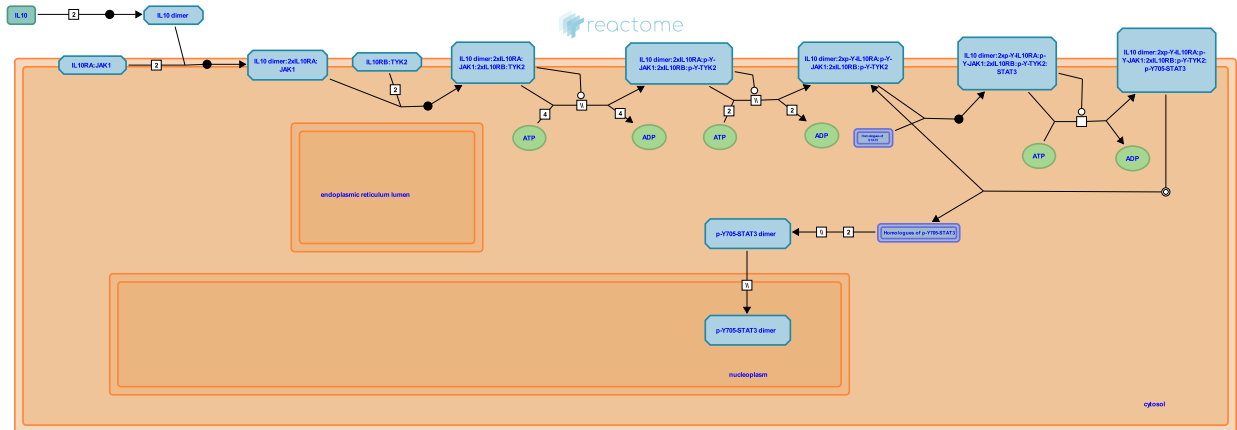


Interleukin-10 signaling



European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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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](https://reactome.org/Textbook).

06/05/2024

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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references

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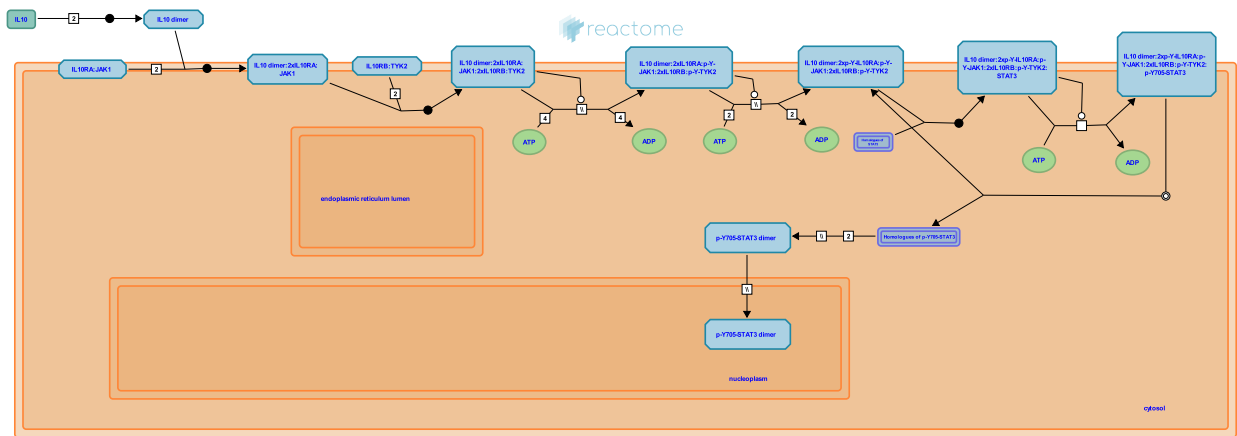
Reactome database release: 88

This document contains 1 pathway and 10 reactions ([see Table of Contents](#))

Interleukin-10 signaling ↗

Stable identifier: R-SSC-6783783

Inferred from: Interleukin-10 signaling (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.](https://www.reactome.org) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

