

Table S3. KEGG function enrichment suggested that target genes are related to various inflammation response pathways

Biological pathway	No. of genes in the dataset	No. of genes in the background dataset	Percentage of genes	Fold enrichment	P-value (Hypergeometric test)	Bonferroni method	BH method	Q-value (Storey-Tibshirani method)	Mapped gene names
LPA receptor mediated events	20	100	15.504	9.7551	5E-15	9E-12	4E-12	2E-11	EGFR; FOS; MMP9; NFKB1; CREB1; MMP2; SRC; RELA; PRKCA; CXCL8; PRKCE; TNF; AKT1; RHOA; JUN; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; IL1B; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8;
AP-1 transcription factor network	45	621	34.884	3.5338	6E-15	9E-12	4E-12	2E-11	MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; IL1B; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8;
Glypican 1 network	66	1296	51.163	2.4833	7E-15	1E-11	4E-12	2E-11	EGFR; FOS; MMP9; NFKB1; CREB1; MMP2; SRC; RELA; PRKCA; CXCL8; PRKCE; TNF; AKT1; RHOA; JUN; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; IL1B; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8;
IFN-gamma pathway	65	1293	50.388	2.4514	3E-14	4E-11	6E-12	3E-11	EGFR; FOS; MMP9; NFKB1; CREB1; MMP2; SRC; RELA; PRKCA; CXCL8; PRKCE; TNF; AKT1; RHOA; JUN; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; IL1B; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8;
Glypican pathway	66	1335	51.163	2.4108	3E-14	6E-11	6E-12	3E-11	EGFR; FOS; MMP9; NFKB1; CREB1; MMP2; SRC; RELA; PRKCA; CXCL8; PRKCE; TNF; AKT1; RHOA; JUN; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8;

Integrin-linked kinase signaling	45	654	34.884	3.3555	4E-14	6E-11	6E-12	3E-11	ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Insulin Pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Class I PI3K signaling events mediated by Akt	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
EGF receptor (ErbB1) signaling pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

Class I PI3K signaling events	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
PDGFR-beta signaling pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Arf6 signaling events	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Internalization of ErbB1	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

Urokinase-type plasminogen activator (uPA) and uPAR-mediated signaling	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
ErbB1 downstream signaling	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
mTOR signaling pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Arf6 trafficking events	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

Arf6 downstream pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Signaling events mediated by focal adhesion kinase	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
S1P1 pathway	64	1285	49.612	2.4287	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
EGFR-dependent Endothelin signaling events	64	1286	49.612	2.4268	8E-14	1E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

IGF1 pathway	64	1288	49.612	2.423	9E-14	1E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; APP; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
TRAIL signaling pathway	65	1325	50.388	2.3922	9E-14	2E-10	6E-12	3E-11	MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
GMCSF-mediated signaling events	64	1289	49.612	2.4211	9E-14	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
IL5-mediated signaling events	64	1289	49.612	2.4211	9E-14	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

PDGF receptor signaling network	64	1290	49.612	2.4193	1E-13	2E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Signaling events mediated by Hepatocyte Growth Factor Receptor (c-Met)	64	1290	49.612	2.4193	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
IL3-mediated signaling events	64	1292	49.612	2.4155	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Nectin adhesion pathway	64	1292	49.612	2.4155	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

Signaling events mediated by VEGFR1 and VEGFR2	64	1293	49.612	2.4136	1E-13	2E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
PAR1-mediated thrombin signaling events	64	1296	49.612	2.4081	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Thrombin/proteas e-activated receptor (PAR) pathway	64	1297	49.612	2.4062	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Syndecan-1-mediated signaling events	64	1297	49.612	2.4062	1E-13	2E-10	6E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;



Plasma membrane estrogen receptor signaling	64	1298	49.612	2.4044	1E-13	2E-10	6E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
VEGF and VEGFR signaling network	64	1301	49.612	2.3988	1E-13	2E-10	7E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Alpha9 beta1 integrin signaling events	64	1302	49.612	2.397	2E-13	3E-10	7E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3;
Endothelins	64	1304	49.612	2.3933	2E-13	3E-10	7E-12	3E-11	CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

