mTORC1 binds RHEB:GTP

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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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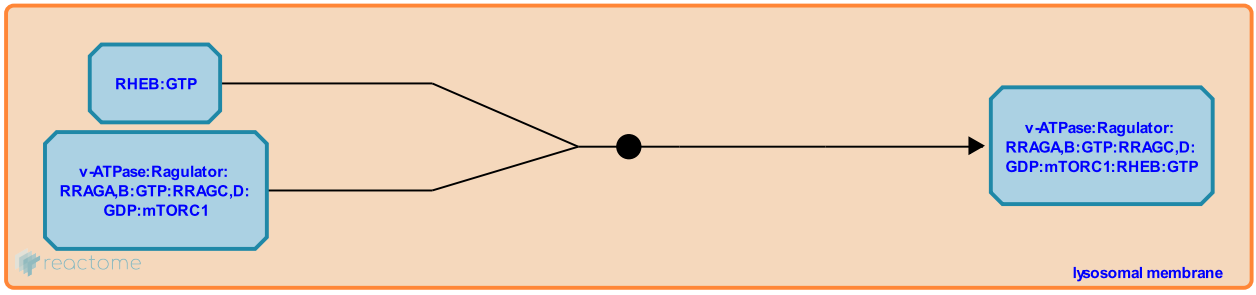
Stable identifier: R-HSA-9646468

Type: binding

Compartments: lysosomal membrane



RHEB:GTP interacts with mTORC1 and activates the kinase activity of mTORC1 (Long et al. 2005, Tee et al. 2005, Long et al. 2007, Yang et al. 2017). RHEB binds the catalytic domain of the MTOR subunit of the mTORC1 complex (Long et al. 2005, Yang et al. 2017). The interaction of RHEB with mTORC1 is independent of the guanyl nucleotide bound by RHEB while the activation of MTOR is dependent on GTP bound to RHEB (Long et al. 2005). The binding of MTOR to RHEB is dependent on amino acid sufficiency (Long et al. 2005) due to association of mTORC1 with the Rag heterodimer at the lysosomal membrane.

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Editions

2019-05-24	Authored, Edited	May, B.
2019-08-08	Reviewed	Sabatini, DM., Condon, KJ.