

Egress of internalized antigen to the cytosol via sec61

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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: 88

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

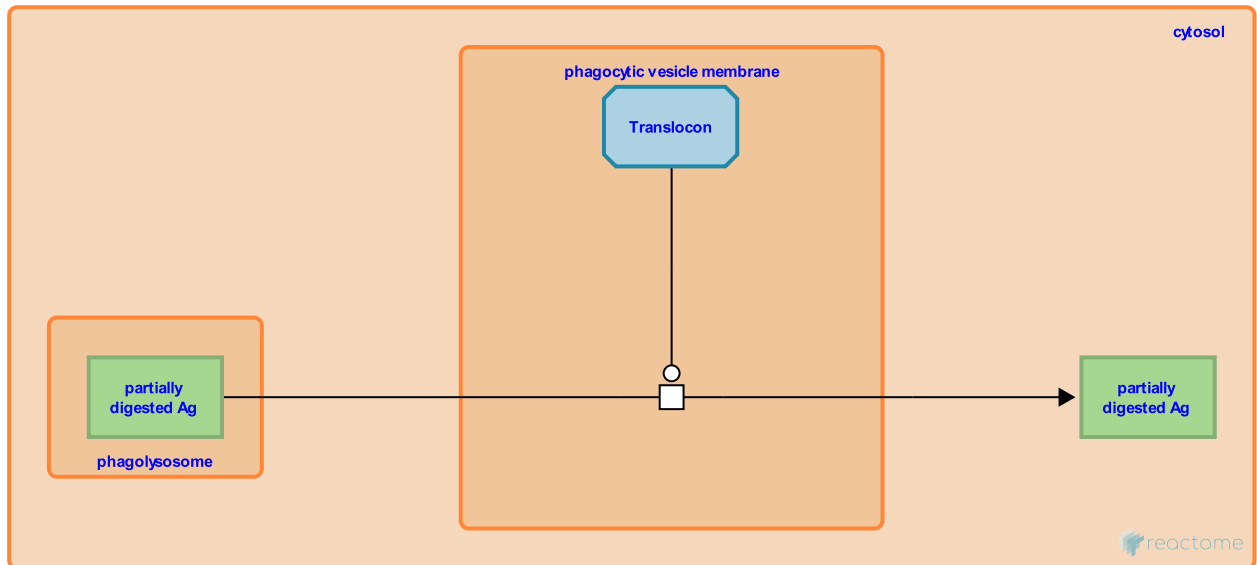
Egress of internalized antigen to the cytosol via sec61 [↗](#)

Stable identifier: R-HSA-1236947

Type: transition

Compartments: phagocytic vesicle membrane, cytosol, phagolysosome

Inferred from: [Egress of internalized antigen to the cytosol via sec61 \(Gallus gallus\)](#)



Fusion of the maturing phagosome with the ER mediates the exchange of materials resulting in the formation of a hybrid ER-phagosome compartment (Gagnon et al. 2002, Guermonprez et al. 2003, Houde et al. 2003, Ackerman et al. 2003, Blanchard et al. 2010). This hybrid contains the retrotranslocon factor Sec61 that mediates the access of proteasomes on the cytosolic surface of the phagosome. Using fluorescence imaging, Houde et al. (2003) provided evidence for the role of Sec61 in the retrotranslocation of internalized exogenous proteins from phagosomes to the cytoplasmic face of J774 macrophages. Sec61 factor is a heterotrimeric complex composed of alpha, beta and gamma subunits forming the core of the mammalian ER translocon (Greenfield et al. 1999). Oligomers of the Sec61 complex form a transmembrane channel involved in the retrotranslocation of misfolded proteins from ER to the cytosol for degradation, and thus it has been proposed that Sec61 might be involved in the translocation of proteins in phagosomes to the cytosol (Kasturi et al. 2008).

Editions

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