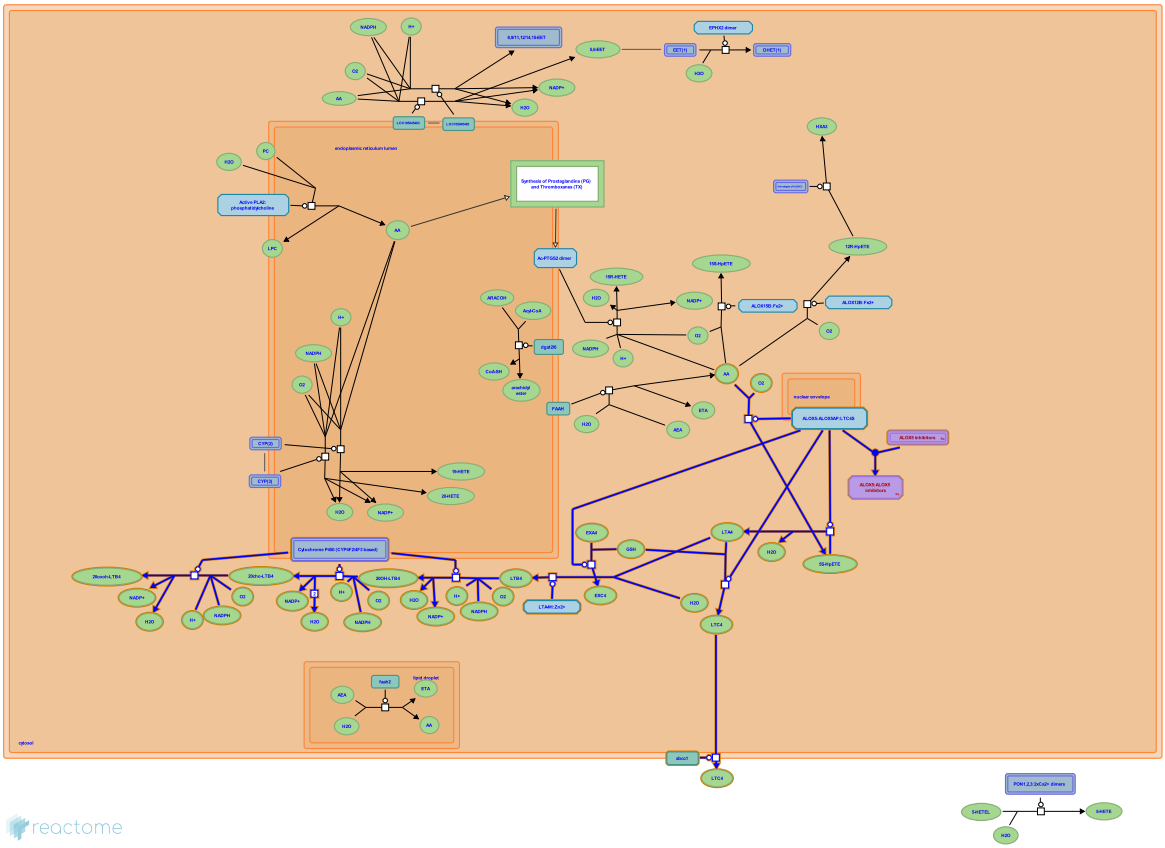
Synthesis of Leukotrienes (LT) and Eoxins (EX)



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

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.

