Interleukin-35 Signalling

This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the Reactome Textbook.

01/04/2024

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

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

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. ↗

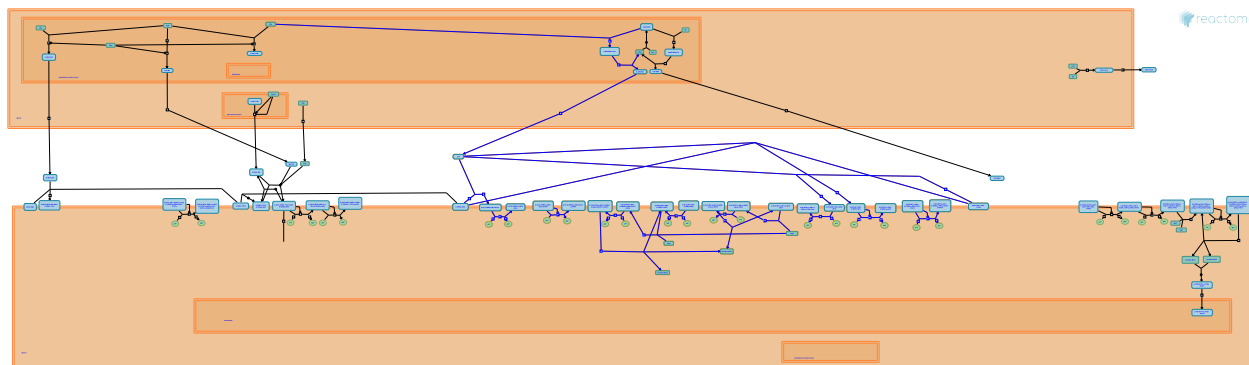Reactome database release: 88

This document contains 1 pathway and 18 reactions (see Table of Contents)

Interleukin-35 Signalling ↗

Stable identifier: R-RNO-8984722

Inferred from: Interleukin-35 Signalling (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also:
http://www.pantherdb.org/about.jsp
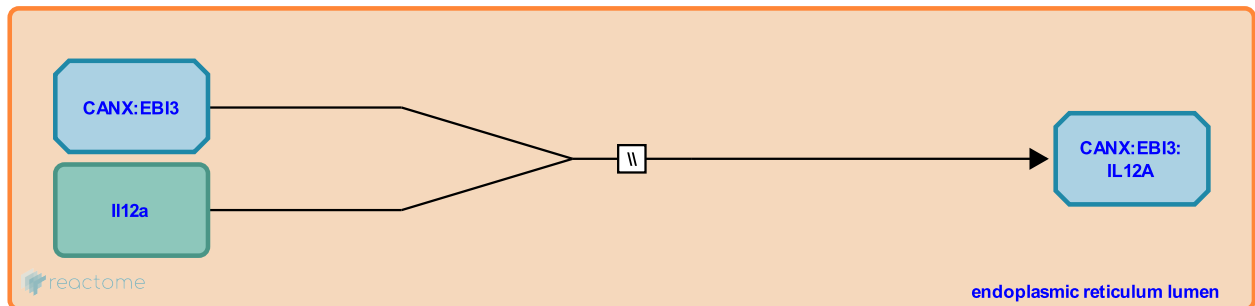
EBI3:CANX binds IL12A ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8950362

Type: omitted

Compartments: endoplasmic reticulum lumen

Inferred from: EBI3:CANX binds IL12A (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Followed by: CANX dissociates from IL12A:EBI3
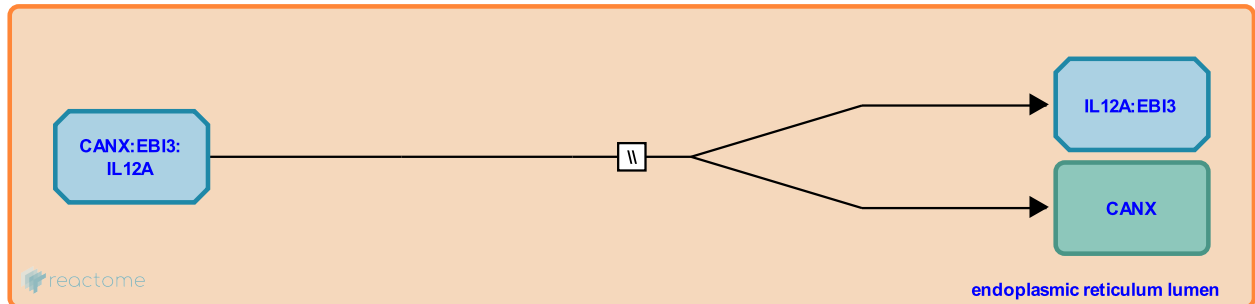
CANX dissociates from IL12A:EBI3 ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8950740

Type: omitted

Compartments: endoplasmic reticulum lumen

Inferred from: CANX dissociates from IL12A:EBI3 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: EBI3:CANX binds IL12A

Followed by: Interleukin-35 translocates from the ER lumen to the extracellular region

