Degradation of beta-catenin by the destruction complex

This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the Reactome Textbook.

18/05/2024

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.

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Literature references

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18*, 142. ↗

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. ↗
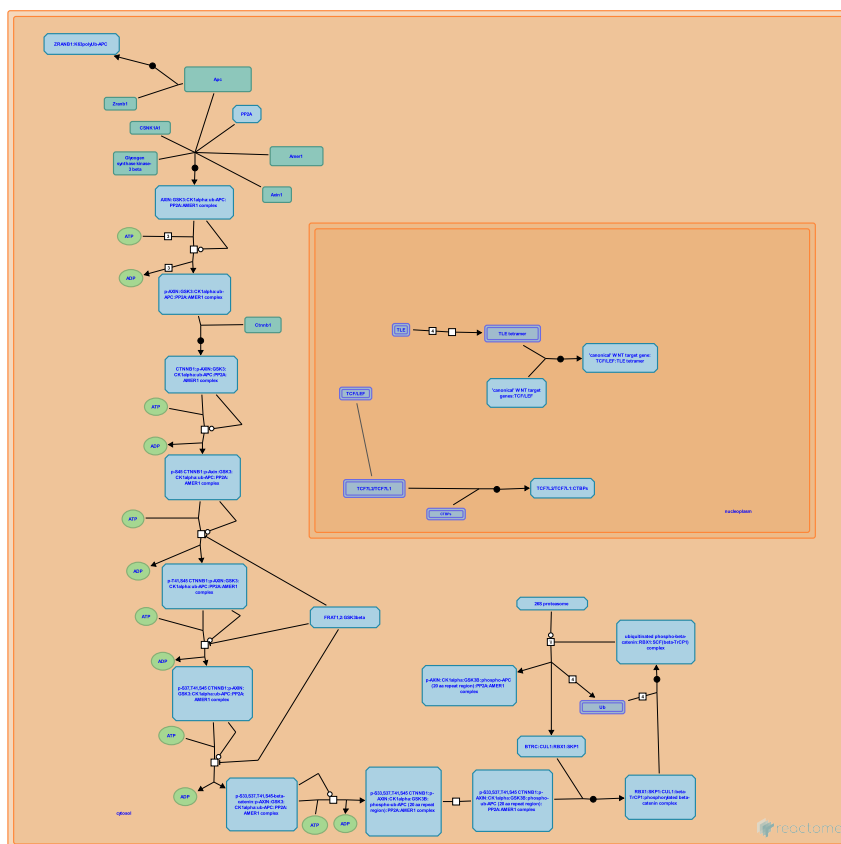
Reactome database release: 88

This document contains 3 pathways and 9 reactions ()

Degradation of beta-catenin by the destruction complex ↗

Stable identifier: R-RNO-195253

Inferred from: Degradation of beta-catenin by the destruction 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
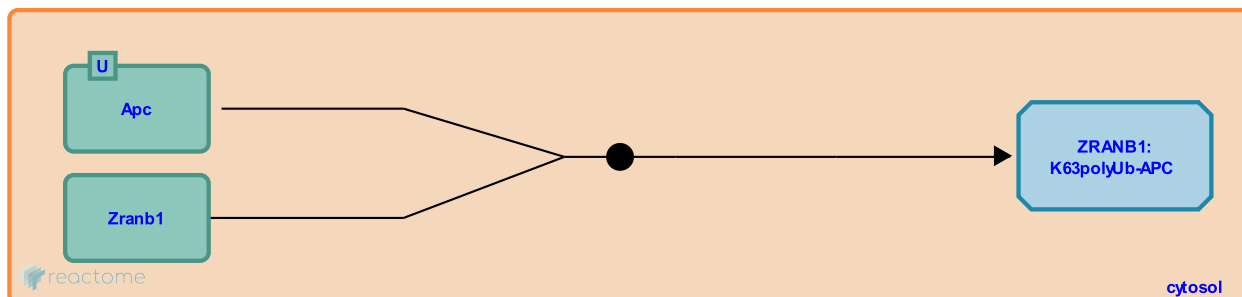
ZRANB1 binds APC ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-6781905