18/05/2024

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

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

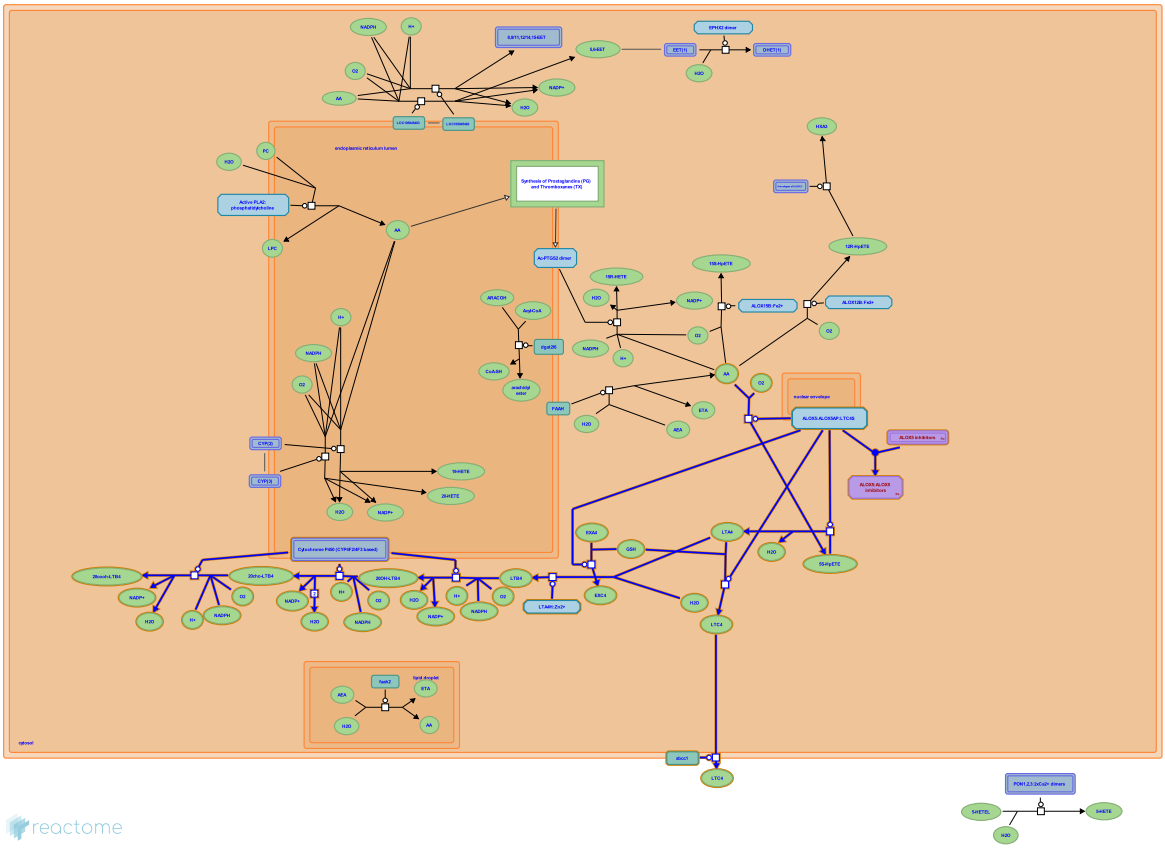
Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

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. ↗

Synthesis of Leukotrienes (LT) and Eoxins (EX) ↗

Stable identifier: R-XTR-2142691

Inferred from: Synthesis of Leukotrienes (LT) and Eoxins (EX) (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

Arachidonic acid is oxidised to 5S-HpETE by ALOX5 ↗

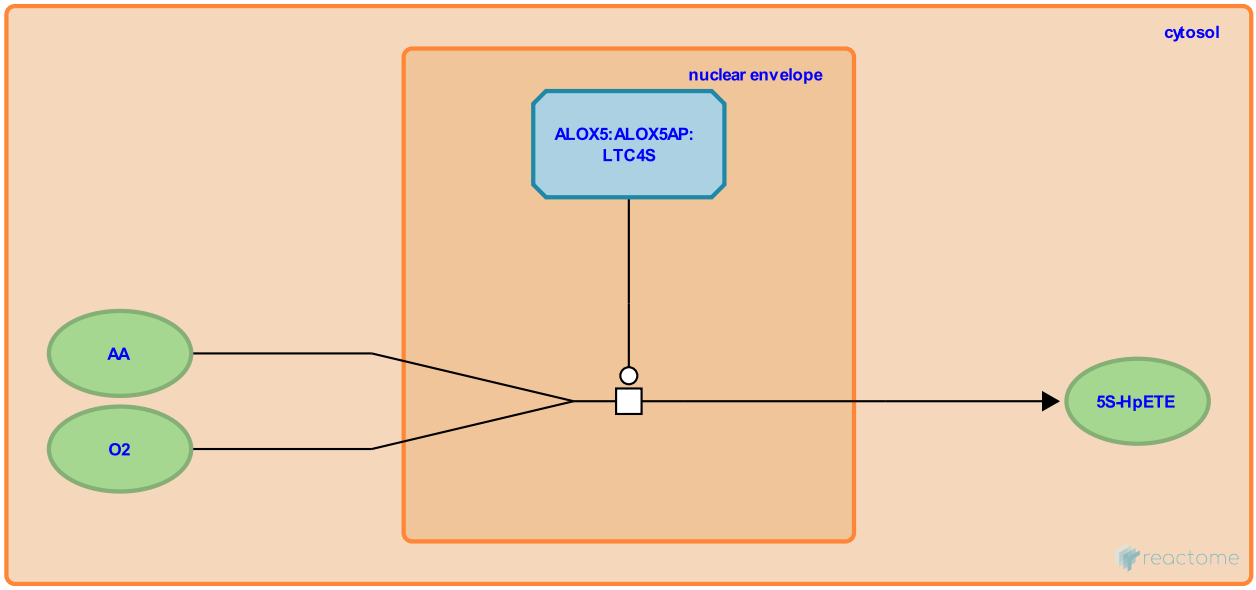
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-265296

