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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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- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)
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- 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: 88

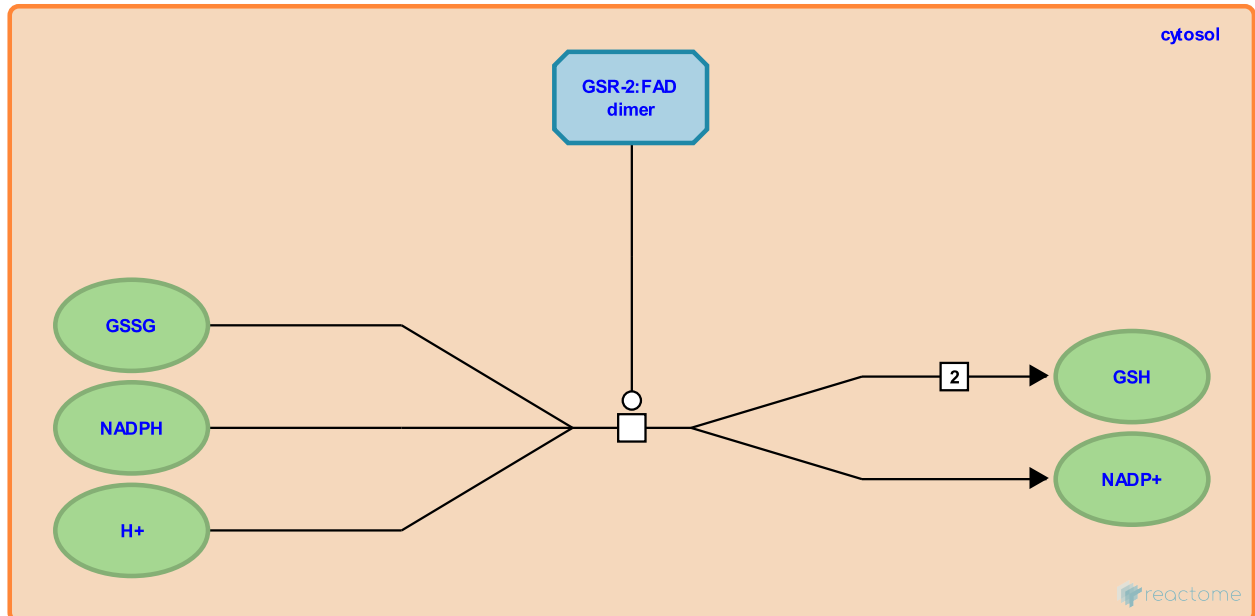
This document contains 1 reaction ([see Table of Contents](#))

**glutathione (oxidized) + NADPH + H+ => 2 glutathione (reduced) + NADP+ ↗**

**Stable identifier:** R-HSA-71682

**Type:** transition

**Compartments:** cytosol



Cytosolic glutathione reductase catalyzes the reaction of glutathione (oxidized) and NADPH + H<sup>+</sup> to form two molecules of glutathione (reduced) and NADP<sup>+</sup> (Scott et al. 1963, Loos et al. 1976). Deficiency of glutathione reductase can cause hemolytic anemia.

### Literature references

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EKSTRAND, V., SCOTT, EM., DUNCAN, IW. (1963). PURIFICATION AND PROPERTIES OF GLUTATHIONE REDUCTASE OF HUMAN ERYTHROCYTES. *J. Biol. Chem.*, 238, 3928-33. ↗

### Editions

2004-03-17	Authored, Edited	D'Eustachio, P.
2005-04-29	Edited	Vastrik, I.
2010-02-06	Revised	D'Eustachio, P.
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