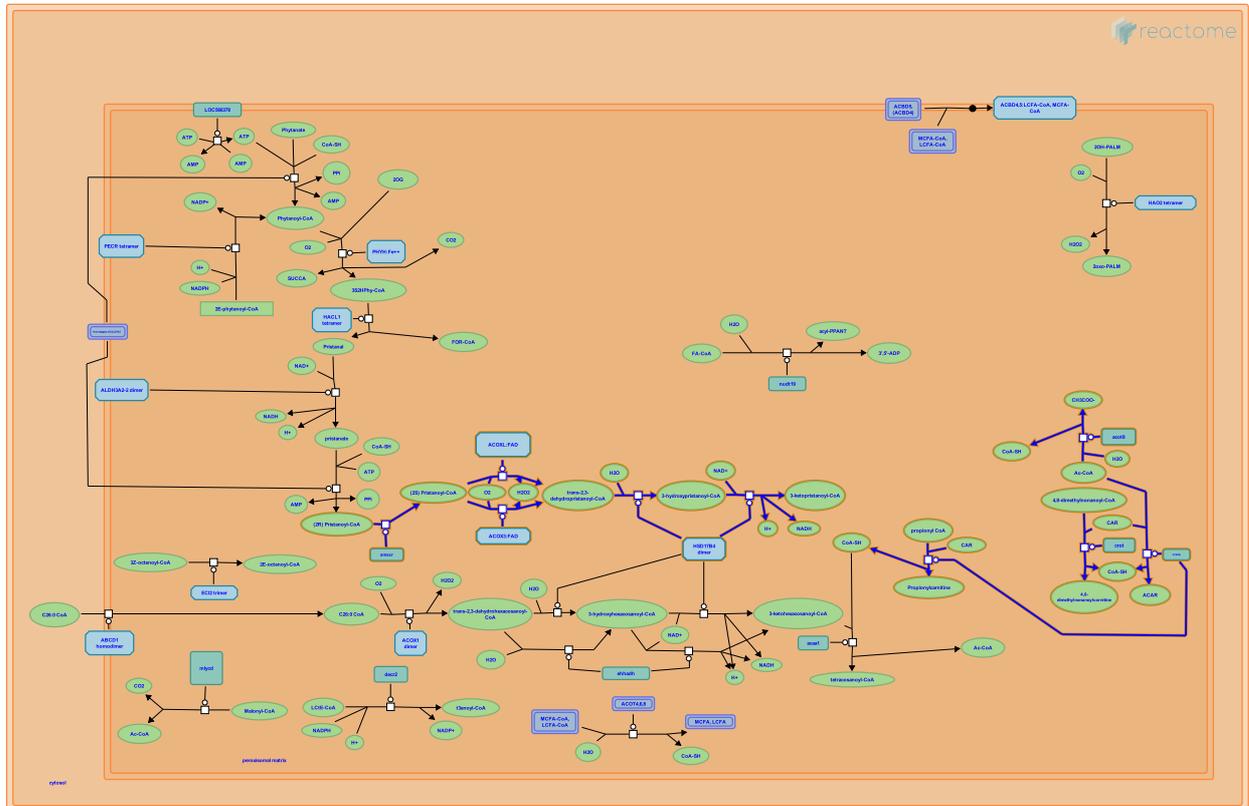


Beta-oxidation of pristanoyl-CoA



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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- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 76