LKB1 signaling events	64	1305	49.612	2.3915	2E-13	3E-10	7E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; FGF2; IL6; HRAS;
Proteoglycan syndecan-mediated signaling events	65	1342	50.388	2.3619	2E-13	3E-10	7E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; FGF2; IL6; HRAS;
Sphingosine 1-phosphate (S1P) pathway	64	1308	49.612	2.386	2E-13	3E-10	8E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;
ErbB receptor signaling network	64	1308	49.612	2.386	2E-13	3E-10	8E-12	3E-11	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1;

Beta1 integrin cell surface interactions	64	1348	49.612	2.3152	8E-13	1E-09	3E-11	1E-10	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; ITGB1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT1; BAD; CCNA2; RHOA; JUN; HMOX1; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; IL6; HRAS;
CDC42 signaling events	46	755	35.659	2.9712	2E-12	3E-09	6E-11	3E-10	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; IL6; HRAS;
Integrin family cell surface interactions	64	1375	49.612	2.2697	2E-12	4E-09	8E-11	3E-10	ESR1; ACHE; DNMT3A; HSPA1A; HSP90AA1; NR4A1; SMAD3; STAT1; HSPD1; EGFR; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; CASP1; CASP9; SLC2A4; HDAC1; ITGB1; MMP13; MMP2; MMP3; CDC25B; PCNA; SRC; TH; ODC1; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT2; AKT1; BAD; SIRT1; CCNA2; CYCS; RHOA; JUN; TNFRSF1A; ADRB2; HMOX1; ABCC1; IGFBP3; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; ESR1; ACHE; HSP90AA1; NR4A1; SMAD3; STAT1; FOS; MMP9; NFKB1; SERPINE1; CXCL12; CREB1; NPPA; HDAC1; ITGB1; MMP2; CDC25B; SRC; TH; FABP4; PPARG; ARG1; NOS2; NOS3; RELA; VEGFA; PRKCA; CXCL8; PRKCE; TNF; ABCG2; ABCB1; AKT1; BAD; CCNA2; RHOA; JUN; HMOX1; CDKN1A; HIF1A; IL2; HSPA8; PRKACA; RAC1; IL6; HRAS;
Regulation of CDC42 activity	46	768	35.659	2.9209	3E-12	5E-09	1E-10	5E-10	CYP2C8; CYP19A1; CYP1A2; CYP2C9; CYP2C19; GSTP1; GCLC; CYP1B1; GSTM1; CYP1A1; MAOB; CYP17A1; CYP2B6; CYP3A4; MAOA; ALDH1A1; CYP2E1; CYP2C8; CYP19A1; CYP1A2; CYP2C9; CYP2C19; CYP1B1; CYP1A1; MAOB; CYP17A1; CYP2B6; CYP3A4; MAOA; ALDH1A1; CYP2E1;
Biological oxidations	17	98	13.178	8.4618	8E-12	1E-08	3E-10	1E-09	
Phase 1 - Functionalization of compounds	14	60	10.853	11.383	9E-12	1E-08	3E-10	1E-09	

