		0.0129	IL1B,IL6	
MMP1	peptidase	np		0.0129	HIF1A,MMP1	
IL3	cytokine	np		0.0131	BIRC3,IL1B,IL6	
HOXC8	transcription regulator	np		0.0131	ASS1,PMP22,TAGLN	
AMPK	complex	np	0.157	0.0136	HIF1A,IL6,NOS2,VEGFA	
FGF21	growth factor	np		0.0145	CIDEA,DIO2,GHR	
MAP2K4	kinase	np		0.0145	BIRC3,IL6,PTGS2	
JAK1	kinase	np		0.0145	CCL2,IL1B,IRF1	
UPF2	other	np		0.0145	NRP1,PTGS2,TNFAIP3	
ABCG1	transporter	np		0.0145	CH25H,IL1B,IL6	
SMAD2	transcription regulator	np	-1.628	0.0145	ACTA2,CTGF,NET1,SERPINE1	
LYN	kinase	np		0.0145	C5AR1,FYN,IL1B,IL6	
ITK	kinase	np	0.271	0.0147	CD44,CRIM1,FCER1G,HIF1A,STAT4	
KITLG	growth factor	np	1.933	0.0155	CCL2,IL1B,IL6,PTGS2	
CSHL1	growth factor	np	0.293	0.0155	ACTA2,BMP2,CTGF,IRF1	
PSEN2	peptidase	np	0.2	0.0155	ACSL1,CD9,FZD4,PDGFRB,PTGS2	
CARD9	other	np		0.0156	CXCL2,IL6	
SLC51A	transporter	np		0.0156	ABCC3,ABCC4	
LECT2	other	np		0.0156	IL1B,IL6	
Traj18	other	np		0.0156	CXCL2,IL6	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
Focal adhesion kinase	group	np		0.0156	ICAM1,IL6	
NOTCH4	transcription regulator	np		0.0156	ACTA2,SERPINE1	
ZBP1	other	np		0.0156	IL6,NFKBIA	
TAF1	transcription regulator	np		0.0156	GHR,PRLR	
miR-125b-5p (and other miRNAs w/seed)	mature microRNA	np		0.0156	C10orf54,NOS2	
SMURF1	enzyme	np		0.0156	IRF1,NOS2	
CD69	transmembrane receptor	np		0.0156	IL1B,S100A9	
TNC	other	np		0.0156	CCL20,IL6	
OSTM1	other	np		0.0156	CTSK,PRDM1	
HSF4	transcription regulator	np		0.0156	HIF1A,LIF	
SMPD1	enzyme	np		0.0156	ACTA2,IL6	
EDNRB	g-protein coupled receptor	np		0.0156	HIF1A,VEGFA	
SH3BP2	other	np		0.0156	CD44,CTSK	
EFNB2	other	np		0.0156	ANGPT1,IL7R	
CCL3L3	cytokine	np		0.0156	IL1B,IL6	
TRIM21	enzyme	np		0.0156	IL1B,IL6	
TAS1R3	g-protein coupled receptor	np		0.0156	DDIT4,SLC7A11	
IGF2	growth factor	np		0.0159	HIF1A,PTGS2,VEGFA	
FN1	enzyme	np		0.0159	IL1B,MMP1,TGM2	
AGTR1	g-protein coupled receptor	np		0.0159	COL3A1,PTGS2,SERPINE1	
BNIP3L	other	np	-1.732	0.0165	CD79B,GSN,NFKBIA,PDGFRB	
CAV1	transmembrane receptor	np		0.017	HK2,IL6,PRLR,SLC7A2,THBS1	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
SOX9	transcription regulator	np		0.0173	CTGF,CYP26B1,GAS7	
IL27RA	transmembrane receptor	np		0.0173	CD44,IL6,PRDM1	
TRAF2	enzyme	np	1.387	0.0175	BIRC3,CCL2,CXCL8,IL6	
HP1	group	np		0.0178	PTGS2	
GPSM3	other	np		0.0178	IL1B	
AMOT	other	np		0.0178	CTGF	
PRR5	other	np		0.0178	PDGFRB	