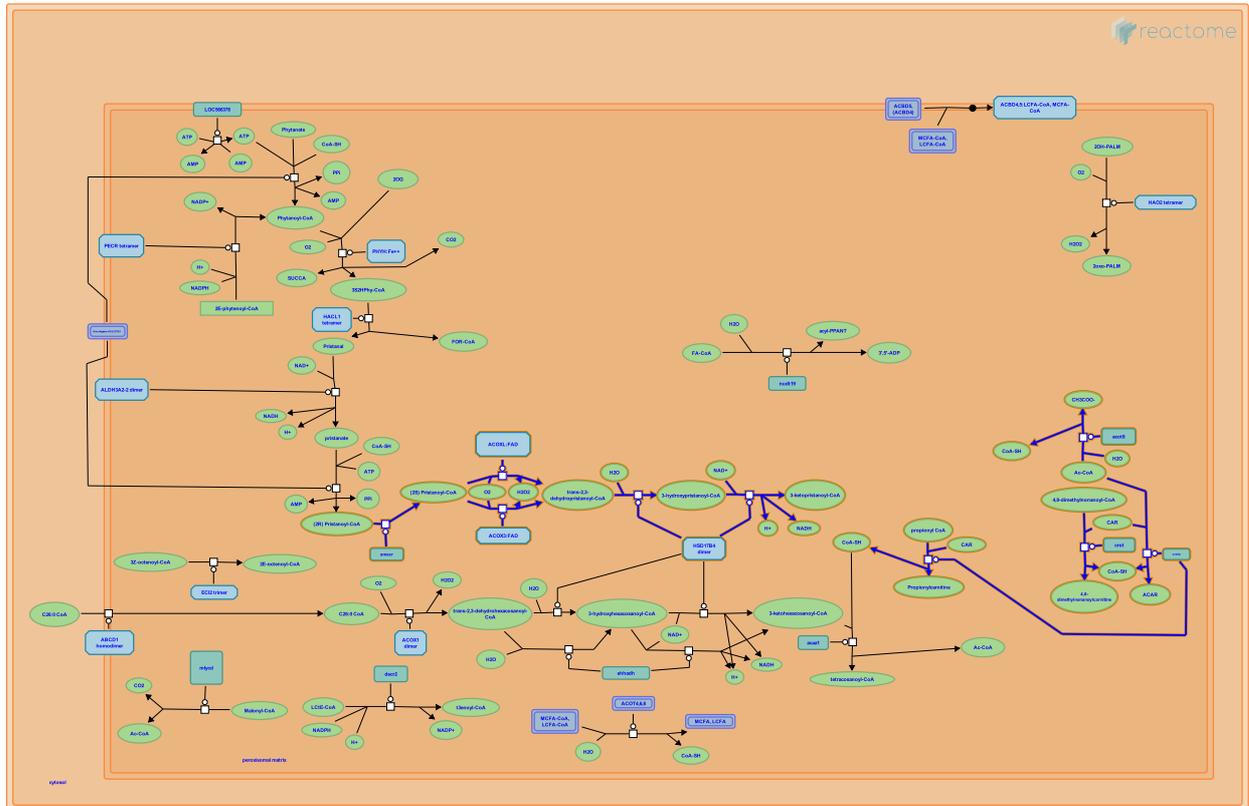
This document contains 1 pathway and 9 reactions ([see Table of Contents](#))

Beta-oxidation of pristanoyl-CoA ↗

Stable identifier: R-DRE-389887

Compartments: peroxisomal matrix

Inferred from: Beta-oxidation of pristanoyl-CoA (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>

Isomerization of (2R)-pristanoyl-CoA to (2S)-pristanoyl-CoA ↗

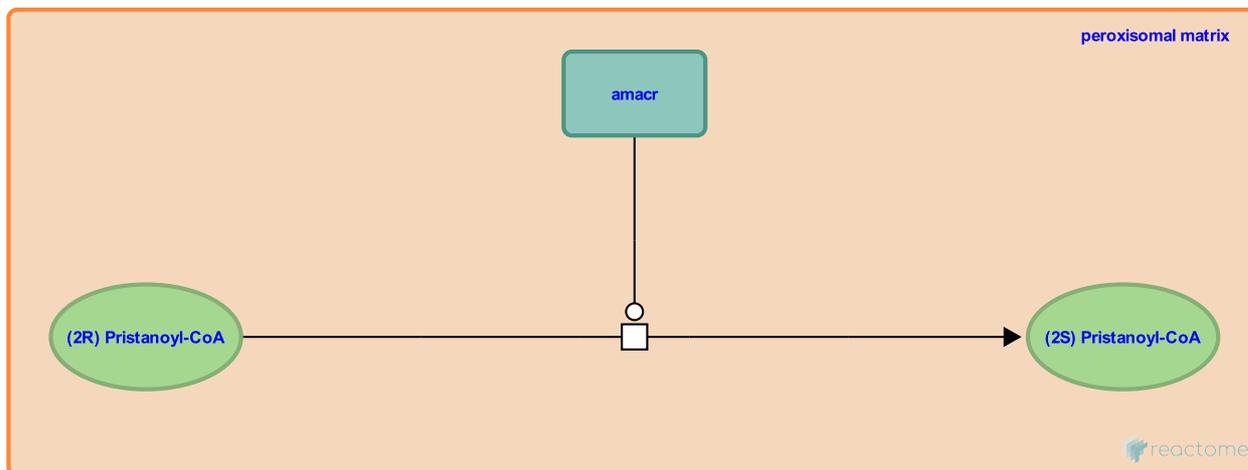
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-389897

Type: transition

Compartments: peroxisomal matrix

Inferred from: [Isomerization of \(2R\)-pristanoyl-CoA to \(2S\)-pristanoyl-CoA \(Homo sapiens\)](#)



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.