Type: transition

Compartments: nuclear envelope, cytosol

Inferred from: Arachidonic acid is oxidised to 5S-HpETE by ALOX5 (Homo sapiens)



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Followed by: 5S-HpETE is dehydrated to LTA4 by ALOX5

ALOX5 binds ALOX5 inhibitors ↗

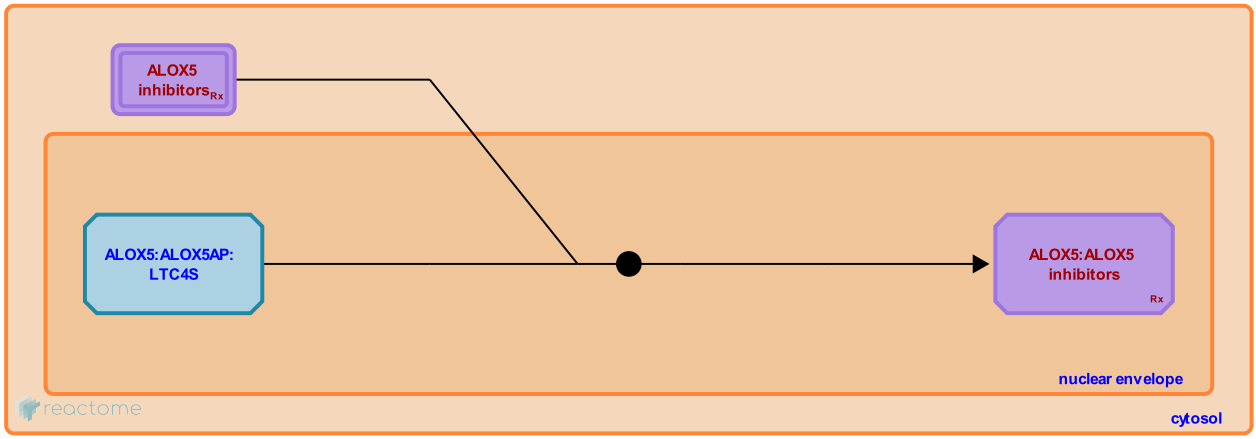
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-9707186

Type: binding

Compartments: nuclear envelope, cytosol

Inferred from: ALOX5 binds ALOX5 inhibitors (Homo sapiens)



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5S-HpETE is dehydrated to LTA4 by ALOX5 ↗

