TNPO1 binds KIF17 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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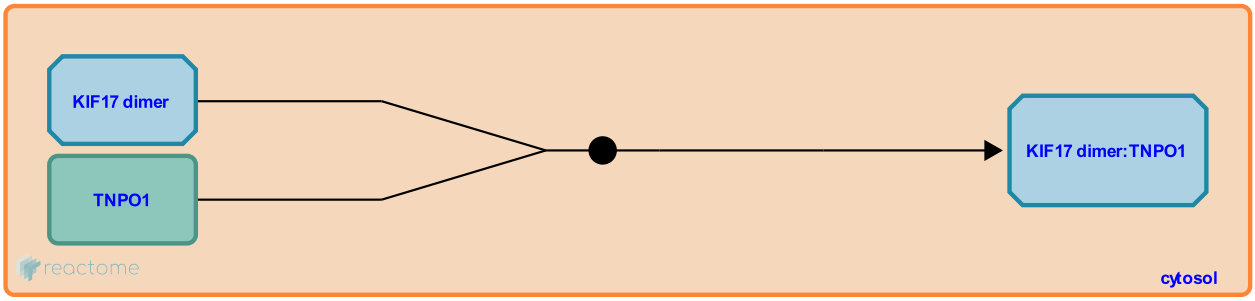
Stable identifier: R-HSA-5624951

Type: binding

Compartments: cytosol



KIF17 is an alternate kinesin-2 motor that is required in some cell types for anterograde IFT and for the ciliary localization of CNG (Ou et al, 2005; Jenkins et al, 2006; Insinna et al, 2008; Insinna et al, 2009; Li et al, 2010; reviewed in Scholey, 2008; Verhey et al, 2011). KIF17 contains a C-terminal ciliary localization signal that mediates its interaction with nuclear import factor TNPO1 (importin beta-2). This interaction is required for the ciliary targeting of KIF17 and is regulated by RAN GTP levels such that the interaction is promoted in the cytosol where RAN:GTP levels are low, and is destabilized in the cilium where RAN:GTP levels are high (Dishinger et al, 2010). The roles of TNPO1 and the RAN:GTP gradient in promoting ciliary localization of KIF17 are analogous to their roles in nuclear import and provide evidence for the first time of conserved mechanisms governing nuclear and ciliary localization (Dishinger et al, 2010; Devos et al, 2004; Gruss, 2010).

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