

Human JAK / STAT Signaling Pathway PCR Array
JAK/STAT Signaling:
<u>Janus Kinase Activity:</u> JAK1, JAK2, JAK3, TYK2.
<u>STAT Family:</u> STAT1, STAT2, STAT3, STAT4, STAT5A, STAT5B, STAT6.
<u>Regulators of the JAK/ STAT pathway:</u> PIAS1, PIAS2, PRL, PTPN1, PTPRC, SOCS1, SOCS2, SOCS3, SOCS4, SOCS5.
<u>Receptors that Bind and Activate JAK Proteins:</u> CSF1R, EGFR, EPOR, F2R, GHR, IFNAR1, IFNGR1, IL10RA, IL2RA, IL2RG, IL4R, IL6ST, INSR, MPL, PDGFRA, SH2B1.
<u>SH3/SH2 Adaptor Protein Activity:</u> CRK, GRB2, SRC, STAM.
Transcription Factors or Regulators that Interact with STAT Proteins:
<u>Transcriptional Regulation:</u> HMGA1, SMAD3, SPI1.
<u>RNA Polymerase II Transcription Factor Activity:</u> JUNB, SP1, USF1.
<u>Transcriptional Coactivator/Corepressor:</u> JUNB, PIAS1, SMAD1, SMAD5, SP1, YY1.
<u>Other Transcription Factors and Regulators:</u> CEBPB, CRK, GATA3, IRF1, IRF9 (ISGF3G), JUN, MYC, NFKB1, NR3C1 (GRL), SMAD2, SMAD4.
Genes Induced by STAT Proteins:
<u>STAT1:</u> CXCL9 (MIG), IRF1, JUNB, NOS2 (iNOS).
<u>STAT3:</u> A2M, BCL2L1 (BCL-X), CCND1, CDKN1A (p21CIP1/WAF1), CEBPD, CRP, FAS (TNFRSF6), IRF1, LRG1, MCL1, MYC, SOCS1, SOCS3.
<u>STAT4:</u> FCGR1A, IFNG, IRF1, MYC.
<u>STAT5:</u> BCL2L1 (BCL-X), CCND1, CDKN1A (p21CIP1/WAF1), IL2RA, IRF1, OSM.
<u>STAT6:</u> FCER2, GATA3, IL4, IL4R (CD124).

<u>STAT1/STAT2/p48</u> : ISG15 (G1P2), OAS1.
Apoptosis : AKT1, BCL2L1 (BCL-X), CDKN1A, F2, F2R, FAS (TNFRSF6), IL2RA, MCL1, NFKB1, PRLR, STAT1.
Cell Growth and/or Maintenance :
<u>Cell Cycle</u> : CCND1, CDKN1A (p21CIP1/WAF1), EGFR, F2, F2R, IL2RA, IRF1, JAK2, MYC, STAT1.
<u>Cell Growth</u> : A2M, EGFR, GHR, IFNG, IL4, INSR, OSM, SOCS1, SOCS2, SOCS3, SOCS4, SOCS5.
<u>Cell Proliferation</u> : CSF1R, IL2RG, IL4, MPL, OSM, PDGFRA, SMAD3.
<u>Cell Differentiation</u> : IL20, IL4, NOS2 (iNOS), SOCS2, SOCS5.
Immune Response :
<u>Acute-Phase Response</u> : CEBPB, CRP, F2, STAT3.
<u>Humoral Immune Response</u> : FCER2, CSF1R, IL4, NFKB1, YY1.
<u>Inflammatory Response</u> : CEBPB, CRP, CXCL9, IL20, NFKB1, NOS2 (iNOS), NR3C1 (GRL).
<u>Other Genes Involved in the Immune Response</u> : CXCL9 (MIG), FAS (TNFRSF6), FCGR1A, ISG15 (G1P2), IFNG, IL2RA (CD25), IL2RG, IL4R (CD124), IL6ST (GP130), IRF1, IRF9 (ISGF3G), OAS1, OSM, PRLR, PTPN11, STUB1.