Elastin cross-linking by lysyl oxidase

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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: 74

This document contains 1 reaction (see Table of Contents)
Elastin cross-linking by lysyl oxidase

Stable identifier: R-HSA-2129375

Type: transition

Compartments: extracellular region

Soluble monomers of tropoelastin are cross-linked by the oxidative deamination of lysine residues, catalyzed by lysyl oxidase (LOX). The first step in the cross linking reaction is the oxidative formation of the delta-aldehyde, known as alpha amino adipic semialdehyde or allysine (Partridge 1963). Subsequent spontaneous reactions lead to the formation of cross-links through dehydrolysinonorleucine and allysine aldol, a trifunctional cross-link dehydromerodesmosine and two tetrafunctional cross-links desmosine and isodesmosine (Lucero & Kagan 2006), which are unique to elastin.

Literature references


Editions

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