TNF receptor signaling pathway	27	299	20.93	4.4042	4E-11	6E-08	1E-09	5E-09	ESR1; NR4A1; STAT1; APP; FOS; NFKB1; CREB1; CASP1; CASP9; CDC25B; SRC; TH; PPARG; NOS2; RELA; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; CYCS; JUN; TNFRSF1A; IL2; PRKACA; RAC1;
Glucocorticoid receptor regulatory	15	80	11.628	9.1467	5E-11	8E-08	2E-09	7E-09	HSP90AA1; NR4A1; STAT1; FOS; NFKB1; CREB1; HDAC1; RELA; CXCL8; AKT1; JUN; CDKN1A; IL2; PRKACA; IL6;
Xenobiotics	8	14	6.2016	27.875	7E-11	1E-07	2E-09	1E-08	CYP2C8; CYP1A2; CYP2C9; CYP2C19; CYP1A1; CYP2B6; CYP3A4; CYP2E1;
IL2-mediated signaling events	17	115	13.178	7.211	1E-10	2E-07	4E-09	2E-08	HSP90AA1; STAT1; FOS; NFKB1; SRC; RELA; PRKCA; PRKCE; TNF; AKT1; CCNA2; RHOA; JUN; TNFRSF1A; IL2; RAC1; HRAS;
ATF-2 transcription factor network	13	59	10.078	10.749	1E-10	2E-07	4E-09	2E-08	ESR1; ACHE; FOS; CREB1; MMP2; TH; ARG1; NOS2; PRKCA; CXCL8; CCNA2; JUN; IL6;
Glucocorticoid receptor signaling	15	85	11.628	8.6087	1E-10	2E-07	4E-09	2E-08	HSP90AA1; NR4A1; STAT1; FOS; NFKB1; CREB1; HDAC1; RELA; CXCL8; AKT1; JUN; CDKN1A; IL2;
IL1-mediated signaling events	23	234	17.829	4.7941	2E-10	4E-07	7E-09	3E-08	ESR1; NR4A1; FOS; NFKB1; CREB1; CASP1; IL1B; CDC25B; SRC; TH; PPARG; NOS2; RELA; PRKCA; CXCL8; PRKCE; TNF; BAD; JUN; TNFRSF1A; IL2; PRKACA; RAC1;
Integrins in angiogenesis	13	64	10.078	9.9096	3E-10	6E-07	1E-08	4E-08	HSP90AA1; FOS; MMP9; NFKB1; MMP2; SRC; RELA; VEGFA; AKT1; RHOA; JUN; RAC1; FGF2;
HIF-1-alpha transcription factor network	13	66	10.078	9.6094	5E-10	8E-07	1E-08	6E-08	SMAD3; FOS; SERPINE1; CXCL12; CREB1; NOS2; VEGFA; ABCG2; ABCB1; AKT1; JUN; HMOX1; HIF1A;
Hypoxic and oxygen homeostasis regulation of HIF-1-alpha	14	80	10.853	8.5373	5E-10	9E-07	2E-08	7E-08	HSP90AA1; SMAD3; FOS; SERPINE1; CXCL12; CREB1; NOS2; VEGFA; ABCG2; ABCB1; AKT1; JUN; HMOX1; HIF1A;
Regulation of cytoplasmic and nuclear SMAD2/3 signaling	25	305	19.38	3.9979	2E-09	3E-06	5E-08	2E-07	ESR1; NR4A1; SMAD3; FOS; SERPINE1; CREB1; HDAC1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; RHOA; JUN; CDKN1A; IL2; HSPA8; PRKACA; RAC1;
Regulation of nuclear SMAD2/3 signaling	25	305	19.38	3.9979	2E-09	3E-06	5E-08	2E-07	ESR1; NR4A1; SMAD3; FOS; SERPINE1; CREB1; HDAC1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; RHOA; JUN; CDKN1A; IL2; HSPA8; PRKACA; RAC1;

TGF-beta receptor signaling	25	305	19.38	3.9979	2E-09	3E-06	5E-08	2E-07	ESR1; NR4A1; SMAD3; FOS; SERPINE1; CREB1; HDAC1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; RHOA; JUN; CDKN1A; IL2; HSPA8; PRKACA; RAC1;
Cytochrome P450 - arranged by substrate type	11	48	8.5271	11.181	2E-09	3E-06	6E-08	2E-07	CYP2C8; CYP19A1; CYP1A2; CYP2C9; CYP2C19; CYP1B1; CYP1A1; CYP17A1; CYP2B6; CYP3A4; CYP2E1;
Regulation of p38-alpha and p38-beta	18	164	13.953	5.3539	4E-09	7E-06	1E-07	5E-07	ESR1; NR4A1; FOS; CREB1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; BAD; JUN; IL2; PRKACA; RAC1;
ALK1 signaling events	25	321	19.38	3.7986	5E-09	8E-06	1E-07	5E-07	ESR1; NR4A1; SMAD3; FOS; SERPINE1; CREB1; HDAC1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; RHOA; JUN; CDKN1A; IL2; HSPA8; PRKACA; RAC1;
ALK1 pathway	25	324	19.38	3.7634	6E-09	1E-05	2E-07	7E-07	ESR1; NR4A1; SMAD3; FOS; SERPINE1; CREB1; HDAC1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; AKT1; BAD; RHOA; JUN; CDKN1A; IL2; HSPA8; PRKACA; RAC1;
IL23-mediated signaling events	12	66	9.3023	8.8708	6E-09	1E-05	2E-07	7E-07	STAT1; NFKB1; MPO; IL1B; SRC; NOS2; RELA; PRKCA; TNF; TNFRSF1A; IL2; IL6;
CXCR4-mediated signaling events	19	190	14.729	4.8779	8E-09	1E-05	2E-07	8E-07	STAT1; FOS; MMP9; NFKB1; CXCL12; SRC; RELA; PRKCA; PRKCE; TNF; AKT1; BAD; RHOA; JUN; TNFRSF1A; IL2; PRKACA; RAC1; HRAS;
Validated transcriptional targets of AP1 family members Fra1 and Fra2	16	134	12.403	5.8248	1E-08	2E-05	3E-07	1E-06	FOS; MMP9; MMP2; PPARG; NOS3; PRKCA; CXCL8; PRKCE; TNF; CCNA2; JUN; HMOX1; IL2; PRKACA; IL6; HRAS;
Signaling events regulated by Ret tyrosine kinase	12	69	9.3023	8.4851	1E-08	2E-05	3E-07	1E-06	NFKB1; CREB1; SRC; RELA; PRKCA; TNF; RHOA; JUN; TNFRSF1A; PRKACA; RAC1; HRAS;
Retinoic acid receptors- mediated	10	47	7.7519	10.382	3E-08	4E-05	6E-07	3E-06	NR4A1; RARA; HDAC1; THRA; PPARG; PPARG; PRKCA; TNF; AKT1; PRKACA;
Downstream signal	12	75	9.3023	7.8064	3E-08	5E-05	7E-07	3E-06	NR4A1; EGFR; CREB1; CASP9; SRC; PRKCA; PRKCE; AKT1; BAD; CDKN1A; PRKACA; HRAS;