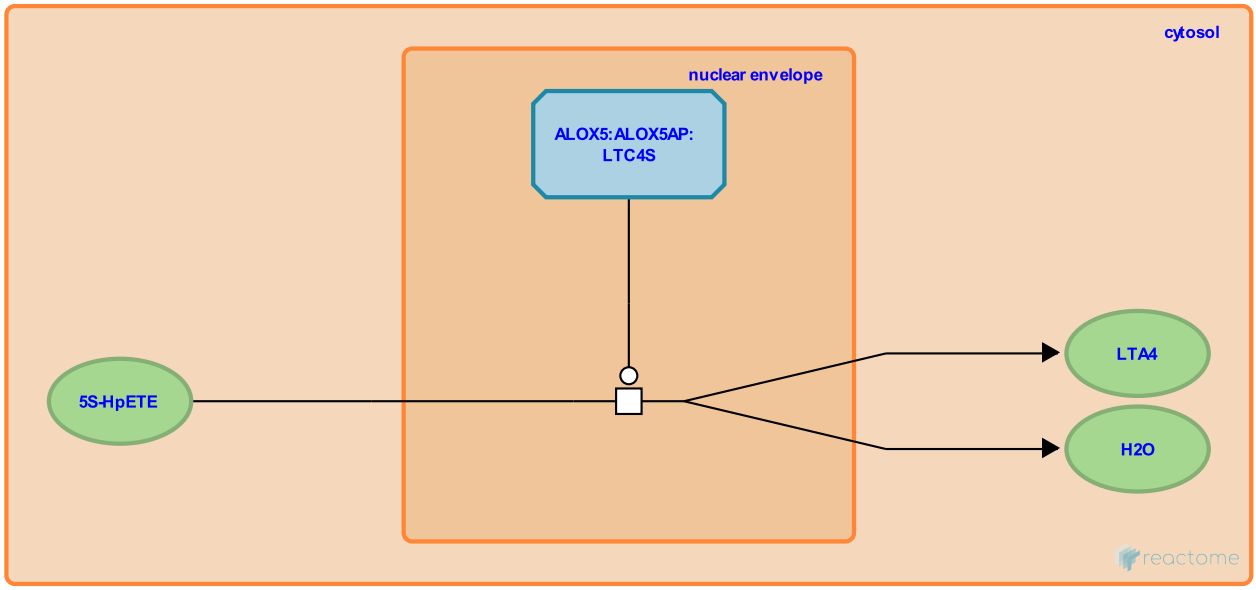
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-266051

Type: transition

Compartments: nuclear envelope, cytosol

Inferred from: 5S-HpETE is dehydrated to LTA4 by ALOX5 (Homo sapiens)



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More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: Arachidonic acid is oxidised to 5S-HpETE by ALOX5

Followed by: LTA4 is hydolysed to LTB4 by LTA4H, LTA4 is converted to LTC4 by LTC4S

LTA4 is hydolysed to LTB4 by LTA4H ↗

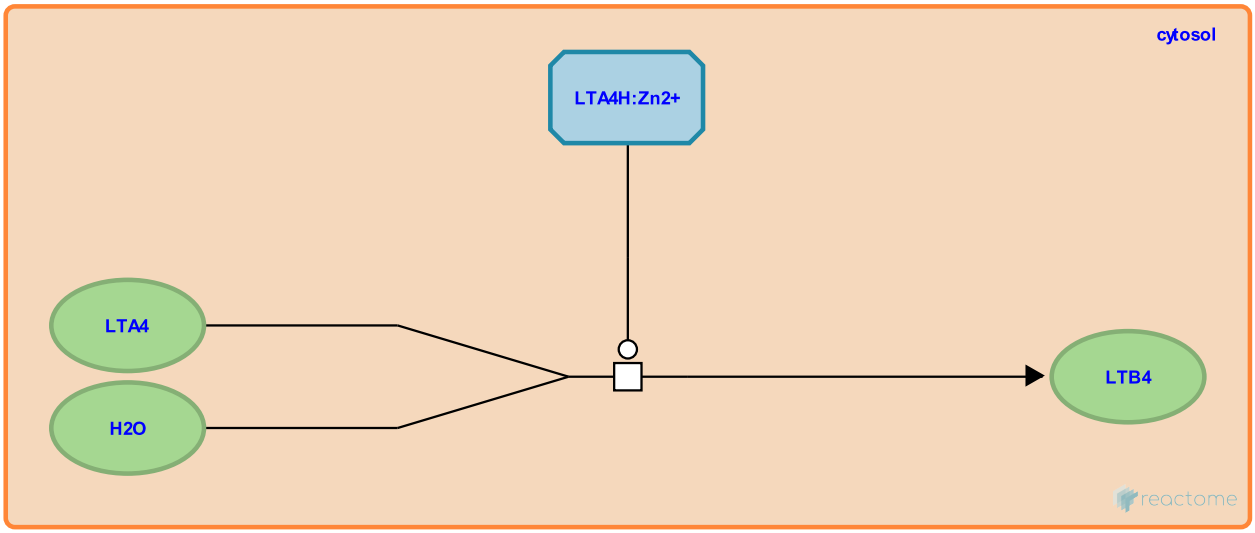
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-266072

