Expression of STAT3-upregulated nuclear proteins

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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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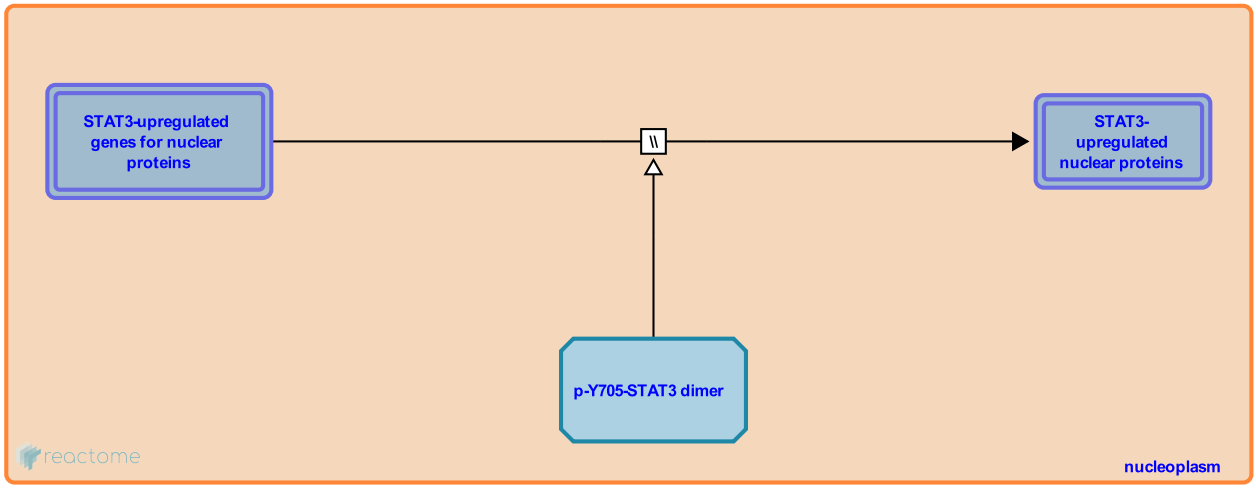
Stable identifier: R-HSA-6790036

Type: omitted

Compartments: nucleoplasm



Signal transducer and activator of transcription 3 (STAT3) is a key regulator of gene expression in response to signaling of many cytokines including interleukin-6 (IL6), Oncostatin M, and leukemia inhibitory factor. Using microarray techniques, hundreds of genes have been reported as potential STAT3 target genes (Dauer et al. 2005, Hsieh et al. 2005). Some of these genes have been proven to be direct STAT3 targets using genome-wide chromatin immunoprecipitation screening (Snyder et al. 2008, Carpenter & Lo 2014). Genes for nuclear proteins upregulated by STAT3 include CCAAT/enhancer-binding protein delta (CEBPD) (Hutt et al. 2000), B-cell lymphoma 6 protein (BCL6) (Reljic et al. 2000), Myc proto-oncogene protein (MYC) (Kiuchi et al. 1999, Bowman et al. 2001), Proto-oncogene c-Fos (FOS) (Yang et al. 2003), Hypoxia-inducible factor 1-alpha (HIF1A) (Niu et al. 2008), Transcription factor SOX-2 (SOX2) (Foshay & Gallicano 2008), the homeobox protein NANOG (Okumura et al. 2011), Twist-related protein 1 (TWIST1) (Lo et al. 2007, Cheng et al. 2008), Zinc finger E-box-binding homeobox 1 (ZEB1) (Xiong et al. 2012), POU domain, class 2, transcription factor 1 (POU2F1) (OCT1) (Wang et al. 2013), Baculoviral IAP repeat-containing protein 5 (BIRC5, Survivin) (Gritsko et al. 2006), G1/S-specific cyclin-D1 (CCND1) (Leslie et al. 2006), Serine/threonine-protein kinase PIM1 (Przanowski et al. 2014), Forkhead box protein O1 (FOXO1), FOXO3 (Oh et al. 2011), Nuclear receptor ROR-alpha (RORA), RORC, Basic leucine zipper transcriptional factor ATF-like (BATF) (Durant et al. 2010) and Transcription factor JUNB (Coffer et al. 1995).

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Editions

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