

AMPK phosphorylates Raptor in the mT- ORC1 complex

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13/05/2024

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

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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: 88

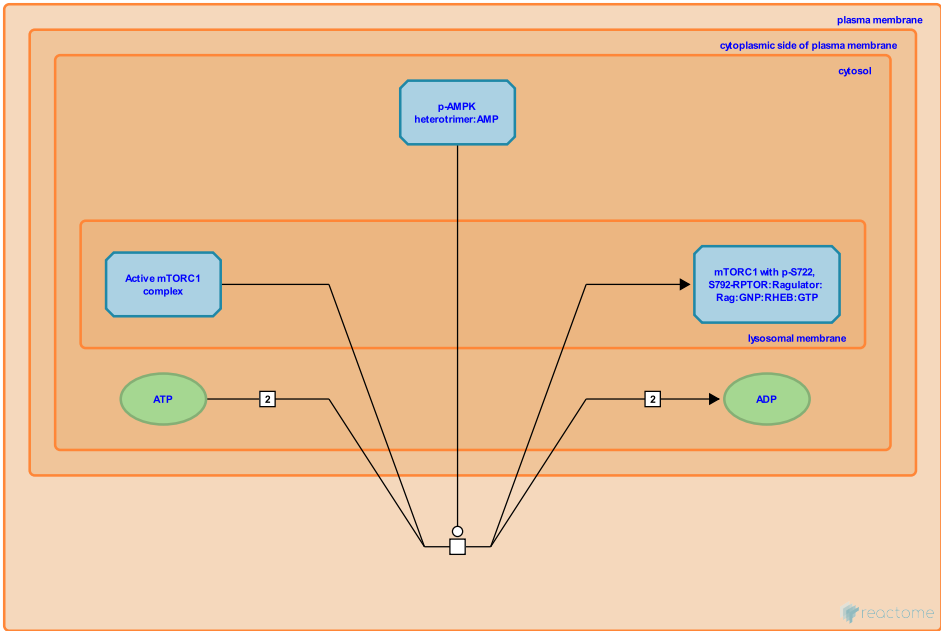
This document contains 1 reaction ([see Table of Contents](#))

AMPK phosphorylates Raptor in the mTORC1 complex ↗

Stable identifier: R-HSA-447074

Type: transition

Compartments: plasma membrane, cytosol



Activated AMPK (phosphorylated on Thr172 or Thr174 and AMP bound) phosphorylates RPTOR (Raptor) on Ser722 and Ser792. These phosphorylations are required for inhibition of mTORC1 activity in response to energy stress (Gwinn et al. 2008).

Literature references

Mihaylova, MM., Mery, A., Shaw, RJ., Turk, BE., Vasquez, DS., Gwinn, DM. et al. (2008). AMPK phosphorylation of raptor mediates a metabolic checkpoint. *Mol Cell*, 30, 214-26. ↗

Editions

2009-11-20	Edited	Jassal, B.
2010-02-03	Authored	Wu, J., Katajisto, P., Makela, T.
2015-04-08	Revised	Jupe, S.
2015-05-14	Reviewed	Zwartkruis, FJ.