Type: transition

Compartments: cytosol

Inferred from: LTA4 is hydolysed to LTB4 by LTA4H (Homo sapiens)



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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: 5S-HpETE is dehydrated to LTA4 by ALOX5

Followed by: CYP4F2, 4F3 20-hydroxylate LTB4

CYP4F2, 4F3 20-hydroxylate LTB4 ↗

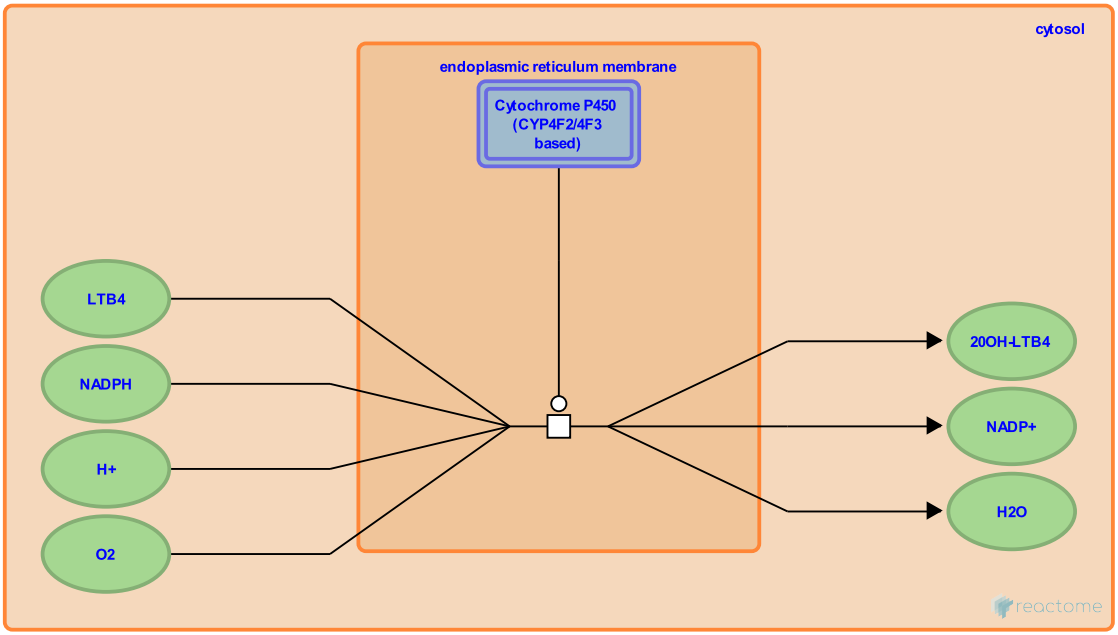
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-211873

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol

Inferred from: CYP4F2, 4F3 20-hydroxylate LTB4 (Homo sapiens)



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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: LTA4 is hydolysed to LTB4 by LTA4H