IL10 dimerizes ↗

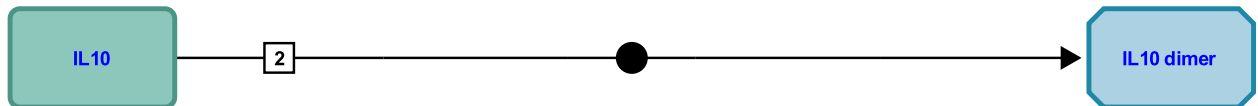
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-449855

Type: binding

Compartments: extracellular region

Inferred from: [IL10 dimerizes \(Homo sapiens\)](#)



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: [IL10 dimer binds IL10RA:JAK1](#)

IL10 dimer binds IL10RA:JAK1 ↗

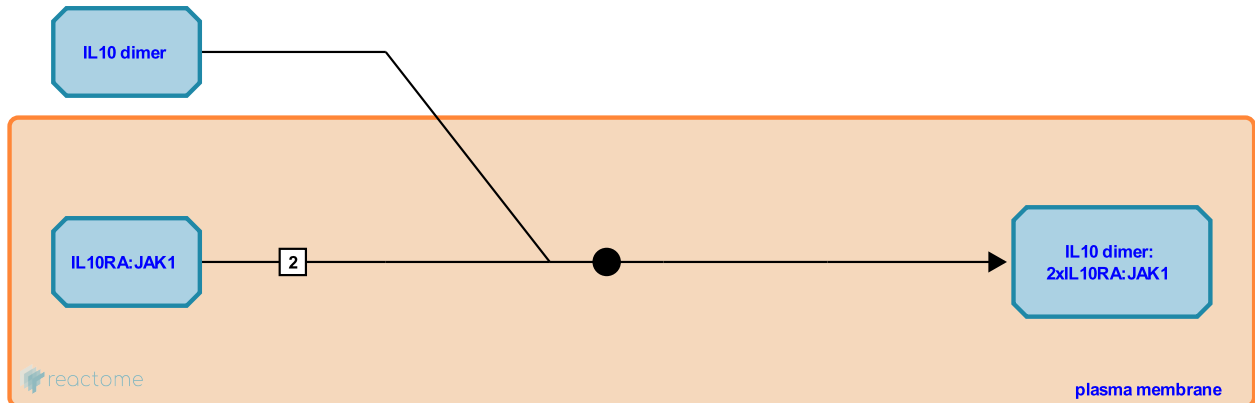
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-449803

Type: binding

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [IL10 dimer binds IL10RA:JAK1 \(Homo sapiens\)](#)



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: [IL10 dimerizes](#)

Followed by: [IL10 dimer:2xIL10RA1:JAK1 binds IL10RB:TYK2](#)

IL10 dimer:2xIL10RA1:JAK1 binds IL10RB:TYK2 ↗

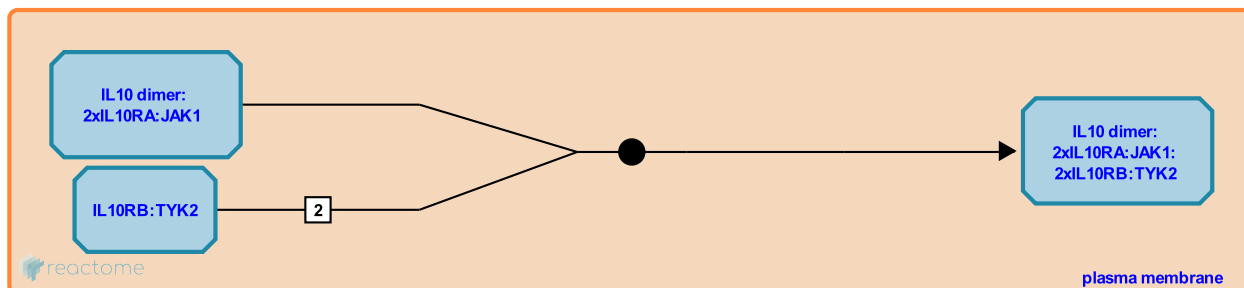
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-449811

