Csnk1a1 phosphorylates Smo dimer

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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

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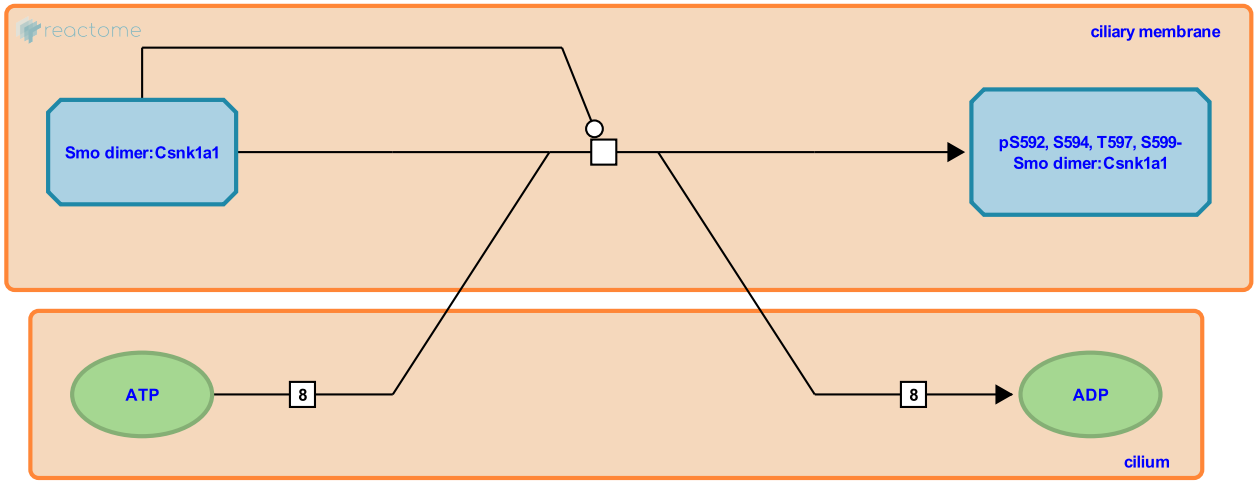
Stable identifier: R-MMU-5632661

Type: transition

Compartments: ciliary membrane



Numerous residues in the C-terminal tail of Smo are phosphorylated by Csnk1a1 as assessed by an in vitro kinase assay. Of these, residues S592, S594, T597 and S599 in the S0 region appear to play the most important role in Smo activation in response to Shh. Initial phosphorylation by Csnk1a promotes further phosphorylation by both Csnk1a1 and by Ardbk1/Grk2, and phosphorylation is required to promote a conformational change in the C-terminal Smo tail that is required to propagate the Hh signal to downstream effectors (Chen et al, 2011; Chen et al, 2010; Zhao et al, 2007).

Literature references

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Editions

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