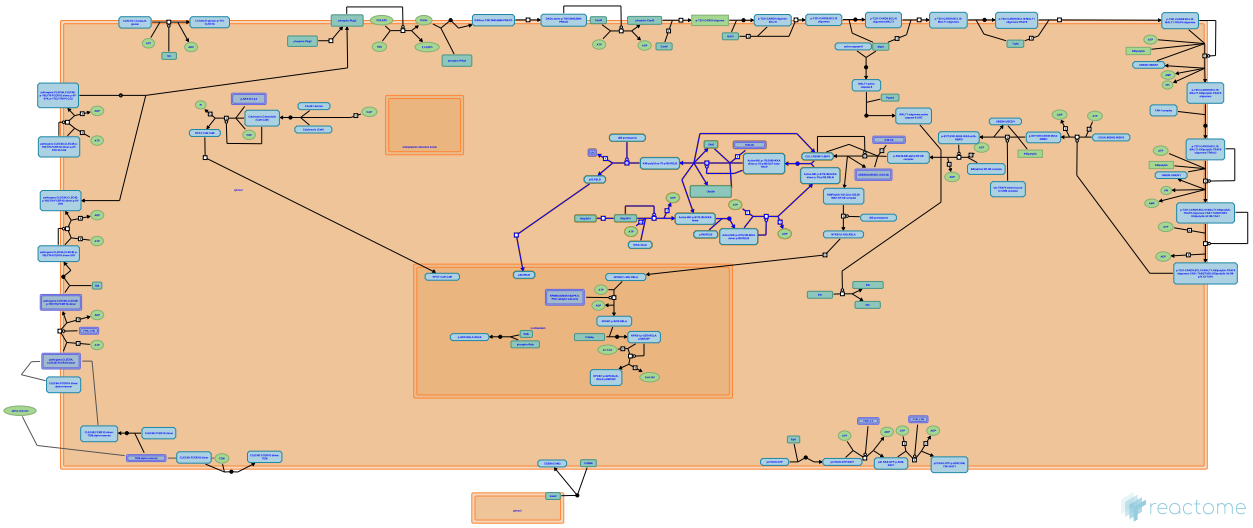
Dectin-1 mediated noncanonical NF-kB signaling



European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

17/01/2021

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. ↗

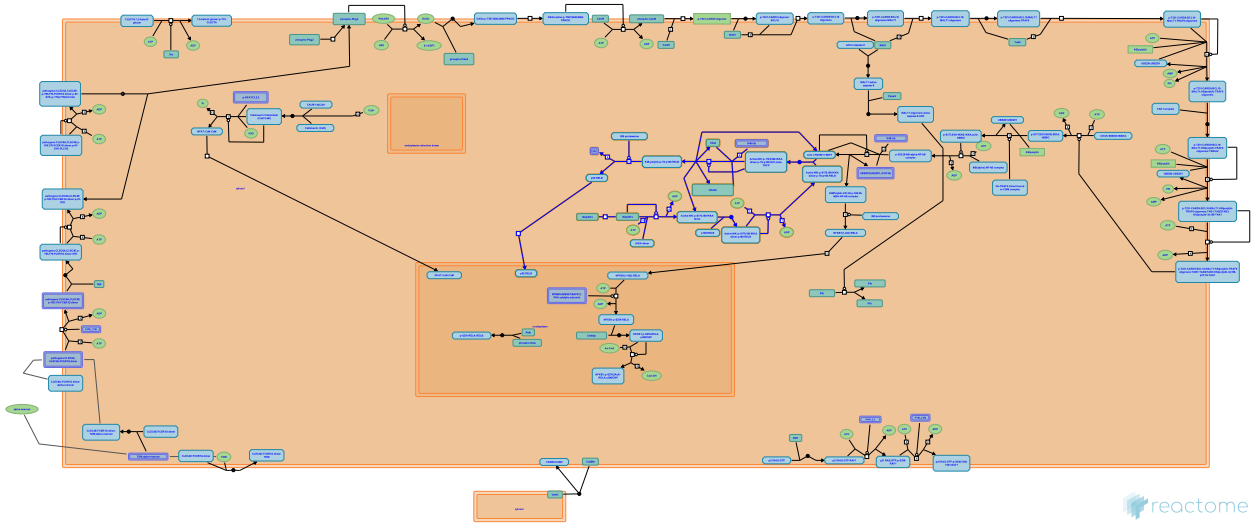
Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology, 14*, e1005968. ↗