TRIM72	enzyme	np		0.0178	ACTA2	
Rsk	group	np		0.0178	CXCL8	
PI3K p85	group	np		0.0178	IL6	
Pld	group	np		0.0178	HIF1A	
Type I BMP receptor	group	np		0.0178	NGF	
IRAK1/4	group	np		0.0178	IL1B	
Ces1b/Ces1c	enzyme	np		0.0178	GHR	
NUDT6	growth factor	np		0.0178	FGF2	
TCHP	other	np		0.0178	VEGFA	
PI4K2A	kinase	np		0.0178	HIF1A	
LECT1	other	np		0.0178	VEGFA	
Il1bos	other	np		0.0178	IL1B	
PELI3	enzyme	np		0.0178	IL1B	
Integrin alpha V beta	complex	np		0.0178	MMP1	
TFAP2E	transcription regulator	np		0.0178	ITGA10	
BPI	transporter	np		0.0178	ICAM1	
VRK2	kinase	np		0.0178	PTGS2	
Ptk	group	np		0.0178	IL6	
Adaptor protein 1	complex	np		0.0178	CD44	
API5	other	np		0.0178	FGF2	
PARP14	other	np		0.0178	F3	
TRIB2	kinase	np		0.0178	CEBPB	
MARCH6	enzyme	np		0.0178	DIO2	



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ADGRG1	g-protein coupled receptor	np		0.0178	VEGFA	
HLA-DR	complex	np		0.0178	IL1B	
MYADM	other	np		0.0178	ICAM1	
DUOX1	enzyme	np		0.0178	CXCL8	
RPS6KA	group	np		0.0178	CXCL8	
CP	enzyme	np		0.0178	SLC40A1	
PLXND1	transmembrane receptor	np		0.0178	VEGFA	
DSC2	other	np		0.0178	CD44	
CPEB2	translation regulator	np		0.0178	TWIST1	
AFAP1L2	other	np		0.0178	CXCL8	
Mucin	group	np		0.0178	PTGS2	
PARD3	other	np		0.0178	IL6	
MYO1C	other	np		0.0178	GSN	
ACBD3	other	np		0.0178	SLC11A2	
PDGFD	growth factor	np		0.0178	VEGFA	
SERPINC1	enzyme	np		0.0178	NOS2	
MMP10	peptidase	np		0.0178	CXCL2	
CNGA2	ion channel	np		0.0178	CYP26B1	
PAG1	other	np		0.0178	FYN	
RAB27A	enzyme	np		0.0178	CD44	
MED7	transcription regulator	np		0.0178	TNFAIP3	
SLC52A1	other	np		0.0178	ICAM1	
TRIM16	transcription regulator	np		0.0178	RARB	
KSR2	kinase	np		0.0178	CXCL8	
HMGCR	enzyme	np		0.0178	IL1B	
TSTA3	enzyme	np		0.0178	ACTA2	
mir-338	microna	np		0.0178	HIF1A	
mir-622	microna	np		0.0178	HIF1A	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
miR-18a-5p (and other miRNAs w/seed AAGGUGC)	mature microRNA	np		0.0178	THBS1	
mir-580	microRNA	np		0.0178	TWIST1	
TOPORS	enzyme	np		0.0178	NKX3-1	
AQUAPORIN	group	np		0.0178	IL1B	
PUS1	enzyme	np		0.0178	RARB	
PBK	kinase	np		0.0178	BIRC3	
GBP1	enzyme	np		0.0178	MMP1	
CALM1 (includes others)	other	np		0.0178	TNFAIP3	
SIGLEC7	transmembrane receptor	np		0.0178	PTGS2	
SIGLEC9	other	np		0.0178	PTGS2	
CKAP4	other	np		0.0178	CTGF	
EFEMP1	enzyme	np		0.0178	VEGFA	
TNPO2	transporter	np		0.0178	CXCL8	
TPSD1	peptidase	np		0.0178	CXCL8	