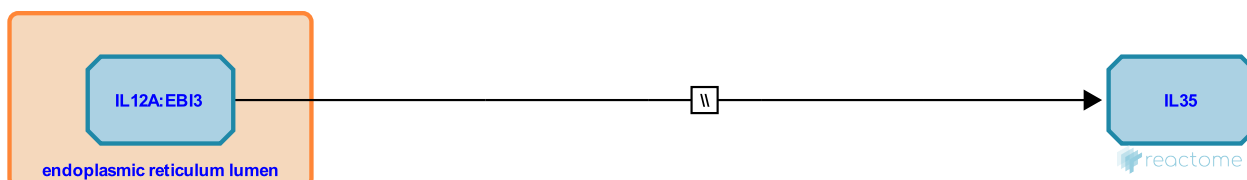**Interleukin-35 translocates from the ER lumen to the extracellular region** ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-448627

Type: omitted

Compartments: extracellular region, endoplasmic reticulum lumen

Inferred from: Interleukin-35 translocates from the ER lumen to the extracellular region (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: CANX dissociates from IL12A:EBI3

Followed by: IL35 binds IL6ST:IL6ST receptor, IL35 binds IL-12RB2:IL6ST receptor, IL35 binds IL12RB2:IL12RB2 receptor

JAK1,JAK2 bound to IL27RA:IL12RB2 receptor are phosphorylated ↗

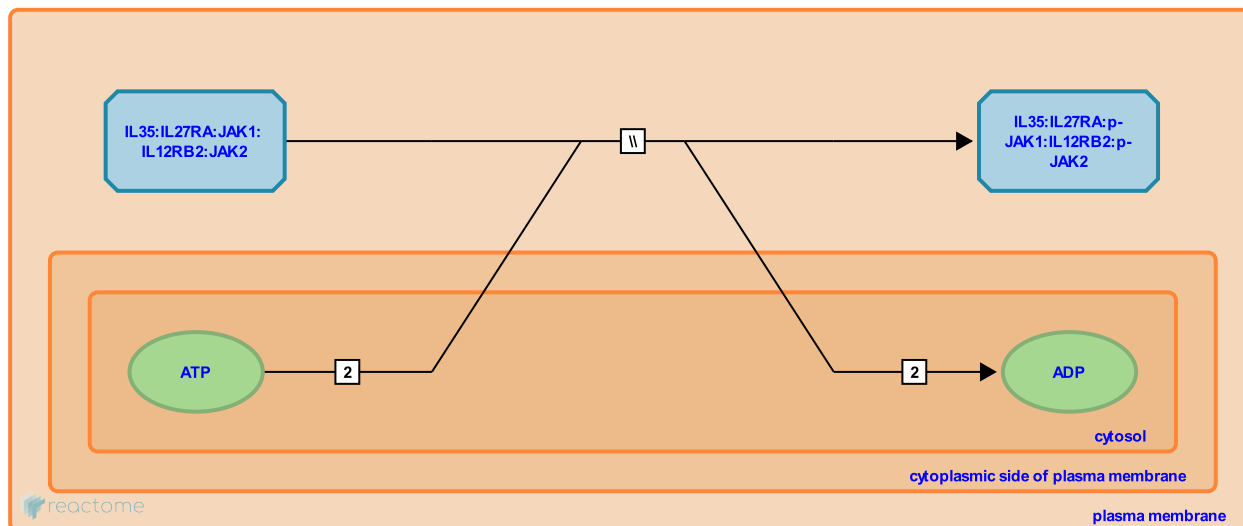**Location:** Interleukin-35 Signalling

Stable identifier: R-RNO-8984012

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1,JAK2 bound to IL27RA:IL12RB2 receptor are phosphorylated (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Followed by: STAT1,STAT3 associate with IL27RA:IL12RB2 receptor

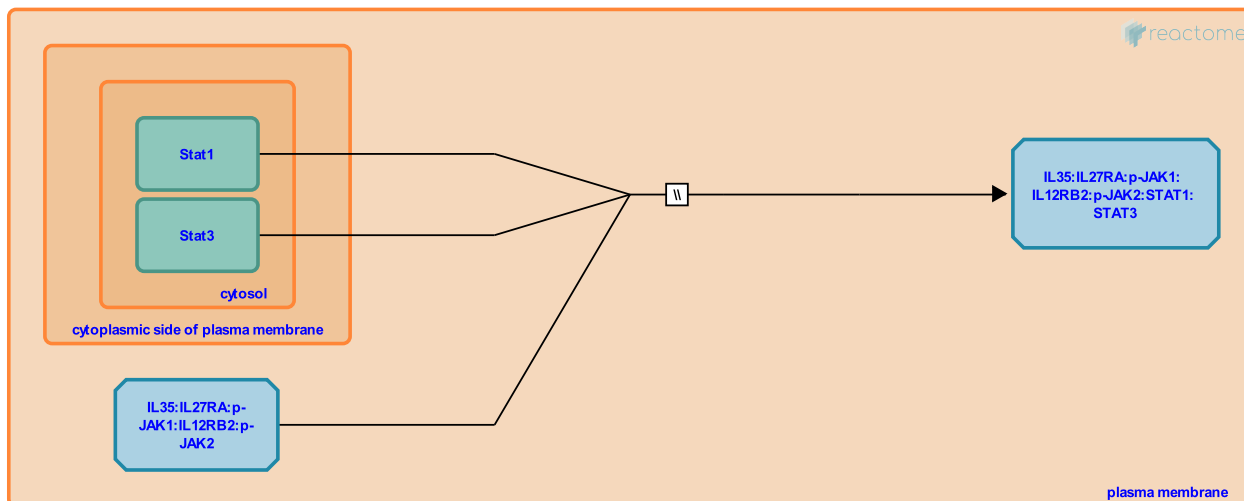# STAT1,STAT3 associate with IL27RA:IL12RB2 receptor ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8984021

