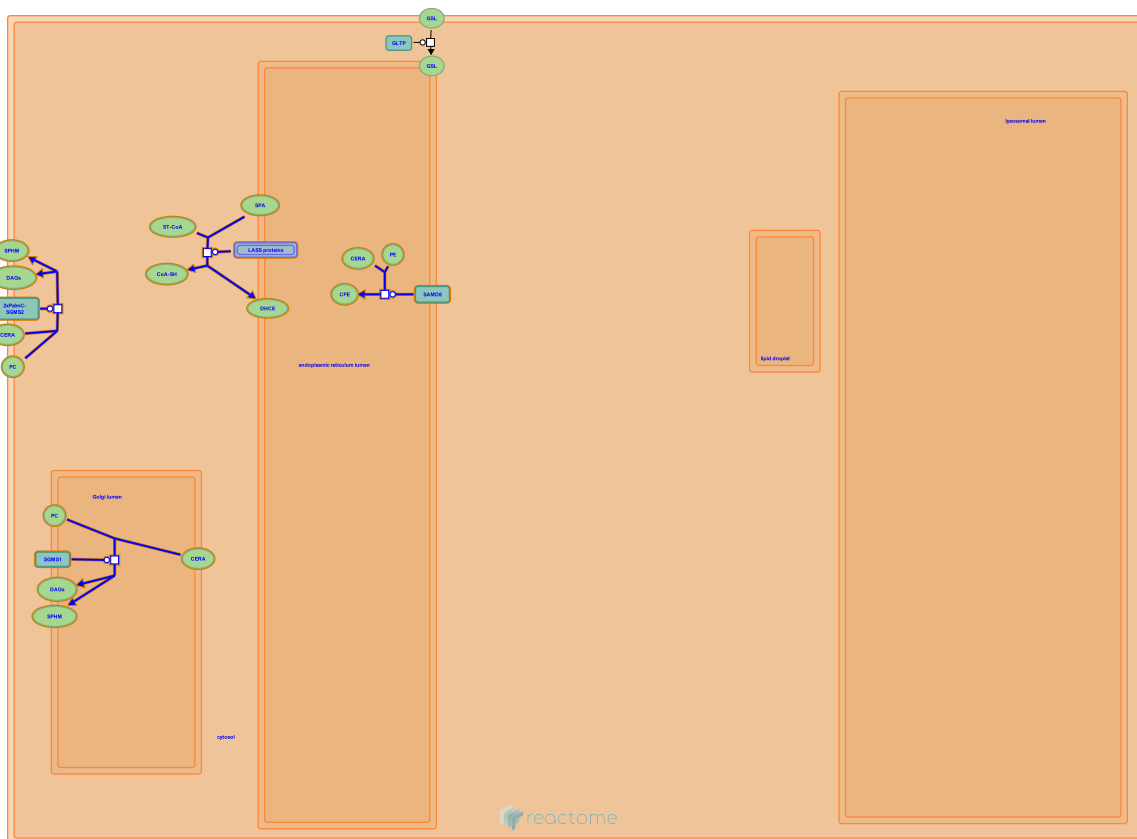


Sphingolipid de novo biosynthesis



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

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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.