Type: binding

Compartments: cytosol

Inferred from: ZRANB1 binds APC (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

Assembly of the destruction complex ↗
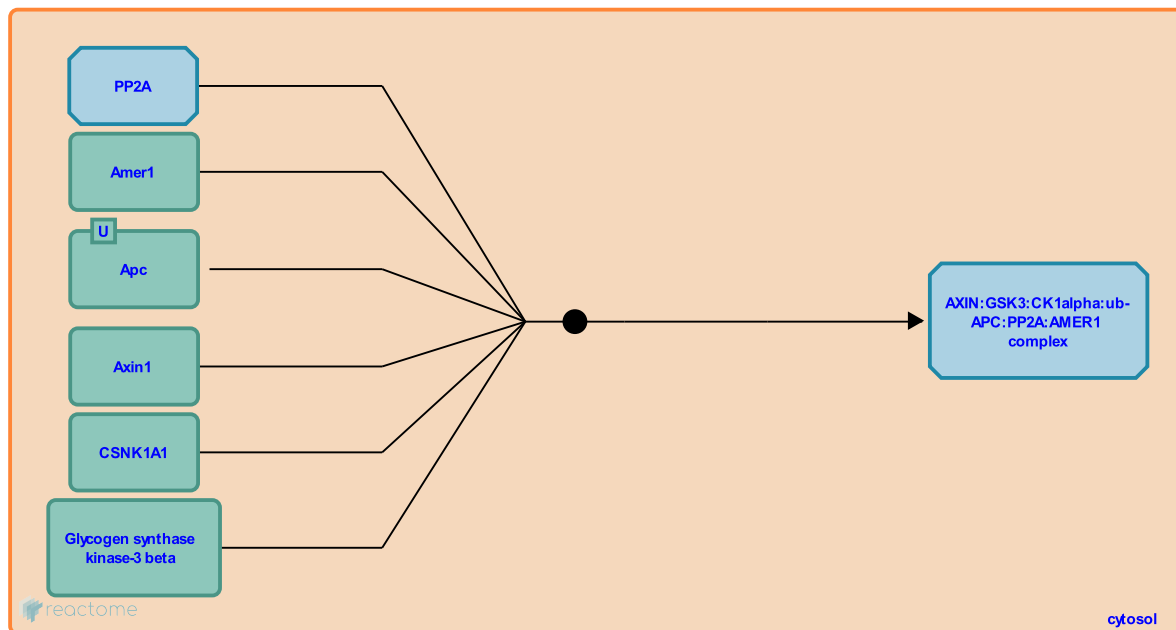
Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-195251

Type: binding

Compartments: cytosol

Inferred from: Assembly of the destruction 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

Followed by: AXIN is phosphorylated in the destruction complex

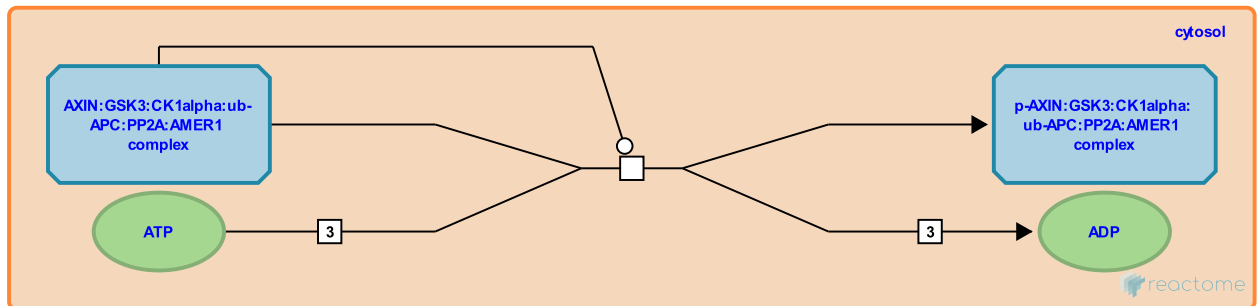# AXIN is phosphorylated in the destruction complex ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-5229343

