RHO GTPases regulate CFTR trafficking

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22/03/2022
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: 79

This document contains 1 pathway and 3 reactions (see Table of Contents)
RHO GTPases regulate CFTR trafficking

Stable identifier: R-HSA-5627083

Compartments: Golgi-associated vesicle membrane, lysosomal membrane, plasma membrane

Activated RHO GTPase RHOQ (TC10) regulates the trafficking of CFTR (cystic fibrosis transmembrane conductance regulator) by binding to GOPC (Golgi-associated and PDZ and coiled-coil motif-containing protein) also known as PIST, FIG or CAL. GOPC is a Golgi resident protein that binds several membrane proteins, thereby modulating their expression. In the absence of RHOQ, GOPC bound to CFTR directs CFTR for lysosomal degradation, while GTP-bound RHOQ directs GOPC:CFTR complex to the plasma membrane, thereby rescuing CFTR (Neudauer et al. 2001, Cheng et al. 2005).

Literature references


Editions

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GOPC promotes translocation of CFTR to lysosomes

Location: RHO GTPases regulate CFTR trafficking

Stable identifier: R-HSA-5627275