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Followed by: [\(2S\)-pristanoyl-CoA + O2 => trans-2,3-dehydropristanoyl-CoA + H2O2 \(ACOX3\)](#), [ACOX2:FAD](#), [ACOXL:FAD oxidise \(2S\)-pristanoyl-CoA to trans-2,3-dehydropristanoyl-CoA](#)

ACOX2:FAD, ACOXL:FAD oxidise (2S)-pristanoyl-CoA to trans-2,3-dehydropristanoyl-CoA ↗

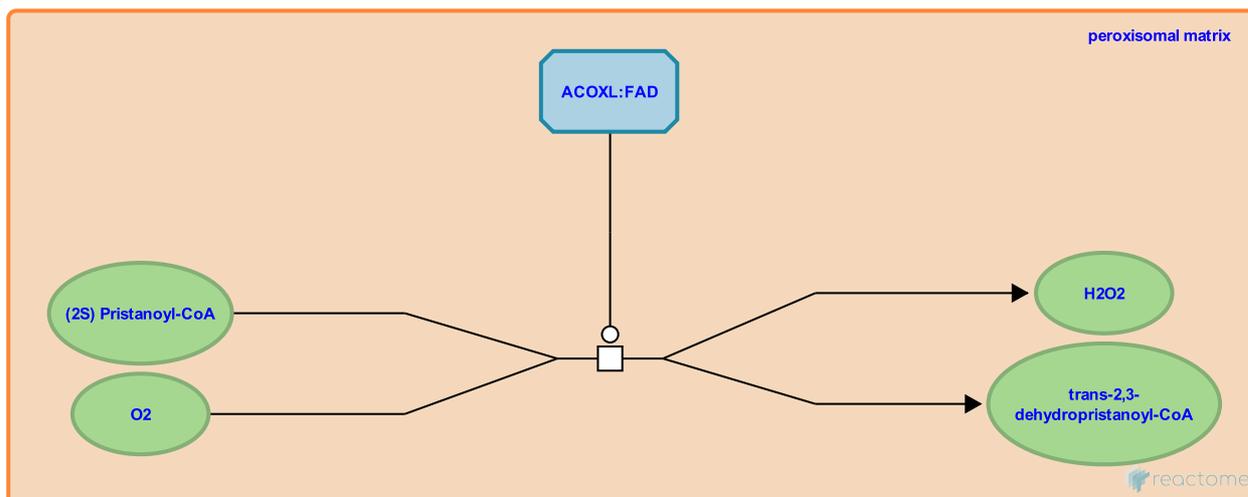
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-389889

Type: transition

Compartments: peroxisomal matrix

Inferred from: [ACOX2:FAD, ACOXL:FAD oxidise \(2S\)-pristanoyl-CoA to trans-2,3-dehydropristanoyl-CoA \(Homo sapiens\)](#)



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.

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Preceded by: [Isomerization of \(2R\)-pristanoyl-CoA to \(2S\)-pristanoyl-CoA](#)

Followed by: [trans-2,3-dehydropristanoyl-CoA + H2O => 3-hydroxypristanoyl-CoA](#)

