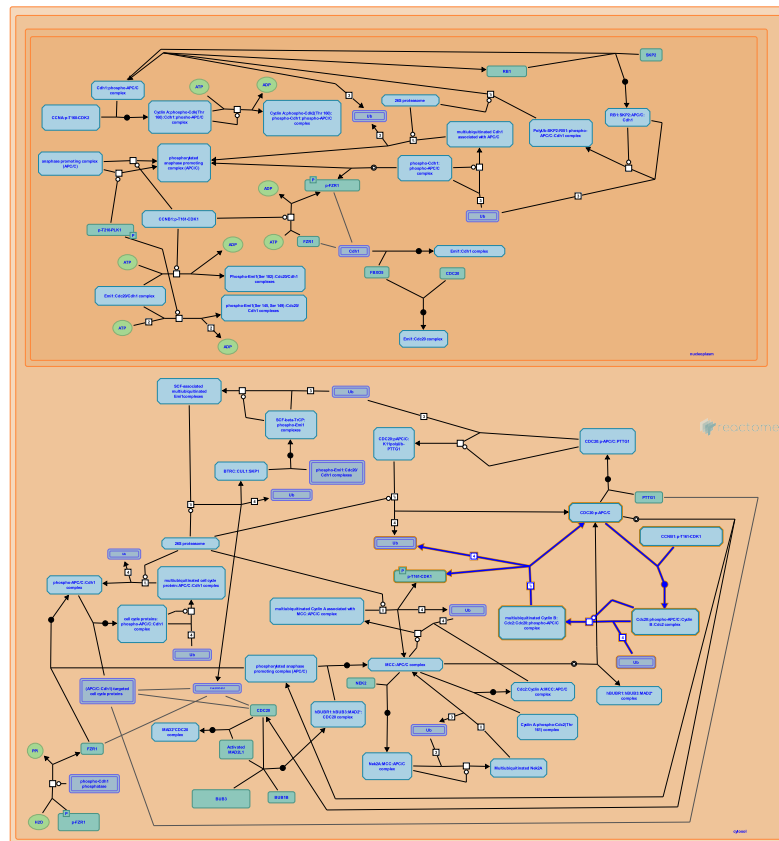


# APC/C:Cdc20 mediated degradation of Cyclin B



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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](https://reactome.org/textbook/).

06/05/2024

## 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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- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)
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Reactome database release: 88

This document contains 1 pathway and 3 reactions ([see Table of Contents](#))



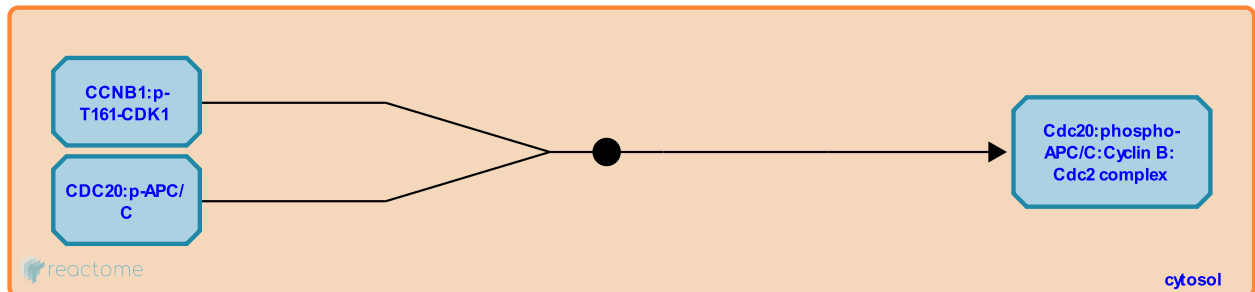
## Association of Cyclin B:Cdc2 with Cdc20:APC/C complex ↗

**Location:** APC/C:Cdc20 mediated degradation of Cyclin B

**Stable identifier:** R-HSA-174120

**Type:** binding

**Compartments:** cytosol



Cyclin B is believed to be recognized by the APC/C:Cdc20 complex through its D-box sequence.

**Followed by:** Ubiquitination of Cyclin B by phospho-APC/C:Cdc20 complex

### Literature references

Peters, JM., Gannon, J., Geley, S., Kramer, E., Gieffers, C., Hunt, T. (2001). Anaphase-promoting complex/cyclosome-dependent proteolysis of human cyclin A starts at the beginning of mitosis and is not subject to the spindle assembly checkpoint. *J Cell Biol*, 153, 137-48. ↗

### Editions

2006-01-26	Authored	Lorca, T., Castro, A.
2006-01-30	Edited	Matthews, L.
2006-03-28	Reviewed	Peters, JM.