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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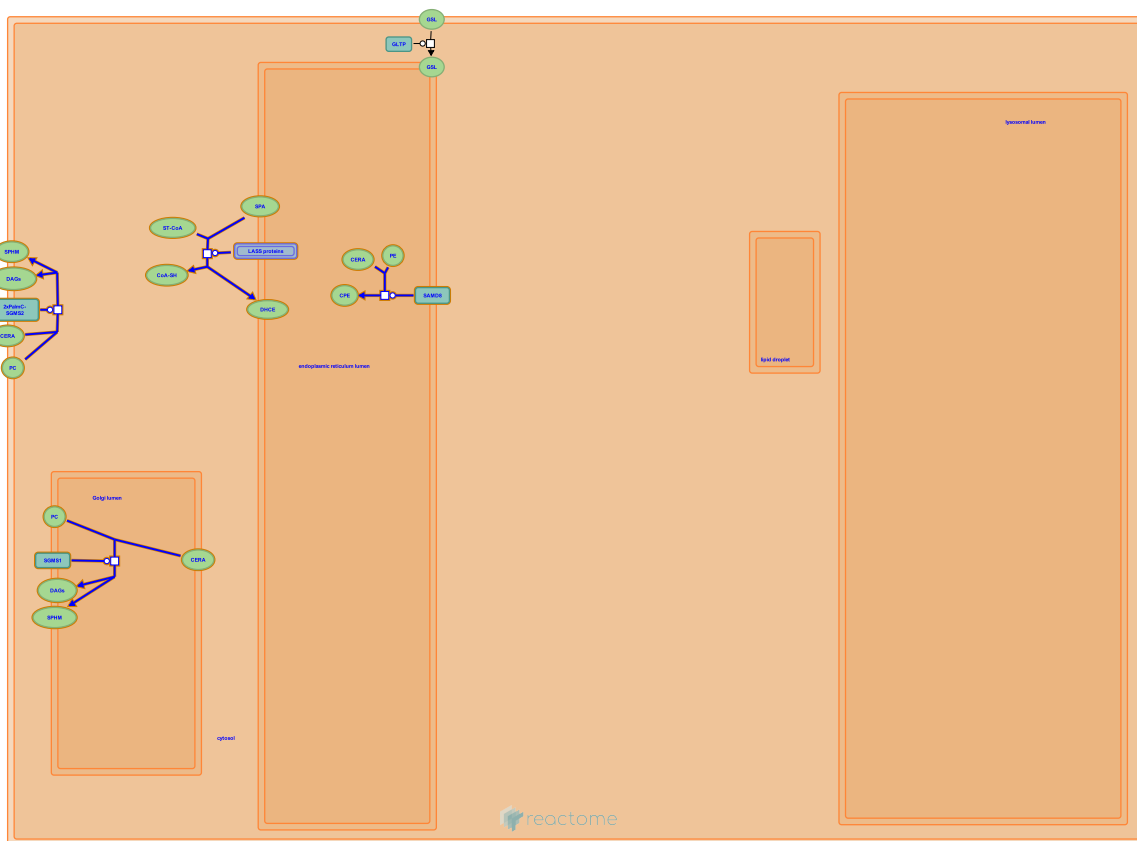
Reactome database release: 70

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

Sphingolipid de novo biosynthesis ↗

Stable identifier: R-PFA-1660661

Inferred from: [Sphingolipid de novo biosynthesis \(Homo sapiens\)](#)



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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

phosphatidylcholine + ceramide <=> sphingomyelin + diacylglycerol [SGMS1] ↗

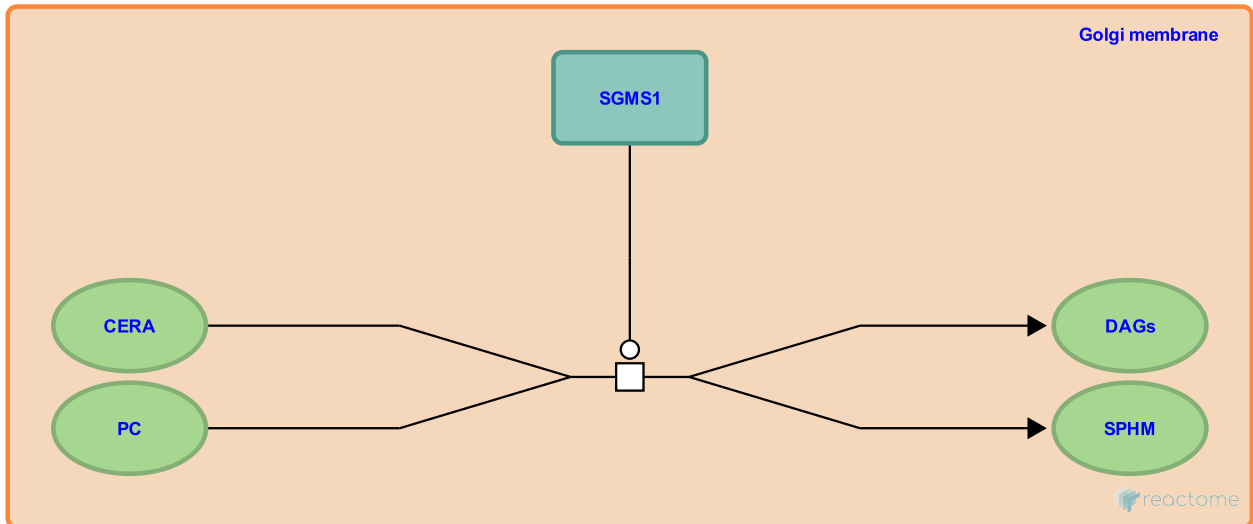
Location: [Sphingolipid de novo biosynthesis](#)

