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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.

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

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Reactome database release: 70

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

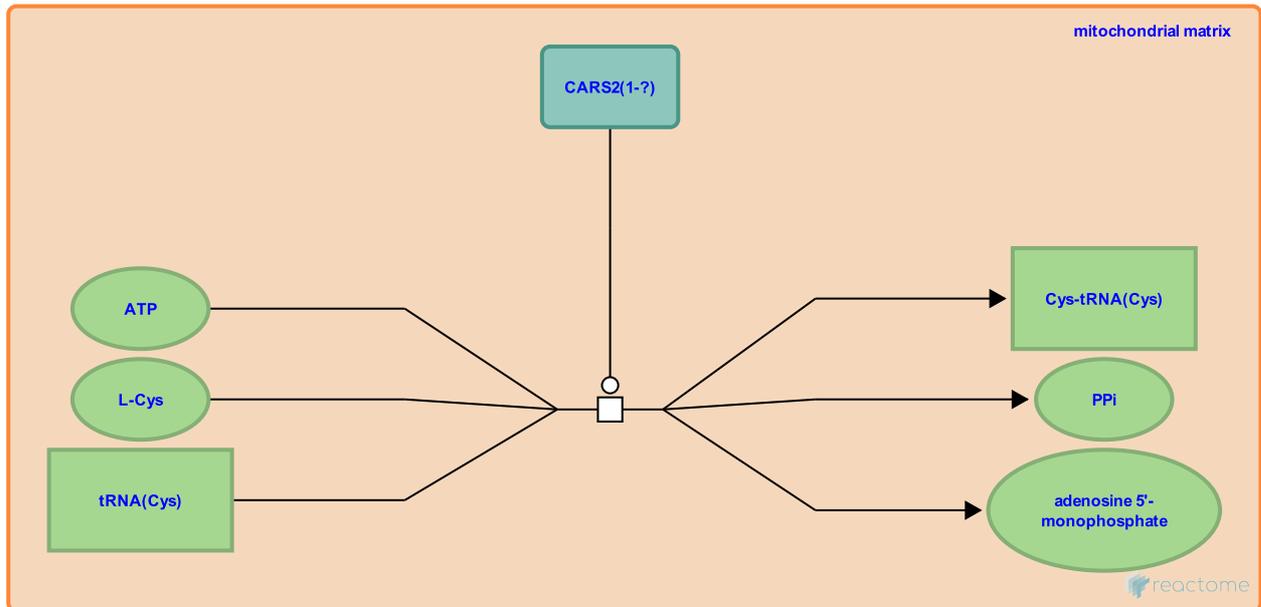
cysteine + tRNA(Cys) + ATP => Cys-tRNA(Cys) + AMP + pyrophosphate ↗

Stable identifier: R-HSA-380158

Type: transition

Compartments: mitochondrial matrix

Inferred from: tyrosine + tRNA(Tyr) + ATP => Tyr-tRNA(Tyr) + AMP + pyrophosphate (Homo sapiens),
aspartate + tRNA(Asp) + ATP => Asp-tRNA(Asp) + AMP + pyrophosphate (Homo sapiens)



CARS2 (mitochondrial cysteinyl tRNA synthetase) catalyzes the reaction of cysteine, mitochondrial tRNA(Cys), and ATP to form Cys-tRNA(Cys), AMP, and pyrophosphate. The CARS2 gene has been identified by computational analysis of the human genome sequence; its function has been inferred from those of the biochemically characterized mitochondrial aspartyl and tyrosyl tRNA synthetases (Bonnefond et al. 2005).

Editions

2008-11-29	Authored, Edited	D'Eustachio, P.
2008-12-02	Reviewed	Antonellis, A.