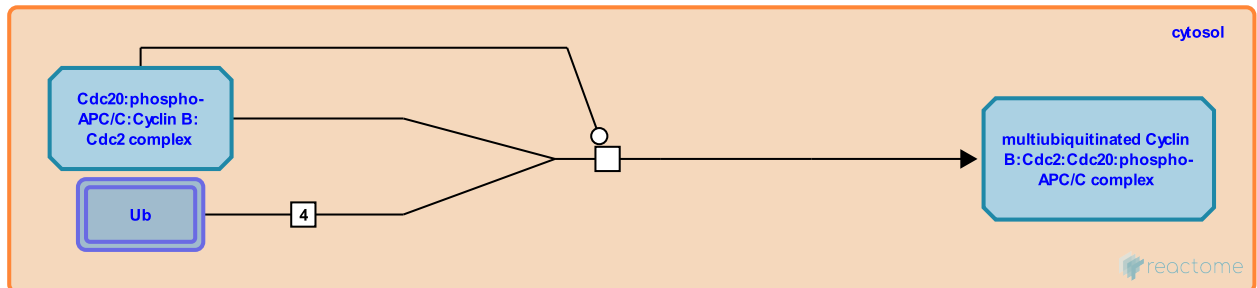
## Ubiquitination of Cyclin B by phospho-APC/C:Cdc20 complex ↗

**Location:** [APC/C:Cdc20 mediated degradation of Cyclin B](#)

**Stable identifier:** R-HSA-174227

**Type:** transition

**Compartments:** cytosol



At the beginning of this reaction, 1 molecule of 'Cdc20:phospho-APC/C:Cyclin B:Cdc2 complex', and 3 molecules of 'ubiquitin' are present. At the end of this reaction, 1 molecule of 'multiubiquitinated Cyclin B:Cdc2:Cdc20:phospho-APC/C complex' is present.

This reaction takes place in the 'cytosol' and is mediated by the 'ubiquitin-protein ligase activity' of 'Cdc20:Phospho-APC/C'.

**Preceded by:** [Association of Cyclin B:Cdc2 with Cdc20:APC/C complex](#)

**Followed by:** [Degradation of multiubiquitinated Cyclin B](#)

### Literature references

Peters, JM., Gannon, J., Geley, S., Kramer, E., Gieffers, C., Hunt, T. (2001). Anaphase-promoting complex/cyclosome-dependent proteolysis of human cyclin A starts at the beginning of mitosis and is not subject to the spindle assembly checkpoint. *J Cell Biol*, 153, 137-48. ↗

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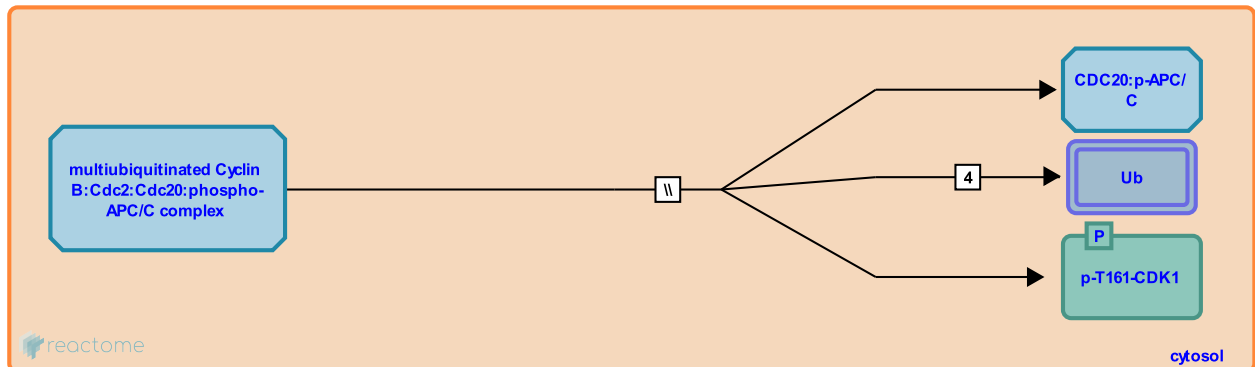
## Degradation of multiubiquitinated Cyclin B [↗](#)

**Location:** [APC/C:Cdc20 mediated degradation of Cyclin B](#)

**Stable identifier:** R-HSA-174157

**Type:** omitted

**Compartments:** cytosol



Multubiquitinated Cyclin B is targeted for degradation by the 26S proteasome.

**Preceded by:** [Ubiquitination of Cyclin B by phospho-APC/C:Cdc20 complex](#)

### Literature references

Peters, JM., Gannon, J., Geley, S., Kramer, E., Gieffers, C., Hunt, T. (2001). Anaphase-promoting complex/cyclosome-dependent proteolysis of human cyclin A starts at the beginning of mitosis and is not subject to the spindle assembly checkpoint. *J Cell Biol*, 153, 137-48. [↗](#)

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