

Table S1 Top 20 list of gene networks from Ingenuity™ Pathway Analysis

Δ	Molecules in Network	Score
1	↑ALDH1B1, ↑BATF, ↑C2, ↑C1R, ↑CSORF13, ↑CD93, ↑COL8A1, Complement component 1, ↑CTGF, ↑EDG3 (includes EG:1903), ↑EDNRA, ↑GLA, ↑IFNAR2, Igfbp, ↑MFHAS1, Mmp, ↑MMP2, ↑MMP11, NfkB, ↑PCOLCE, Pdgf, Pdgf Ab, ↑PDGFB, Pdgfra-Pdgfrb, ↑PDGFRB, ↑RFTN1, ↓RIPK4, ↑SFRP2, ↑SPARC, ↓STAP2, Tgf beta, ↑THBS1, ↑THBS2, ↑TIMP1, ↑TNFAIP6	43
2	Akt, ↑APLN, ↑CCT2, ↑CDC7, ↑CDC25B, ↑CDK4, ↑CHEK1, ↑CLEC11A, ↑COL18A1, ↑COL4A1, ↑COL4A2, Cyclin A, Cyclin B, Cyclin E, E2f, ↑EXOSC8, ↑FBLN2, ↑FHOD1, Hsp90, ↑HSP90A1, ↑HYOU1, ↑IGFBP7, ↑ITGA5, ↑MCAM, ↑MCM2, Mek, ↑NID2, ↑NRP1, ↑PPT1, Rb, ↑SPOCK1, ↑SULF1, ↑THY1, Vegf, ↑WISP1	41
3	↑AEBP1, ↑ANGPT2, ↑ANTXR1*, ↑BUB1B, Cbp/p300, ↑CEBPB, ↑COL1A1, ↑CXCL2, ↑ENO2, ERK1/2, ↑FAP, ↑FCGR2A, Fgfr, ↑FSTL1, IL1, ↑IL6, ↑IL11, ↑IL24, ↑ITGA11, JAK, ↑LIF, Mek1/2, ↑OIP5, p70 S6k, PI3K, ↑PTP4A3, ↑RIPK2, ↑SNX10, SOCS5, ↑SOCS4, ↑SPP1, STAT, Tnf receptor, ↑TNFRSF11B, ↑UBE2C	36
4	↑ADCY3, Adenylate Cyclase, ↓DHR59, ↑DKK3, ↑ELK1, ↑ENTPD1, ↑EPHB1, ↑ESM1, ↑FHL3, ↑FNDC1, G alphaI, G protein beta gamma, ↑GRM8, Integrin, Integrin, Integrinβ, ↑ITGA1, ↑ITGB1, Jnk, ↑LGALS1, ↑MAD2L2, ↑NES, Nfat, P38 MAPK, ↑PGM2L1, PLC gamma, Rac, Ras, ↑RGS4, ↑RGS16, ↑SEPT4, Sod, ↑TGM2, ↑VCAM1, ↑ZAK	32
5	Actin, ↑ACTN1, ↑ADFP, Alkaline Phosphatase, Ap1, ↑CALD1, CaMKII, ↑CDC42EP2, Ck2, ↓CLOCK, Creb, F Actin, Fibrin, ↑FKHL18, ↑GAS1, ↓GSN, ↑HNRPD, ↑HTRA1, LDL, Mapk, ↑MMP1, ↑MMP3, Myosin, ↑PCAF, PDGF BB, ↑PKD2 (includes EG:5311), Rxr, ↑SCARF2, ↑STC1, ↑STC2, ↑THRA, ↑TPM2, Tropomyosin, ↑TWIST1, ↓ZNF433	30
6	↑ABCD1, ↑AEBP1, ↑ASP, ↑BCL6B, BMP1, BUB1 (includes EG:699), CS, ↑CDH11, CENPE, CLDN5, ↑CMTM3, ↑COL5A1, ↑COL5A2, COL5A3, DUSP4, ↑EDNRA, ↑FZD2, GJA7, ↑GREM1, hydrogen peroxide, ↑IGFBP7, ITGB6, MAPK1, ↑PLOD1, ↑PLOD2, ↑PRKRIR, Procollagen-lysine 5-dioxygenase, ↑RCN1, ↓SCNN1A, ↑SERPINH1, ↑SH2B3, ↑SPARC, TGFβ1, TJP1, ↓TJP3	30
