Amino Acid conjugation

Jassal, B.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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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


Reactome database release: 72

This document contains 2 pathways (see Table of Contents)

https://reactome.org
Amino Acid conjugation

Stable identifier: R-HSA-156587

Xenobiotics that contain either a carboxylic group or an aromatic hydroxylamine group are possible substrates for amino acid conjugation. Xenobiotics with a **carboxylic group** conjugate with an **amino group** of amino acids such as glycine, taurine and glutamine. The **hydroxylamine group** conjugates with the **carboxylic group** of amino acids such as proline and serine. The amino acid is first activated by an aminoacl-tRNA-synthetase which then reacts with the hydroxylamine group to form a reactive N-ester. N-esters can degrade to form electrophilic nitrenium (R-N⁺-R') and carbonium (R-C⁺H₂) ions. The pyrolysis product of tryptophan, an N-hydroxy intermediate, can potentially form these reactive electrophilic ions.

**Literature references**


**Editions**

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Conjugation of carboxylic acids

Location: Amino Acid conjugation

Stable identifier: R-HSA-159424

Xenobiotics and endogenous compounds containing carboxylate groups can be activated with coenzyme A to produce acyl-CoA thioesters and then conjugated with the amino groups of glycine or glutamine to form amide-linked conjugates. Clinically important substrates include benzoic acid, phenylacetic acid, and salicylic acid.

Editions

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