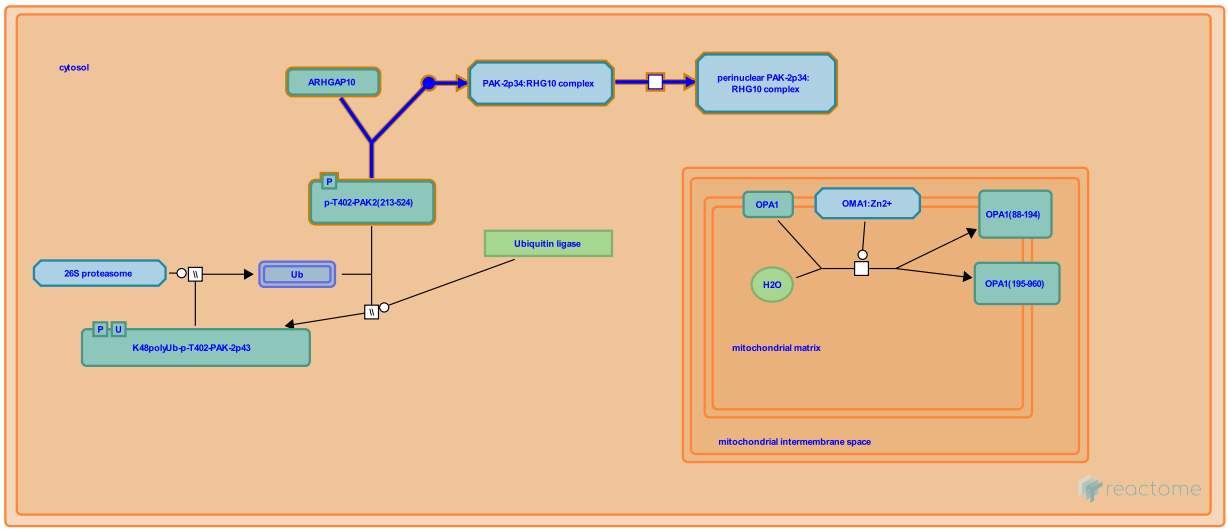
Regulation of PAK-2p34 activity by PS-GAP/RHG10



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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.
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. ↗

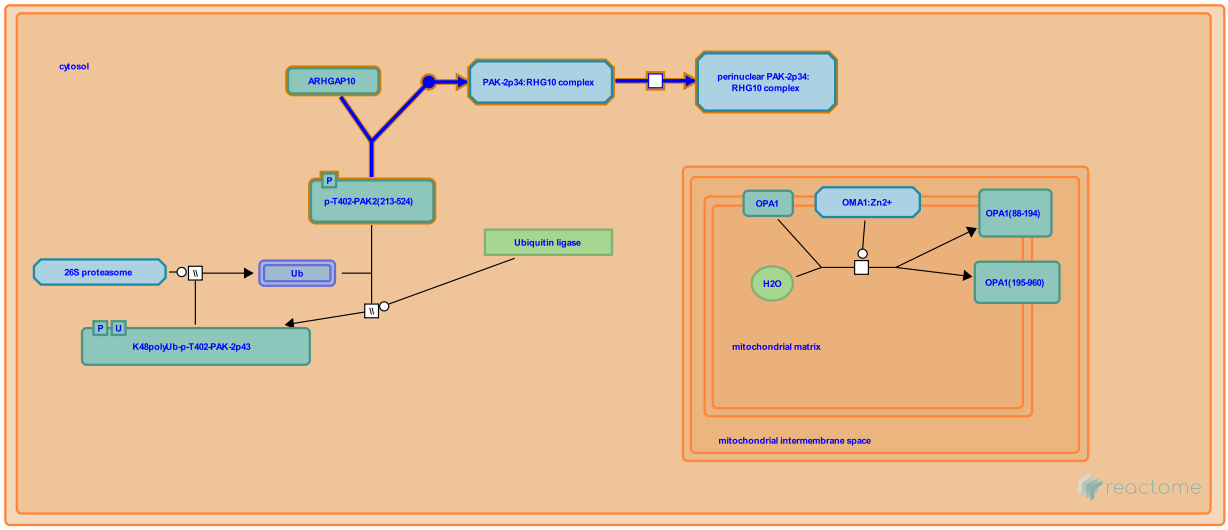
Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗

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. ↗

Regulation of PAK-2p34 activity by PS-GAP/RHG10 ↗

Stable identifier: R-HSA-211728

Compartments: cytosol



PS-GAP (RGH10) interacts specifically with caspase-activated PAK-2p34 reducing the ability of PAK-2p34 to induce cell death. This interaction inhibits the kinase activity of PAK-2p34 and changes the localization of PAK-2p34 from the nucleus to the perinuclear region (Koeppel et al., 2004).

Literature references

Jakobi, R., Koeppel, MA., McCarthy, CC., Moertl, E. (2004). Identification and characterization of PS-GAP as a novel regulator of caspase-activated PAK-2. *J Biol Chem, 279*, 53653-64. ↗

Editions

2008-02-04	Edited	Matthews, L.
2008-02-05	Authored	Jakobi, R.
2008-05-21	Reviewed	Chang, E.
2008-06-12	Edited	Matthews, L.

