LTA4H:Zn2+ hydrolyses 4S(5)-epoxy-17(R)-HDHA to AT-RvD3 or AT-RvD4

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12/05/2024

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

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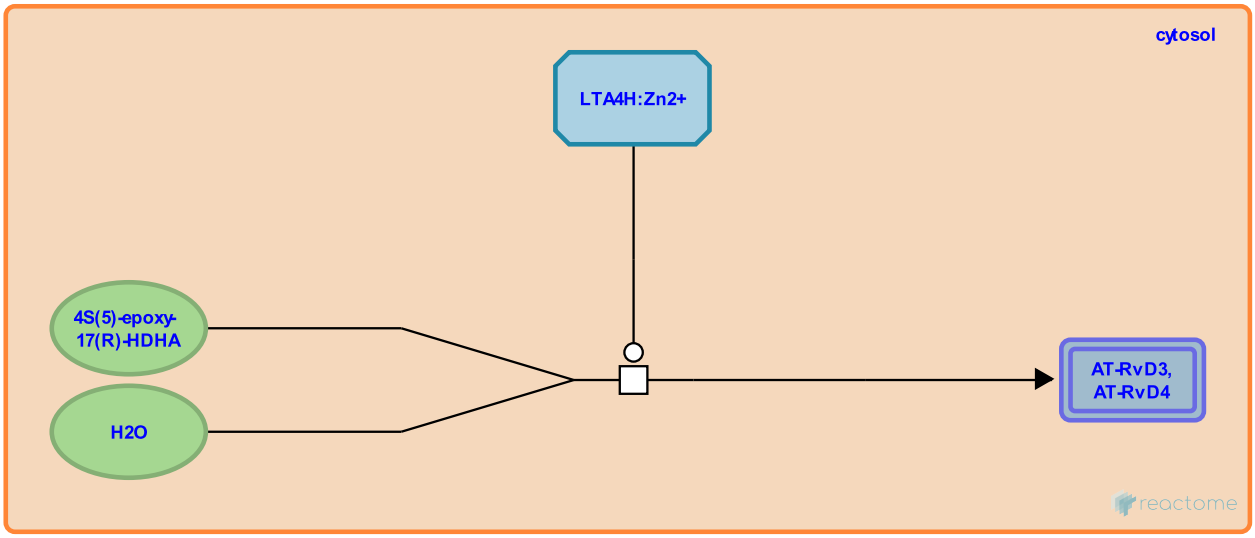
Stable identifier: R-HSA-9020270

Type: transition

Compartments: cytosol



Leukotriene A4 hydrolase (LTA4H) is a monomeric, soluble enzyme that uses a Zn2+ cofactor to catalyse the hydrolysis of the allylic epoxide leukotriene A4 (LTA4) (McGee & Fitzpatrick 1985). LTA4H can also catalyse the hydrolysis of 4S(5)-epoxy-17(R)-hydroxydocosahexaenoic acid (4S(5)-epoxy-17(R)-HDHA) to the trihydroxydocosahexaenoic acids 4(S), 11(R), 17(R)-triHDHA and 4(S), 5(R), 17(R)-triHDHA (AT-RvD3 and AT-RvD4 respectively) (Dalli et al. 2013, Serhan et al. 2002, Winkler et al. 2013, 2016). The D-resolvins are anti-inflammatory, pro-resolving, and non-phlogistic (that is, they mediate the clearance of leukocytes without eliciting an inflammatory response) (Serhan et al. 2008).

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Editions

2017-09-05	Authored, Edited	Jassal, B.
2018-02-21	Reviewed	Hansen, TV.