

Arachidonic acid is epoxidated to 8,9/11,12/14,15-EET by CYP(5)

Rush, MG., Williams, MG.

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.

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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. [↗](#)

Reactome database release: 82

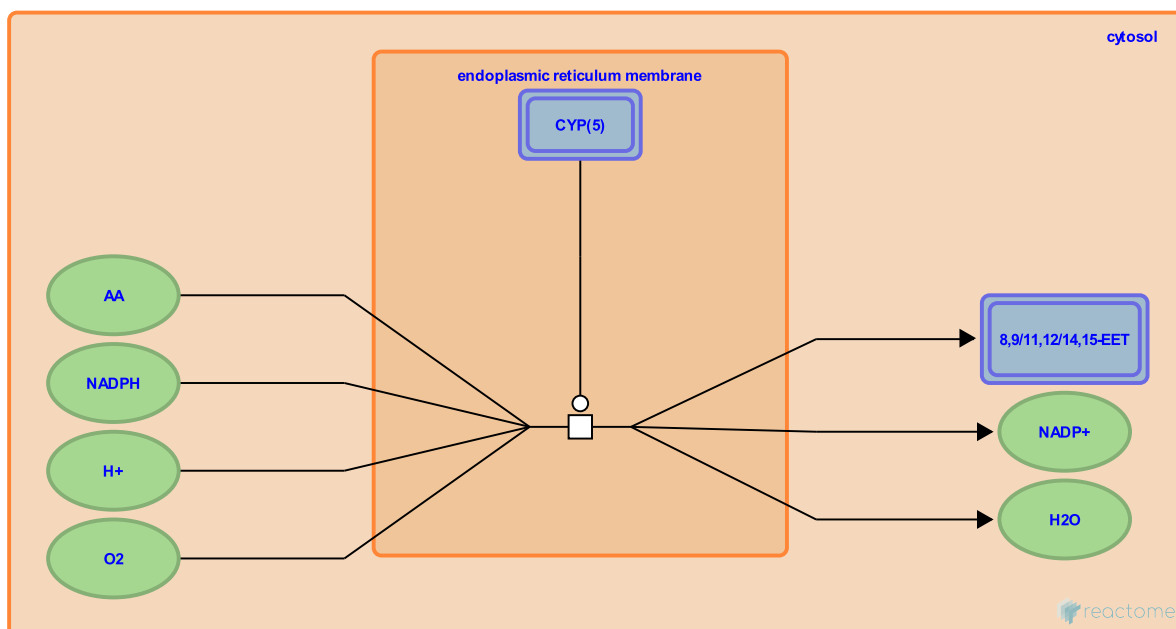
This document contains 1 reaction ([see Table of Contents](#))

Arachidonic acid is epoxidated to 8,9/11,12/14,15-EET by CYP(5) ↗

Stable identifier: R-HSA-2161899

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol



Several cytochrome P450s (CYPs) convert arachidonic acid to 8,9-, 11,12-, and 14,15-epoxyeicosatrienoic acids (8,9-, 11,12-, 14,15-EETs). The CYPs and their references are as follows: CYP1A1, CYP1A2, CYP1B1 (Choudhary et al. 2004); CYP2C8, CYP2C9 (Rifkind et al. 1995); CYP2C19 (Bylund et al. 1998, Rifkind et al. 1995); CYP2J2 (Wu et al. 1996).

Literature references

- Ericsson, J., Oliw, EH., Bylund, J. (1998). Analysis of cytochrome P450 metabolites of arachidonic and linoleic acids by liquid chromatography-mass spectrometry with ion trap MS. *Anal Biochem*, 265, 55-68. ↗
- Waxman, DJ., Chang, TK., Lee, C., Rifkind, AB. (1995). Arachidonic acid metabolism by human cytochrome P450s 2C8, 2C9, 2E1, and 1A2: regioselective oxygenation and evidence for a role for CYP2C enzymes in arachidonic acid epoxygenation in human liver microsomes. *Arch Biochem Biophys*, 320, 380-9. ↗
- Falck, JR., Wu, S., Zeldin, DC., Moomaw, CR., Tomer, KB. (1996). Molecular cloning and expression of CYP2J2, a human cytochrome P450 arachidonic acid epoxygenase highly expressed in heart. *J Biol Chem*, 271, 3460-8. ↗
- Stoilov, I., Choudhary, D., Schenkman, JB., Sarfarazi, M., Jansson, I. (2004). Metabolism of retinoids and arachidonic acid by human and mouse cytochrome P450 1b1. *Drug Metab Dispos*, 32, 840-7. ↗

Editions

2012-02-24	Authored, Edited	Williams, MG.
2012-11-10	Reviewed	Rush, MG.