PRKAB1	kinase	np		0.0178	NOS2	
ACSL4	enzyme	np		0.0178	PTGS2	
S100A1	other	np		0.0178	TUBA1A	
GRAMD4	other	np		0.0178	IL6	
UBE2D1	enzyme	np		0.0178	PTGS2	
MT-ND2	enzyme	np		0.0178	HIF1A	
CRADD	other	np		0.0178	IL6	
MAP3K10	kinase	np		0.0178	CXCL8	
TFF1	other	np		0.0178	PTGS2	
MED21	transcription regulator	np		0.0178	TNFAIP3	
Pla2g2a	other	np		0.0178	PTGS2	
PDPN	other	np		0.0178	CD44	
ITSN1	other	np		0.0178	NOS2	
THEM4	enzyme	np		0.0178	PTGS2	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ARHGDIB	enzyme	np		0.0178	PTGS2	
MED17	transcription regulator	np		0.0178	RARB	
RXFP1	g-protein coupled receptor	np		0.0178	ACTA2	
OPN4	g-protein coupled receptor	np		0.0178	VEGFA	
PRC1	other	np		0.0178	PTGS2	
FXVD5	ion channel	np		0.0178	CCL2	
ADCY3	enzyme	np		0.0178	NRP1	
SRRM1	other	np		0.0178	CD44	
Flt1	kinase	np		0.0178	ATF3	
Marcks	other	np		0.0178	IL6	
Naip1 (includes others)	other	np		0.0178	NOS2	
NLRP1	other	np		0.0178	IL1B	
PRR13	other	np		0.0178	THBS1	
GBA	enzyme	np		0.0178	IL6	
Ifnz (includes)	cytokine	np		0.0178	IRF1	
ISCU	other	np		0.0178	FTH1	
Immunoglobulin Lambda Light Chain	group	np		0.0178	CCL2	
Ifnar	group	np	1.406	0.0178	CCL2,FCER1G,IL1B,IL6,IRF1	
VGLL3	other	np		0.0185	COL12A1,THBS1	
PPP2CA	phosphatase	np		0.0185	IRF1,NOS2	
LRAT	enzyme	np		0.0185	PDK4,RARB	
TICAM2	other	np		0.0185	CTSK,IL6	
GHRHR	g-protein coupled receptor	np		0.0185	HSD11B1,IL1B	
PRAME	other	np		0.0185	CYP26B1,RARB	
SPHK2	kinase	np		0.0185	FYN,IL6	
VAV1	transcription regulator	np		0.0185	IL6,PTGS2	
DKK1	growth factor	np		0.0185	BMP4,CD44	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
DPP4	peptidase	np		0.0185	FGF2,IL1RN	
RPS6KA5	kinase	np		0.0185	IL6,PTGS2	
GABBR1	g-protein coupled receptor	np		0.0185	BMP2,IL6	
PRKD1	kinase	np		0.0185	MMP1,PTGS2	
FOXF2	transcription regulator	np		0.0185	ACTA2,TAGLN	
IL1RL1	transmembrane receptor	np		0.0185	CXCL8,IL6	
FGF9	growth factor	np		0.0185	BMP4,VEGFA	
DUSP14	phosphatase	np		0.0185	NFKBIZ,PLAT	
TFEB	transcription regulator	np		0.0189	CTSK,IL1B,IL6	
TBP	transcription regulator	np		0.0189	IER3,NFKBIA,TNFAIP3	
ITGB3	transmembrane receptor	np		0.0189	MMP1,PTGS2,TGFBR2	
KLF5	transcription regulator	np		0.0189	ACTA2,HIF1A,TAGLN	
Esrra	transcription regulator	np		0.0195	CH25H,GALM,IL6,PK4,PTGS2	
HIPK2	kinase	np	0	0.0197	CIDEA,MMP10,SLC25A37,VEGFA	