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: STAT1,STAT3 associate with IL27RA:IL12RB2 receptor (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: JAK1,JAK2 bound to IL27RA:IL12RB2 receptor are phosphorylated

Followed by: JAK1,JAK2 bound to IL27RA:IL12RB2 receptor phosphorylate STAT1,STAT3

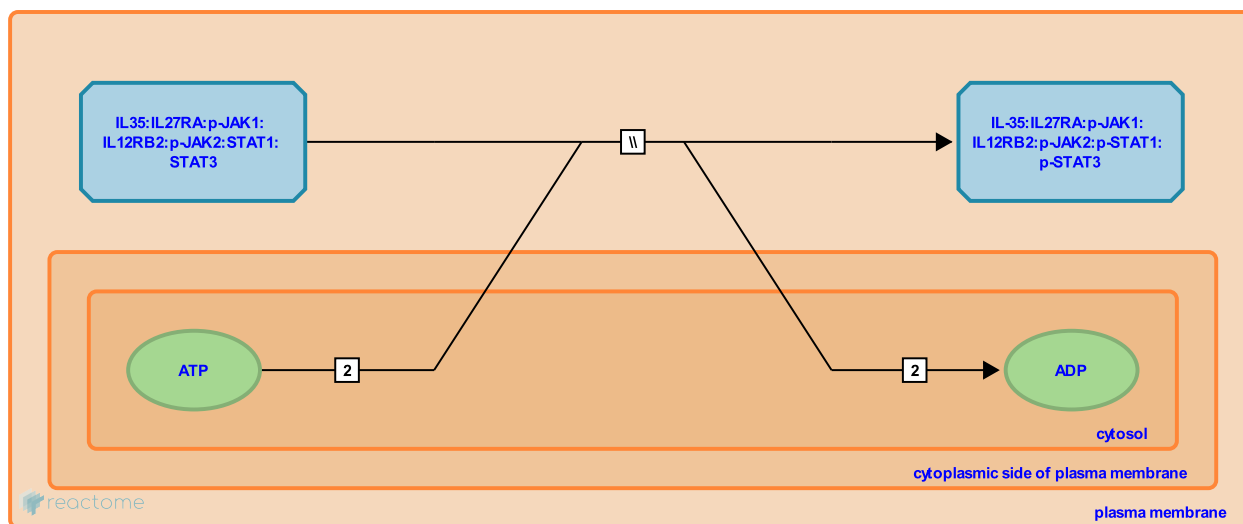# JAK1,JAK2 bound to IL27RA:IL12RB2 receptor phosphorylate STAT1,STAT3 ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8984014

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1,JAK2 bound to IL27RA:IL12RB2 receptor phosphorylate STAT1,STAT3 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: STAT1,STAT3 associate with IL27RA:IL12RB2 receptor

Followed by: p-STAT1, p-STAT3 dissociate from IL27RA:IL12RB2 receptor

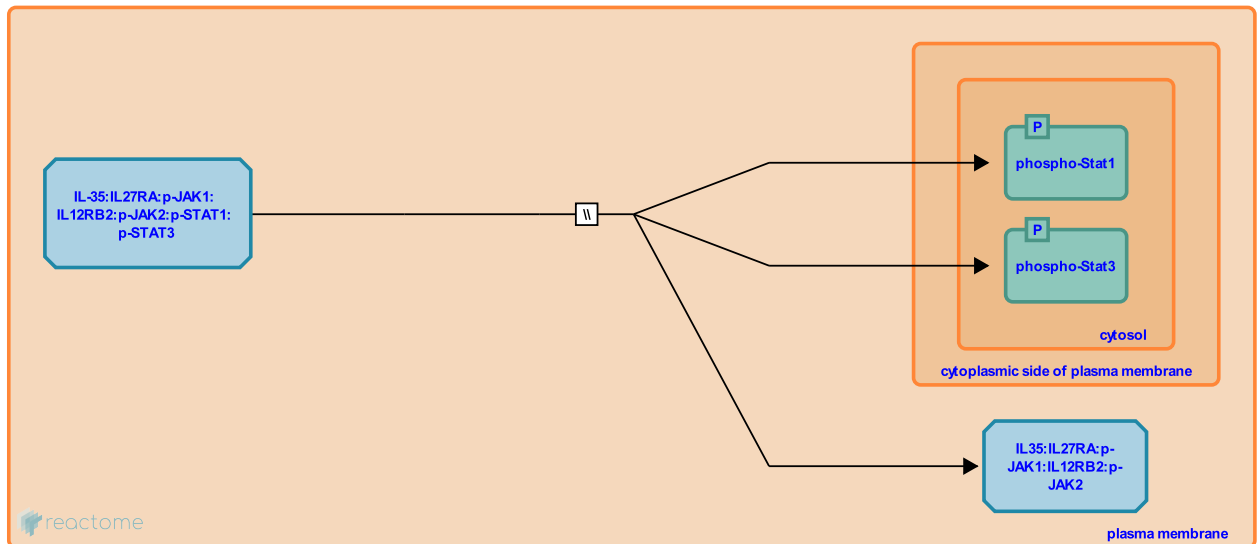# p-STAT1, p-STAT3 dissociate from IL27RA:IL12RB2 receptor ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8984023

