

CYP monooxygenates EPA to 18(S)-HpEPE

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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.

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Literature references

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Reactome database release: 77

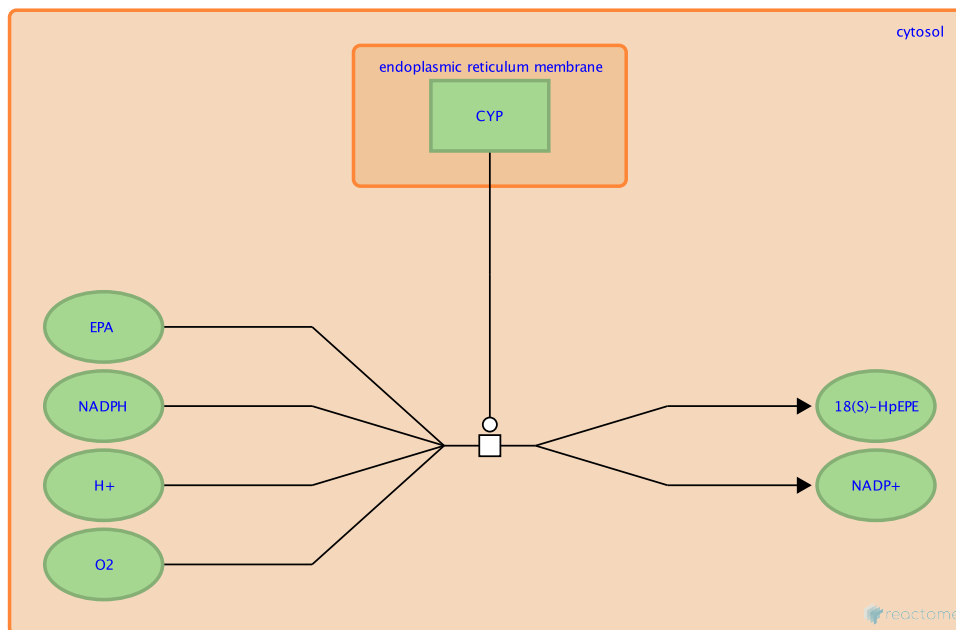
This document contains 1 reaction ([see Table of Contents](#))

CYP monooxygenates EPA to 18(S)-HpEPE ↗

Stable identifier: R-HSA-9018874

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane



The same cytochrome P450 (CYP) isoforms that metabolise the ω -6 polyunsaturated fatty acid (PUFA) arachidonic acid (AA) accept the ω -3 PUFAs eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) as efficient alternative substrates (Arnold et al. 2010a). Several human CYPs are thought to oxidise EPA to 18(S)-hydroperoxyeicosapentaenoic acid (18(S)-HpEPE) although the exact CYP enzymes involved are not known (Arnold et al. 2010b, Weylandt et al. 2012). Microbial CYPs can generate 18-HEPE from EPA (Serhan et al. 2000) that can be converted by human PMNs to RvE1 and RvE2 (Arita et al. 2005). The microbial content in the local environment can therefore, also be a critical factor in the production of E-series resolvins in vivo in humans.

Literature references

Arnold, C., Markovic, M., Blossey, K., Wallukat, G., Fischer, R., Dechend, R. et al. (2010). Arachidonic acid-metabolizing cytochrome P450 enzymes are targets of ω -3 fatty acids. *J. Biol. Chem.*, 285, 32720-33. ↗

Editions

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