E2F1	transcription regulator	np		0.0203	BMP4,CITED2,HIST2H2AA3/HIST2H2AA4,ID3,KIAA0101,MEIS1,NRP1,PK4, SERPINE1,STK17B,THBS1	
SBDS	other	np		0.0204	AKR1C3,CTGF,FBXO32,MAFF,MT2A	
GATA3	transcription regulator	np	0.728	0.0205	C10orf54,EBF1,IL24,IL6,NKX3-1,RGCC,S100A9	
CASP8	peptidase	np		0.0205	CD44,IL1B,IL6	
HNF1A	transcription regulator	np	-0.816	0.0212	CDO1,ELF3,HOPX,PAMR1,PRLR,RARB,SERPINA1,SLC40A1,SLC7A2,VN N3	
SMARCB1	transcription regulator	np	-0.152	0.0213	ACSL1,CD44,GSN,LBP,PPP1R3C	
Ctbp	group	np		0.0216	CTSK,PLAUR	
LGR4	transmembrane receptor	np		0.0216	IL1B,IL6	
PLP1	other	np		0.0216	CCL20,CXCL2	
STAP2	other	np		0.0216	CXCL2,IL6	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
FGFR4	kinase	np		0.0216	CD44,MMP13	
GAS6	growth factor	np		0.0216	IL6,SOCS1	
ITGA5	transmembrane receptor	np		0.0216	CEBPB,NOS2	
ROCK1	kinase	np		0.0216	CD44,ICAM1	
mir-218	microna	np		0.0216	FZD4,ZEB2	
miR-30c-5p (and other miRNAs w/seed GUAAACA)	mature microrna	np		0.0216	CTGF,IL6	
CCL21	cytokine	np		0.0216	CCL2,CXCL8	
IGFBP5	other	np		0.0216	F3,SERPINE1	
STK3	kinase	np		0.0216	CTGF,IL6	
SFTPD	other	np		0.0216	IL1B,MMP1	
ITIH1	other	np		0.0216	NOS2,TNFAIP6	
NBEAL2	other	np		0.0216	CXCL2,THBS1	
HDC	enzyme	np		0.0216	IL6,PTGS2	
CGA	other	np		0.0216	BIRC3,PTGS2	
ILK	kinase	np		0.0216	IL6,NOS2	
IL37	cytokine	np		0.0216	IL1B,IL6	
MKL1	transcription regulator	np	-1.432	0.022	ACTA2,CXCL6,G0S2,MGST2,S100A9,TAGLN	
HOXD10	transcription regulator	np	0	0.022	CD44,ICAM1,PDZK1IP1,SERPINE1	
mir-29	microna	np		0.0222	CCL8,ITGA11,PMP22	
FOXO4	transcription regulator	np		0.0222	CTGF,IER3,NAMPT	
Interferon alpha	group	np	0.519	0.0225	AUTS2,IFIT1,IRF1,NOS2,RARRES3,SOCS1,STAT4	
TCF3	transcription regulator	np		0.0232	ATF3,CD79B,HSD17B14,IL7R,ZC3H12A	
PPARGC1B	transcription regulator	np		0.024	HK2,PDK4,VEGFA	
TBX21	transcription regulator	np		0.024	PRDM1,STAT4,TGFBR2	
CSF3	cytokine	np	1.131	0.0245	BIRC3,CEBPB,IL6,TNFRSF1B	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TMSB4	group	np		0.0249	BMP2,BMP4	
MTDH	transcription regulator	np		0.0249	RARB,TWIST1	
SCAVENGER receptor CLASS A	group	np		0.0249	CXCL8,IL6	
SUMO1	enzyme	np		0.0249	IL6,NOS2	
miR-296-5p (miRNAs w/seed GGGCCCC)	mature microRNA	np		0.0249	MMP1,VEGFA	
NFIX	transcription regulator	np		0.0249	CXCL8,SERPINE1	
GNA12	enzyme	np		0.0249	ACTA2,TAGLN	
PIM2	kinase	np		0.0249	SOCS1,STAT4	
SLC16A2	transporter	np		0.0249	SLC7A5,SLCO3A1	