(2S)-pristanoyl-CoA + O2 => trans-2,3-dehydropristanoyl-CoA + H2O2 (ACOX3) ↗

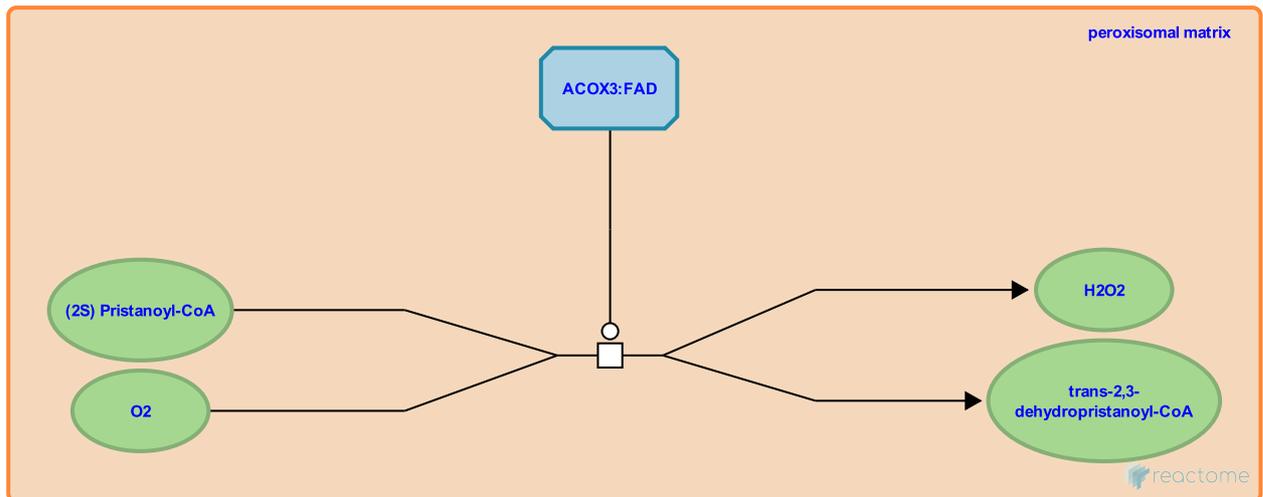
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-389891

Type: transition

Compartments: peroxisomal matrix

Inferred from: [\(2S\)-pristanoyl-CoA + O2 => trans-2,3-dehydropristanoyl-CoA + H2O2 \(ACOX3\) \(Homo sapiens\)](#)



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.

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Preceded by: [Isomerization of \(2R\)-pristanoyl-CoA to \(2S\)-pristanoyl-CoA](#)

Followed by: [trans-2,3-dehydropristanoyl-CoA + H2O => 3-hydroxypristanoyl-CoA](#)

trans-2,3-dehydropristanoyl-CoA + H₂O => 3-hydroxypristanoyl-CoA ↗

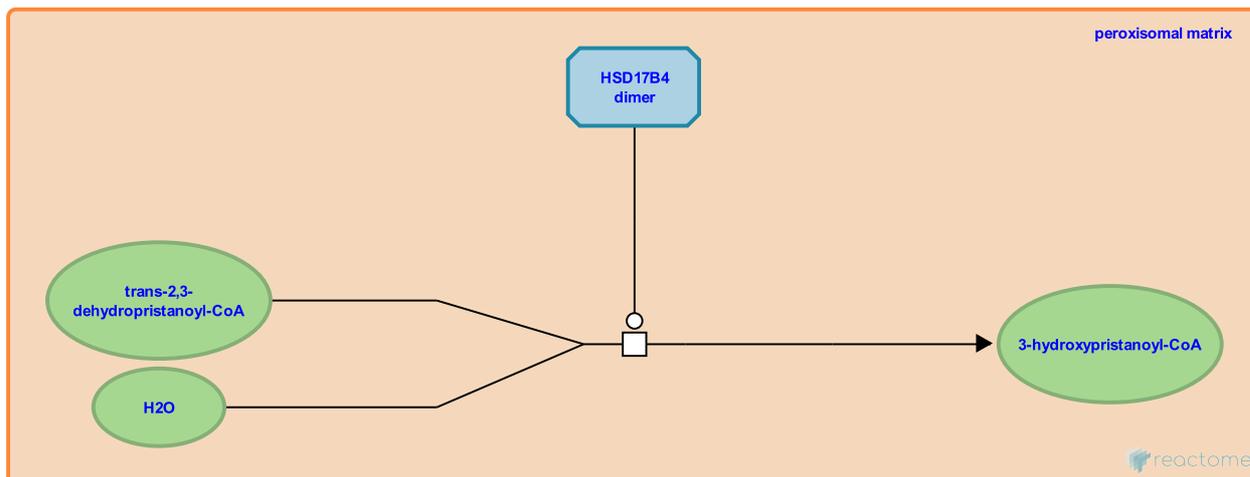
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-389986

Type: transition

Compartments: peroxisomal matrix

Inferred from: [trans-2,3-dehydropristanoyl-CoA + H₂O => 3-hydroxypristanoyl-CoA \(Homo sapiens\)](#)



