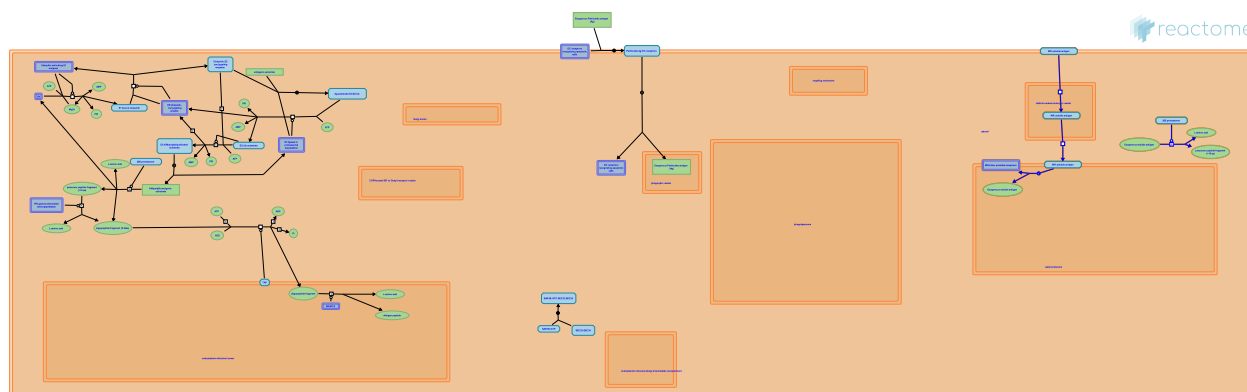


Cross-presentation of soluble exogenous antigens (endosomes)



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/).

20/05/2024

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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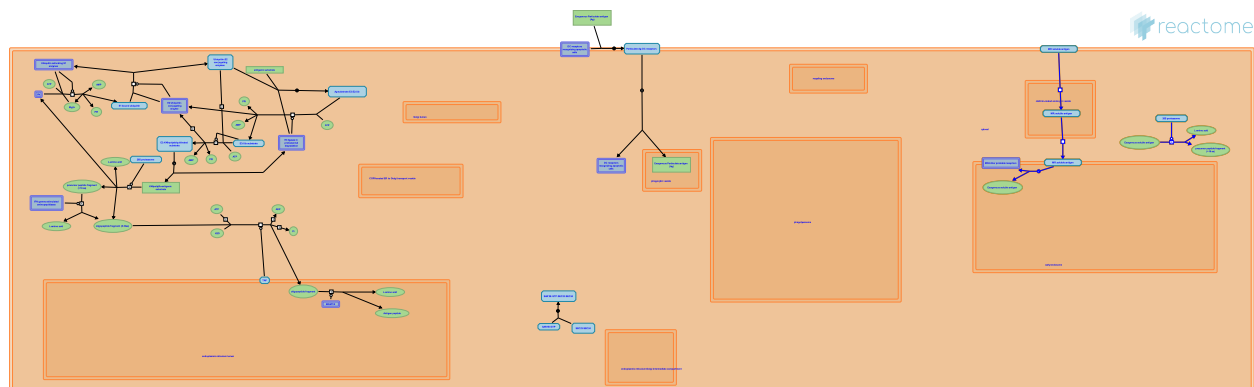
Reactome database release: 88

This document contains 1 pathway and 4 reactions ([see Table of Contents](#))

Cross-presentation of soluble exogenous antigens (endosomes) ↗

Stable identifier: R-CEL-1236978

Inferred from: [Cross-presentation of soluble exogenous antigens \(endosomes\) \(Homo sapiens\)](#)