Stable identifier: R-PFA-429798

Type: transition

Compartments: Golgi membrane

Inferred from: [phosphatidylcholine + ceramide <=> sphingomyelin + diacylglycerol \[SGMS1\]](#) (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

phosphatidylcholine + ceramide <=> sphingomyelin + diacylglycerol [SGMS2] ↗

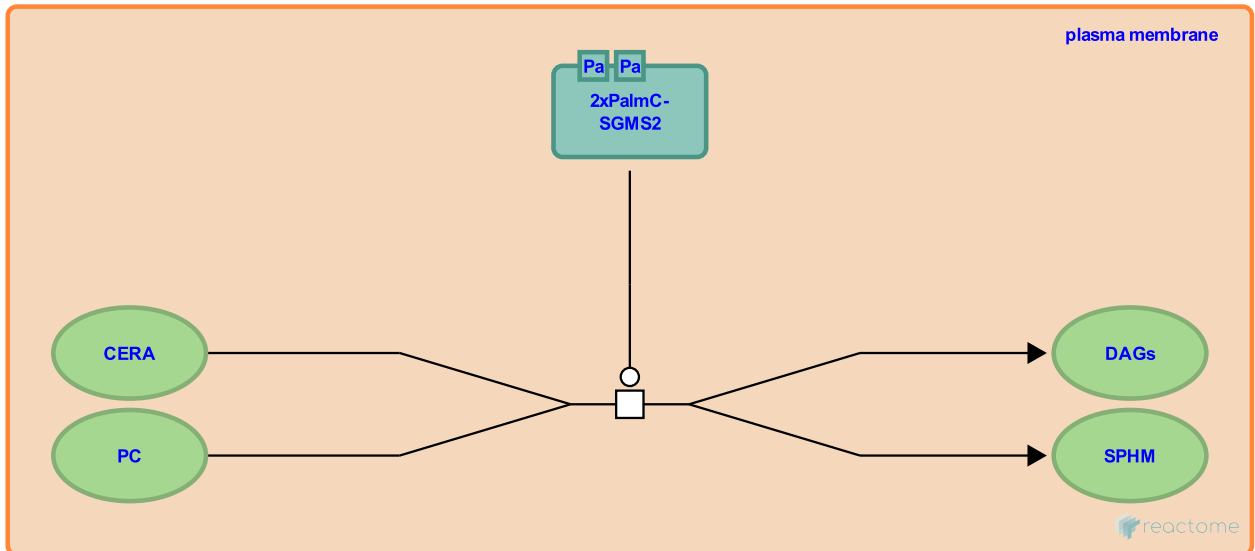
Location: [Sphingolipid de novo biosynthesis](#)

Stable identifier: R-PFA-429786

Type: transition

Compartments: plasma membrane

Inferred from: [phosphatidylcholine + ceramide <=> sphingomyelin + diacylglycerol \[SGMS2\]](#) (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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

sphinganine + stearyl-CoA => dihydroceramide + CoASH ↗

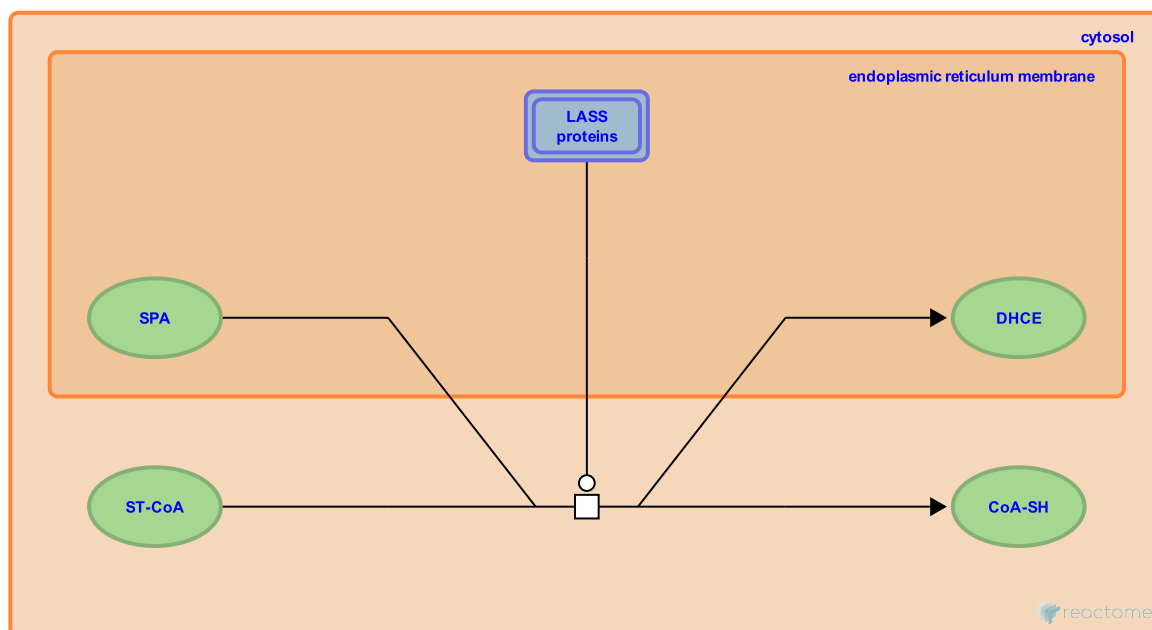
Location: [Sphingolipid de novo biosynthesis](#)