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>

Preceded by: [ACOX2:FAD, ACOXL:FAD oxidise \(2S\)-pristanoyl-CoA to trans-2,3-dehydropristanoyl-CoA, \(2S\)-pristanoyl-CoA + O₂ => trans-2,3-dehydropristanoyl-CoA + H₂O₂ \(ACOX3\)](#)

Followed by: [3-hydroxypristanoyl-CoA + NAD⁺ => 3-ketoxypristanoyl-CoA + NADH + H⁺](#)

3-hydroxypristanoyl-CoA + NAD+ => 3-ketopristanoyl-CoA + NADH + H+ ↗

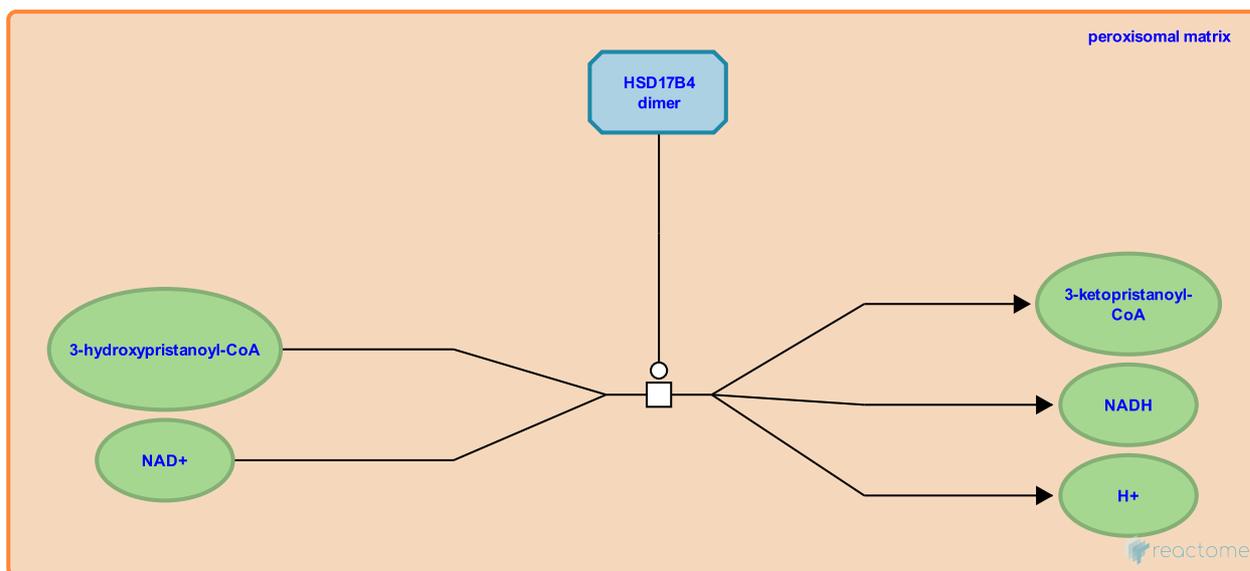
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-389995

Type: transition

Compartments: peroxisomal matrix

Inferred from: [3-hydroxypristanoyl-CoA + NAD+ => 3-ketopristanoyl-CoA + NADH + H+ \(Homo sapiens\)](#)



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.

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Preceded by: [trans-2,3-dehydropristanoyl-CoA + H2O => 3-hydroxypristanoyl-CoA](#)