Type: transition

Compartments: cytosol

Inferred from: AXIN is phosphorylated in the destruction 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: Assembly of the destruction complex

Followed by: Association of beta-catenin with the destruction complex

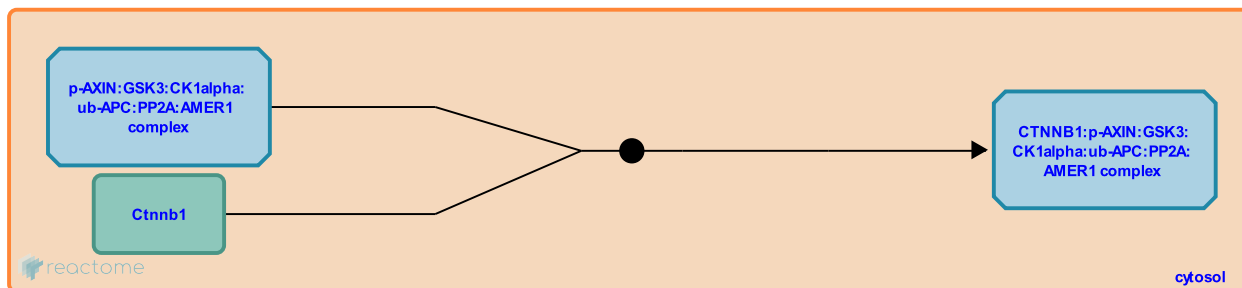## Association of beta-catenin with the destruction complex ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-195304

Type: binding

Compartments: cytosol

Inferred from: Association of beta-catenin with the destruction 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

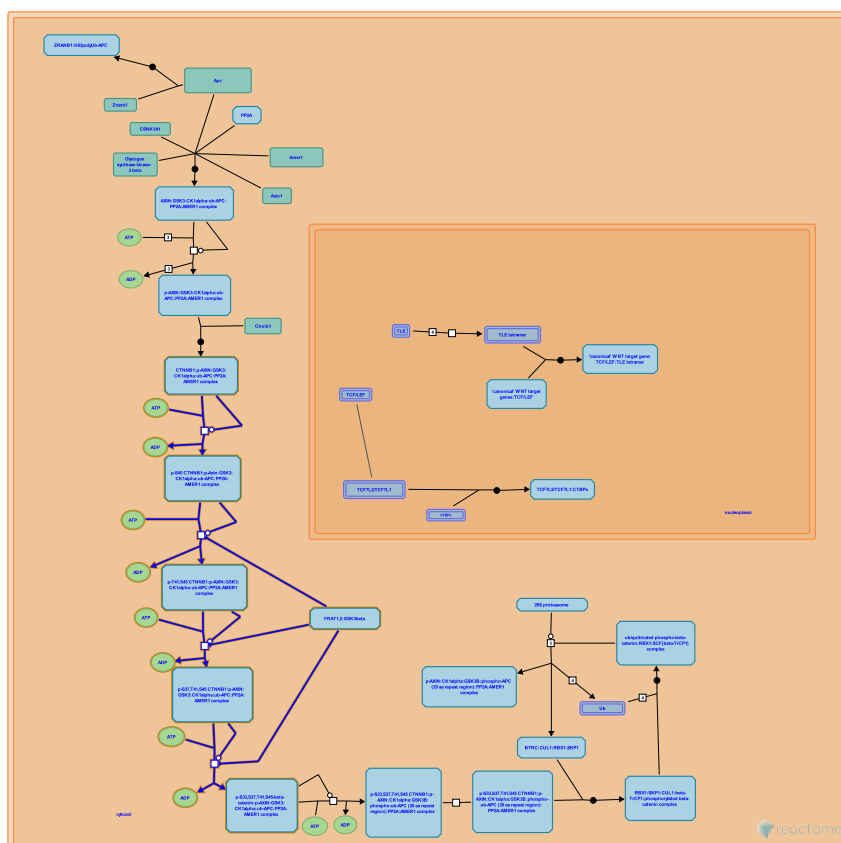**Preceded by:** AXIN is phosphorylated in the destruction complex

