PAFAH2 hydrolyses PAF to lyso-PAF and acetate

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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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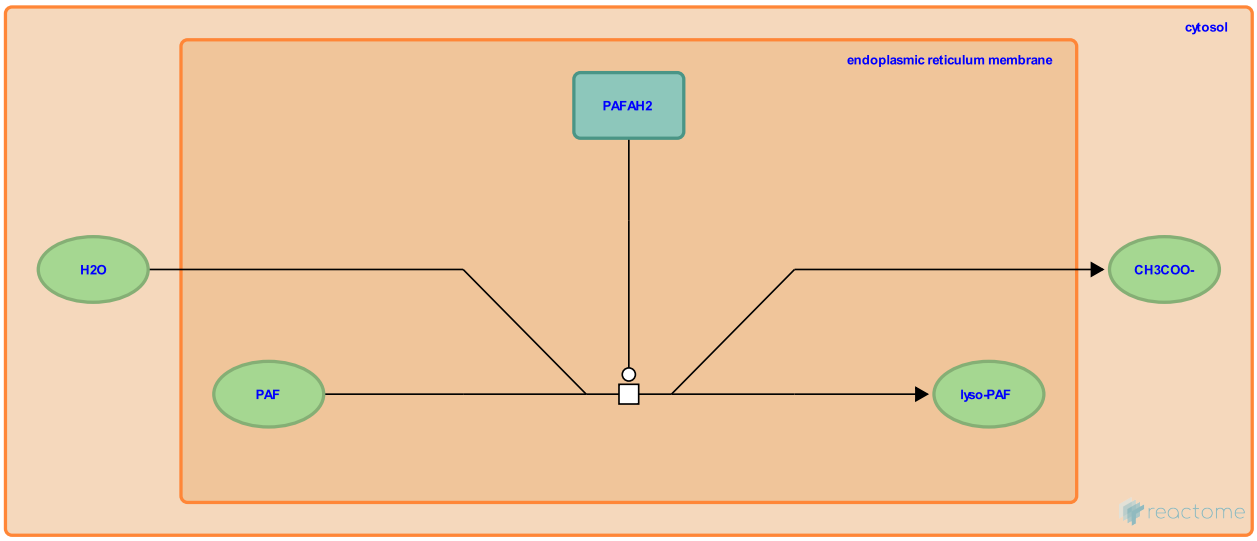
Stable identifier: R-HSA-8869206

Type: transition

Compartments: endoplasmic reticulum membrane, cytosol



Platelet-activating factor acetylhydrolase 2 (PAFAH2) (Rice et al. 1998) is an intracellular phospholipase A2 enzyme that inactivates the potent phospholipid mediator platelet-activating factor (PAF) and other structurally similar bioactive lipids produced in response to oxidative stress. PAFAH2 hydrolyses PAF at the sn-2 position, producing lyso-PAF and acetate (CH3COO-). Following oxidative stress, cytoplasmic PAFAH2 (present in homodimeric form) trafficks to the membranes of both the endoplasmic reticulum and Golgi apparatus; membrane localisation is critical for substrate acquisition and effective oxidative stress protection (Thevenin et al. 2011, Monillas et al. 2015). The enzyme that performs the last step in PAF synthesis is located on the outer leaf of the ER membrane. PAFAH2 ER localisation would allow it to access newly synthesized PAF, potentially serving as a control mechanism for PAF levels.

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Editions

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