dihydroceramide + NAD(P)H + H+ + O2 => ceramide + NAD(P)+ + H2O

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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. ↗

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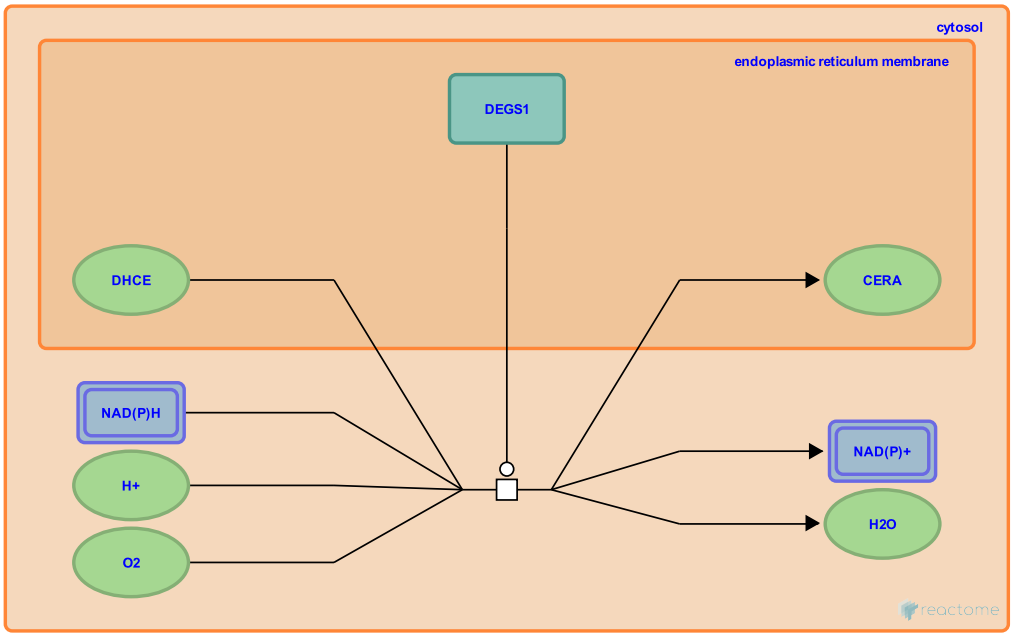
Stable identifier: R-HSA-428259

Type: transition

Compartments: cytosol, endoplasmic reticulum membrane



DEGS1 (sphingolipid delta(4)-desaturase 1 / “degenerative spermatocyte homolog 1”) enzyme associated with the cytosolic face of the endoplasmic reticulum catalyzes the desaturation of dihydroceramide to form ceramide (Cadena et al. 1997; Ternes et al. 2002). The stoichiometry and cofactor requirements of the reaction are inferred from those observed in studies of ceramide synthesis in vitro catalyzed by rat liver microsomes (Michel et al. 1997). DEGS1 may also catalyze the 4-hydroxylation of dihydroceramide to form 4-hydroxysphinganine, but with low efficiency.

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Editions

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