

# GTP loading by Rheb

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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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Reactome database release: 88

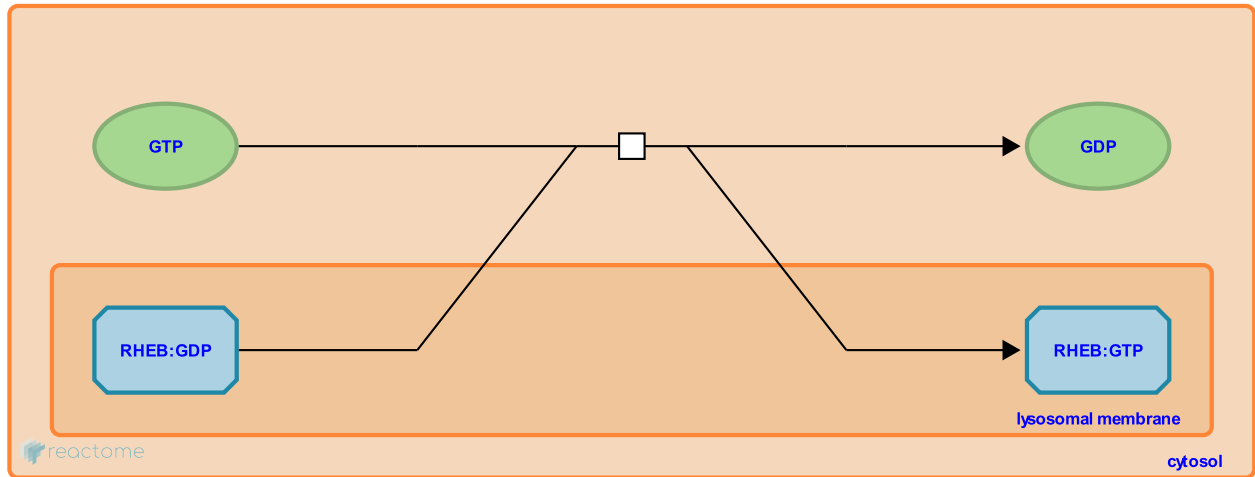
This document contains 1 reaction ([see Table of Contents](#))

## GTP loading by Rheb [↗](#)

**Stable identifier:** R-HSA-165195

**Type:** transition

**Compartments:** lysosomal membrane, cytosol



Rheb is a GTP binding protein that exhibits GTPase activity. GDP is exchanged for GTP in the [Rheb:GDP] complex to form [Rheb:GTP], which binds and activates the mTORC1 complex. The GDP-bound form of Rheb also binds mTORC1 but does not lead to activation. This exchange may be catalysed by an as yet unidentified guanine exchange factor (GEF); the intrinsic exchange activity of Rheb may be sufficient in the absence of a GEF.

### Literature references

Inoki, K., Guan, KL., Ouyang, H., Li, Y. (2005). Signaling by target of rapamycin proteins in cell growth control. *Microbiol Mol Biol Rev*, 69, 79-100. [↗](#)

### Editions

2015-01-23	Authored	Jupe, S.
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