Beta-catenin phosphorylation cascade ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-196299

Compartments: cytosol

Inferred from: Beta-catenin phosphorylation cascade (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

Phosphorylation of APC component of the destruction complex ↗
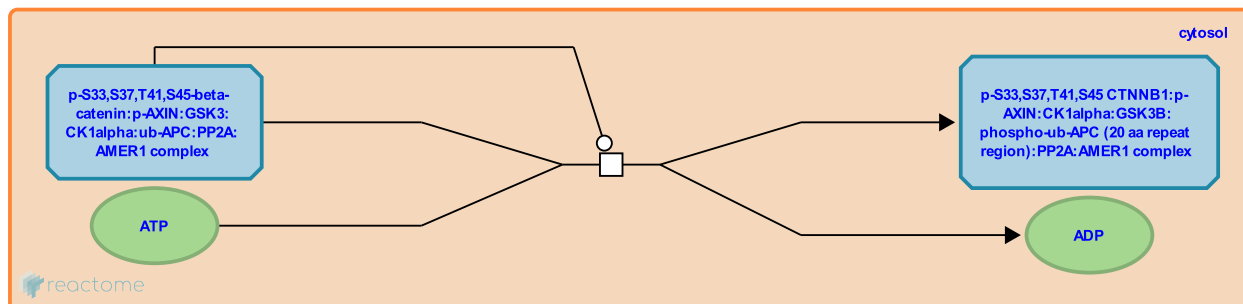
Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-195275

Type: transition

Compartments: cytosol

Inferred from: Phosphorylation of APC component of the destruction 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

Followed by: Dissociation of beta-catenin from Axin and association of beta catenin with phospho-(20 aa) APC in the detruction complex

Dissociation of beta-catenin from Axin and association of beta catenin with phospho-(20 aa) APC in the detruction complex ↗
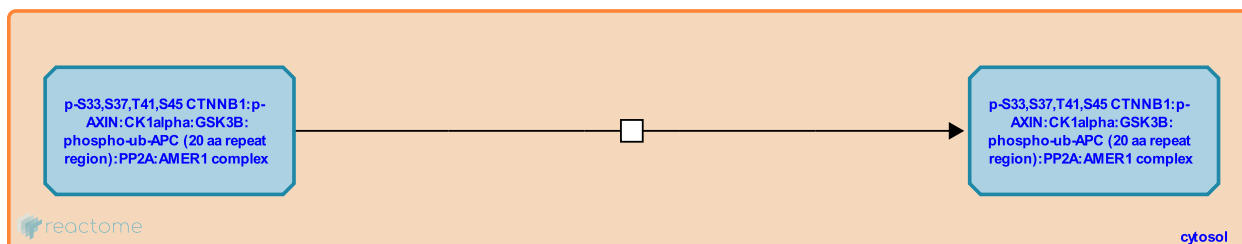
Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-195280

Type: transition

Compartments: cytosol

Inferred from: Dissociation of beta-catenin from Axin and association of beta catenin with phospho-(20 aa) APC in the detruction 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: Phosphorylation of APC component of the destruction complex

Followed by: Association of beta-catenin with the RBX1:SCF(beta-TrCP1) ubiquitin ligase complex

