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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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Reactome database release: 75

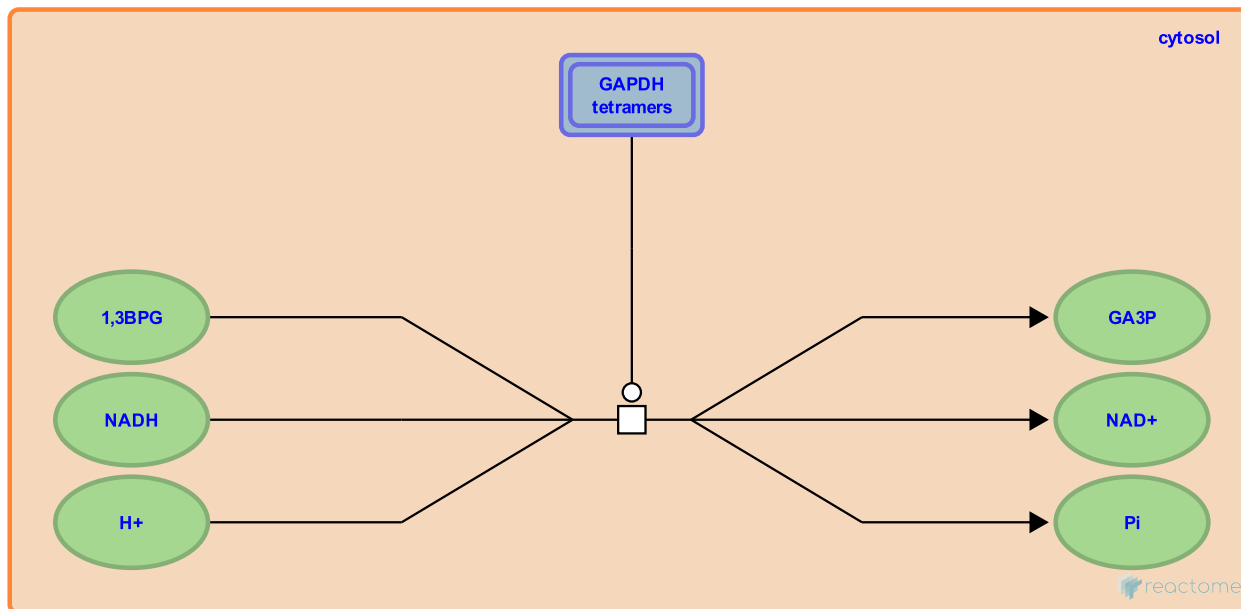
This document contains 1 reaction ([see Table of Contents](#))

# 1,3-bisphospho-D-glycerate + NADH + H+ <=> D-glyceraldehyde 3-phosphate + Orthophosphate + NAD+ ↗

**Stable identifier:** R-HSA-70482

**Type:** transition

**Compartments:** cytosol



The reversible reduction of 1,3-bisphosphoglycerate to form glyceraldehyde-3-phosphate is catalyzed by cytosolic glyceraldehyde-3-phosphate dehydrogenase tetramer.

There are multiple human glyceraldehyde 3-phosphate dehydrogenase-like pseudogenes, but only one glyceraldehyde 3-phosphate dehydrogenase gene expressed in somatic tissue (Benham and Povey 1989). Consistent with this conclusion, the homogeneous enzymes purified from various human tissues had indistinguishable physical and immunochemical properties (Heinz and Freimüller 1982), and studies of human erythrocytes of various ages suggested that variant forms of the enzyme arise as a result of post-translational modifications (Edwards et al. 1976). There is, however, an authentic second isoform of glyceraldehyde 3-phosphate dehydrogenase whose expression is confined to spermatogenic cells of the testis (Welch et al. 2000).

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## Editions

2008-09-10

Reviewed

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