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: p-STAT1, p-STAT3 dissociate from IL27RA:IL12RB2 receptor (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: JAK1,JAK2 bound to IL27RA:IL12RB2 receptor phosphorylate STAT1,STAT3
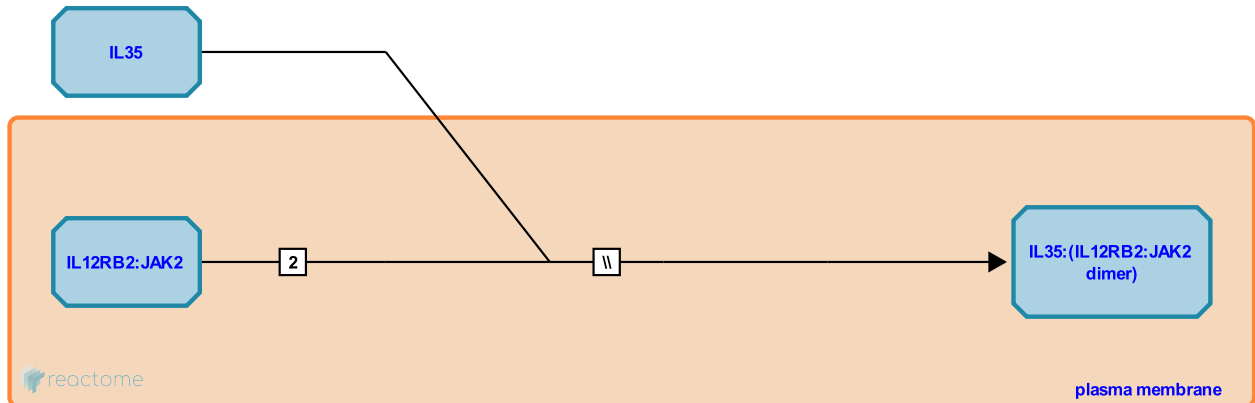
IL35 binds IL12RB2:IL12RB2 receptor ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983519

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: IL35 binds IL12RB2:IL12RB2 receptor (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Interleukin-35 translocates from the ER lumen to the extracellular region

Followed by: JAK2 in IL12RB2:IL12RB2 receptor is phosphorylated
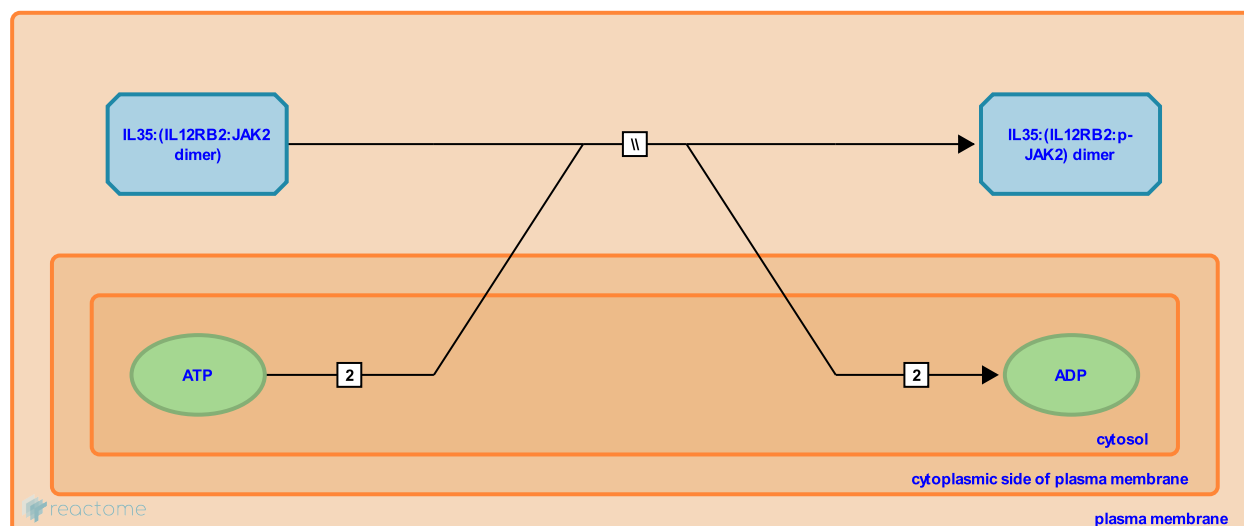
JAK2 in IL12RB2:IL12RB2 receptor is phosphorylated ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983870