Association of beta-catenin with the RBX1:SCF(beta-TrCP1) ubiquitin ligase complex ↗
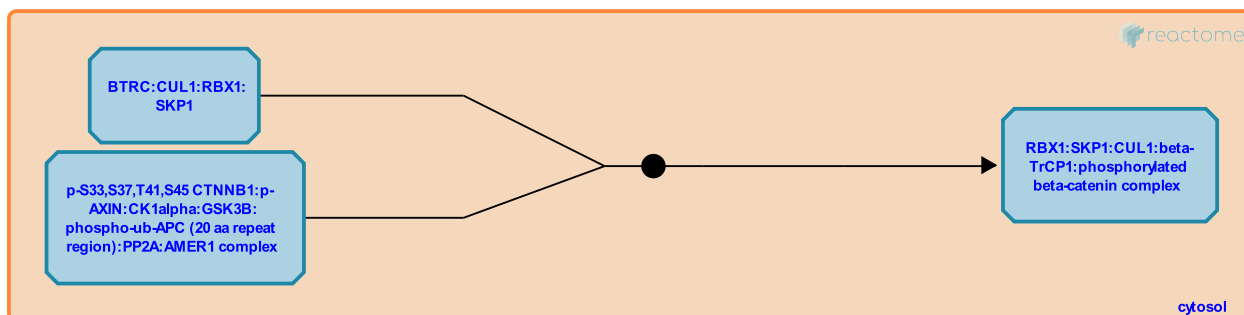
Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-2130279

Type: binding

Compartments: cytosol

Inferred from: Association of beta-catenin with the RBX1:SCF(beta-TrCP1) ubiquitin ligase 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: Dissociation of beta-catenin from Axin and association of beta catenin with phospho-(20 aa) APC in the detruction complex

Followed by: Multi-ubiquitination of phospho-beta-catenin by RBX1:SCF(beta-TrCP1)

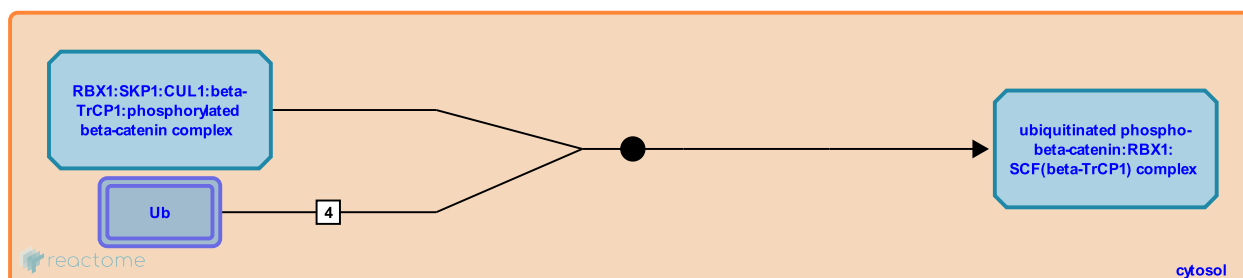## Multi-ubiquitination of phospho-beta-catenin by RBX1:SCF(beta-TrCP1) ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-2130286

Type: binding

Compartments: cytosol

Inferred from: Multi-ubiquitination of phospho-beta-catenin by RBX1:SCF(beta-TrCP1) (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: Association of beta-catenin with the RBX1:SCF(beta-TrCP1) ubiquitin ligase complex

Followed by: Degradation of ubiquitinated beta catenin by the proteasome

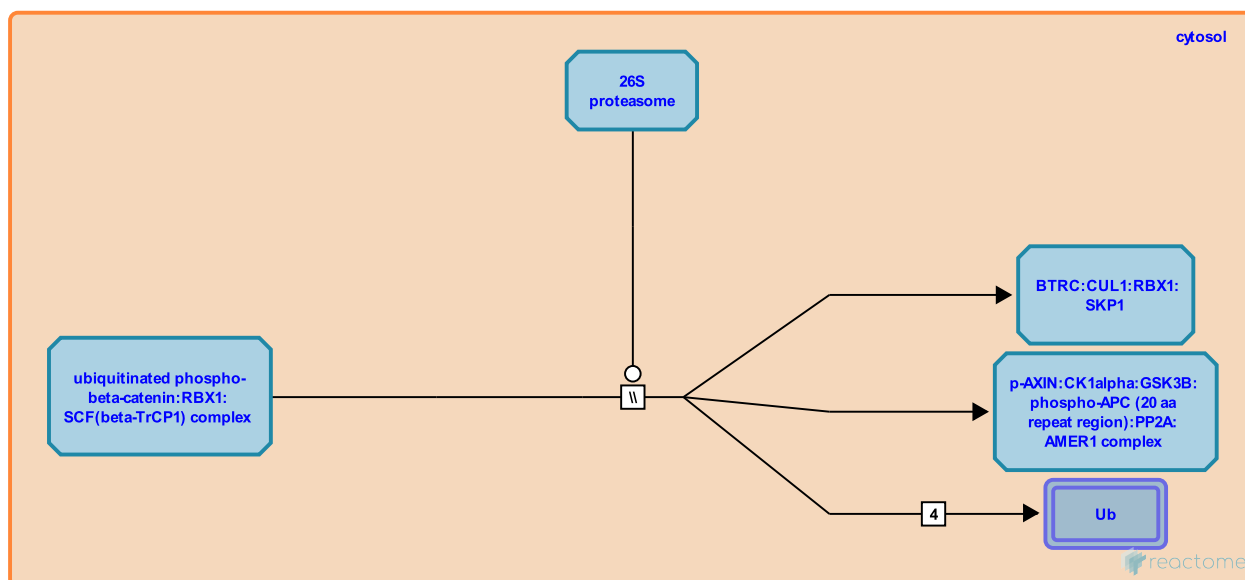## Degradation of ubiquitinated beta catenin by the proteasome ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-2130282