Syndecan-2-mediated signaling events	12	77	9.3023	7.6037	4E-08	7E-05	9E-07	4E-06	STAT1; FOS; MMP9; ITGB1; MMP2; SRC; CXCL8; AKT1; RHOA; JUN; PRKACA; HRAS;
p38 MAPK signaling pathway	18	189	13.953	4.6458	4E-08	7E-05	1E-06	4E-06	ESR1; NR4A1; FOS; CREB1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; BAD; JUN; IL2; PRKACA; RAC1;
Signaling by PDGF	12	78	9.3023	7.5062	5E-08	8E-05	1E-06	4E-06	NR4A1; EGFR; CREB1; CASP9; SRC; PRKCA; PRKCE; AKT1; BAD; CDKN1A; PRKACA; HRAS;
Angiopoietin receptor Tie2-mediated	10	50	7.7519	9.759	5E-08	8E-05	1E-06	5E-06	NFKB1; ITGB1; MMP2; NOS3; RELA; TNF; AKT1; CDKN1A; RAC1; FGF2;
Signaling by FGFR	13	95	10.078	6.6763	5E-08	9E-05	1E-06	5E-06	NR4A1; EGFR; CREB1; CASP9; SRC; PRKCA; PRKCE; AKT1; BAD; CDKN1A; PRKACA; FGF2; HRAS;
Signaling by SCF-KIT	11	66	8.5271	8.1322	7E-08	0.0001	2E-06	7E-06	NR4A1; STAT1; MMP9; CREB1; CASP9; PRKCA; AKT1; BAD; CDKN1A; RAC1; HRAS;
p75(NTR)-mediated signaling	17	178	13.178	4.6589	1E-07	0.0002	2E-06	9E-06	APP; FOS; NFKB1; CREB1; CASP9; MMP3; SRC; RELA; PRKCA; TNF; AKT1; BAD; CYCS; RHOA; TNFRSF1A; RAC1; HRAS;
Signalling by NGF	15	143	11.628	5.1173	2E-07	0.0003	4E-06	2E-05	NR4A1; NFKB1; CREB1; CASP9; SRC; RELA; PRKCA; PRKCE; AKT1; BAD; RHOA; CDKN1A; PRKACA; RAC1; HRAS;
GAB1 signalosome	8	32	6.2016	12.2	2E-07	0.0003	4E-06	2E-05	NR4A1; EGFR; CREB1; CASP9; SRC; AKT1; BAD;
IL12-mediated signaling events	13	111	10.078	5.714	3E-07	0.0006	7E-06	3E-05	STAT1; FOS; NFKB1; IL1B; SRC; NOS2; RELA; PRKCA; TNF; JUN; TNFRSF1A; IL2; IL6;
Signaling by EGFR	12	98	9.3023	5.9745	6E-07	0.001	1E-05	5E-05	NR4A1; EGFR; CREB1; CASP9; SRC; PRKCA; PRKCE; AKT1; BAD; CDKN1A; PRKACA; HRAS;
BMP receptor signaling	18	226	13.953	3.8852	6E-07	0.0011	1E-05	6E-05	ESR1; NR4A1; FOS; CREB1; CDC25B; SRC; TH; PPARG; NOS2; PRKCA; CXCL8; PRKCE; TNF; BAD; JUN; IL2; PRKACA; RAC1;
ErbB2/ErbB3 signaling events	8	38	6.2016	10.275	7E-07	0.0012	1E-05	6E-05	FOS; SRC; AKT1; BAD; JUN; PRKACA; RAC1; HRAS;
Downstream signaling of activated FGFR	10	66	7.7519	7.3935	7E-07	0.0012	1E-05	6E-05	NR4A1; CREB1; CASP9; PRKCA; PRKCE; AKT1; BAD; CDKN1A; PRKACA; HRAS;
IL2 signaling events mediated by PI3K	10	67	7.7519	7.2832	9E-07	0.0014	2E-05	7E-05	HSP90AA1; NFKB1; SRC; RELA; PRKCA; TNF; AKT1; TNFRSF1A; IL2; RAC1;

