Hh mutants abrogate ligand secretion

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04/12/2019
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


Reactome database release: 70

This document contains 3 pathways (see Table of Contents)
Hh mutants abrogate ligand secretion

Stable identifier: R-HSA-5387390

Diseases: holoprosencephaly

Hh signaling is required for a number of developmental processes, and mutations that disrupt the normal processing and biogenesis of Hh ligand can result in neonatal abnormalities. SHH is one of a number of genes that have been associated with the congenital disorder holoprosencephaly, which causes abnormalities in brain and craniofacial development (Roessler et al, 2009; reviewed in Roessler and Muenke, 2011). SHH variants associated with the condition affect the autocatalytic processing of the precursor and dramatically impair the production of the secreted active Hh-Np, abrogating signaling (reviewed in Pan et al, 2013). Aberrant Hh signaling is also associated with gondal dysgenesis syndromes in which palmitoylation of DHH is abrogated by mutation of the acyltransferase HHAT (Callier et al, 2014).

Literature references


Editions

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Hh mutants that don't undergo autocatalytic processing are degraded by ERAD

Location: Hh mutants abrogate ligand secretion

Stable identifier: R-HSA-5362768

Diseases: holoprosencephaly, 46 XY gonadal dysgenesis

Hh signaling is required for a number of developmental processes, and mutations that disrupt the normal processing and biogenesis of Hh ligand can result in neonatal abnormalities. SHH is one of a number of genes that have been associated with the congenital disorder holoprosencephaly, which causes abnormalities in brain and craniofacial development (Roessler et al, 2009; reviewed in Roessler and Muenke, 2011). SHH variants associated with the condition affect the autocatalytic processing of the precursor and dramatically impair the production of the secreted active Hh-Np, abrogating signaling (reviewed in Pan et al, 2013).

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HHAT G278V abrogates palmitoylation of Hh-Np

Location: Hh mutants abrogate ligand secretion

Stable identifier: R-HSA-5658034

Diseases: 46 XY gonadal dysgenesis

A loss-of-function mutation in HHAT that abrogates palmitoylation of Hh ligand is associated with Syndromic 46, XY Disorder of Sex Development, which results in testis dysgenesis (Callier et al, 2014).

Literature references


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