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK2 in IL12RB2:IL12RB2 receptor is phosphorylated (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: IL35 binds IL12RB2:IL12RB2 receptor

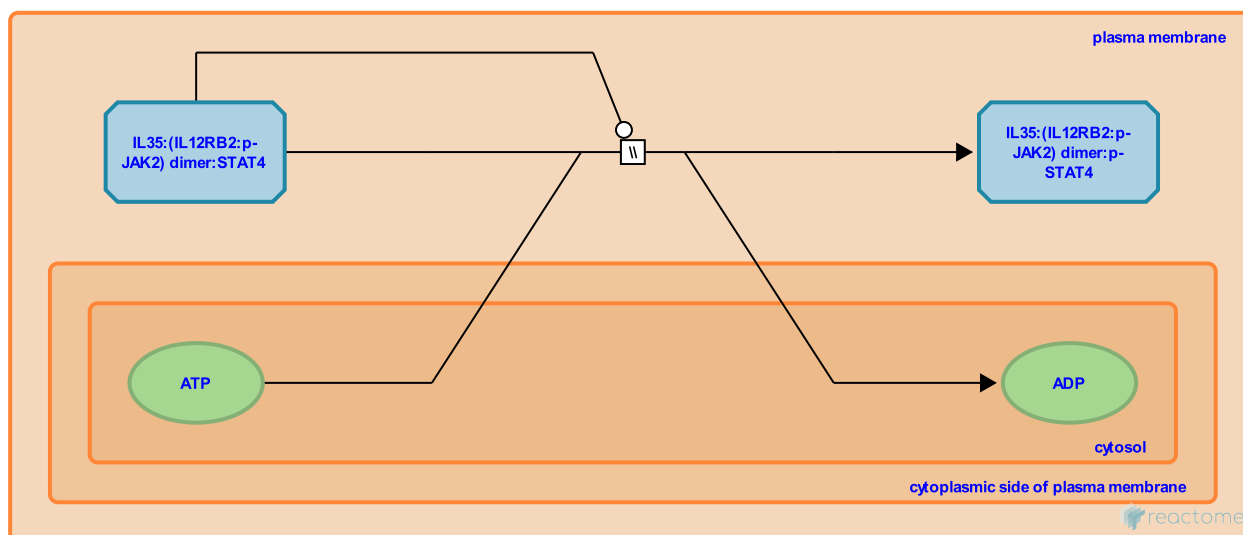# JAK2 bound to IL12RB2:IL12RB2 phosphorylate STAT4 ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983872

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK2 bound to IL12RB2:IL12RB2 phosphorylate STAT4 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

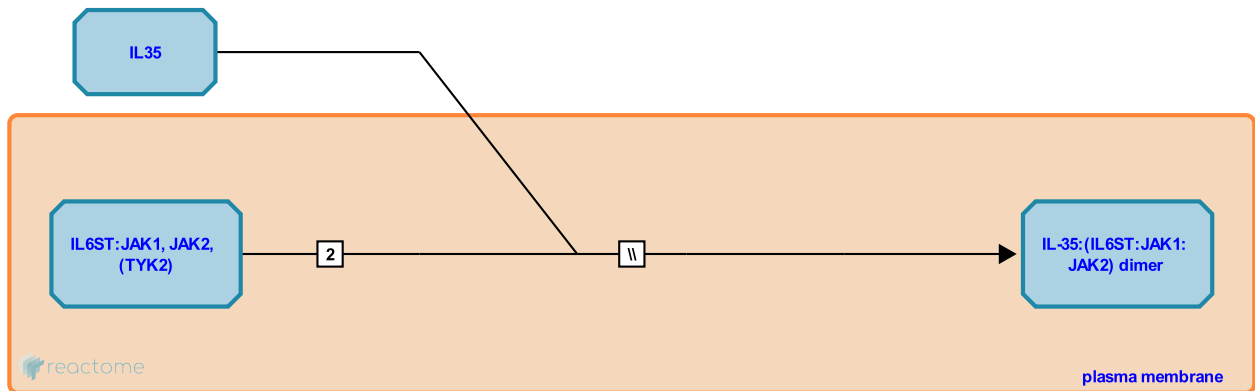# IL35 binds IL6ST:IL6ST receptor ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983518

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: IL35 binds IL6ST:IL6ST receptor (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Interleukin-35 translocates from the ER lumen to the extracellular region

Followed by: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST are phosphorylated

