

# KTN1 binds Kinesin-1

Orlic-Milacic, M., Rivero Crespo, F.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of [Creative Commons Attribution 4.0 International \(CC BY 4.0\) License](#). For more information see our [license](#).

## 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

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics*, 18, 142. [↗](#)
- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)
- Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res*, 46, D649-D655. [↗](#)
- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 75

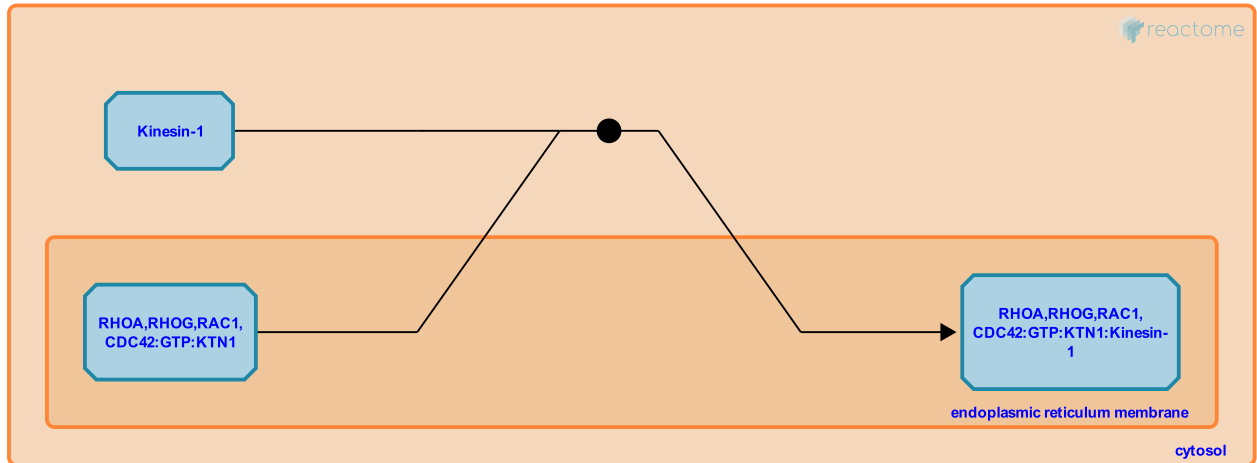
This document contains 1 reaction ([see Table of Contents](#))

## KTN1 binds Kinesin-1 [↗](#)

**Stable identifier:** R-HSA-5672083

**Type:** binding

**Compartments:** cytosol, endoplasmic reticulum membrane



The C-terminal region of KTN1 (kinectin) binds the cargo-binding tail of the kinesin heavy chain KIF5A and enhances microtubule-stimulated ATPase activity of KIF5A. KIF5A is a part of the conventional kinesin complex, kinesin-1. RHO GTPases, KTN1 and kinesin-1 colocalize on endoplasmic reticulum (ER) membranes and ER-derived vesicles and are thought to be involved in organelle/vesicle motility (Ong et al. 2000, Vignal et al. 2001)

### Literature references

Ong, LL., Lim, AP., Er, CP., Kuznetsov, SA., Yu, H. (2000). Kinectin-kinesin binding domains and their effects on organelle motility. *J. Biol. Chem.*, 275, 32854-60. [↗](#)

Vignal, E., Blangy, A., Martin, M., Gauthier-Rouvière, C., Fort, P. (2001). Kinectin is a key effector of RhoG microtubule-dependent cellular activity. *Mol. Cell. Biol.*, 21, 8022-34. [↗](#)

### Editions

2014-10-24	Authored	Orlic-Milacic, M.
2014-12-26	Authored	Rivero Crespo, F.
2015-02-02	Edited	Orlic-Milacic, M.