Dectin-1 mediated noncanonical NF-kB signaling ↗

Stable identifier: R-RNO-5607761

Compartments: cytosol, nucleoplasm

Inferred from: Dectin-1 mediated noncanonical NF-kB signaling (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

Activation of NIK ↗

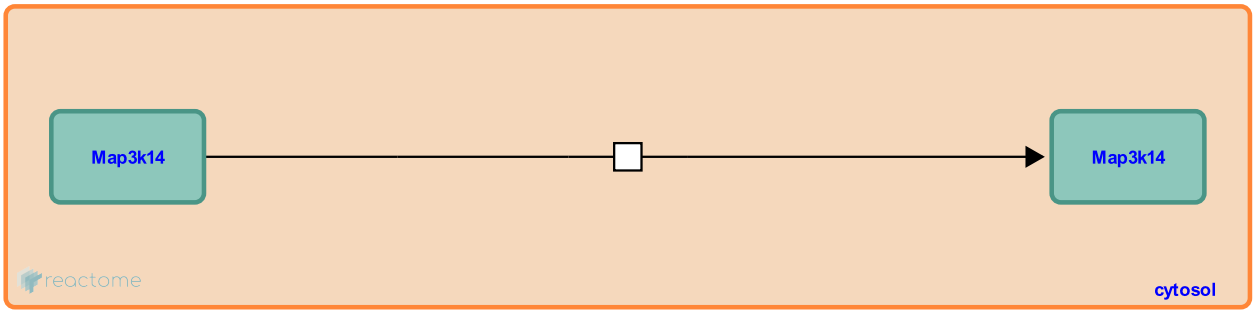
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607721

Type: transition

Compartments: cytosol

Inferred from: Activation of NIK (Homo sapiens)



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Active NIK phosphorylates IKKA dimer ↗

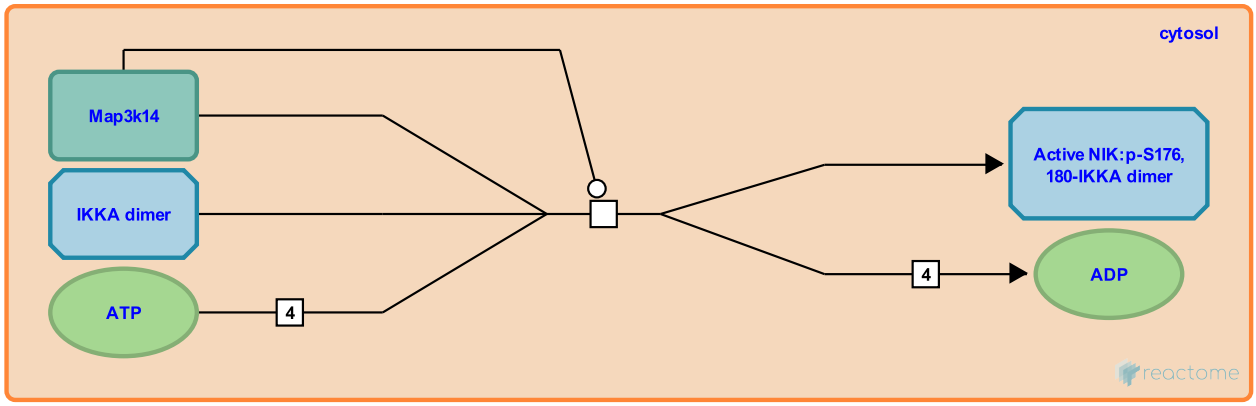
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607722

Type: transition

Compartments: cytosol

Inferred from: Active NIK phosphorylates IKKA dimer (Homo sapiens)



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p100:RELB binds active NIK:p-IKKA dimer ↗