JAK1/JAK2/TYK2 bound to IL6ST:IL6ST are phosphorylated ↗

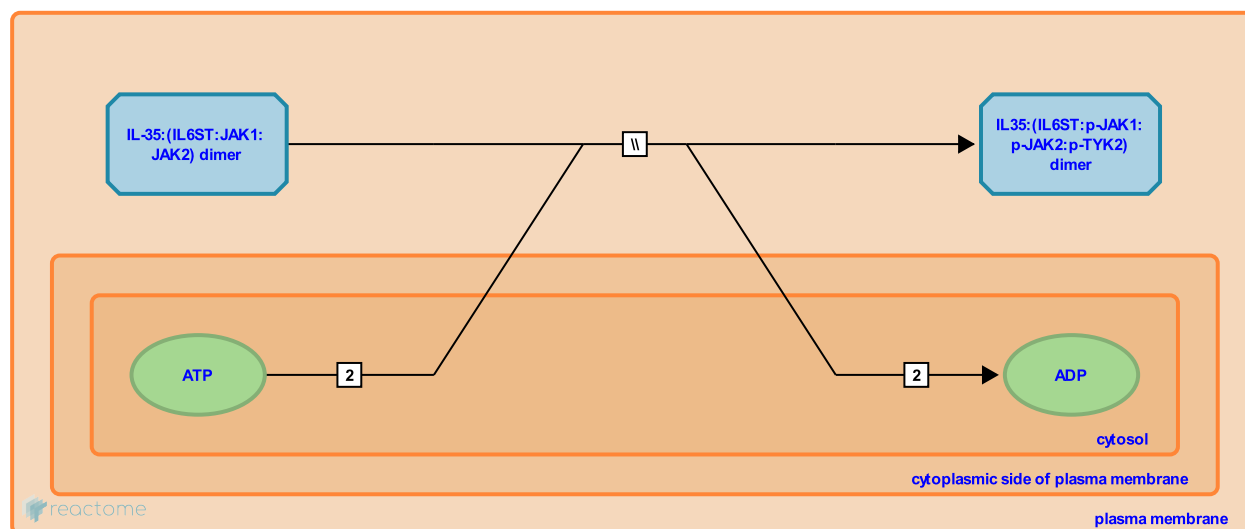**Location:** Interleukin-35 Signalling

Stable identifier: R-RNO-8983834

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST are phosphorylated (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: IL35 binds IL6ST:IL6ST receptor

Followed by: STAT1 associates with IL6ST:IL6ST

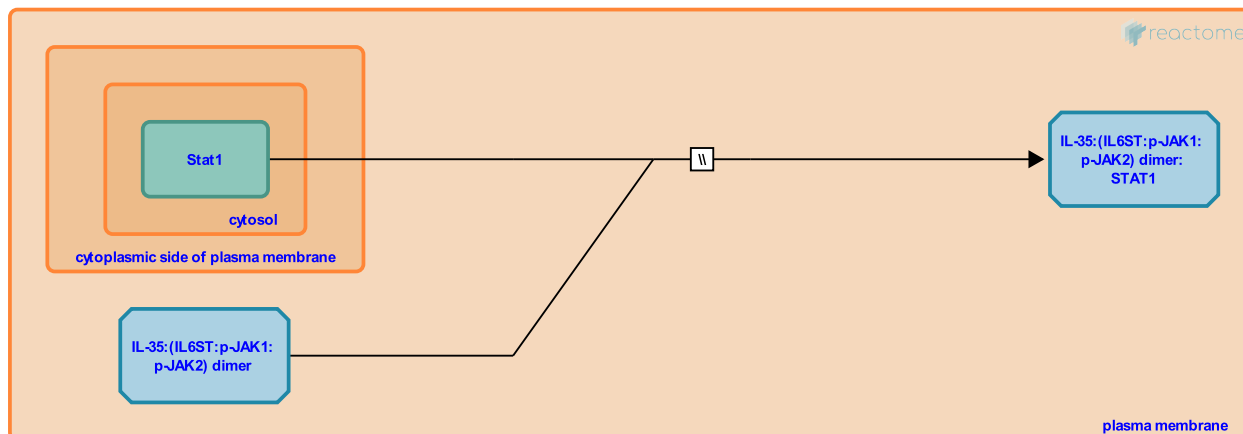# STAT1 associates with IL6ST:IL6ST ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983841

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: STAT1 associates with IL6ST:IL6ST (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST are phosphorylated

Followed by: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST phosphorylate STAT1

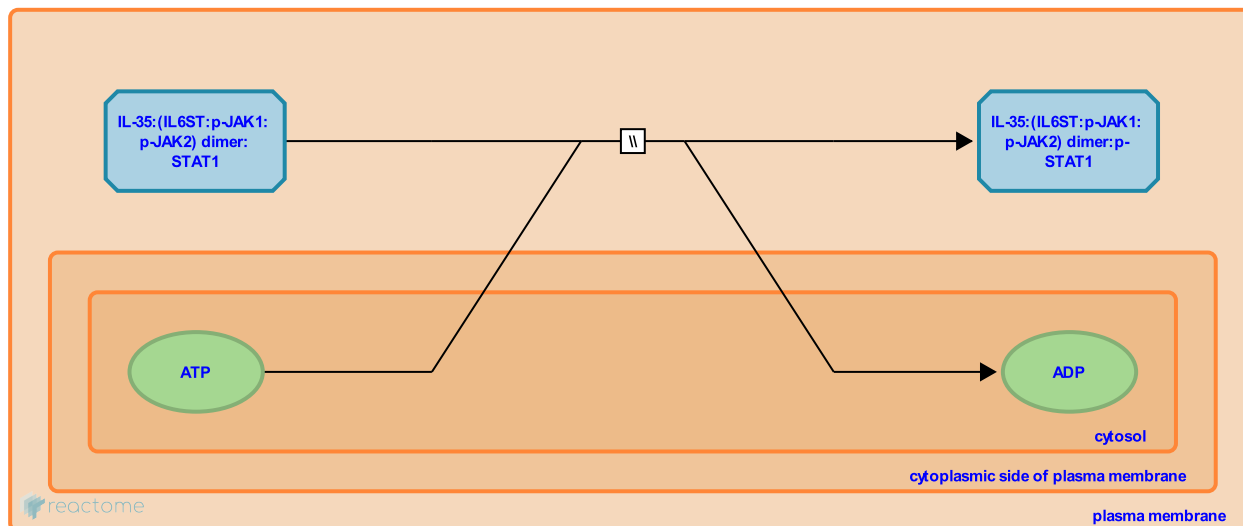# JAK1/JAK2/TYK2 bound to IL6ST:IL6ST phosphorylate STAT1 ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983835