PAK1	kinase	np		0.0249	F3,VEGFA	
DDX5	enzyme	np		0.0249	NET1,S100A4	
RGS1	other	np		0.0249	CITED2,CXCL2	
LHCGR	g-protein coupled receptor	np		0.0258	PRLR,PTGS2,TNFAIP6	
EGR2	transcription regulator	np		0.0258	IL1B,PRDM1,RRAD	
GNB1	enzyme	np		0.0258	IER3,IL1B,PRDM1	
FOXA1	transcription regulator	np	-1.199	0.027	ACTA2,BMP2,EFHD1,FNDC3B,IL6,TAGLN	
Sos	group	np		0.0271	AKR1C3,CD44,ESM1,MMP10,NET1,PLD1,PTGS2,PTPN12	
GNB2	enzyme	np		0.0277	IER3,IL1B,PRDM1	
RARB	ligand-dependent nuclear receptor	np		0.0277	IFIT1,RARB,VEGFA	
CLEC11A	growth factor	np		0.0277	IL1B,PMP22,STAT4	
HSF2	transcription regulator	np		0.0277	HIF1A,HSPB1,IL1B	
KLF15	transcription regulator	np		0.0277	ACSL1,CTGF,PKD4	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
UCP1	transporter	np	-0.816	0.0279	FBXO32,GPX3,GSTM1,SHMT1,SLC6A9,SMS	
Rock	group	np		0.0284	COL3A1,CTGF	
AGPAT2	enzyme	np		0.0284	ACSL1,CEBPB	
IL23	complex	np		0.0284	CCL20,IL26	
CFB	peptidase	np		0.0284	C5AR1,CXCL2	
SOD2	enzyme	np		0.0284	IL1B,MMP13	
EHHADH	enzyme	np		0.0284	ACSL1,PDK4	
SPTLC2	enzyme	np		0.0284	CTGF,THBS1	
SMARCD3	transcription regulator	np		0.0284	ACAN,CD44	
MAPK12	kinase	np		0.0284	IL1B,MAP3K8	
ICOSLG/LOC10272399	other	np		0.0284	IL1B,IL6	
ADRB3	g-protein coupled receptor	np		0.0284	IL1B,IL6	
RETN	other	np		0.0284	CCL2,IL6	
ITGB6	other	np		0.0284	COL3A1,SERPINE1	
FABP5	transporter	np		0.0284	CXCL8,VEGFA	
FOSB	transcription regulator	np		0.0284	CEBPB,FTH1	
ACTB	other	np		0.0284	DSTN,LIMK2	
KLRC4-KLRK1/KLRK1	transmembrane receptor	np		0.0284	CD44,VEGFA	
TRIM24	transcription regulator	np	-1.091	0.0284	IRF1,JAK2,KIAA0101,SOCS1,VEGFA	
Ige	complex	np		0.0297	CXCL2,IL1B,IL6	
RUNX1	transcription regulator	np		0.0307	FSCN1,IL7R,MMP13,RGCC,SLC22A4	
RXRA	ligand-dependent nuclear receptor	np	0.152	0.0308	ABCC3,ALDH1A2,CCL20,CDO1,HIF1A,RARB	
MAPT	other	Activated	2	0.0318	DSTN,FYN,GPM6B,HIST1H2BD,IL1B,IL6,NOS2,TUBA1A,TUBB2B	
HOXA10	transcription regulator	np	1.342	0.0319	ALDH1A2,GAS6,MINOS1-NBL1/NBL1,NDRG2,TGFBR3	
HCAR2	g-protein coupled receptor	np		0.0321	IL1B,IL6	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
GLIS2	transcription regulator	np		0.0321	CTGF,SERPINE1	
CYP2E1	enzyme	np		0.0321	C5AR1,IL6	
STK4	kinase	np		0.0321	IL6,IL7R	
BSG	transporter	np		0.0321	CXCL8,MMP1	
WNT4	cytokine	np		0.0321	BMP2,PTGS2	
T	transcription regulator	np		0.0321	ACAN,CD44	
TYROBP	transmembrane receptor	np		0.0321	IL1B,IL6	