7	↑ADAMT55, CBLC, ↑COL3A1, ↓CROT, ↑CTS, ↑CYB5B, CYP2D9, EGFR, GH1, growth factor receptor, ↑HS2ST1, Igfbp, IGFBP2, ↑ISLR, ↑ITGA1, ↑LINGO1, ↑LYPLA3, ↑MICB, ↑MTHFD2, ↑NNMT, ↓OAS1, ODC1, PAX3, PBX1, PDCD6IP, PTPN12, retinoic acid, ↑SCML1, ↑SH3KBP1, SRGN, ↑STC1, TF, TIA1, ↑VCAN, ↑ZNF281	26
8	5'-methylthioadenosine, ADCYAP1R1, ↑AURKA, CHFR, CIAA1, CIAA2, ↑COL10A1, COL11A2, ↑COL1A2, ↑COL3A1, COL5A3, ↑DNMT1, ↑EDNRA, ELP2, ↑FZD2, HELZ, Histone h3, ↑HSD11B1, Insulin, IRS, ↑PARP1, PDZK1, Pka, Pkc(s), PLC, ↑PTPRE, RNA polymerase II, ↑SCARB1, ↑SERPINH1, ↑SMOC2, ↑SMYD3, STAS1a/b, ↑STX2, ↑TM4SF18, ↓VAMP8	22
9	↑CSORF13, ↑CDKN2AIP, ↑CKLF, ↑COL1A1, ↑COL4A1, ↑CTGF, ↑DKFZP762E1312, DNA-directed DNA polymerase, ELAVL1, ↑ENO2, Glutathione peroxidase, GPX1, ↑GPX7, HDAC3, ID2, ↑KIAA1199, ↑KNTC1, MAF, ↑MFAP2, MYB, NBN, NME1, NOTCH1, POLG, ↑POLG2, PRDM5, ↑QPR1, ↑RAB15, RUNX1, RXRB, SOD2, ↑TFAM, ↑TMSL8, TP53, VHL	22
10	↑ALPK2, butyric acid, ↑CDH11, CHI3L1, ↑COL4A1, ↑COL5A2, ↑COL6A1, ↑COL6A2, ↑COL6A3, COL6A1 MAPPED, ↑DNMT1P1, ELL, F7, FBN1, FIGF, FOS, ↑FSTL1, GAPDH (includes EG:2597), ↑GAS1, GEMIN4, ↑KCNJ8, KCNJ11, ↑LEPRE1, MYCN, ↑NOLA1, NR3C1, ↑POFUT1, ↑PROCR, ↑PRRX1, PTPRN, ↓RNF141, SIP1, SMARCD1, SMN1, WEE1	22
11	AMH, ATPase, ↑CD300A, CDKN1A, chondroitin sulfate B, ↑COL1A1, ↑CROP, ↑CTSK, DDR1, ELN, FGF7, FGF13, Fgfr, FGFR2, FOXM1, ↓FXD3, GTF2I, HSPA5, ↑HYOU1, IL1R1, ↑KIAA1274, KRAS, ↑LGALS1, lipoxin A4, ↑LUM, ↑MMP3, ↑NFE2L3, PTPN11, ↑RADS1C, S100A4, ↓SDC1, SHP, ↑SLN (includes EG:6588), ↑SPAG5, ↑VCAN	20
12	↑ANGPT12, ↑CALU (includes EG:813), ↑COL3A1, CREB1, CTNNB1, dihydrotestosterone, ETV1, Frizzled, ↑HTRA1, INHBB, ↑KLK1 (includes EG:3816), LRP6, MME, ↑MMP1, ↑NRCAM, OSM, PBSN, ↑PP1L5, ↑PTPRG, ↑QPCT (includes EG:25797), SERPINA3, SFTPB, ↑SLC7A6, ↑SNAI1, ↑SPARC, TCF4, ↑TDO2, TERT, TF, ↑TNFRSF11B, Wnt, ↑WNT2, WNT4, WNT10B, WNT5A	20
13	↑ADAMT54, BMYO, ↑DYSF, ↑FADS3, FBLN1, FIGF, FLNB, GLB1, ↑ITGA5, ITGA9 (includes EG:3680), ↑ITGB1, LAMA1, LAMA2, LAMA3, ↑LAMA4, LAMAS, LAMA4 PREDICTED, ↑LAMB1, LAMB3, LAMB1-2, ↑LAMC1, LAMC2, ↑LGALS1, ↑NID2, PLG, ↑SCHIP1, SMARCA4, ↓SPINK5, sulfatides, ↑TEAD2, ↑TEAD4, TNNT2, ↑TRIM37, ↑VCAN, VGLL1	20