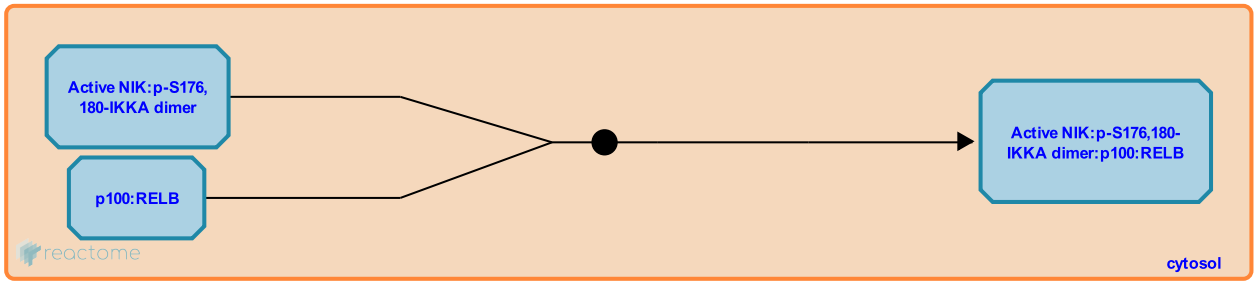
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607720

Type: binding

Compartments: cytosol

Inferred from: p100:RELB binds active NIK:p-IKKA dimer (Homo sapiens)



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Active NIK:p-S176,180-IKKA dimer phosphorylates p100:RELB ↗

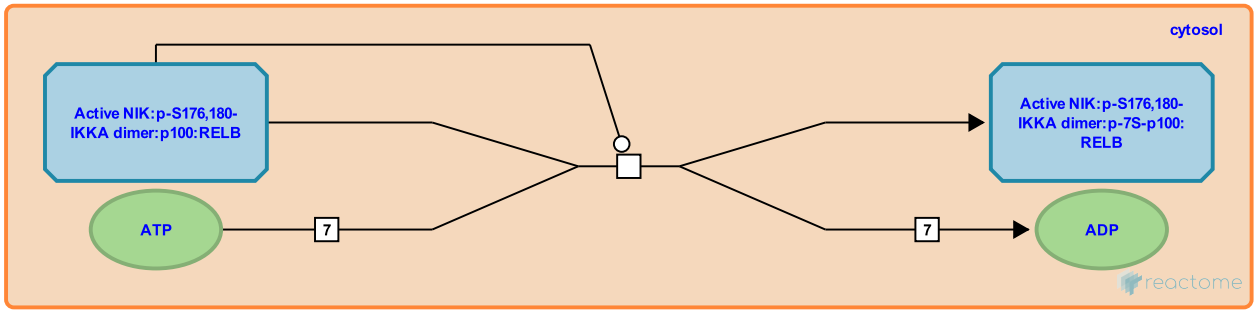
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607726

Type: transition

Compartments: cytosol

Inferred from: Active NIK:p-S176,180-IKKA dimer phosphorylates p100:RELB (Homo sapiens)



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SCF-beta-TRCP binds p-7S-p100 in active NIK:p-S176,180-IKKA dimer:p-7S-p100:RELB ↗

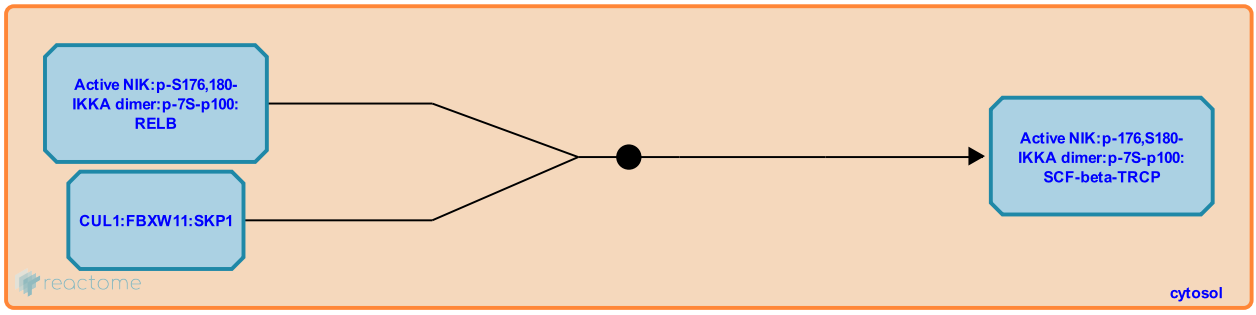
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607723