Followed by: 20oh-LTB4 is oxidised to 20cho-LTB4 by CYP4F2/4F3

20oh-LTB4 is oxidised to 20cho-LTB4 by CYP4F2/4F3 ↗

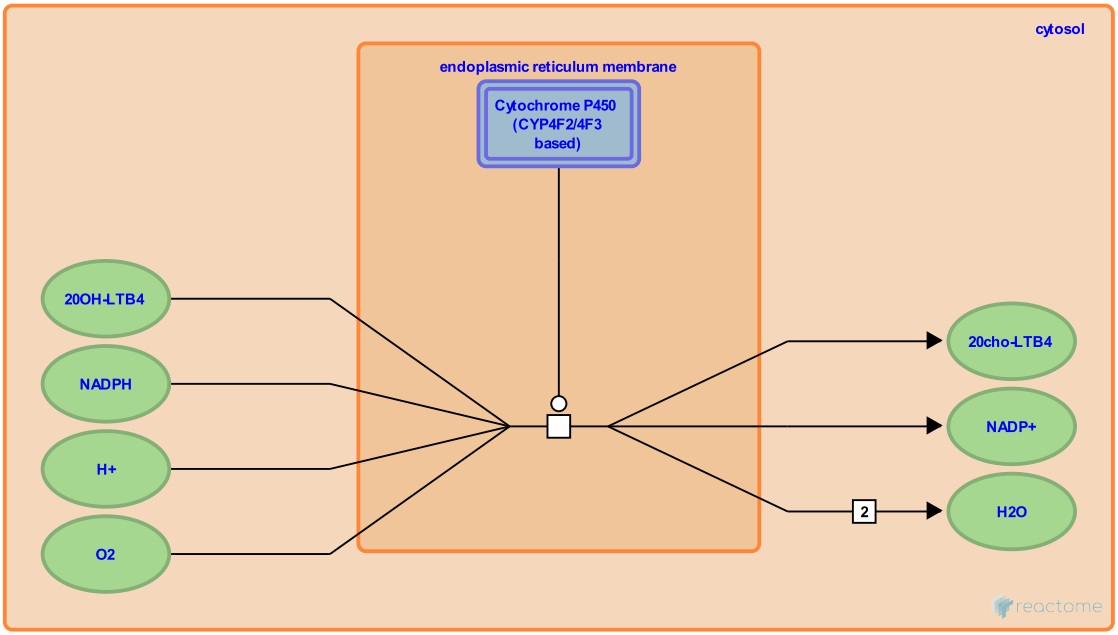
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-2161745

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol

Inferred from: 20oh-LTB4 is oxidised to 20cho-LTB4 by CYP4F2/4F3 (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: CYP4F2, 4F3 20-hydroxylate LTB4

Followed by: 20cho-LTB4 is oxidised to 20cooh-LTB4 by CYP4F2/4F3

20cho-LTB4 is oxidised to 20cooh-LTB4 by CYP4F2/4F3 ↗

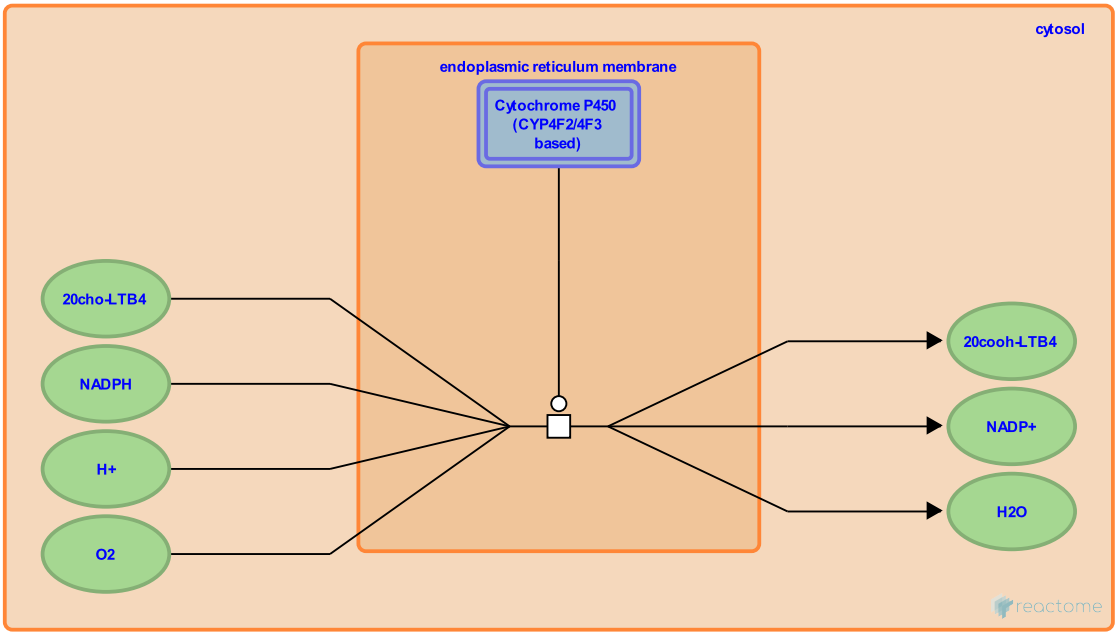
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-2161792

