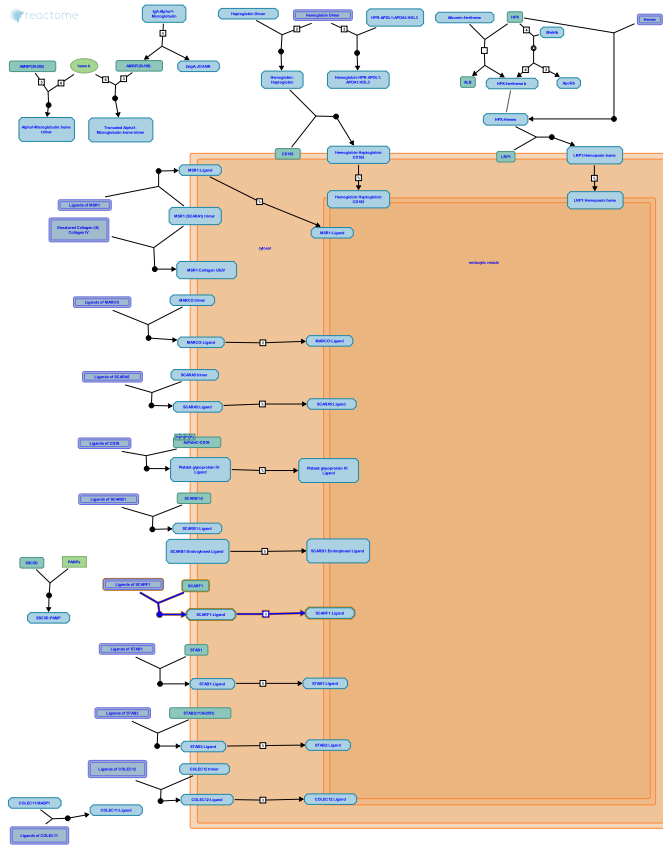


Scavenging by Class F Receptors



May, B., Neyen, C.

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).

02/05/2024

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).

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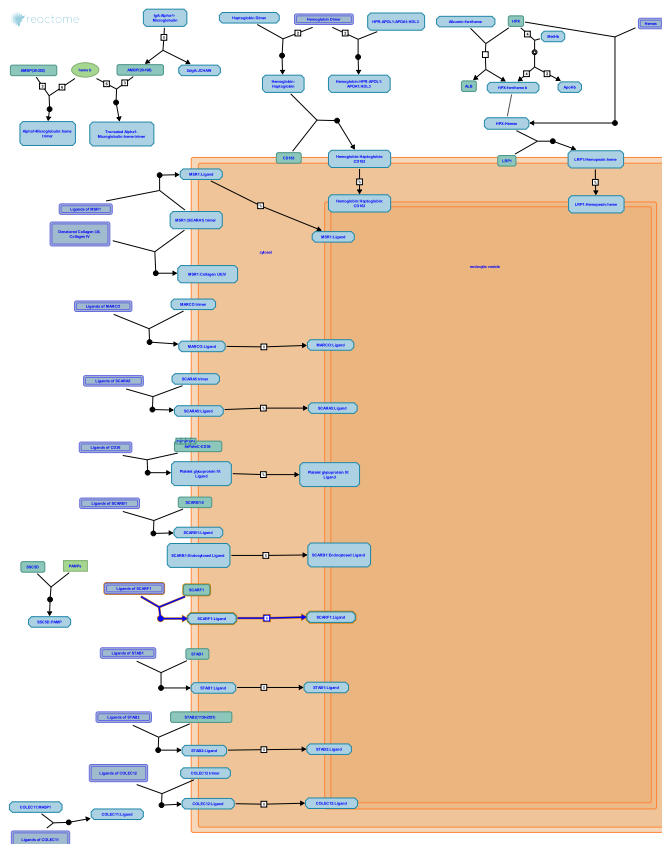
Reactome database release: 88

This document contains 1 pathway and 2 reactions ([see Table of Contents](#))

Scavenging by Class F Receptors ↗

Stable identifier: R-HSA-3000484

Compartments: endocytic vesicle membrane, extracellular region, plasma membrane



SCARF1 (SREC-I) and SCARF2 (SREC-II) are transmembrane proteins that contain multiple extracellular EGF-like domains (Ishii et al. 2002, reviewed in Areschoug and Gordon 2009). SCARF2 may be involved in cell adhesion rather than ligand binding.

Literature references

Ishii, J., Tomita, S., Koizumi, H., Arai, H., Inoue, K., Adachi, H. et al. (2002). SREC-II, a new member of the scavenger receptor type F family, trans-interacts with SREC-I through its extracellular domain. *J. Biol. Chem.*, 277, 39696-702 . ↗

Gordon, S., Areschoug, T. (2009). Scavenger receptors: role in innate immunity and microbial pathogenesis. *Cell. Microbiol.*, 11, 1160-9. ↗

Editions

2013-01-27	Authored, Edited	May, B.
2013-03-22	Authored, Reviewed	Neyen, C.