FLT3	kinase	np		0.0321	CEBPB,IL6	
SHH	peptidase	np		0.0329	BMP2,BMP4,DLX5,PGF	
PCGEM1	other	np		0.0339	HK2,IDH1,PDK4	
ELAVL1	other	np		0.0345	ATF3,NOS2,PTGS2,SAT1	
ARHGEF12	other	np		0.0352	ACTA2	
ITPR	group	np		0.0352	IL1B	
tyrosine kinase	group	np		0.0352	CD44	
Bvr	group	np		0.0352	NOS2	
Erm	group	np		0.0352	ICAM1	
NIK	group	np		0.0352	IL6	
T-type Calcium Channel	complex	np		0.0352	ENPP1	
MBNL3	other	np		0.0352	CD44	
Smr3b/Vcsa2	other	np		0.0352	HIF1A	
DGKE	kinase	np		0.0352	ICAM1	
ZMIZ1	other	np		0.0352	SERPINE1	
MRAP	other	np		0.0352	MRAP2	
POPDC2	other	np		0.0352	IL1B	
LPAR5	g-protein coupled receptor	np		0.0352	PTGS2	
PIP5K1A	kinase	np		0.0352	CXCL8	
NOX5	ion channel	np		0.0352	PTGS2	
ENTPD2	enzyme	np		0.0352	SERPINE1	
TOX4	other	np		0.0352	TWIST1	



Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
SEMA4A	other	np		0.0352	VEGFA	
SLC22A3	transporter	np		0.0352	IL6	
LGR5	transmembrane receptor	np		0.0352	AKR1C3	
ESRP2	other	np		0.0352	ZEB2	
ZDHHC2	enzyme	np		0.0352	CD9	
HSD17B14	enzyme	np		0.0352	IL6	
SEN5	peptidase	np		0.0352	CXCL8	
CYSLTR2	g-protein coupled receptor	np		0.0352	CXCL8	
GPBAR1	g-protein coupled receptor	np		0.0352	DIO2	
Mi2	group	np		0.0352	CTSK	
Vla-4	complex	np		0.0352	F3	
RYR3	ion channel	np		0.0352	ATF3	
Sfk	group	np		0.0352	PRLR	
JDP2	transcription regulator	np		0.0352	CTSK	
RRM2	enzyme	np		0.0352	THBS1	
Atf	group	np		0.0352	PTGS2	
PDE6B	enzyme	np		0.0352	RIPK3	
ACTC1	enzyme	np		0.0352	ACTA2	
GLRX	enzyme	np		0.0352	CXCL2	
AHSG	other	np		0.0352	IL6	
CCL1	cytokine	np		0.0352	SERPINE1	
HAMP	other	np		0.0352	SLC40A1	
ABCC2	transporter	np		0.0352	ABCC3	
SP100	transcription regulator	np		0.0352	MMP1	
UBA1	enzyme	np		0.0352	BIRC3	
AKAP10	other	np		0.0352	IL6	
CCL18	cytokine	np		0.0352	S100A4	
BCAP31	transporter	np		0.0352	CD9	
EAF2	transcription regulator	np		0.0352	HIF1A	
mir-379	microRNA	np		0.0352	HIF1A	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
miR-23a-3p (and other miRNAs w/seed UCACAUU)	mature microRNA	np		0.0352	FBXO32	
HPX	transporter	np		0.0352	IL6	
IGK	other	np		0.0352	CCL2	
NUBP1	other	np		0.0352	FTH1	
ABHD5	enzyme	np		0.0352	PDK4	
HBP1	transcription regulator	np		0.0352	PTGS2	
CD19	transmembrane receptor	np		0.0352	IL6	
SEPT9	enzyme	np		0.0352	HIF1A	
SDC4	other	np		0.0352	IL1B	
LGALS7/LGALS7B	other	np		0.0352	SERPINE1	
TRIM63	enzyme	np		0.0352	FBXO32	
