p-STAT5 binds CISH, SOCS1 and SOCS2 gene

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references


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https://reactome.org
Interleukin-7 (IL7) up-regulates Cytokine-inducible SH2-containing protein (CISH), Suppressor of cytokine signaling 1 (SOCS1), Suppressor of cytokine signaling 2 (SOCS2) and Suppressor of cytokine signaling 3 (SOCS3) mRNA transcripts in primary human CD8 T cells. IL7 induces CISH and SOCS1-3 transcripts via the JAK/STAT5 signaling pathway (Ghazawi et al. 2016).

Signal transducer and activator of transcription 5A (STAT5A) and Signal transducer and activator of transcription 5B (STAT5B) dimers bind to similar core gamma-interferon activated sequence (GAS) motifs (Soldaini et al., 2000). STAT5 also form homo- and hetero-tetramers with distinct or expanded DNA-binding properties. This is a black box event because apart of the mentioned here genes could be another subset of genes up or downregulated by STAT5. Genes that are regulated by STAT5 include Interleukin-2 receptor alpha (IL2RA) (John et al. 1996), TNFSF11 (RANKL), Connexin-26 (GJB2) and Cyclin D1 (Hennighausen & Robinson, 2005). A comprehensive listing of hepatic STAT5B regulated genes is available from microarray/STAT5B knockout mice (Clodfelter et al. 2006), and similarly for STAT5-dependent genes regulated by the GH receptor (Rowland et al. 2005, Barclay et al. 2011).

**Literature references**