Inactivation of CDC42 and RAC1

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09/05/2020
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: 72

This document contains 1 pathway and 4 reactions (see Table of Contents)

https://release.reactome.org
Inactivation of CDC42 and RAC1

Stable identifier: R-HSA-428543

Compartments: plasma membrane

Rho family GTPases, including RAC1, RHOA, and CDC42, are ideal candidates to regulate aspects of cytoskeletal dynamics downstream of axon guidance receptors. Biochemical and genetic studies have revealed an important role for CDC42 and RAC1 in ROBO repulsion. ROBO controls the activity of Rho GTPases by interacting with a family of SLIT/ROBO-specific GAPs (SrGAPs) and Vilse/CrossGAP. SrGAPs inactivate CDC42 and Vilse/CrossGAP specifically inactivates RAC1.

It was recently implicated that SRGAP3 may inactivate RAC1 downstream of SLIT1-activated ROBO2, which promotes neurite outgrowth in mammalian dorsal root ganglion (DRG) neurons (Zhang et al. 2014).

Editions

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<th>Action</th>
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<td>Garapati, P V.</td>
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<tr>
<td>2009-08-18</td>
<td>Reviewed</td>
<td>Kidd, T.</td>
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<tr>
<td>2017-06-26</td>
<td>Edited</td>
<td>Orlic-Milacic, M.</td>
</tr>
<tr>
<td>2017-07-31</td>
<td>Reviewed</td>
<td>Jaworski, A.</td>
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SRGAP binds ROBO1:SLIT2

**Location:** Inactivation of CDC42 and RAC1

**Stable identifier:** R-HSA-376145