glutamine + H2O => glutamate + NH4+

[GLS]

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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. ↗

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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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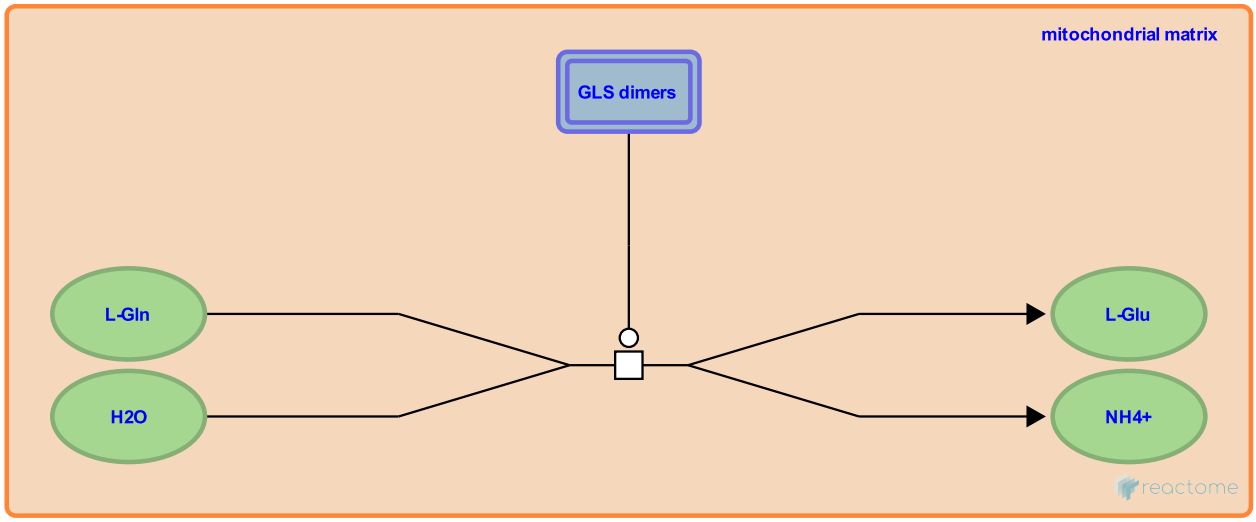
glutamine + H2O => glutamate + NH4+ [GLS]

Stable identifier: R-HSA-70609

Type: transition

Compartments: mitochondrial matrix



Mitochondrial glutaminase (GLS) catalyzes the hydrolysis of glutamine to yield glutamate and ammonia. Two GLS enzymes have been identified, one abundantly expressed in the liver (GLS - Elgadi et al. 1999) and one abundantly expressed in kidney (GLS2 - Gomez-Fabre et al. 2000). Their biochemical properties are similar. The enzymes are inferred to function as dimers based on unpublished crystallographic data for GLS (PDB 3CZD) and studies of glutaminase enzyme purified from Ehrlich Ascites cells (Quesada et al. 1988).

Literature references

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Editions

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