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>

Internalization of receptor bound antigen into clathrin coted vesicles ↗

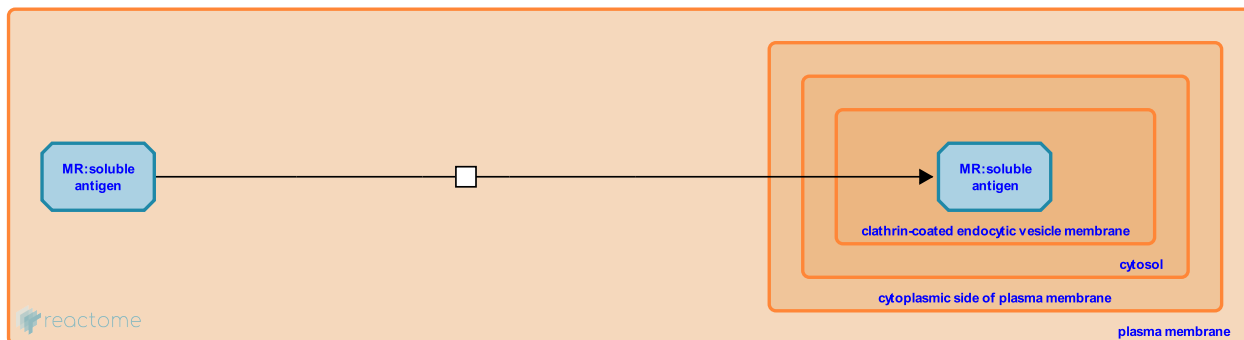
Location: Cross-presentation of soluble exogenous antigens (endosomes)

Stable identifier: R-CEL-1236941

Type: transition

Compartments: plasma membrane, extracellular region, clathrin-coated endocytic vesicle membrane

Inferred from: Internalization of receptor bound antigen into clathrin coted vesicles (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.](http://www.pantherdb.org/about.jsp) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Followed by: Movement of clathrin coated vesicles into early endosome

Movement of clathrin coated vesicles into early endosome ↗

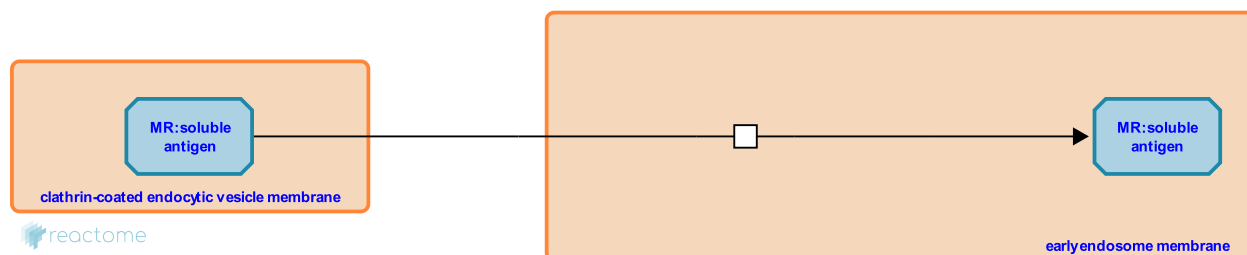
Location: [Cross-presentation of soluble exogenous antigens \(endosomes\)](#)

Stable identifier: R-CEL-1236955

Type: transition

Compartments: early endosome membrane, clathrin-coated endocytic vesicle membrane

Inferred from: [Movement of clathrin coated vesicles into early endosome \(Homo sapiens\)](#)



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: [Internalization of receptor bound antigen into clathrin coted vesicles](#)

Followed by: [Exogenous soluble antigen targeted to more stable early endosome](#)

