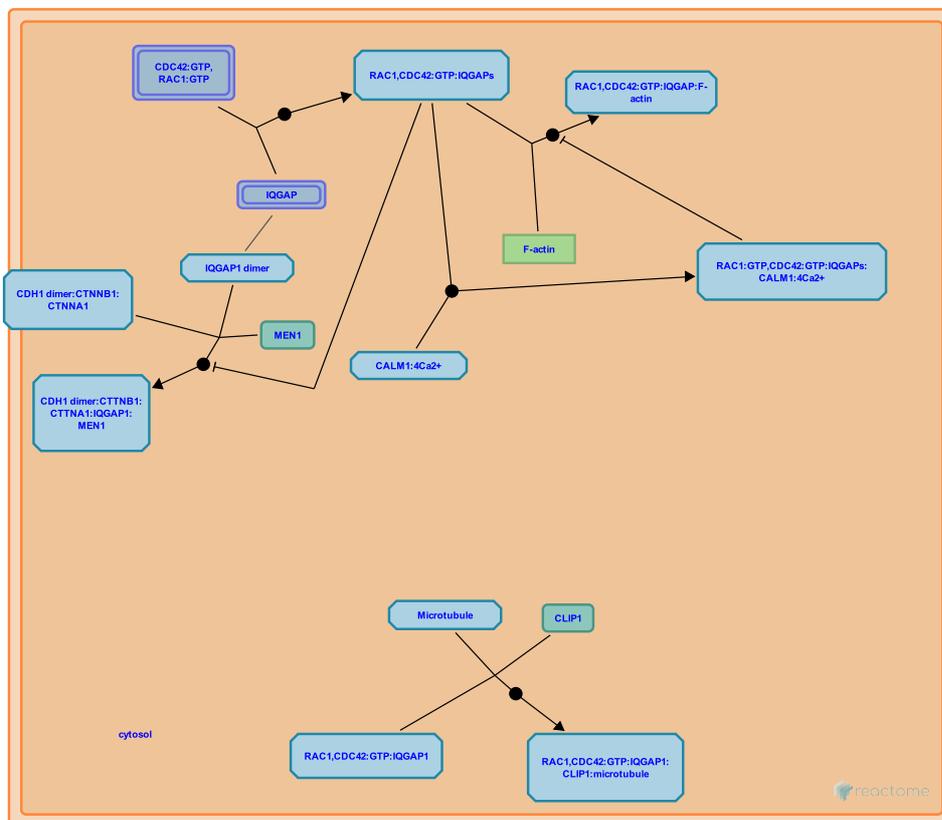


RHO GTPases activate IQGAPs



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

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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

- 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: 74

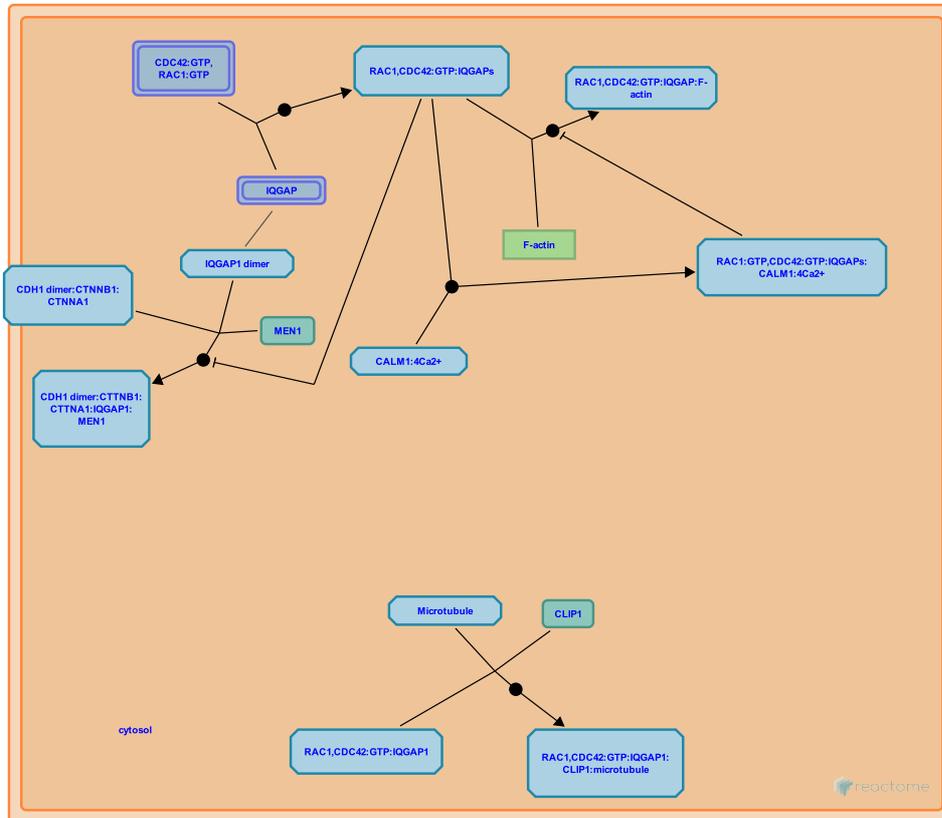
This document contains 1 pathway and 5 reactions ([see Table of Contents](#))

