

GCL ligates L-Glu to L-Cys

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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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Reactome database release: 74

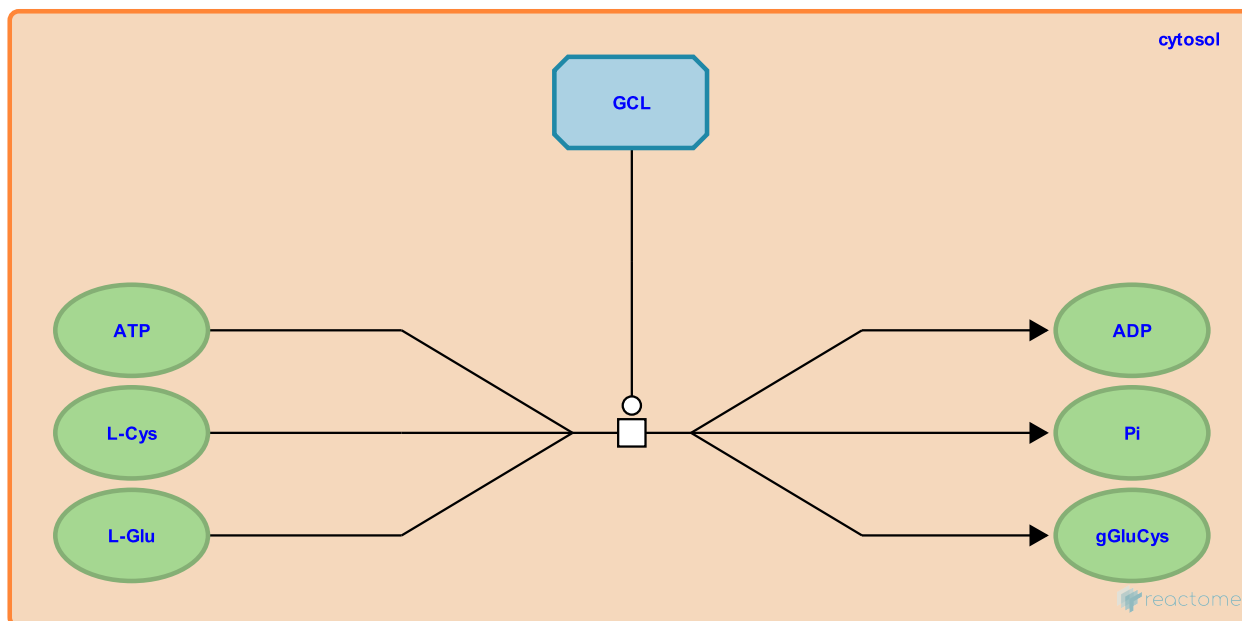
This document contains 1 reaction ([see Table of Contents](#))

GCL ligates L-Glu to L-Cys [↗](#)

Stable identifier: R-HSA-174367

Type: transition

Compartments: cytosol



The first step in the formation of glutathione is the ligation of glutamate with cysteine, catalysed by the dimeric protein glutamate-cysteine ligase, GCL (Gipp et al. 1995, Misra & Griffith 1998).

Literature references

Misra, I., Griffith, OW. (1998). Expression and purification of human gamma-glutamylcysteine synthetase. *Protein Expr Purif*, 13, 268-76. [↗](#)

Gipp, JJ., Bailey, HH., Mulcahy, RT. (1995). Cloning and sequencing of the cDNA for the light subunit of human liver gamma-glutamylcysteine synthetase and relative mRNA levels for heavy and light subunits in human normal tissues. *Biochem Biophys Res Commun*, 206, 584-9. [↗](#)

Editions

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