Regulation of Telomerase	10	68	7.7519	7.1761	1E-06	0.0016	2E-05	8E-05	ESR1; HSP90AA1; SMAD3; EGFR; FOS; NFKB1; HDAC1; AKT1; JUN; IL2;
amb2 Integrin signaling	8	40	6.2016	9.7609	1E-06	0.0019	2E-05	9E-05	MMP9; NFKB1; MMP2; SRC; TNF; AKT1; RHOA; IL6;
Thromboxane A2 receptor signaling	9	54	6.9767	8.1335	1E-06	0.002	2E-05	1E-04	EGFR; SRC; NOS3; PRKCA; PRKCE; AKT1; RHOA; PRKACA; RAC1;
VEGFR1 specific signals	7	29	5.4264	11.781	1E-06	0.0023	3E-05	0.0001	HSP90AA1; NOS3; VEGFA; PRKCA; AKT1; HIF1A; PRKACA;
Osteopontin-mediated events	7	29	5.4264	11.781	1E-06	0.0023	3E-05	0.0001	FOS; MMP9; NFKB1; MMP2; RELA; JUN; RAC1;
NGF signalling via TRKA from the plasma membrane	12	107	9.3023	5.472	2E-06	0.0026	3E-05	0.0001	NR4A1; CREB1; CASP9; SRC; PRKCA; PRKCE; AKT1; BAD; RHOA; CDKN1A; PRKACA; HRAS;
PI3K/AKT activation	7	30	5.4264	11.389	2E-06	0.003	3E-05	0.0001	NR4A1; CREB1; CASP9; AKT1; BAD; RHOA; CDKN1A;
Endogenous TLR signaling	9	57	6.9767	7.7055	2E-06	0.0032	3E-05	0.0001	TLR4; HSPD1; NFKB1; SRC; RELA; PRKCA; TNF; RHOA; TNFRSF1A;
Interleukin-1 processing	4	6	3.1008	32.531	2E-06	0.0041	4E-05	0.0002	NFKB1; CASP1; IL1B; RELA;
Neurotransmitter Clearance In The Synaptic Cleft	4	6	3.1008	32.531	2E-06	0.0041	4E-05	0.0002	ACHE; SLC22A2; SLC6A3; MAOA;
TCR signaling in na&#xeff;ve CD4+ T cells	13	133	10.078	4.7689	3E-06	0.0046	5E-05	0.0002	FOS; NFKB1; SRC; RELA; PRKCA; PRKCE; TNF; AKT1; JUN; TNFRSF1A; IL2; PRKACA; HRAS;
E-cadherin signaling in keratinocytes	6	21	4.6512	13.947	3E-06	0.0047	5E-05	0.0002	EGFR; SRC; AKT2; AKT1; RHOA; RAC1;
PIP3 activates AKT signaling	6	21	4.6512	13.947	3E-06	0.0047	5E-05	0.0002	NR4A1; CREB1; CASP9; AKT1; BAD; CDKN1A;
Role of Calcineurin-dependent NFAT signaling in lymphocytes	11	95	8.5271	5.65	3E-06	0.0053	5E-05	0.0002	NR4A1; FOS; PPARG; PRKCA; CXCL8; PRKCE; TNF; BAD; JUN; IL2; PRKACA;
RAC1 signaling pathway	16	205	12.403	3.8075	4E-06	0.0062	6E-05	0.0003	ESR1; ACHE; FOS; CREB1; ITGB1; MMP2; TH; ARG1; NOS2; PRKCA; CXCL8; CCNA2; RHOA; JUN; RAC1; IL6;