Type: binding

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [IL10 dimer:2xIL10RA1:JAK1 binds IL10RB:TYK2 \(Homo sapiens\)](#)



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: [IL10 dimer binds IL10RA:JAK1](#)

Followed by: [JAK1,TYK2 phosphorylate JAK1,TYK2](#)

JAK1, TYK2 phosphorylate JAK1, TYK2 ↗

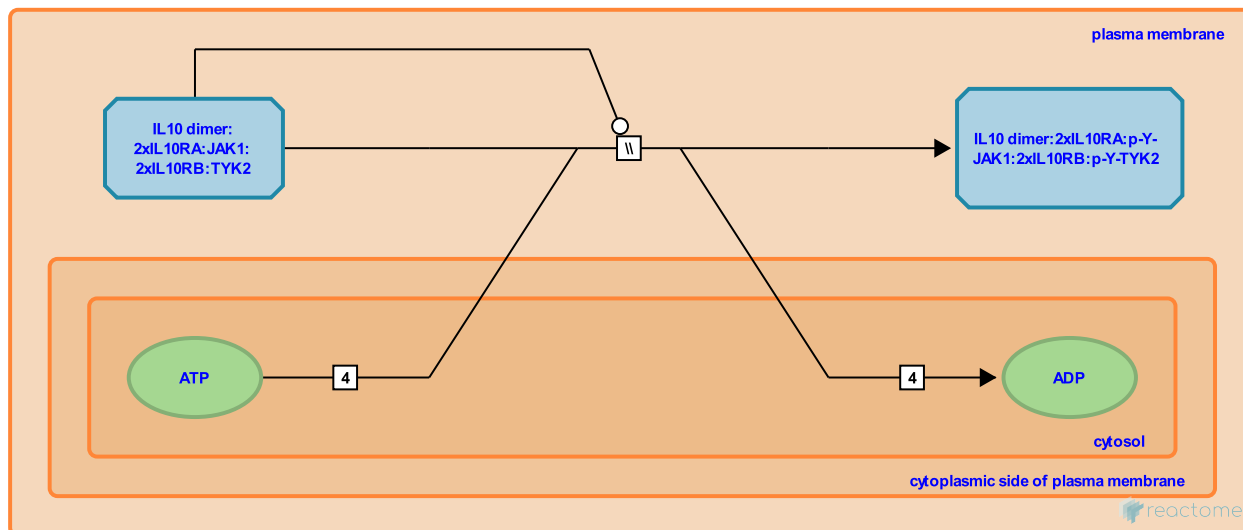
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784319

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [JAK1, TYK2 phosphorylate JAK1, TYK2 \(Homo sapiens\)](#)



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: [IL10 dimer:2xIL10RA1:JAK1 binds IL10RB:TYK2](#)

Followed by: [p-Y-JAK1,p-Y-TYK2 phosphorylate IL10RA](#)

