

PLK1 hyperphosphorylates Condensin II complex

Longworth, MS., Matthews, L., Orlic-Milacic, M.

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

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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

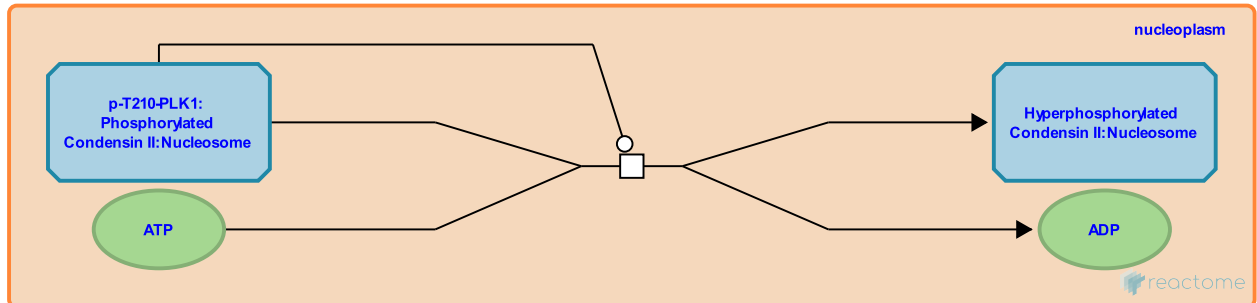
This document contains 1 reaction ([see Table of Contents](#))

PLK1 hyperphosphorylates Condensin II complex [↗](#)

Stable identifier: R-HSA-2294580

Type: transition

Compartments: nucleoplasm



Once PLK1 is recruited to the chromatin-bound condensin II complex, it phosphorylates the NCAPD3 subunit of condensin II on serine residue S1419, and possibly other residues. In addition to phosphorylating NCAPD3, PLK1 phosphorylates other condensin II subunits, NCAPG2 and NCAPH2. However, the phosphorylation sites have not yet been determined. PLK1-mediated phosphorylation of the condensin II complex facilitates condensation of prophase chromosomes (Abe et al. 2011).

Literature references

Nagasaka, K., Hirota, T., Aoyagi, Y., Abe, S., Kozuka-Hata, H., Obuse, C. et al. (2011). The initial phase of chromosome condensation requires Cdk1-mediated phosphorylation of the CAP-D3 subunit of condensin II. *Genes Dev.*, 25, 863-74. [↗](#)

Editions

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