GLYCTK phosphorylates DGA to 3PDGA

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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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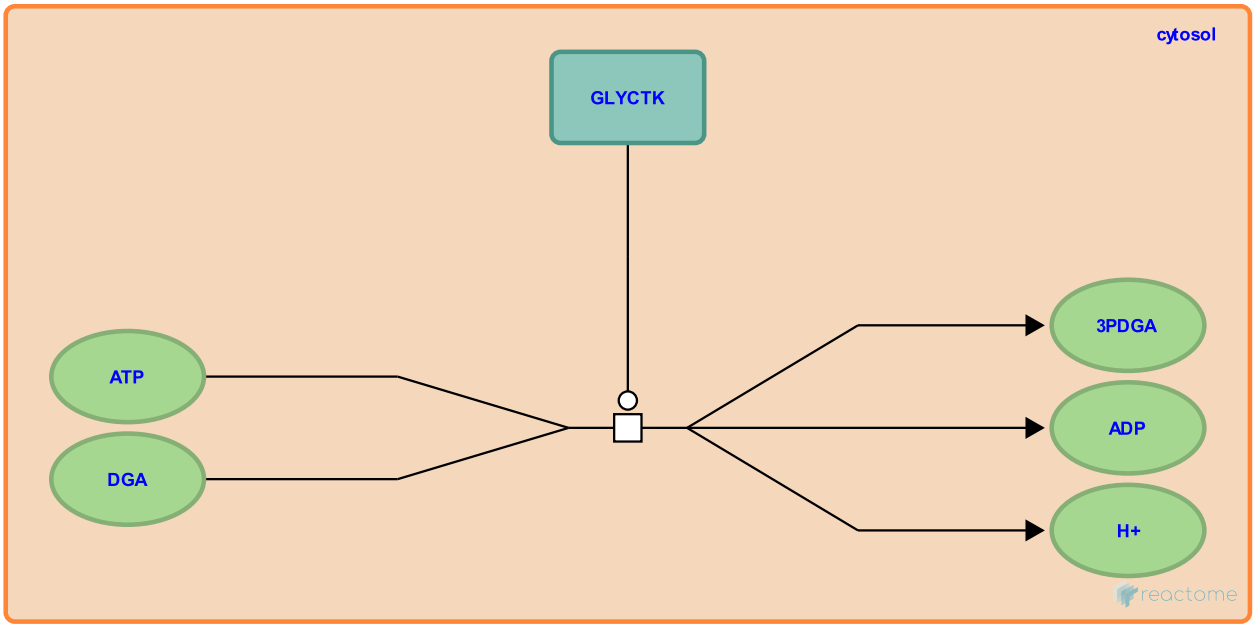
Stable identifier: R-HSA-6799495

Type: transition

Compartments: cytosol



D-glyceric acid (DGA) is an intermediate of serine catabolism and of a minor pathway of fructose metabolism. The only known fate of DGA is phosphorylation to 3-phospho-D-glyceric acid (3PDGA) by cytosolic glycerate kinase (GLYCTK) (Yu et al. 2006). Defects in GLYCTK can cause D-glyceric aciduria (D-GA; MIM:220120), a rare inborn error of serine and fructose metabolism where DGA is excreted in large amounts in the urine. A variable phenotype is observed, ranging from severe mental retardation and death to milder speech delays and normal development (Van Schaftingen 1989, Sass et al. 2010).

Literature references

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