Phosphorylation of 4E-BP1 by activated mTORC1

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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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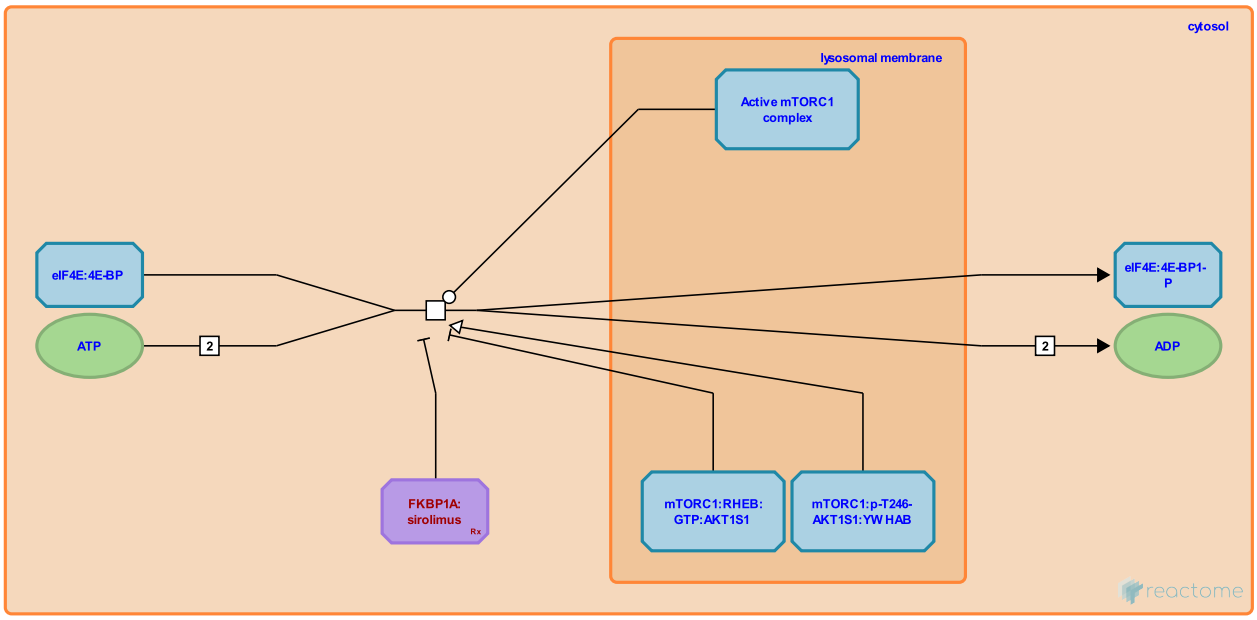
Stable identifier: R-HSA-165692

Type: transition

Compartments: lysosomal membrane, cytosol



Raptor recruits mTOR to non-phosphorylated 4E-BP1 bound to eIF4E and positively modulates phosphorylation of 4E-BP1 by mTOR. 4E-BP1 is further phosphorylated on multiple sites by other unknown kinases, also contributing to the dissociation of 4E-BP1 from eIF4E. Thus mTORC1 relieves the inhibitory effect of 4E-BP1 on eIF4E dependent translation initiation (Inoki et al. 2005, Gingras et al. 1999, 2001).

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Editions

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