RHO GTPases activate IQGAPs ↗

Stable identifier: R-SSC-5626467

Compartments: cytosol, plasma membrane

Inferred from: RHO GTPases activate IQGAPs (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

GTP-bound RAC1 and CDC42 bind IQGAPs ↗

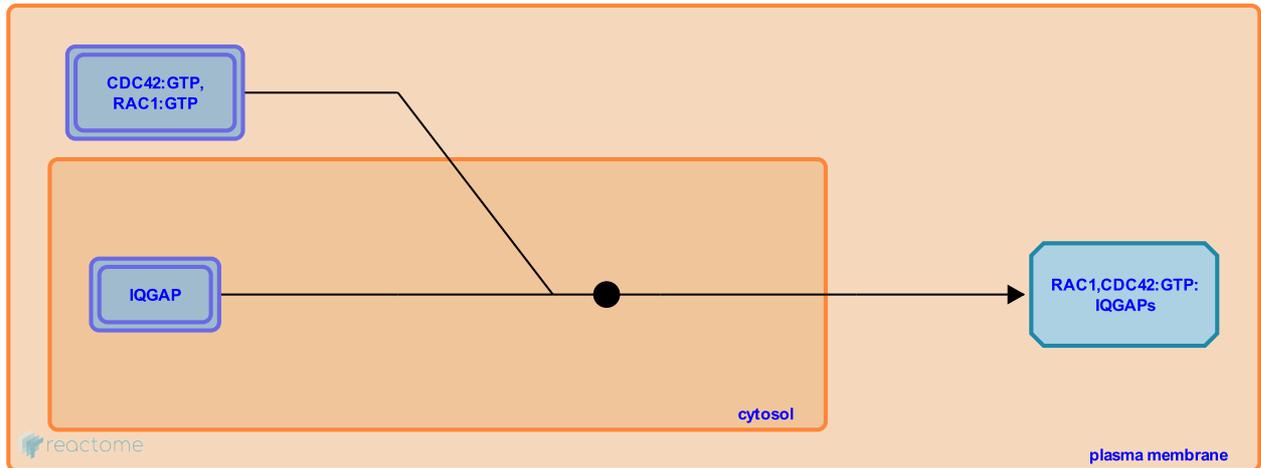
Location: [RHO GTPases activate IQGAPs](#)

Stable identifier: R-SSC-5626469

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: [GTP-bound RAC1 and CDC42 bind IQGAPs \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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Followed by: [IQGAP1 binds CLIP1 and microtubules](#), [IQGAPs bind F-actin, which is inhibited by calmodulin](#), [IQGAPs bind CALM1](#)

