

IL15:IL15RA binds IL2RB:JAK1 and IL2RG:JAK3

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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: 75

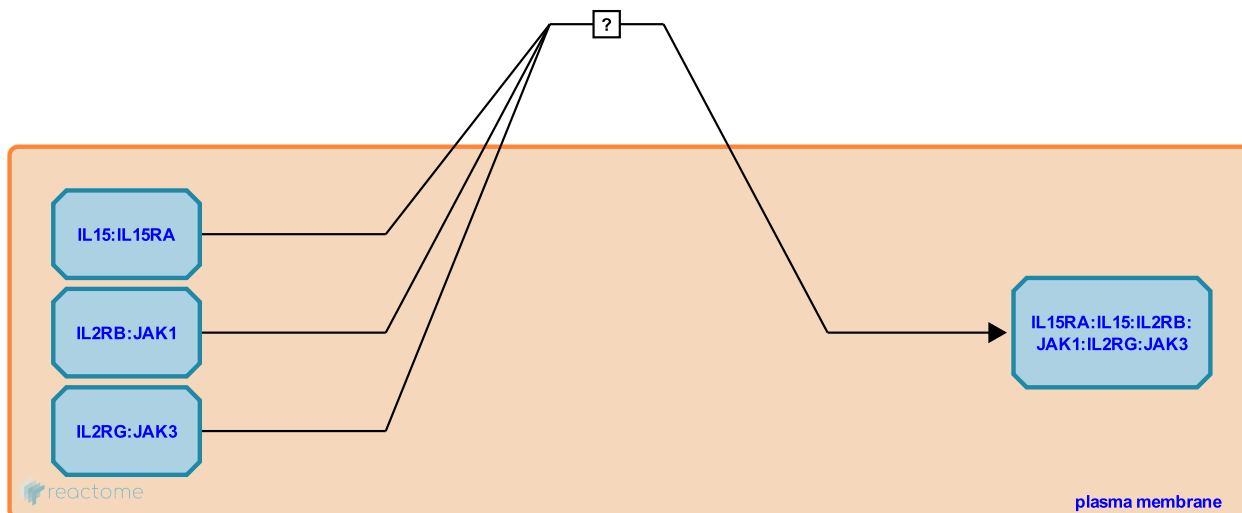
This document contains 1 reaction ([see Table of Contents](#))

IL15:IL15RA binds IL2RB:JAK1 and IL2RG:JAK3 ↗

Stable identifier: R-HSA-449115

Type: uncertain

Compartments: extracellular region, plasma membrane, cytosol



The Interleukin-15 (IL15) / Interleukin-15 receptor subunit alpha (IL15RA, IL15R α) complex binds Interleukin-2 receptor subunit beta (IL2RB, IL2R β), which is associated with Tyrosine-protein kinase JAK1 (JAK1) and Cytokine receptor common subunit gamma (IL2RG, IL2R γ), which is associated with Tyrosine-protein kinase JAK3 (JAK3) (Johnston et al. 1995). The heterodimer of IL2RB and IL2RG can bind IL15 with low affinity but high affinity binding requires a third component, IL15RA (Giri et al. 1994, 1995, Anderson et al. 1995). This is a Black Box Event because it is not clear whether the beta and gamma subunits pre-associate before binding IL15:IL15RA.

Literature references

Giri, JG., Kumaki, S., Ahdieh, M., Friend, DJ., Loomis, A., Shanebeck, K. et al. (1995). Identification and cloning of a novel IL-15 binding protein that is structurally related to the alpha chain of the IL-2 receptor. *EMBO J*, 14, 3654-63 . ↗

Anderson, DM., Kumaki, S., Ahdieh, M., Bertles, J., Tometsko, M., Loomis, A. et al. (1995). Functional characterization of the human interleukin-15 receptor alpha chain and close linkage of IL15RA and IL2RA genes. *J Biol Chem*, 270, 29862-9. ↗

Editions

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