Regulation of RAC1 activity	16	205	12.403	3.8075	4E-06	0.0062	6E-05	0.0003	ESR1; ACHE; FOS; CREB1; ITGB1; MMP2; TH; ARG1; NOS2; PRKCA; CXCL8; CCNA2; RHOA; JUN; RAC1; IL6;
RhoA signaling pathway	16	205	12.403	3.8075	4E-06	0.0062	6E-05	0.0003	ESR1; ACHE; FOS; CREB1; ITGB1; MMP2; TH; ARG1; NOS2; PRKCA; CXCL8; CCNA2; RHOA; JUN; RAC1; IL6;
Regulation of RhoA activity	16	205	12.403	3.8075	4E-06	0.0062	6E-05	0.0003	ESR1; ACHE; FOS; CREB1; ITGB1; MMP2; TH; ARG1; NOS2; PRKCA; CXCL8; CCNA2; RHOA; JUN; RAC1; IL6;
Signaling events mediated by PRL	6	23	4.6512	12.735	5E-06	0.0084	8E-05	0.0003	ITGB1; SRC; CCNA2; RHOA; CDKN1A; RAC1;
Aurora A signaling	9	64	6.9767	6.8629	5E-06	0.0086	8E-05	0.0003	NFKB1; CDC25B; SRC; RELA; PRKCA; TNF; AKT1; TNFRSF1A; PRKACA;
TCR signaling in naive CD8+ T cells	12	127	9.3023	4.6103	1E-05	0.016	0.0002	0.0006	FOS; NFKB1; SRC; RELA; PRKCA; PRKCE; TNF; AKT1; JUN; TNFRSF1A; IL2; HRAS;
Nongenotropic Androgen signaling	6	26	4.6512	11.266	1E-05	0.0182	0.0002	0.0007	FOS; CREB1; SRC; AKT1; RAC1; HRAS;
RXR and RAR heterodimerization with other nuclear receptor	6	26	4.6512	11.266	1E-05	0.0182	0.0002	0.0007	NR4A1; RARA; THRA; PPARA; PPARG; TNF;
FAS (CD95) signaling pathway	12	130	9.3023	4.504	1E-05	0.0204	0.0002	0.0008	APP; NFKB1; CASP1; CASP9; SRC; RELA; PRKCA; TNF; AKT1; BAD; CYCS; TNFRSF1A; CYP2C8; CYP19A1; CYP1A2; CYP2C9; CYP2C19; GSTP1; HSPA1A; HSP90AA1; GCLC; DBH; CYP1B1; GSR; GSTM1; TH; ODC1; CYP1A1; ARG1; NOS3; MAOB; PRKCA; AKT1; CYP17A1; CYP2B6; CYP3A4; CYCS; NAMPT; MAOA; NQO1; ALDH1A1; HMOX1; ASNS; HSPA8; PRKACA; XDH; CYP2E1;
Metabolism	35	823	27.132	2.074	1E-05	0.0219	0.0002	0.0008	NR4A1; CREB1; CASP9; AKT1; BAD; CDKN1A;
PI-3K cascade	6	27	4.6512	10.849	1E-05	0.023	0.0002	0.0009	ESR1; HSP90AA1; NFKB1; HDAC1; PPARG; RELA; TNF; SIRT1; TNFRSF1A; CDKN1A; PRKACA;
Signaling events mediated by HDAC Class I	11	113	8.5271	4.7501	2E-05	0.0289	0.0003	0.0011	CASP9; AKT1; BAD; CDKN1A;
AKT phosphorylates targets in the cytosol	4	9	3.1008	21.699	2E-05	0.0328	0.0003	0.0012	NFKB1; SRC; RELA; PRKCA; TNF; AKT1; JUN; TNFRSF1A;
CD40/CD40L signaling	8	58	6.2016	6.7322	2E-05	0.034	0.0003	0.0013	



EGFR1	12	138	9.3023	4.2429	2E-05	0.0375	0.0003	0.0014	STAT1; EGFR; FOS; SNCA; CREB1; CASP9; SRC; PRKCA; AKT1; JUN; RAC1; HRAS;
Signaling by Aurora kinases	10	98	7.7519	4.9796	3E-05	0.047	0.0004	0.0017	NFKB1; CDC25B; SRC; RELA; PRKCA; TNF; AKT1; RHOA; TNFRSF1A; PRKACA;

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