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST phosphorylate STAT1 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: STAT1 associates with IL6ST:IL6ST

Followed by: p-STAT1 dissociates from IL6ST:IL6ST
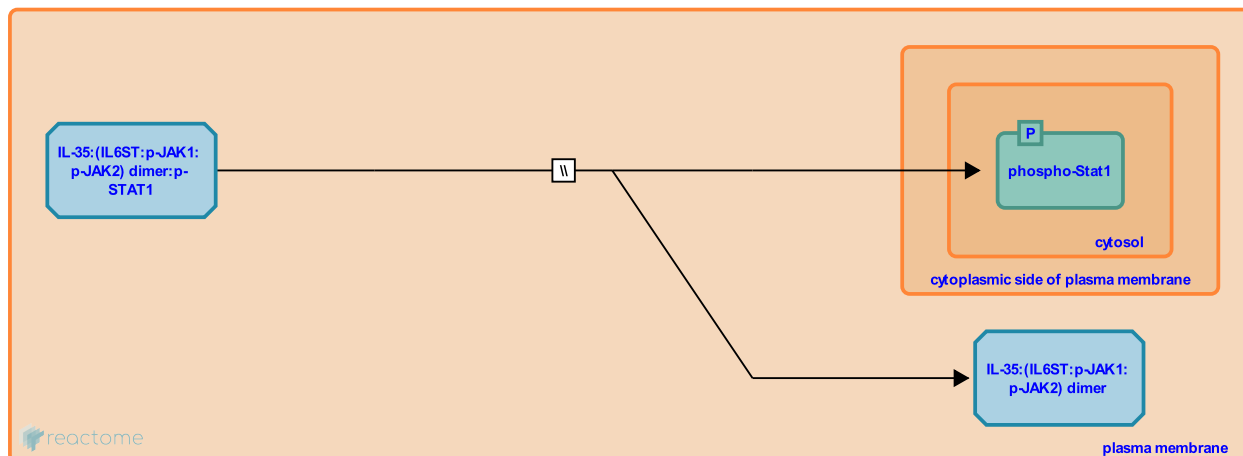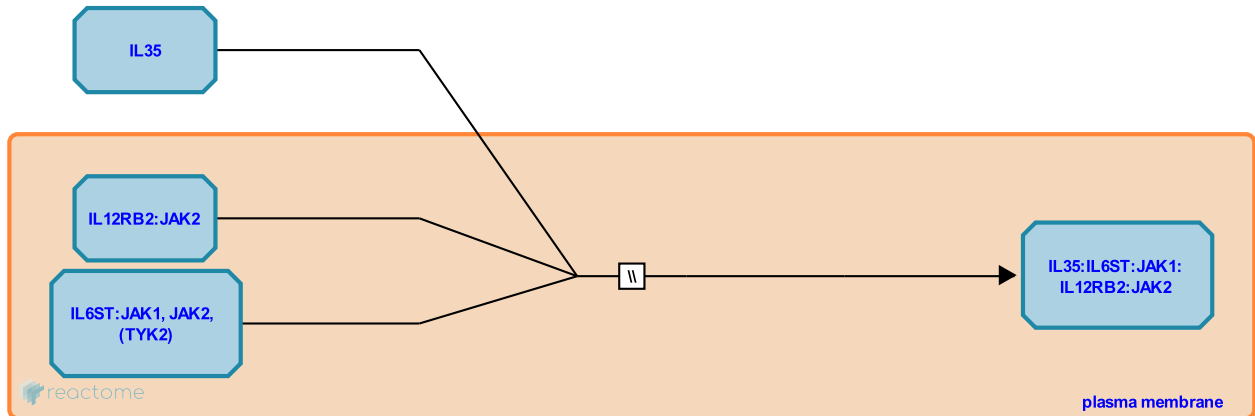
p-STAT1 dissociates from IL6ST:IL6ST ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8983845

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: p-STAT1 dissociates from IL6ST:IL6ST (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: JAK1/JAK2/TYK2 bound to IL6ST:IL6ST phosphorylate STAT1

