

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. [↗](#)

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. [↗](#)

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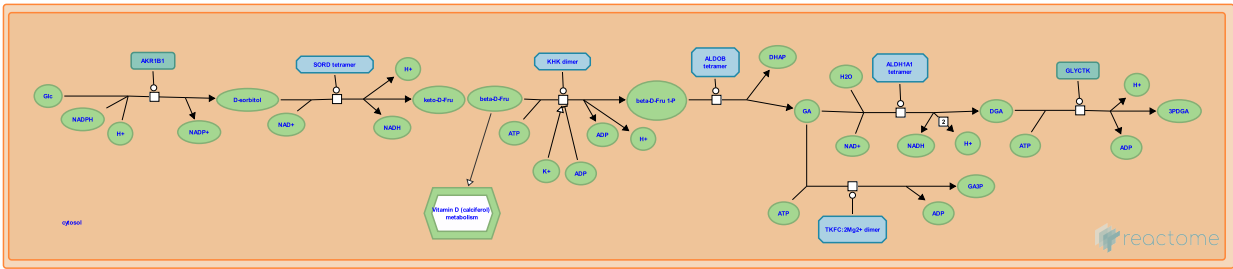
Reactome database release: 88

This document contains 3 pathways ([see Table of Contents](#))

Fructose metabolism ↗

Stable identifier: R-HSA-5652084

Compartments: cytosol



Fructose is found in fruits, is one of the components of the disaccharide sucrose, and is a widely used sweetener in processed foods. Dietary fructose is catabolized in the liver via fructose 1-phosphate to yield dihydroxyacetone phosphate and glyceraldehyde 3-phosphate, which then are converted to pyruvate via steps of canonical glycolysis (Hers & Kusaka 1953; Sillero et al. 1969). Excessive dietary intake of fructose and its metabolism have been associated with major disease risks in humans, although this issue remains controversial (Kolderup & Svihus 2015; DiNicolantonio et al. 2015; Bray 2013; Mayes 1993; Rippe & Angelopoulos 2013; van Buul et al. 2013). Fructose can also be synthesized from glucose via the polyol pathway (Hers 1960; Oates 2008). This synthetic process provides the fructose found in seminal fluid and, in other tissues, can contribute to pathologies of diabetes.

Literature references

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Editions

2014-11-27	Authored, Edited	D'Eustachio, P.
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