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol

Inferred from: 20cho-LTB4 is oxidised to 20cooh-LTB4 by CYP4F2/4F3 (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: 20oh-LTB4 is oxidised to 20cho-LTB4 by CYP4F2/4F3

LTA4 is converted to LTC4 by LTC4S ↗

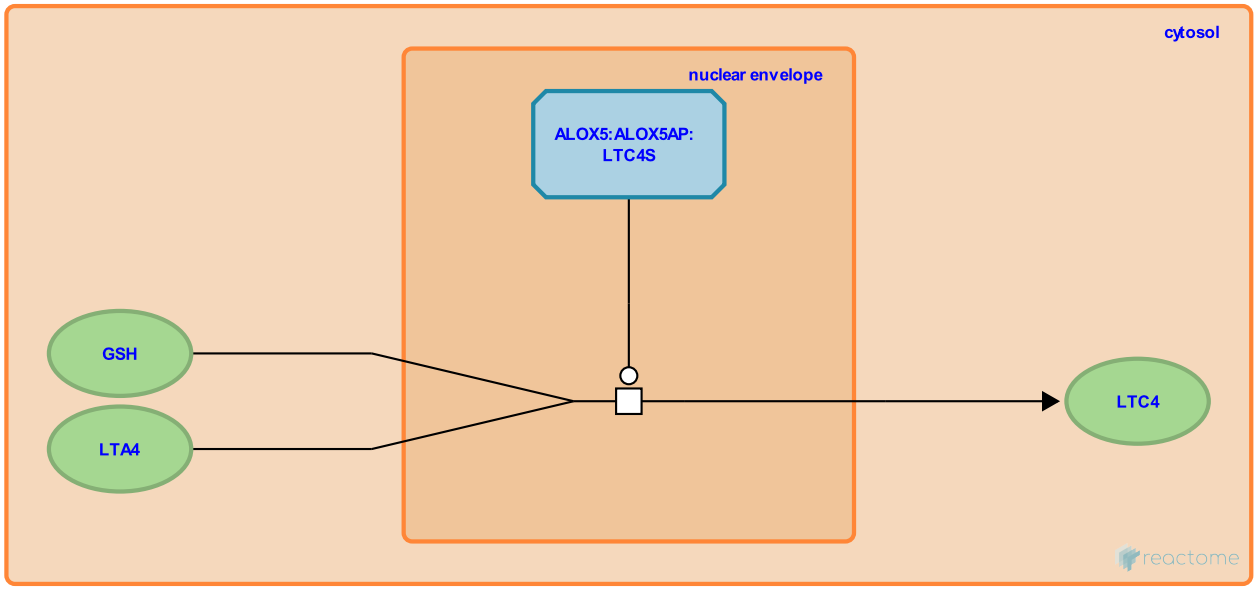
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-266050

Type: transition

Compartments: nuclear envelope, cytosol

Inferred from: LTA4 is converted to LTC4 by LTC4S (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: 5S-HpETE is dehydrated to LTA4 by ALOX5