IL35 binds IL-12RB2:IL6ST receptor ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-6809140

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: IL35 binds IL-12RB2:IL6ST receptor (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Interleukin-35 translocates from the ER lumen to the extracellular region

Followed by: JAK1/JAK2 bound to IL35:IL6ST:IL12RB2 receptor are phosphorylated

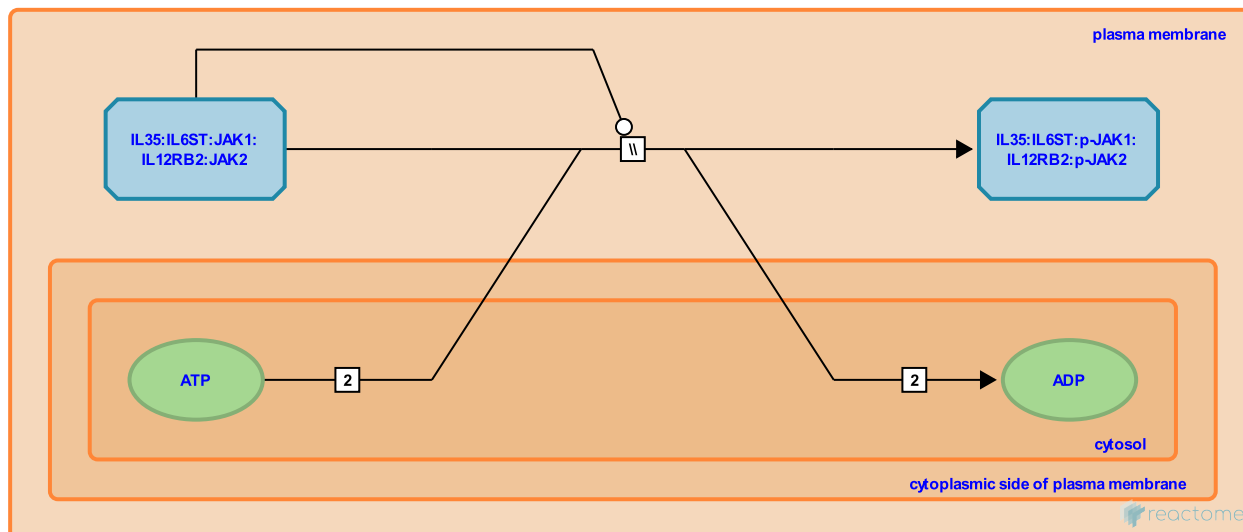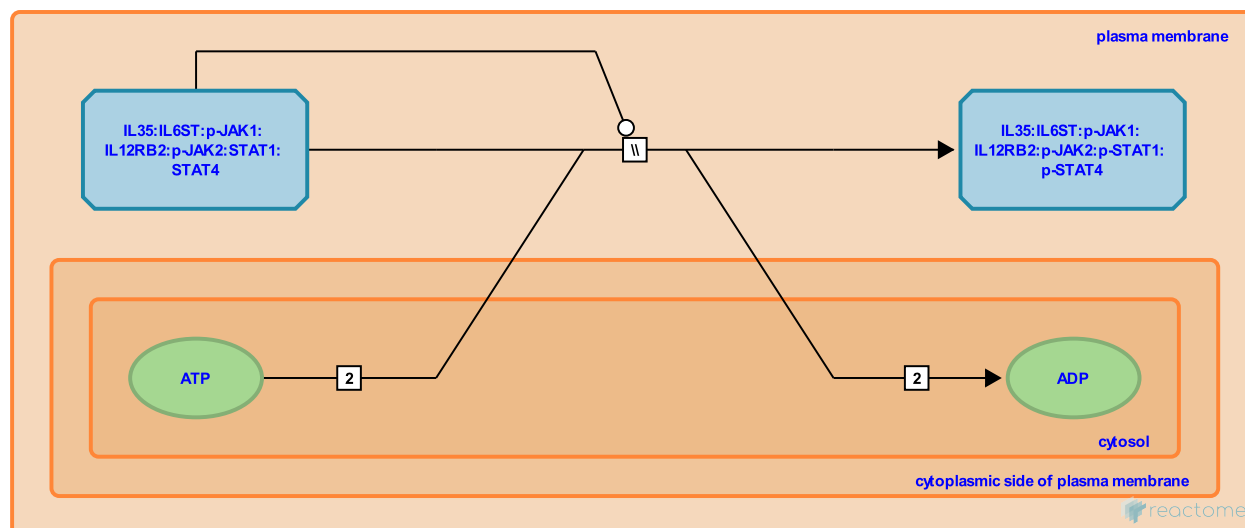# JAK1/JAK2 bound to IL35:IL6ST:IL12RB2 receptor are phosphorylated ↗

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8950405

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1/JAK2 bound to IL35:IL6ST:IL12RB2 receptor are phosphorylated (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: IL35 binds IL-12RB2:IL6ST receptor

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

Location: Interleukin-35 Signalling

Stable identifier: R-RNO-8950453

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: JAK1/JAK2 bound to IL12RB2:IL6ST receptor phosphorylates STAT1 and STAT4 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Table of Contents