14	ADM2, AGRP, ↑ANGPT2, ↑ATIC, ↑CALCRL, CRMP1, cyclic AMP, CYP27B1, ↓CYP2C18, Dihydropyrimidinase, DLK1, ↑DPYSL2, ↑DPYSL3, DPYSL5, E2F1, ↑ENO2, ↓ETFDH, ↑H2AFX, HAND1, HAND2, ↑HEY1, ↑HEYL, IGF1, L-triiodothyronine, LEP, ↑MDC1, MYH6, NPPA, POU1F1, RAMP1, RAMP2, RAMP3, ↑TRPV2, ↓TSPO, ↑ZNF22	19
15	↑AHS1, ↓AK3L1, ↑ANTXR2, ↑ATAD3A, Ca2+, CANX, CAPZB, ↑CHN1 (includes EG:1123), ↑CNTNAP1, ↑COL4A1, DLG1, EEF1E1, ↑ENPEP, FCGRT, ↑GPR124, GRIN2A, ↑H2AFZ, HMG2, HSP90AA1, LAMP1, ↑MAP1A, MYC, PEG3 (includes EG:5178), ↑PODXL, POLD1, ↓RALGAP5, RFX1, RFX3, SREBF1, ST14, TAC3, ↑THBS2, TP53, ↑UBE2C, WT1	19
16	ADORA2B, Caspase 3/7, CCL8, CCL18, CD163, ↑CDCA5, CDKN2A, ↑CHTF18, CLEC4E, ↓CPEB3, ↑CST1, CTSC, ↑DCC1, DERP, ↑FADS1, GPNMB, ↑IFI30, IFNG, IL13, LAMP1, NFYB, NUP98, ↑NUP107, NUP133, NUP160, RFC4, RFX1, RFX5, ↑SALL4, ↑SLC43A3, TLR1, ↑TMEM158, ↑TMEPAI, ↑USP13, ↓ZNF323	17
17	beta-estradiol, ↑CENPM, ↑CHST13, ↑CTGF, estrone, FGF7, FOSL2, GFAP, ↑GUCY1A3, GUCY1B3, Igfbp, IGFBP4, ↑ITGBL1, LCN2, ↑LYPD1, Mmp, MMP7, ↑MMP23A, ↑NKD2, PLAT, ↑PLEKHA4, ↑PLXDC1, ↑PRPS1, PTTG1, ↓SDCBP2, SERPINA1, SERPINA3, SERPINB5, ↓SH3RF2, SOCS2, sulfotransferase, TFP12, TGFA, TM4SF1, ZNF217	15
18	↑ACOT9, ↓AKR1B10, ARG1, ARNT2, BTNL2, CBFB, CCRN4L (includes EG:25819), ↑COL11A1, ↑COL12A1, ↑COL15A1, CYP27B1, ↑DOCK11, GBP2 (includes EG:14469)Δ, GBP2 (includes EG:2634), HSP90AA2, IFIT1L, IL4, IL19, IL33, IL10RA, LAMB3, ↑MMD, P4HB, PLP1, ↑PPF1A1, ↑RAB27B, SLC29A1, ↑SYT11, ↓SYTL1, Timp, TNF, ↑TOMM34, USP2, ↑WASH1, YWHAG	15
19	↑CHSY1, ↑CSS3, Glucuronyl-N-acetylgalactosaminylproteoglycan beta-1,4-N-acetylgalactosaminyltransferase, N-acetylgalactosaminyl-proteoglycan 3-beta-glucuronosyltransferase	3
20	↑APOD1, leukotriene D4	2

The score is a numerical value used to rank networks according to how relevant they are to the genes in input dataset (406 genes). The score takes into account the number of genes in the network and the size of the network to approximate how relevant this network is to input gene list.