IQGAPs bind F-actin, which is inhibited by calmodulin ↗

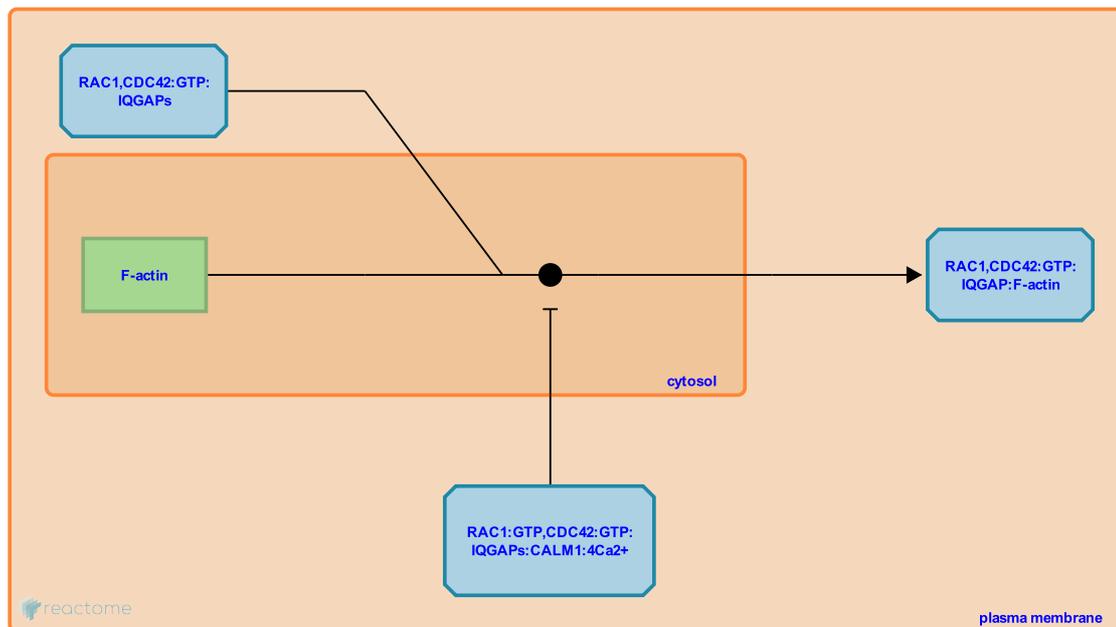
Location: RHO GTPases activate IQGAPs

Stable identifier: R-SSC-5626507

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: IQGAPs bind F-actin, which is inhibited by calmodulin (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: GTP-bound RAC1 and CDC42 bind IQGAPs

IQGAPs bind CALM1 ↗

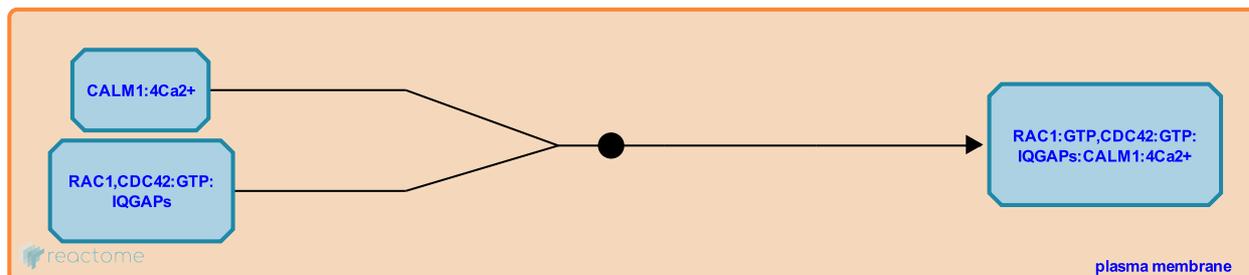
Location: [RHO GTPases activate IQGAPs](#)

Stable identifier: R-SSC-5626549

Type: binding

Compartments: plasma membrane

Inferred from: [IQGAPs bind CALM1 \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: [GTP-bound RAC1 and CDC42 bind IQGAPs](#)

IQGAP1 binds CDH1:CTTNB1:CTTNA1 and MEN1 [↗](#)

