JAK1/JAK2 bound to IL12RB2:IL6ST receptor phosphorylates STAT1 and STAT4

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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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Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗
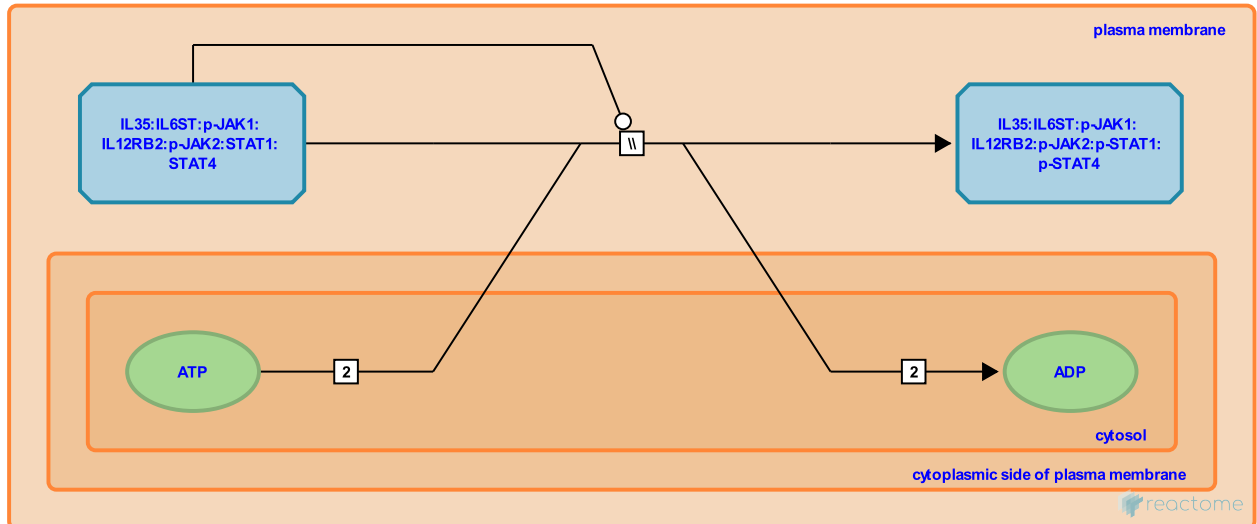
Reactome database release: 88

This document contains 1 reaction (see Table of Contents)

JAK1/JAK2 bound to IL12RB2:IL6ST receptor phosphorylates STAT1 and STAT4 ↗

Stable identifier: R-HSA-8950453

Type: omitted

Compartments: cytosol, plasma membrane, extracellular region

Interleukin-35 (IL35) binding activates the IL35 receptor complex and facilitates Tyrosine-protein kinase JAK (JAK) phosphorylation. Subsequently, Signal transducer and activator of transcription 1-alpha/beta (STAT1) and STAT4 bind to the receptor complex and are activated by tyrosine phosphorylation (Collison et al. 2012). Although it is known that JAKs are involved in STATs phosphorylation (Stark GR and Darnell JE, 2012), it is not clear how other components of the IL35 receptor complex contribute to STAT1/STAT4 phosphorylation. For this reason, this event is assigned a black box status.

Literature references

Delgoffe, GM., Vignali, DA. (2013). STAT heterodimers in immunity: A mixed message or a unique signal?. *JAKSTAT, 2*, e23060. ↗

Editions

2016-12-02	Authored	Duenas, C.
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