4,8-dimethylnonanoyl-CoA + carnitine => 4,8-dimethylnonanoylcarnitine + CoASH ↗

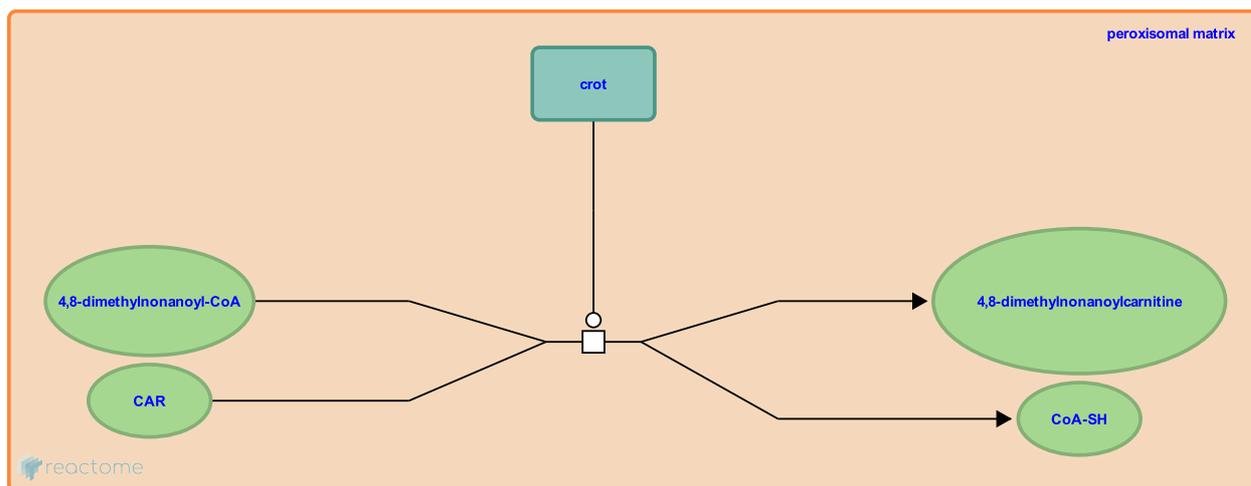
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-390281

Type: transition

Compartments: peroxisomal matrix

Inferred from: [4,8-dimethylnonanoyl-CoA + carnitine => 4,8-dimethylnonanoylcarnitine + 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>

acetyl-CoA + carnitine => acetylcarnitine + CoASH ↗

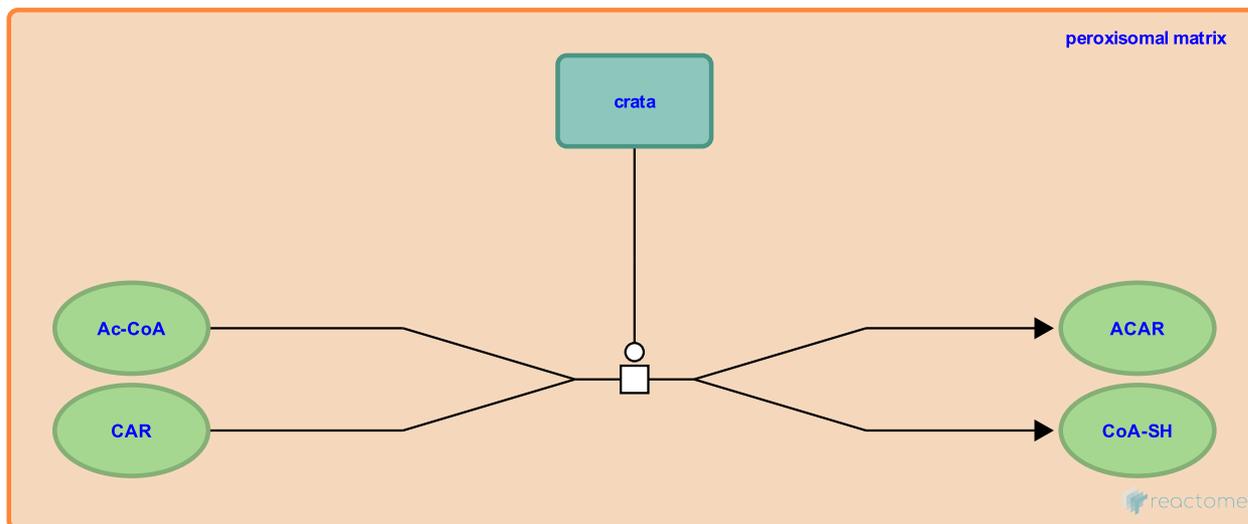
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-390291

Type: transition

Compartments: peroxisomal matrix

Inferred from: [acetyl-CoA + carnitine => acetylcarnitine + 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>