Exogenous soluble antigen targeted to more stable early endosome ↗

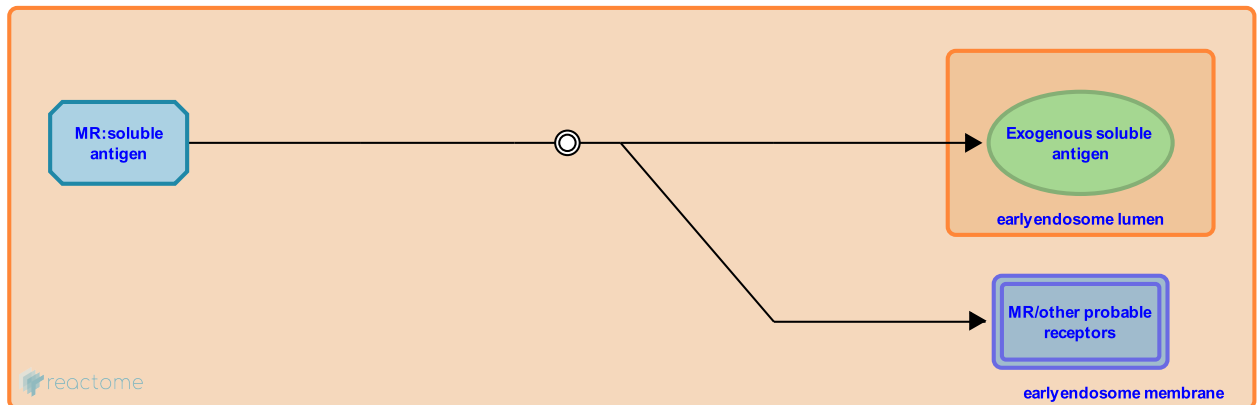
Location: [Cross-presentation of soluble exogenous antigens \(endosomes\)](#)

Stable identifier: R-CEL-1236940

Type: dissociation

Compartments: early endosome membrane, early endosome lumen

Inferred from: [Exogenous soluble antigen targeted to more stable early endosome \(Homo sapiens\)](#)



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: [Movement of clathrin coated vesicles into early endosome](#)

Proteasomal cleavage of exogenous antigen ↗

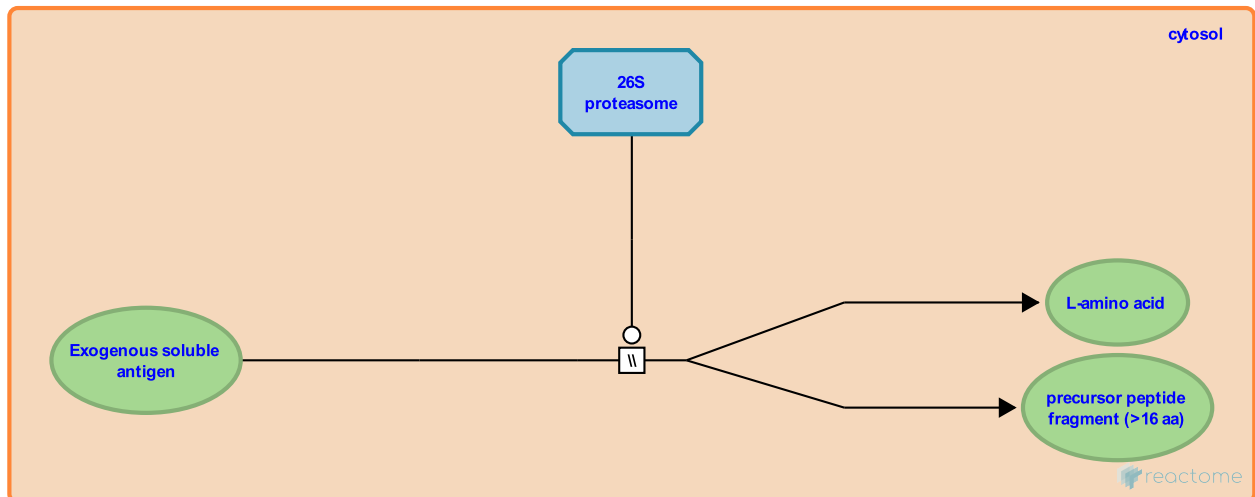
Location: [Cross-presentation of soluble exogenous antigens \(endosomes\)](#)

Stable identifier: R-CEL-1236970

Type: omitted

Compartments: cytosol

Inferred from: [Proteasomal cleavage of exogenous antigen \(Homo sapiens\)](#)



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>

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