Followed by: LTC4 is exported from the cytosol by ABCC1

LTC4 is exported from the cytosol by ABCC1 ↗

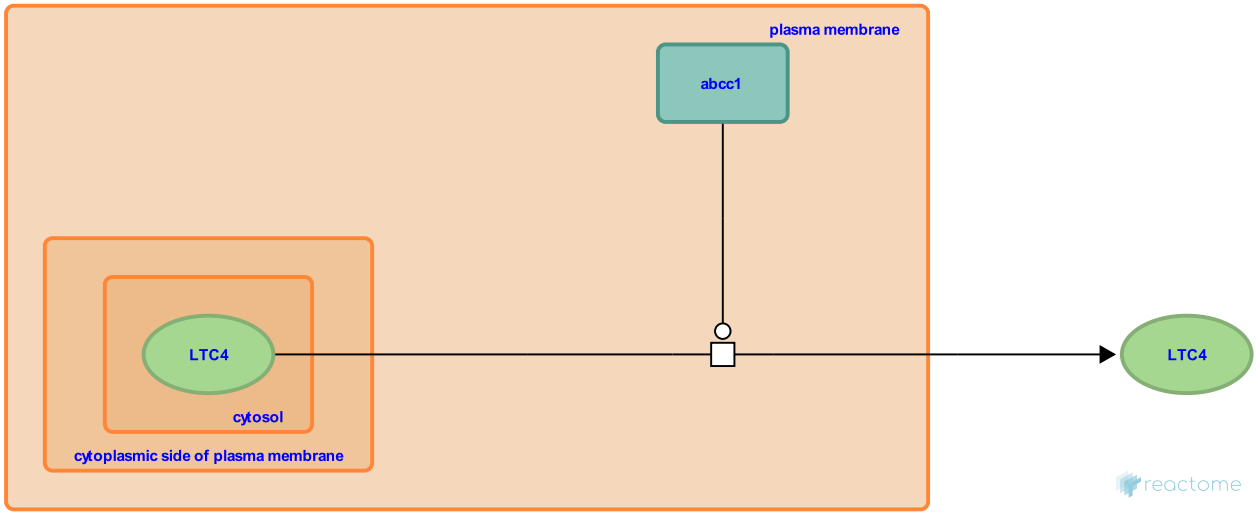
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-266070

Type: transition

Compartments: plasma membrane, extracellular region, cytosol

Inferred from: LTC4 is exported from the cytosol by ABCC1 (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: LTA4 is converted to LTC4 by LTC4S

EXA4 is converted to EXC4 by LTC4S ↗

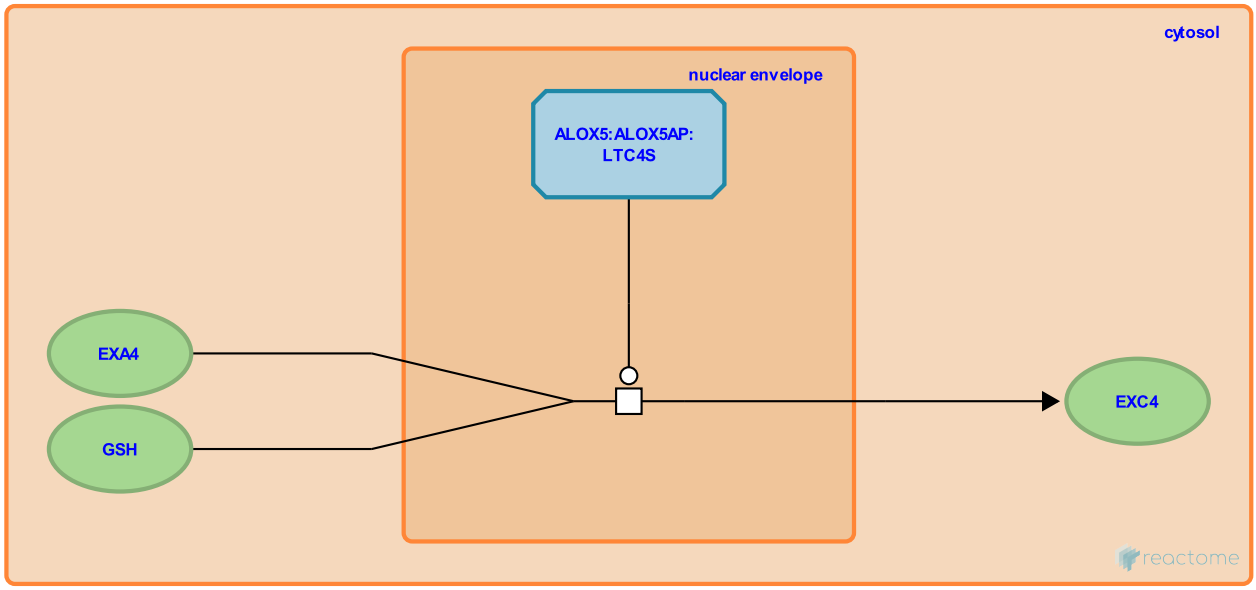
Location: Synthesis of Leukotrienes (LT) and Eoxins (EX)

Stable identifier: R-XTR-2161768

Type: transition

Compartments: nuclear envelope, cytosol

Inferred from: EXA4 is converted to EXC4 by LTC4S (Homo sapiens)



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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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