

STAT1 and STAT4 associate with IL12RB2:IL6ST receptor

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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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Reactome database release: 88

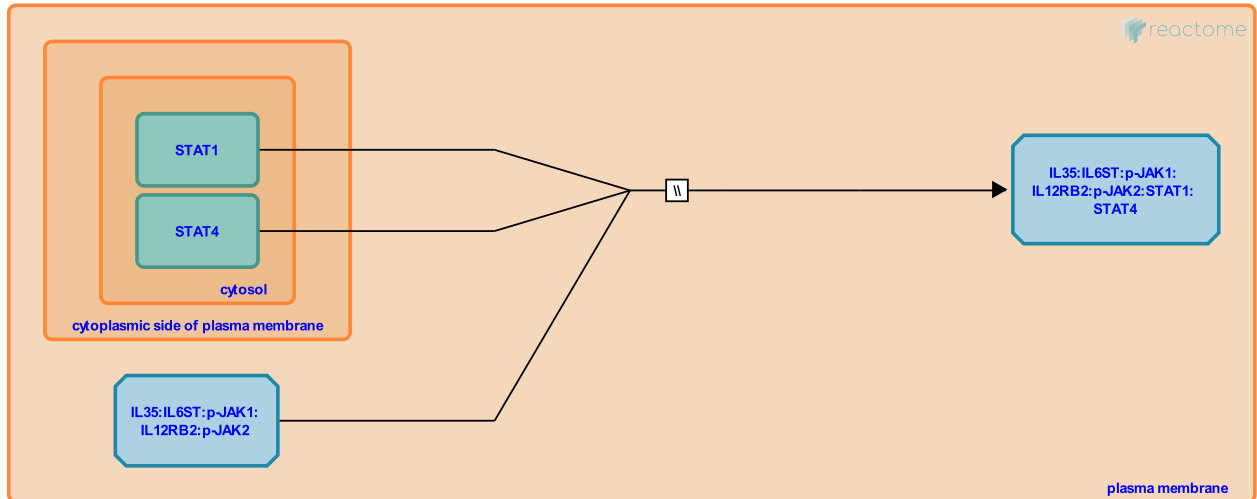
This document contains 1 reaction ([see Table of Contents](#))

STAT1 and STAT4 associate with IL12RB2:IL6ST receptor [↗](#)

Stable identifier: R-HSA-8983996

Type: omitted

Compartments: plasma membrane, cytosol, extracellular region



Interleukin-35 (IL35) binding activates the IL35 receptor complex and facilitates JAKs 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). This is a black box event because the receptor subunit responsible for STAT4 binding to the receptor is unclear. However, it is reported that simultaneous activation of IL12RB2 or IL6ST homodimer receptors do not promote the formation of pSTAT1:pSTAT4 and only the activation of the IL12RB2:IL6ST heteromeric receptor favours pSTAT1:pSTAT4 formation. For this reason, STAT1 and STAT4 are simultaneously considered in the binding, activation and release events.

Literature references

Delgoffe, GM., Murray, PJ., Drake, CG., Satoskar, AR., Fairweather, D., Guy, CS. et al. (2012). The composition and signaling of the IL-35 receptor are unconventional. *Nat. Immunol.*, 13, 290-9. [↗](#)

Editions

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