p-Y-JAK1,p-Y-TYK2 phosphorylate IL10RA ↗

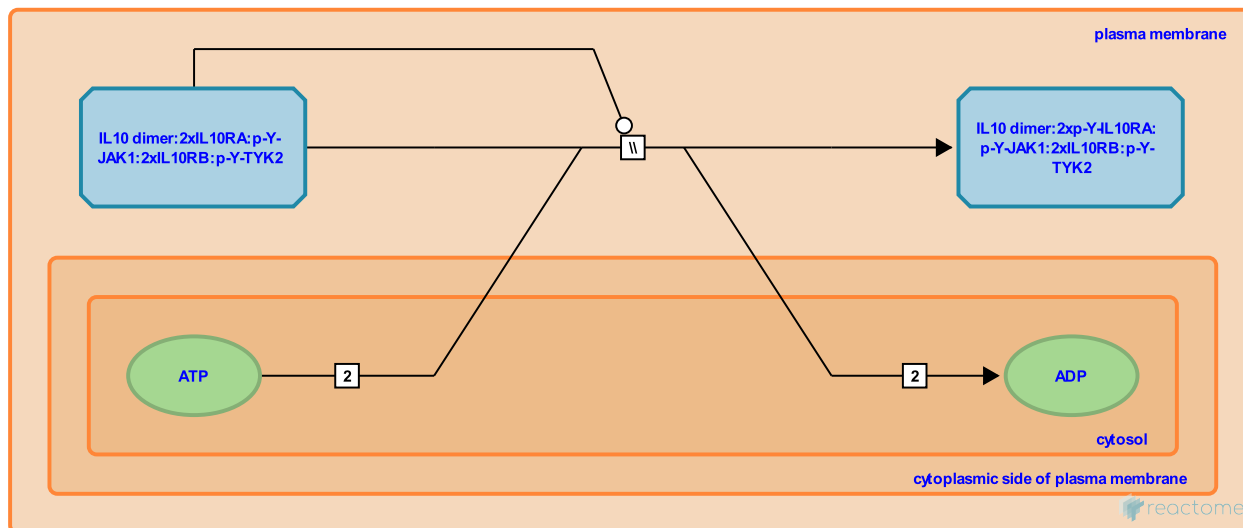
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784324

Type: omitted

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [p-Y-JAK1,p-Y-TYK2 phosphorylate IL10RA \(Homo sapiens\)](#)



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,TYK2 phosphorylate JAK1,TYK2](#)

Followed by: [IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2 binds STAT3](#)

IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2 binds STAT3 ↗

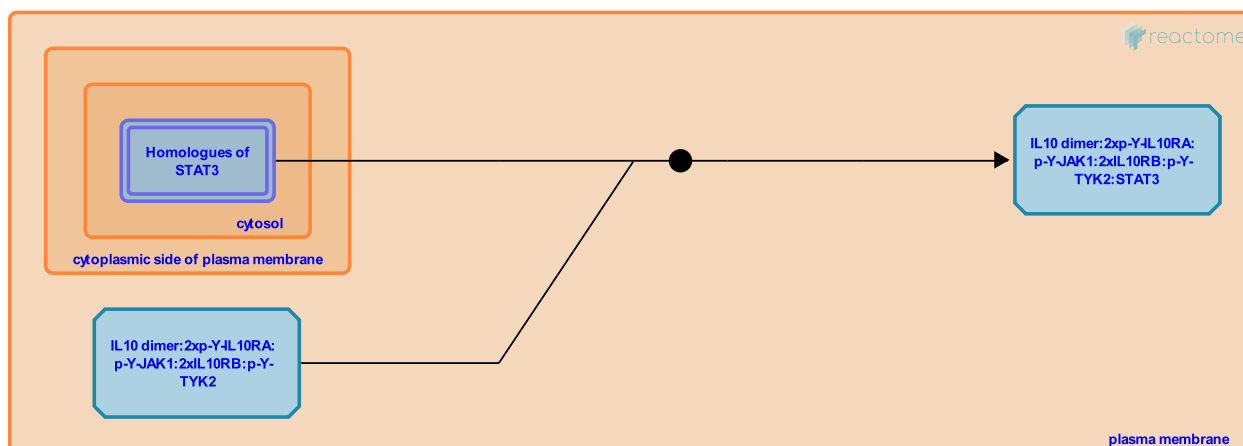
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784323

Type: binding

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2 binds 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: [p-Y-JAK1,p-Y-TYK2 phosphorylate IL10RA](#)

Followed by: [STAT3 is phosphorylated by p-Y-JAK1,P-Y-TYK2](#)

