fructose 6-phosphate + ATP => fructose 1,6-bisphosphate + ADP

D'Eustachio, P., Harris, RA.
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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references


Reactome database release: 70

This document contains 1 reaction (see Table of Contents)
**fructose 6-phosphate + ATP => fructose 1,6-bisphosphate + ADP**

**Stable identifier:** R-GGA-352945

**Type:** transition

**Compartments:** cytosol

Cytosolic phosphofructokinase 1 (PFK1) catalyzes the irreversible reaction of fructose 6-phosphate and ATP to form fructose 1,6-bisphosphate and ADP in a reaction that is positively regulated by fructose 2,6-bisphosphate (Chaekal et al. 1983). In rodents and humans, two major isoforms of the enzyme are differentially regulated to meet tissue-specific requirements for glucose breakdown in response to the organism's nutritional status and need to support vigorous muscle activity. Chicken genes predicted to encode proteins similar to human liver and muscle PFK1 isoforms have been shown to be differentially expressed in chicken tissues and in response to insulin. The physiological consequences of their differential expression are unknown (Seki et al. 2006). Five additional proteins, PFK1-like1, 2, 3, 4, and 5, are predicted to have phosphofructokinase 1 activity based on OrthoMCL analysis of the ENSEMBL chicken gene set.

**Literature references**


**Editions**

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<td>Authored, Edited</td>
<td>D'Eustachio, P.</td>
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<tr>
<td>2008-09-10</td>
<td>Reviewed</td>
<td>Harris, RA.</td>
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