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


Reactome database release: 83

This document contains 4 pathways and 12 reactions (see Table of Contents)
MTOR signalling

**Stable identifier:** R-CFA-165159

**Inferred from:** MTOR signalling (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/parologue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp
**Inhibition of TSC complex formation by PKB**

**Location:** MTOR signalling

**Stable identifier:** R-CFA-165181

**Inferred from:** Inhibition of TSC complex formation by PKB (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/parologue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**GTP loading by Rheb**

**Location:** MTOR signalling

**Stable identifier:** R-CFA-165195

**Type:** transition

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** GTP loading by Rheb (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**Followed by:** Formation of active mTORC1 complex
Rag dimer formation

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5653957

**Type:** binding

**Compartments:** cytosol

**Inferred from:** Rag dimer formation (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<https://reactome.org>

Followed by: Ragulator binds Rag dimers
Formation of Ragulator complex

Location: MTOR signalling

Stable identifier: R-CFA-5653936

Type: binding

Compartments: lysosomal membrane

Inferred from: Formation of Ragulator complex (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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Followed by: Ragulator binds Rag dimers
**Ragulator binds Rag dimers**

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5653974

**Type:** binding

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** Ragulator binds Rag dimers (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

**Preceded by:** Formation of Ragulator complex, Rag dimer formation

**Followed by:** SLC38A9 binds Ragulator:Rag dimers
**SLC38A9 binds Ragulator:Rag dimers**

**Location:** MTOR signalling

**Stable identifier:** R-CFA-8952716

**Type:** binding

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** SLC38A9 binds Ragulator:Rag dimers (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

[a href='/electronic_inference_compara.html' target = 'NEW']More details and caveats of the event inference in Reactome. For details on PANTHER see also: [a href='http://www.pantherdb.org/about.jsp' target='NEW']http://www.pantherdb.org/about.jsp[/a]

**Preceded by:** Ragulator binds Rag dimers

**Followed by:** SLC38A9 transports L-Arg from lysosomal lumen to cytosol, Ragulator:Rag dimers:SLC38A9 bind mTORC1
SLC38A9 transports L-Arg from lysosomal lumen to cytosol

**Location:** MTOR signalling

**Stable identifier:** R-CFA-8952726

**Type:** transition

**Compartments:** lysosomal lumen, cytosol, lysosomal membrane

**Inferred from:** SLC38A9 transports L-Arg from lysosomal lumen to cytosol (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**Preceded by:** SLC38A9 binds Ragulator:Rag dimers
Ragulator:Rag dimers:SLC38A9 bind mTORC1

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5653968

**Type:** binding

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** Ragulator:Rag dimers:SLC38A9 bind mTORC1 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species. The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**Preceded by:** SLC38A9 binds Ragulator:Rag dimers
Formation of active mTORC1 complex

Location: MTOR signalling

Stable identifier: R-CFA-165680

Type: binding

Compartments: cytosol, lysosomal membrane

Inferred from: Formation of active mTORC1 complex (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp

Preceded by: GTP loading by Rheb

Followed by: AKT1S1 (PRAS40) binds mTORC1
**AKT1S1 (PRAS40) binds mTORC1**

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5672843

**Type:** binding

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** AKT1S1 (PRAS40) binds mTORC1 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: [http://www.pantherdb.org/about.jsp](http://www.pantherdb.org/about.jsp)

**Preceded by:** Formation of active mTORC1 complex

**Followed by:** Activated Akt1 phosphorylates AKT1S1 (PRAS40)
Activated Akt1 phosphorylates AKT1S1 (PRAS40)

**Location:** MTOR signalling

**Stable identifier:** R-CFA-377186

**Type:** transition

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** Activated Akt1 phosphorylates AKT1S1 (PRAS40) (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/parologue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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**Preceded by:** AKT1S1 (PRAS40) binds mTORC1
Phosphorylated AKT1S1:mTORC1 binds YWHAB

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5672824

**Type:** binding

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** Phosphorylated AKT1S1:mTORC1 binds YWHAB (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/parologue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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https://reactome.org
mTORC1 phosphorylates AKT1S1

**Location:** MTOR signalling

**Stable identifier:** R-CFA-5672828

**Type:** transition

**Compartments:** cytosol, lysosomal membrane

**Inferred from:** mTORC1 phosphorylates AKT1S1 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species. The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: [http://www.pantherdb.org/about.jsp](http://www.pantherdb.org/about.jsp)
mTORC1-mediated signalling

**Location:** MTOR signalling

**Stable identifier:** R-CFA-166208

**Inferred from:** mTORC1-mediated signalling (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

More details and caveats of the event inference in Reactome. For details on PANTHER see also: http://www.pantherdb.org/about.jsp
Energy dependent regulation of mTOR by LKB1-AMPK

**Location:** MTOR signalling

**Stable identifier:** R-CFA-380972

**Inferred from:** Energy dependent regulation of mTOR by LKB1-AMPK (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

For details on PANTHER see also: [http://www.pantherdb.org/about.jsp](http://www.pantherdb.org/about.jsp)

More details and caveats of the event inference in Reactome.

[http://reactome.org](http://reactome.org)
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