STAT3 is phosphorylated by p-Y-JAK1,P-Y-TYK2 ↗

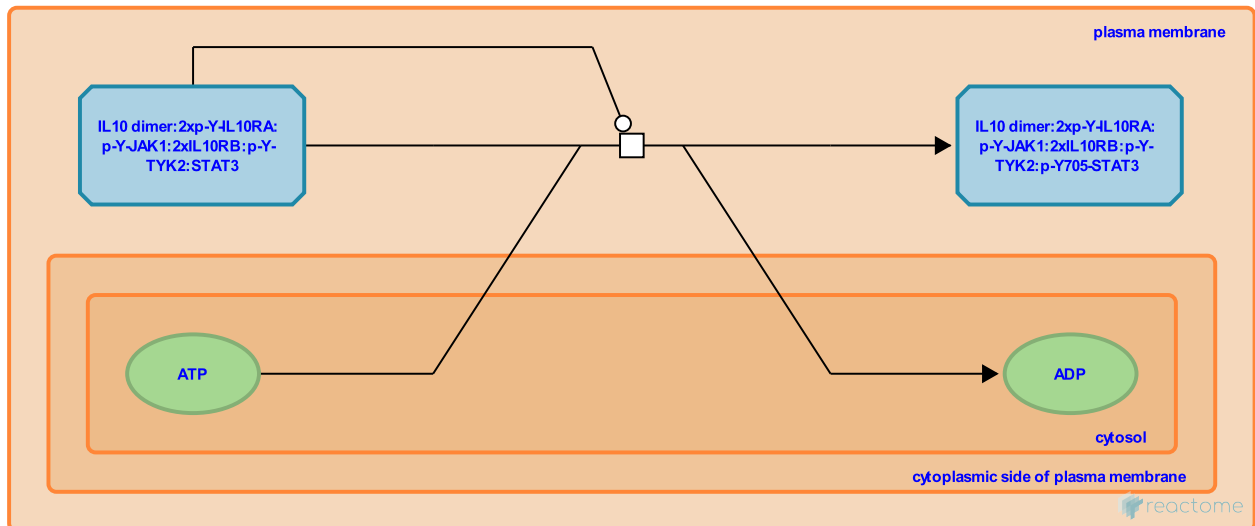
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784006

Type: transition

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [STAT3 is phosphorylated by p-Y-JAK1,P-Y-TYK2 \(Homo sapiens\)](#)



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: [IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2 binds STAT3](#)

Followed by: [p-Y705-STAT3 dissociates from IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2:p-Y705-STAT3](#)

p-Y705-STAT3 dissociates from IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2:p-Y705-STAT3 ↗

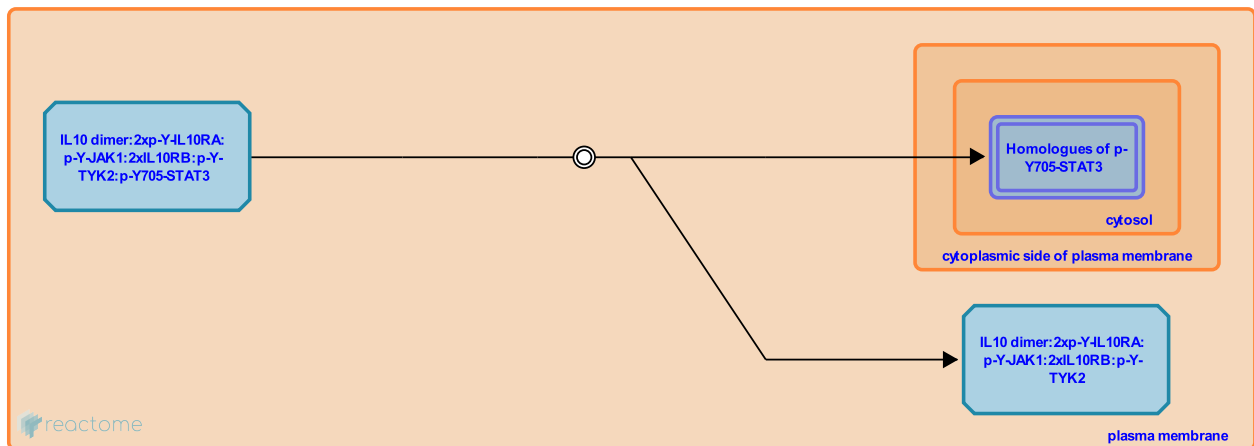
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784791