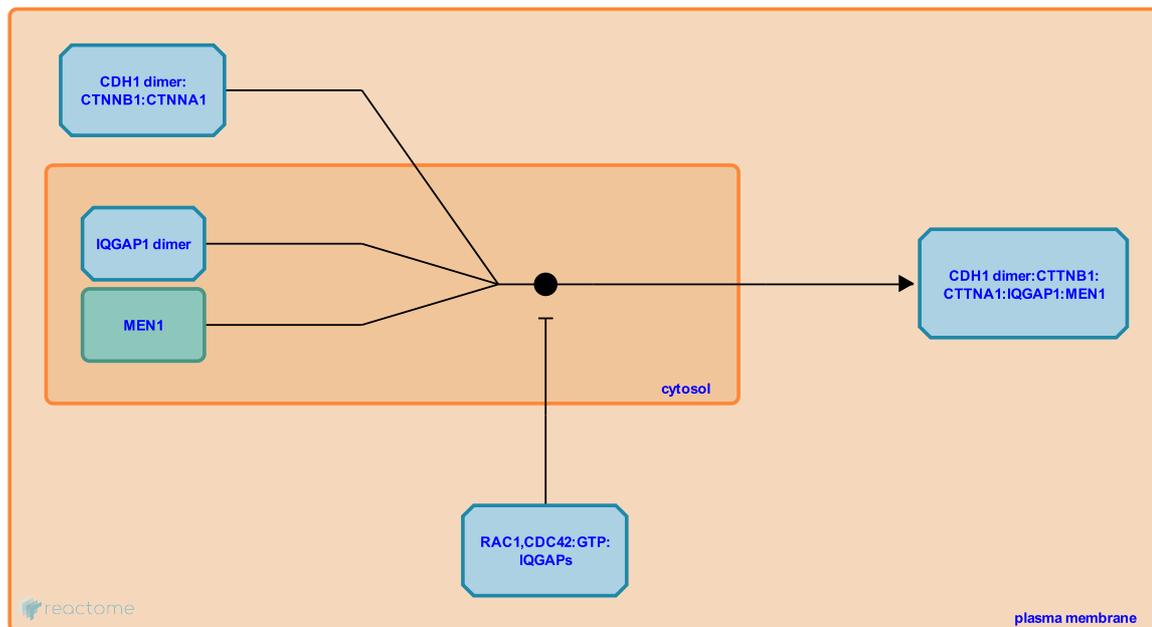
Location: RHO GTPases activate IQGAPs

Stable identifier: R-SSC-5672304

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: IQGAP1 binds CDH1:CTTNB1:CTTNA1 and MEN1 (Homo sapiens)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

IQGAP1 binds CLIP1 and microtubules ↗

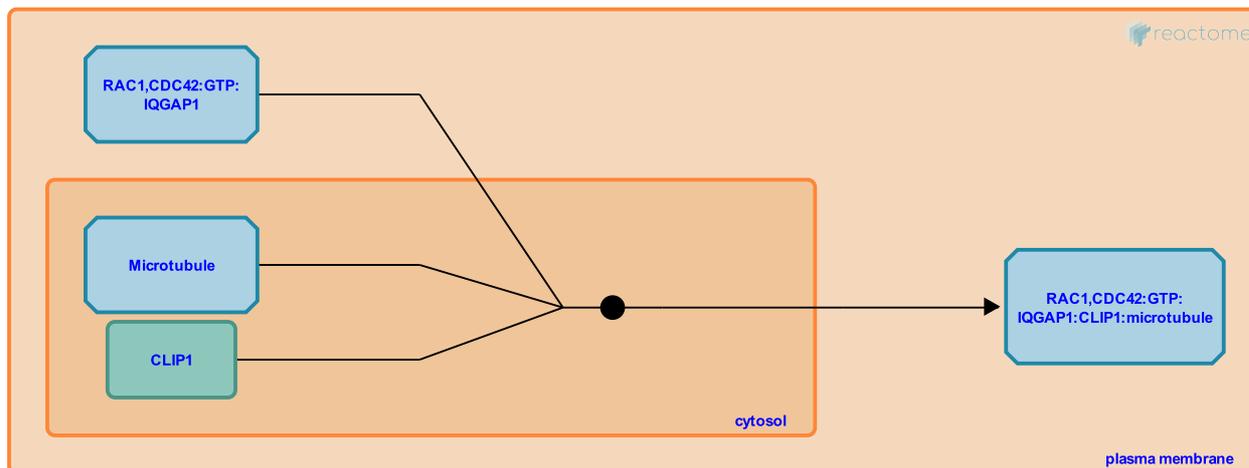
Location: [RHO GTPases activate IQGAPs](#)

Stable identifier: R-SSC-5672329

Type: binding

Compartments: cytosol, plasma membrane

Inferred from: [IQGAP1 binds CLIP1 and microtubules \(Homo sapiens\)](#)



This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[More details and caveats of the event inference in Reactome.](/electronic_inference_compara.html) For details on PANTHER see also: <http://www.pantherdb.org/about.jsp>

Preceded by: [GTP-bound RAC1 and CDC42 bind IQGAPs](#)

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