Stable identifier: R-PFA-428185

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane

Inferred from: [sphinganine + stearyl-CoA => dihydroceramide + CoASH \(Homo sapiens\)](#)



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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

SAMD8 transforms PE and CERA to CPE ↗

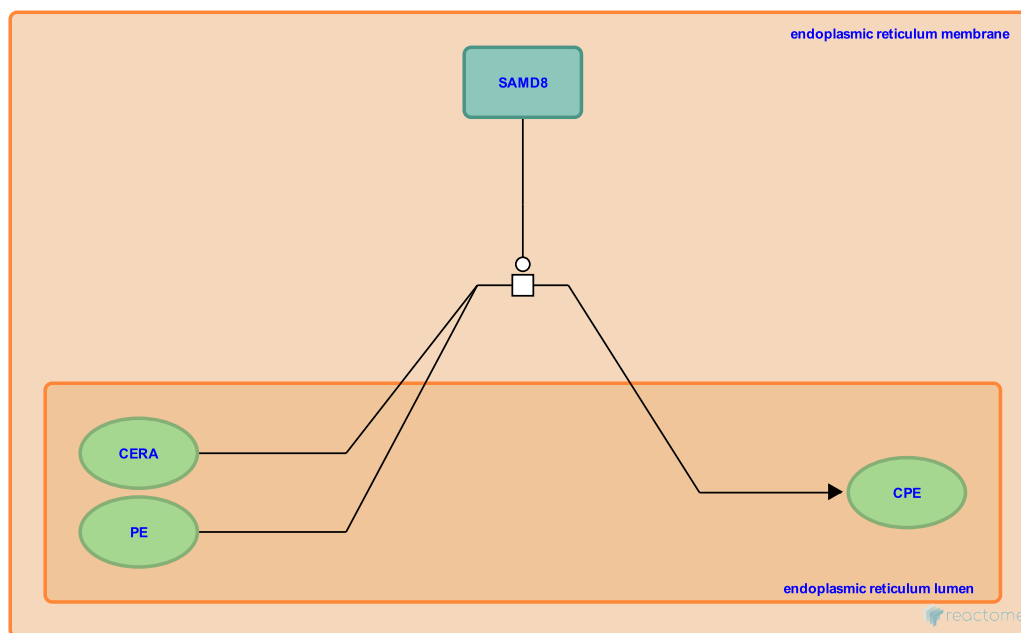
Location: [Sphingolipid de novo biosynthesis](#)

Stable identifier: R-PFA-8959462

Type: transition

Compartments: endoplasmic reticulum membrane, endoplasmic reticulum lumen

Inferred from: [SAMD8 transforms PE and CERA to CPE \(Homo sapiens\)](#)



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.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Table of Contents

Introduction	1
☞ Sphingolipid de novo biosynthesis	2
☞ phosphatidylcholine + ceramide \rightleftharpoons sphingomyelin + diacylglycerol [SGMS1]	3
☞ phosphatidylcholine + ceramide \rightleftharpoons sphingomyelin + diacylglycerol [SGMS2]	4
☞ sphinganine + stearyl-CoA \Rightarrow dihydroceramide + CoASH	5
☞ SAMD8 transforms PE and CERA to CPE	6
Table of Contents	7