Type: dissociation

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: [p-Y705-STAT3 dissociates from IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2:p-Y705-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: [STAT3 is phosphorylated by p-Y-JAK1,P-Y-TYK2](#)

Followed by: [p-Y705-STAT3 dimerizes](#)

p-Y705-STAT3 dimerizes ↗

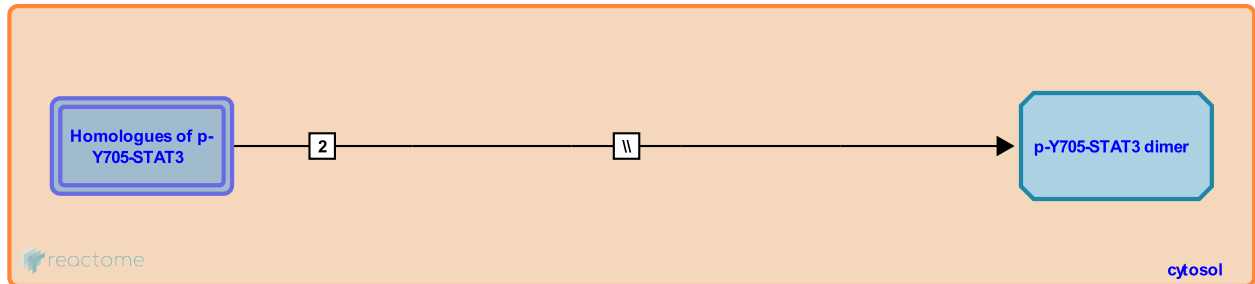
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784765

Type: omitted

Compartments: cytosol

Inferred from: [p-Y705-STAT3 dimerizes \(Homo sapiens\)](#)



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: [p-Y705-STAT3 dissociates from IL10 dimer:2xp-Y-IL10RA:p-Y-JAK1:2xIL10RB:p-Y-TYK2:p-Y705-STAT3](#)

Followed by: [p-Y705-STAT3 dimer translocates from cytosol to nucleoplasm](#)

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

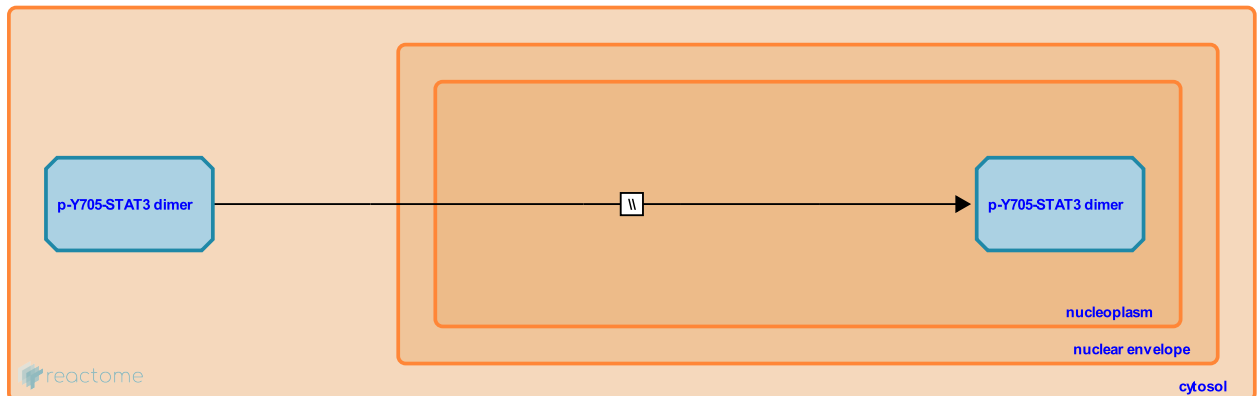
Location: [Interleukin-10 signaling](#)

Stable identifier: R-SSC-6784763

Type: omitted

Compartments: nucleoplasm, cytosol

Inferred from: [p-Y705-STAT3 dimer translocates from cytosol to nucleoplasm \(Homo sapiens\)](#)



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: [p-Y705-STAT3 dimerizes](#)

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