IL1RAPL1	transmembrane receptor	np		0.0352	IL6	
SART1	other	np		0.0352	VEGFA	
ACKR1	g-protein coupled receptor	np		0.0352	CCL2	
HOXD4	transcription regulator	np		0.0352	RARB	
PFN1	other	np		0.0352	NOS2	
P2RX4	ion channel	np		0.0352	IL1B	
NPPC	other	np		0.0352	NOS2	
ZNF410	other	np		0.0352	MMP1	
IFNE	cytokine	np		0.0352	RARRES3	
SH2D3C	other	np		0.0352	IL6	
PROK1	growth factor	np		0.0352	CXCL8	
EFNB1	other	np		0.0352	IL7R	
HOXB4	transcription regulator	np		0.0352	RARB	
CFH	other	np		0.0352	CXCL2	
TEK	kinase	np		0.0352	VEGFA	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
HOXB7	transcription regulator	np		0.0352	FGF2	
IL22RA1	transmembrane receptor	np		0.0352	CCL20	
DVL3	other	np		0.0352	MMP13	
CIAPIN1	other	np		0.0352	JAK2	
CFL1	other	np		0.0352	DSTN	
GPX4	enzyme	np		0.0352	MMP1	
COL11A1	other	np		0.0352	MMP13	
CSTB	peptidase	np		0.0352	IL1B	
CASP10	peptidase	np		0.0352	IL6	
DIABLO	other	np		0.0352	BIRC3	
Mt3	other	np		0.0352	MT2A	
CDK11B	kinase	np		0.0352	VEGFA	
Col17a1	other	np		0.0352	SERPINA1	
HMGA2	enzyme	np		0.0352	TWIST1	
LNPEP	peptidase	np		0.0352	NOS2	
EXOC7	transporter	np		0.0352	ZEB2	
SH3GLB2	other	np		0.0352	PTGS2	
EMD	other	np		0.0352	IER3	
SIAH1	enzyme	np		0.0352	HIF1A	
ZFYVE16	transporter	np		0.0352	SERPINE1	
FTL	enzyme	np		0.0352	FTH1	
SPARC	other	np	-1.387	0.0356	ABCC4,AKR1C3,IL6,SERPINE1,SLC7A11	
CLOCK	transcription regulator	np		0.036	ACSL4,DNAJB9,ICAM1,PDGFRB,PIGA,TNFRSF21	
ZC3H14	other	np		0.036	CITED2,PLAT	
AGTR2	g-protein coupled receptor	np		0.036	COL3A1,NOS2	
PTPN2	phosphatase	np		0.036	CIDEA,NOS2	
MYT1	transcription regulator	np		0.036	ARHGDIB,GLT8D2	
CD80	transmembrane receptor	np		0.036	IL1B,IL6	
IGFBP3	other	np		0.036	ICAM1,IL1B	
CSF1R	kinase	np		0.036	IL6,NOS2	
TNK1	kinase	np		0.036	IL6,NOS2	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
ACSL5	enzyme	np		0.036	ANOS1,GFPT2	
BMPR1B	kinase	np		0.036	ID3,PTGS2	
NLRC5	transcription regulator	np		0.036	IL1B,IL6	
IL15RA	transmembrane receptor	np		0.036	CD44,IL6	
STAT2	transcription regulator	np		0.0361	IL6,IRF1,SOCS1	
RAC2	enzyme	np		0.0361	IL1B,PMP22,STAT4	
STAT5B	transcription regulator	np	0	0.0382	AHNAK,BIRC3,EBF1,IL24,PRLR	
EFNA5	kinase	np		0.0384	CTGF,IRF1,PLAT	
DDIT3	transcription regulator	np		0.0384	ATF3,IL6,IRAK2	
EFNA4	kinase	np		0.0384	CTGF,IRF1,PLAT	
EFNA3	kinase	np		0.0384	CTGF,IRF1,PLAT	
BCL11B	transcription regulator	np		0.0384	CXCL8,IL7R,MAP3K8	