Type: binding

Compartments: cytosol

Inferred from: SCF-beta-TRCP binds p-7S-p100 in active NIK:p-S176,180-IKKA dimer:p-7S-p100:RELB (Homo sapiens)



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SCF-beta-TRCP ubiquitinates p-7S-p100:RELB in active NIK:p-176,S180-IKKA dimer:p-7S-p100:SCF-beta-TRCP ↗

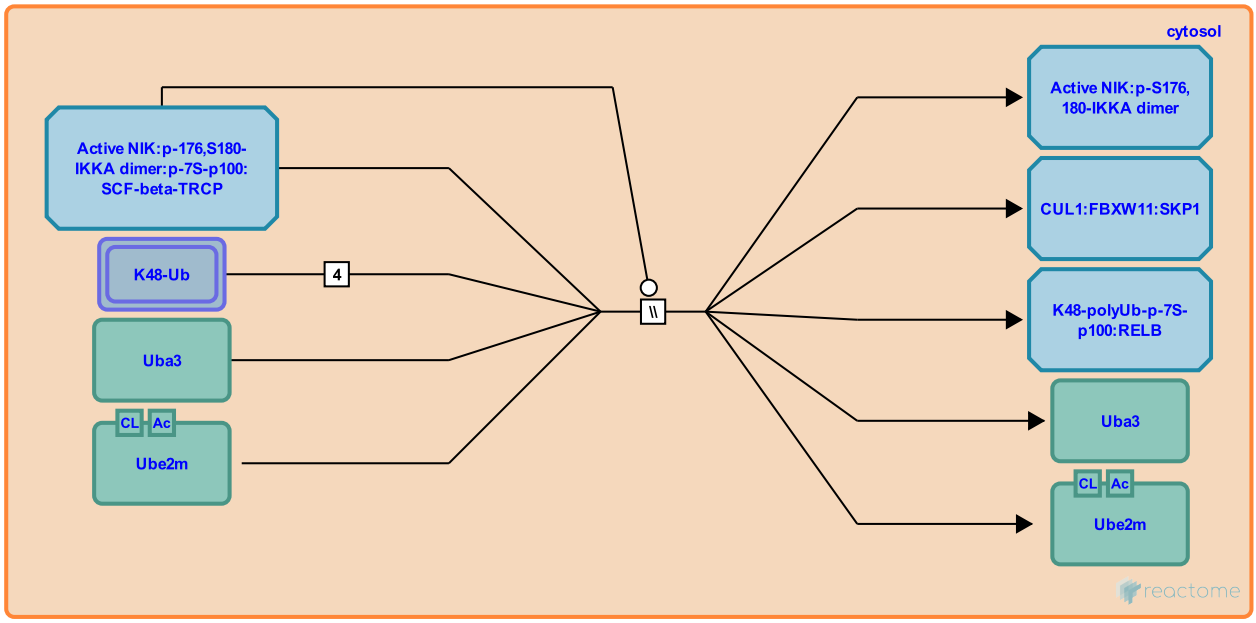
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607725

Type: omitted

Compartments: cytosol

Inferred from: SCF-beta-TRCP ubiquitinates p-7S-p100:RELB in active NIK:p-176,S180-IKKA dimer:p-7S-p100:SCF-beta-TRCP (Homo sapiens)



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26S proteasome processes p-7S-p100:RELB to form p52:RELB ↗

