GLUT3 (SLC2A3) tetramer transports Glc from extracellular region to cytosol

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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.

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. ↗

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. ↗

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. ↗
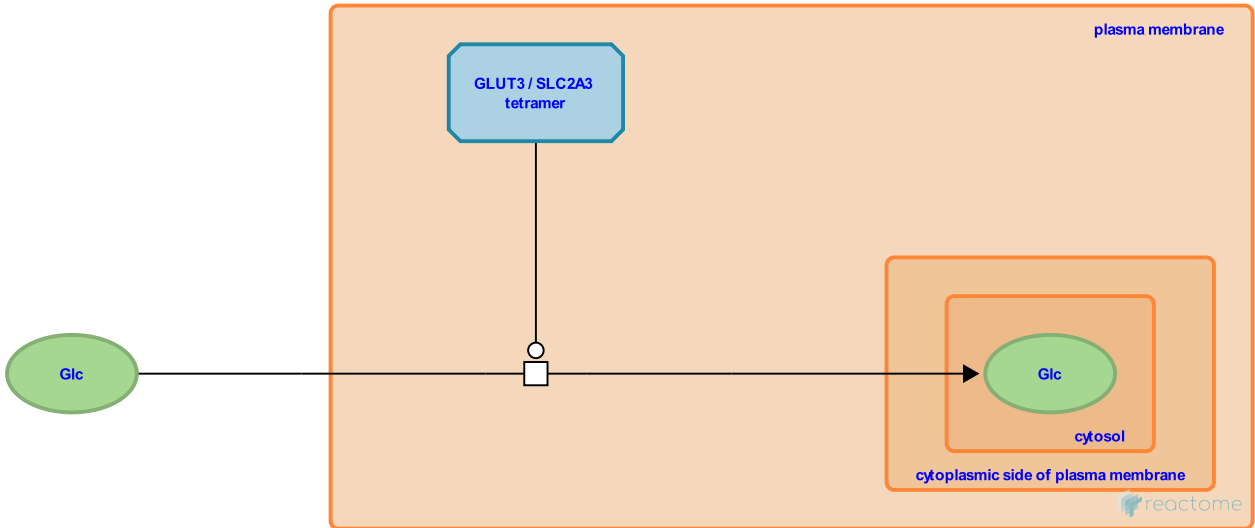
Reactome database release: 88

This document contains 1 reaction (see Table of Contents)

GLUT3 (SLC2A3) tetramer transports Glc from extracellular region to cytosol ↗

Stable identifier: R-HSA-8981564

Type: transition

Compartments: cytosol, plasma membrane, extracellular region

Tetrameric GLUT3, the SLC2A3 gene product, associated with the plasma membrane, mediates the facilitated diffusion of glucose (Glc) into cells. GLUT3 is expressed by many cell types, notably in the brain. Its low Km for glucose (~1 mM) relative to normal blood glucose concentration (~5 mM) allows these cells to import glucose independent of fluctuations in blood glucose levels (Colville et al. 1993). GLUT3, like GLUT1 and 4, has a high affinity for glucose.

Literature references

Gould, GW., Colville, CA., Seatter, MJ., Thomas, HM., Jess, TJ. (1993). Kinetic analysis of the liver-type (GLUT2) and brain-type (GLUT3) glucose transporters in Xenopus oocytes: substrate specificities and effects of transport inhibitors. *Biochem J, 290*, 701-6. ↗

Editions

2004-06-23	Authored, Edited	D'Eustachio, P.
2009-08-24	Reviewed	He, L.
2009-12-12	Revised	D'Eustachio, P.