p-Y705-STAT3 dimer translocates from cytosol to nucleoplasm

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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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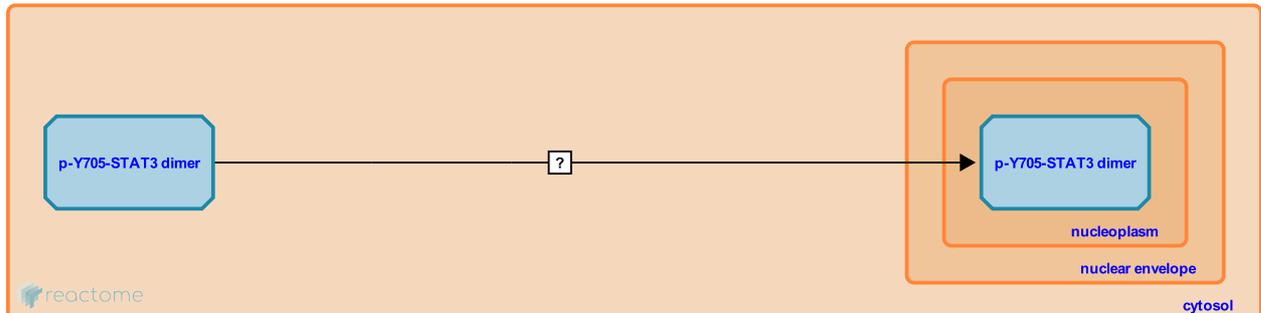
Reactome database release: 70

This document contains 1 reaction ()

p-Y705-STAT3 dimer translocates from cytosol to nucleoplasm ↗

Stable identifier: R-HSA-6784763

Type: uncertain

Compartments: cytosol, nucleoplasm

The classical model of JAK-STAT signaling suggests that phosphorylated Signal transducer and activator of transcription 3 (STAT3) translocates to the nucleus (Akira et al. 1994) where it binds DNA to mediate the effects of Interleukin-10 (IL10) on expression of cytokines, soluble mediators and cell surface molecules by cells of myeloid origin, with important consequences for their ability to activate and sustain immune and inflammatory responses. STAT3 is able to shuttle freely between the cytoplasm and the nucleus, independent of tyrosine phosphorylation (Liu et al. 2005, Li 2008, Reich 2013). Binding of unphosphorylated STAT3 to DNA has been reported (Nkansah et al. 2013). As it is not clear what triggers nuclear accumulation of STAT3 in response to IL10 this event is shown as an uncertain process.

Literature references

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Editions

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