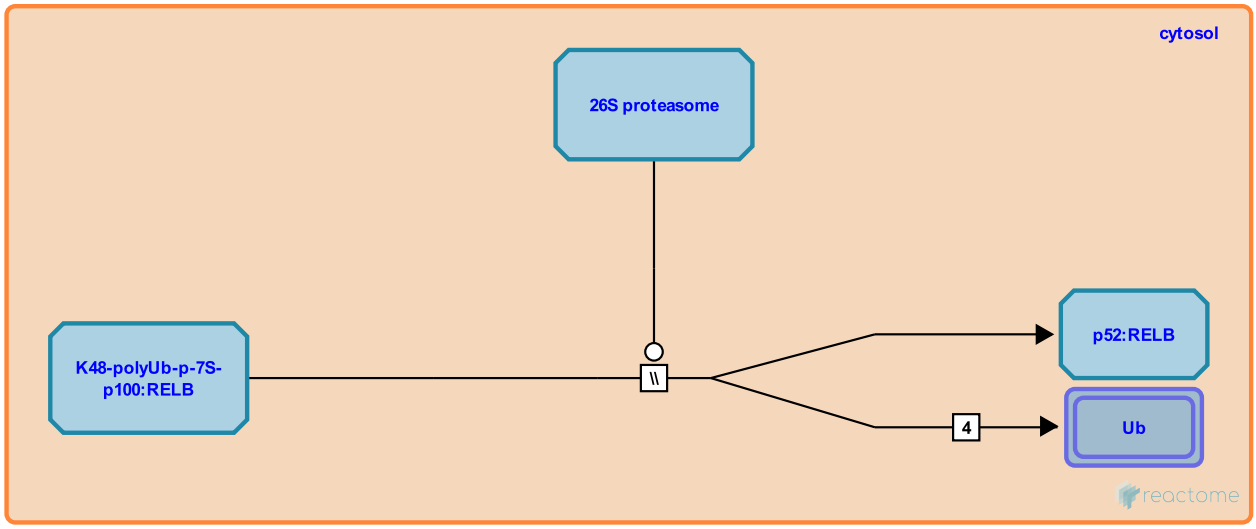
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607731

Type: omitted

Compartments: cytosol

Inferred from: 26S proteasome processes p-7S-p100:RELB to form p52:RELB (Homo sapiens)



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p52:RELB translocates from cytosol to nucleus ↗

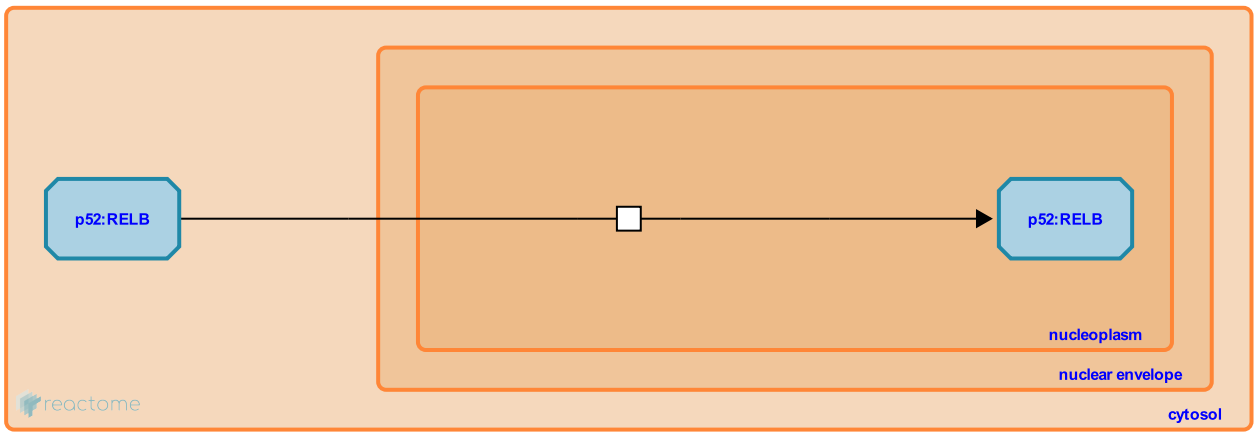
Location: Dectin-1 mediated noncanonical NF-kB signaling

Stable identifier: R-RNO-5607741

Type: transition

Compartments: nucleoplasm, cytosol

Inferred from: p52:RELB translocates from cytosol to nucleus (Homo sapiens)



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