

PTCH is internalized

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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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Reactome database release: 88

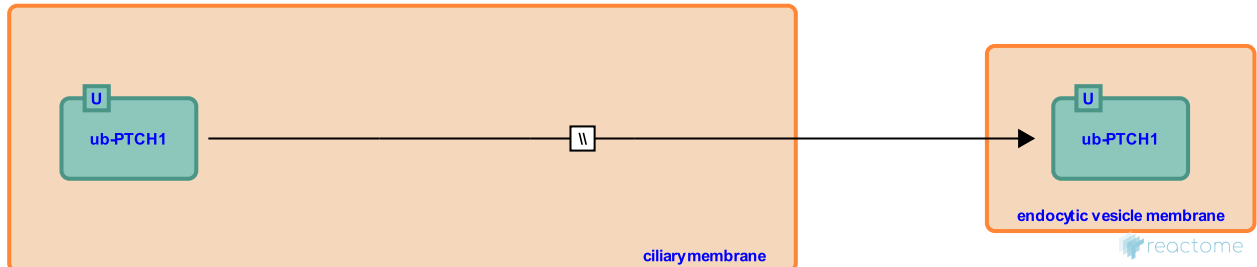
This document contains 1 reaction ([see Table of Contents](#))

PTCH is internalized [↗](#)

Stable identifier: R-HSA-5632677

Type: omitted

Compartments: ciliary membrane



After SMURF-dependent ubiquitination, PTCH1 is internalized to endocytic vesicles for degradation (Rohatgi et al, 2007; Huang et al, 2013; Yue et al, 2014). PTCH1 and SMO show reciprocal changes in localization upon Hh pathway activation, with PTCH moving from the primary cilium to internal vesicles while SMO becomes enriched in the primary cilium after ligand binding (Denef et al, 2000; Rohatgi et al, 2007; Corbit et al, 2005; Kovacs et al, 2008; reviewed in Goetz and Anderson). In mice, internalization of PTCH1 appears to be independent of SMO, while in flies, activated SMO is required to promote the SMURF-dependent downregulation of PTCH (Yue et al, 2014; Huang et al, 2013).

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Editions

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