Glyoxylate metabolism and glycine degradation

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Introduction

Reactome is an 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


Reactome database release: 79

This document contains 2 pathways and 20 reactions (see Table of Contents)
Glyoxylate metabolism and glycine degradation

Stable identifier: R-HSA-389661

Glyoxylate is generated in the course of glycine and hydroxyproline catabolism and can be converted to oxalate. In humans, this process takes place in the liver. Defects in two enzymes of glyoxylate metabolism, alanine:glyoxylate aminotransferase (AGXT) and glycerate dehydrogenase/glyoxylate reductase (GRHPR), are associated with pathogenic overproduction of oxalate (Danpure 2005). The reactions that interconvert glycine, glycolate, and glyoxylate and convert glyoxylate to oxalate have been characterized in molecular detail in humans. A reaction sequence for the conversion of hydroxyproline to glyoxylate has been inferred from studies of partially purified extracts of rat and bovine liver but the enzymes involved in the corresponding human reactions have not been identified.

**Literature references**


**Editions**

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Unknown hydroxyproline carrier transports cytosolic HPRO into the mitochondrial matrix

Location: Glyoxylate metabolism and glycine degradation

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