EBF2	transcription regulator	np		0.04	SFRP4,SHISA3	
BMPR2	kinase	np		0.04	CXCL8,SEMA3C	
TNFRSF4	transmembrane receptor	np		0.04	IL6,SOCS1	
TSLP	cytokine	np		0.04	CXCL8,IL6	
CASP3	peptidase	np		0.04	CTSK,NOS2	
CTSS	peptidase	np		0.04	CTSK,IL1B	
PRKCZ	kinase	np		0.04	NFKBIA,VEGFA	
UBE3A	enzyme	np		0.04	IL1B,SERPINE1	
SIX1	transcription regulator	np		0.04	BMP4,DLX5	
PRLR	transmembrane receptor	np		0.04	FGF2,GHR	
SST	other	np		0.04	GHR,PRLR	
NPC1	transporter	np		0.0408	CTSK,PTGS2,STAT4	
SMARCA2	transcription regulator	np		0.0408	CD44,MMP10,TAGLN	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
NR4A1	ligand-dependent nuclear receptor	np		0.0409	ACSL4,CIDEA,G0S2,IL6,SAT1	
CFTR	ion channel	np		0.0411	NFKBIZ,NOS2,OSBPL1A,SAA1	
NANOG	transcription regulator	np		0.0423	CCDC85A,COL3A1,DLX5,HOPX,MEIS1	
CTLA4	transmembrane receptor	np		0.0432	CXCL8,PRDM1,SLC7A5	
RHOJ	enzyme	np		0.0442	GSN,PLAT	
FCGR2B	transmembrane receptor	np		0.0442	SOCS1,VEGFA	
HEY2	transcription regulator	np		0.0442	IL6,SMTN	
MAT1A	enzyme	np		0.0442	GAMT,SAA1	
RAG2	enzyme	np		0.0442	IL1B,IL6	
SERPINA1	other	np		0.0442	CCL2,RGS16	
TRAIP	enzyme	np		0.0442	IL1B,IL6	
mir-193	microna	np		0.0442	SULF1,VEGFA	
IFI16	transcription regulator	np		0.0442	CCL20,IL6	
NR2F2	ligand-dependent nuclear receptor	np		0.0442	ANGPT1,NRP1	
PML	transcription regulator	np	0.849	0.0447	ACSL4,HSPB1,IL1B,PK4	
DGCR8	enzyme	np		0.0457	ACTA2,PMP22,TAGLN	
IFN Beta	group	np		0.0457	IFIT1,IL24,SOCS1	
AIRE	transcription regulator	np		0.0457	BMP2,BMP4,S100A9	
TBX5	transcription regulator	np		0.0457	COL3A1,ECM2,S100A4	
PTPN11	phosphatase	np		0.0457	ACSL4,IL6,PDGFRB	
TCF12	transcription regulator	np		0.0457	HSD17B14,IL7R,ZC3H12A	
HOXA3	transcription regulator	np		0.0483	CEBPB,EVI2A,TNFRSF1B	
MBD3	enzyme	np		0.0484	CD44,FZD4,PRICKLE1,RHOU	

Upstream Regulator	Molecule Type	Predicted Activation State	Activation z-score	p-value of overlap	Target Molecules	Mechanistic Network
TEAD4	transcription regulator	np		0.0485	BMP4,HIF1A	
F2R	g-protein coupled receptor	np		0.0485	CTGF,CXCL8	
HAND1	transcription regulator	np		0.0485	ANGPT1,NRP1	
RHOA	enzyme	np		0.0485	IL1B,SDC2	
SUZ12	enzyme	np		0.0498	FBXO32,LAMB3,RARB,SLC7A5,TNFRSF1B	
IRF8	transcription regulator	np	1.941	0.0503	ICAM1,IL1B,IL6,LIF	
SATB1	transcription regulator	Inhibited	-2.425	0.062	EVI2A,ID3,IL7R,KITLG,PTGS2,SIPA1L2	