SCARF1 (SREC-I) binds ligands ↗

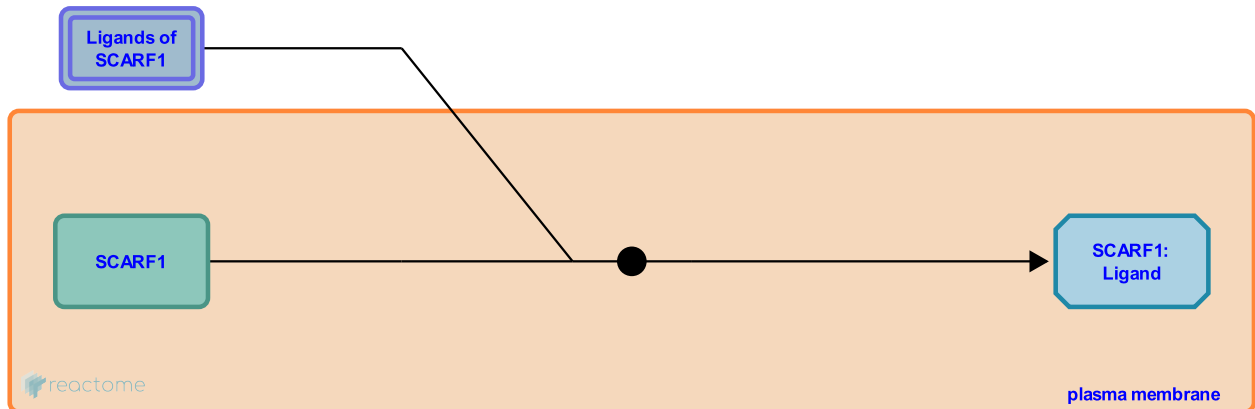
Location: [Scavenging by Class F Receptors](#)

Stable identifier: R-HSA-2197645

Type: binding

Compartments: plasma membrane, extracellular region

Inferred from: [Scarf1 \(Srec-I\) binds ligands \(Mus musculus\)](#)



SCARF1 (SREC-I) binds low density lipoprotein (LDL), oxidized LDL, acetylated LDL (Adachi et al. 1997), carbamylated LDL (Apostolov et al. 2009), beta glucan (Means et al. 2009), and calreticulin (Berwin et al. 2004). SREC-I binds Hsp90 and Hsp90-chaperoned peptides (Murshid et al. 2010) as well as Heat shock protein 110 (hsp110) and glucose-regulated protein (grp170) (inferred from mouse, Facciponte, Wang et al. 2007). SREC-I interacts with PorB of *Neisseria gonorrhoeae* and mediates host cell entry (Rechner et al. 2007).

Followed by: [SCARF1:ligand is endocytosed](#)

Literature references

- Subjeck, JR., Facciponte, JG., Wang, XY. (2007). Hsp110 and Grp170, members of the Hsp70 superfamily, bind to scavenger receptor-A and scavenger receptor expressed by endothelial cells-I. *Eur. J. Immunol.*, 37, 2268-79. ↗
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Editions

2012-04-07	Edited	May, B.
2013-01-27	Authored	May, B.
2013-03-22	Authored, Reviewed	Neyen, C.

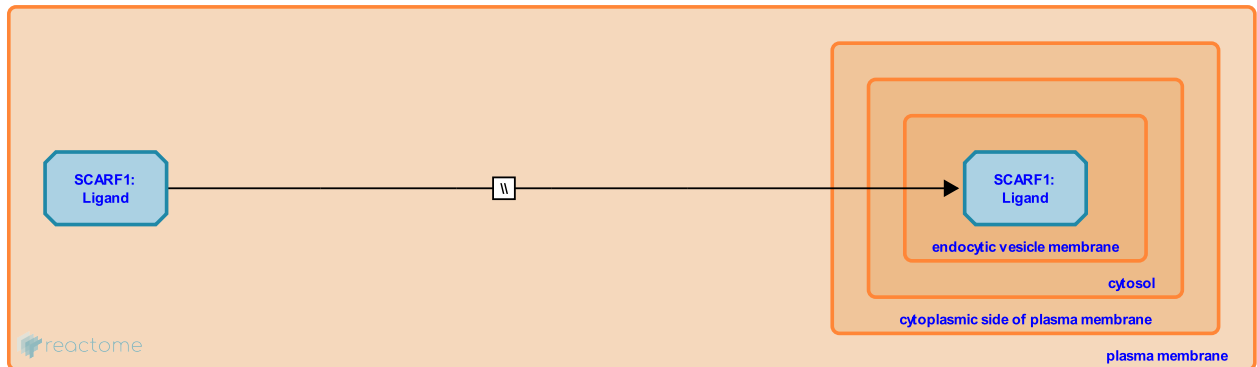
SCARF1:ligand is endocytosed ↗

Location: [Scavenging by Class F Receptors](#)

Stable identifier: R-HSA-2247514

Type: omitted

Compartments: plasma membrane, endocytic vesicle membrane



The SCARF1:ligand complex is endocytosed (Adachi et al. 1997, Berwin et al. 2004) and cross-presented on MHC class II (Murshid et al. 2010). SREC-I mediates host cell entry of *Neisseria gonorrhoeae* (Rechner et al. 2007)

Preceded by: [SCARF1 \(SREC-I\) binds ligands](#)

Literature references

- Rechner, C., Rudel, T., Kühlewein, C., Schild, H., Müller, A. (2007). Host glycoprotein Gp96 and scavenger receptor SREC interact with PorB of disseminating *Neisseria gonorrhoeae* in an epithelial invasion pathway. *Cell Host Microbe*, 2, 393-403. ↗
- Murshid, A., Gong, J., Calderwood, SK. (2010). Heat shock protein 90 mediates efficient antigen cross presentation through the scavenger receptor expressed by endothelial cells-I. *J. Immunol.*, 185, 2903-17. ↗
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- Tsujimoto, M., Arai, H., Inoue, K., Adachi, H. (1997). Expression cloning of a novel scavenger receptor from human endothelial cells. *J Biol Chem*, 272, 31217-20. ↗

Editions

2012-05-06	Edited	May, B.
2013-01-27	Authored	May, B.
2013-03-22	Authored, Reviewed	Neyen, C.

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