Type: omitted

Compartments: cytosol

Inferred from: Degradation of ubiquitinated beta catenin by the proteasome (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: Multi-ubiquitination of phospho-beta-catenin by RBX1:SCF(beta-TrCP1)
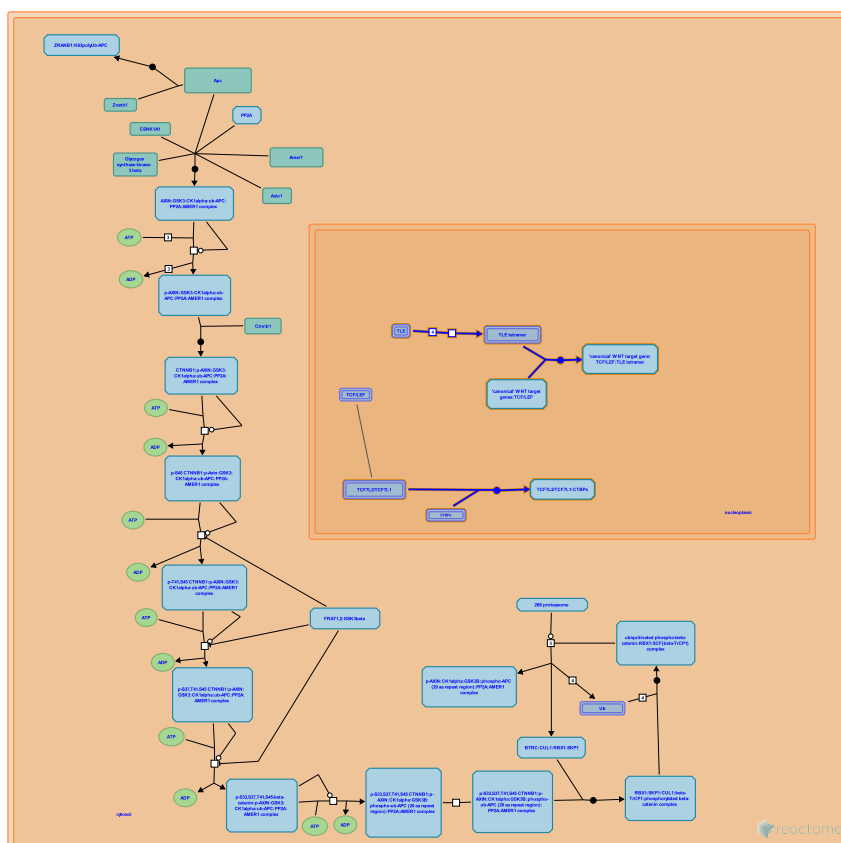
Repression of WNT target genes ↗

Location: Degradation of beta-catenin by the destruction complex

Stable identifier: R-RNO-4641265

Compartments: nucleoplasm

Inferred from: Repression of WNT target genes (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

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