acetyl-CoA + H₂O => acetate + CoASH ↗

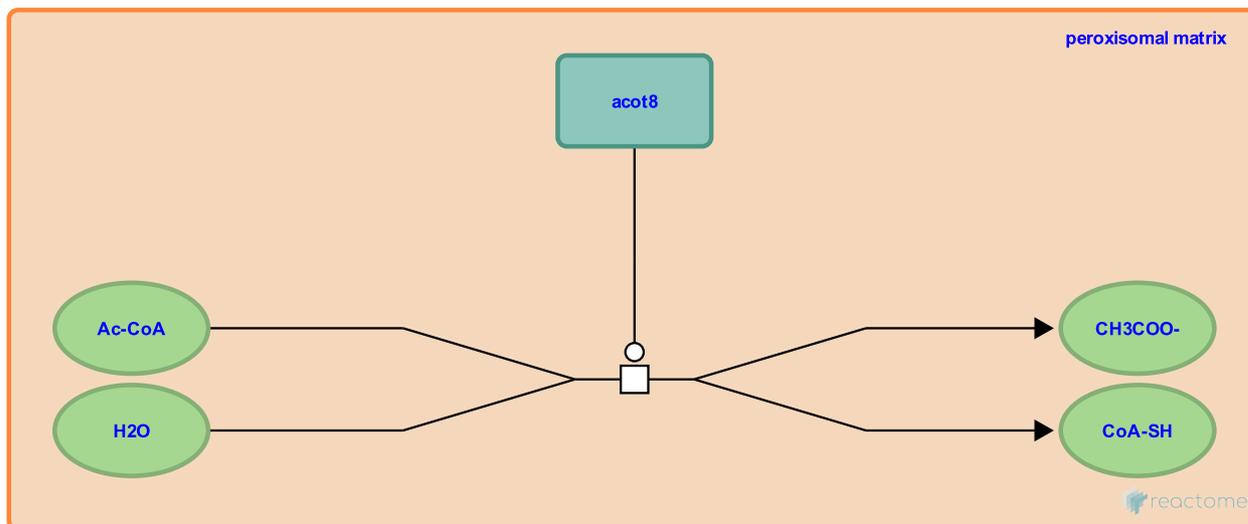
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-390304

Type: transition

Compartments: peroxisomal matrix

Inferred from: [acetyl-CoA + H₂O => acetate + 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>

propionyl-CoA + carnitine => propionylcarnitine + CoASH ↗

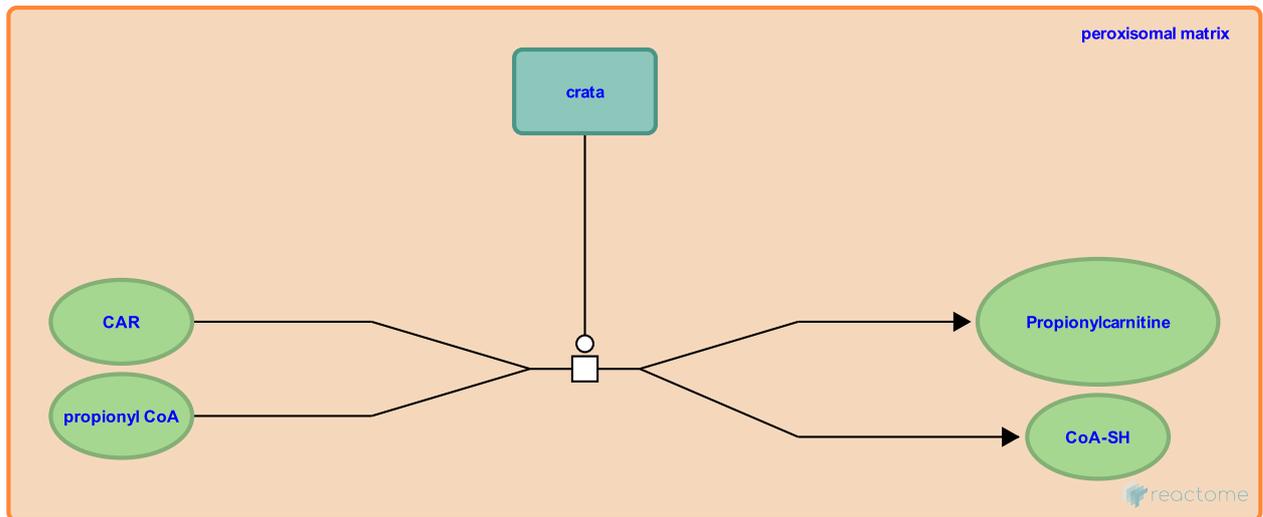
Location: [Beta-oxidation of pristanoyl-CoA](#)

Stable identifier: R-DRE-390284

Type: transition

Compartments: peroxisomal matrix

Inferred from: [propionyl-CoA + carnitine => propionylcarnitine + 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.

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