Rho GTPase-activating protein 10 (RHG10) interacts with caspase-activated PAK-2p34

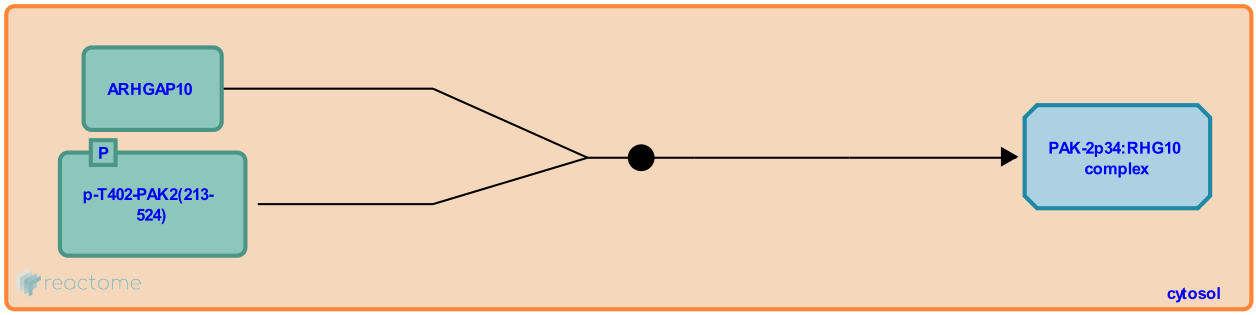
Location: Regulation of PAK-2p34 activity by PS-GAP/RHG10

Stable identifier: R-HSA-211716

Type: binding

Compartments: cytosol

Inferred from: PS-GAP interacts with caspase-activated PAK-2p34 (Mus musculus)



Murine PS-GAP interacts specifically with caspase-activated PAK-2p34, but not active or inactive full-length PAK-2, through a region between the GAP and SH3 domains (Koeppel et al.,2004). Evidence for this reaction comes from experiments using both mouse and rabbit proteins.

Followed by: Interaction of PAK-2p34 with RGH10/ PS-GAP results in accumulation of PAK-2p34 in the perinuclear region

Literature references

Jakobi, R., Koeppel, MA., McCarthy, CC., Moertl, E. (2004). Identification and characterization of PS-GAP as a novel regulator of caspase-activated PAK-2. *J Biol Chem, 279*, 53653-64.

Editions

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2008-05-29	Edited	Matthews, L.

Interaction of PAK-2p34 with RGH10/ PS-GAP results in accumulation of PAK-2p34 in the perinuclear region ↗

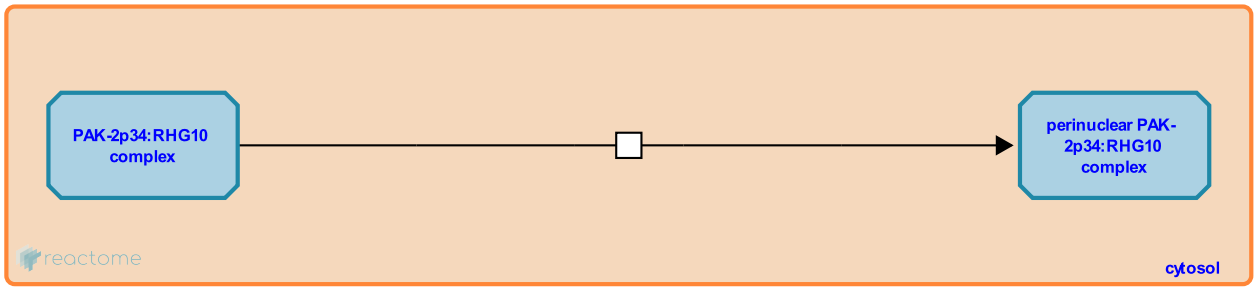
Location: Regulation of PAK-2p34 activity by PS-GAP/RHG10

Stable identifier: R-HSA-211731

Type: transition

Compartments: cytosol

Inferred from: Interaction of PAK-2p34 with PS-GAP results in accumulation of PAK-2p34 in the perinuclear region (Mus musculus)



Following caspase mediated cleavage, PAK-2p34 translocates to the nucleus (Jakobi et al., 2003). The interaction with PS-GAP changes the localization of PAK-2p34 from the nucleus to the perinuclear region (Koeppel et al.,2004).

Preceded by: Rho GTPase-activating protein 10 (RHG10) interacts with caspase-activated PAK-2p34

Literature references

Jakobi, R., Koeppel, MA., McCarthy, CC., Moertl, E. (2004). Identification and characterization of PS-GAP as a novel regulator of caspase-activated PAK-2. *J Biol Chem, 279*, 53653-64. ↗

Editions

2008-02-05	Authored	Jakobi, R.
2008-02-08	Edited	Matthews, L.
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2008-05-23	Edited	Matthews, L.

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