CDKN1A (p21) prevents association of Cyclin A:Cdk2 with Cdh1

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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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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. ↗

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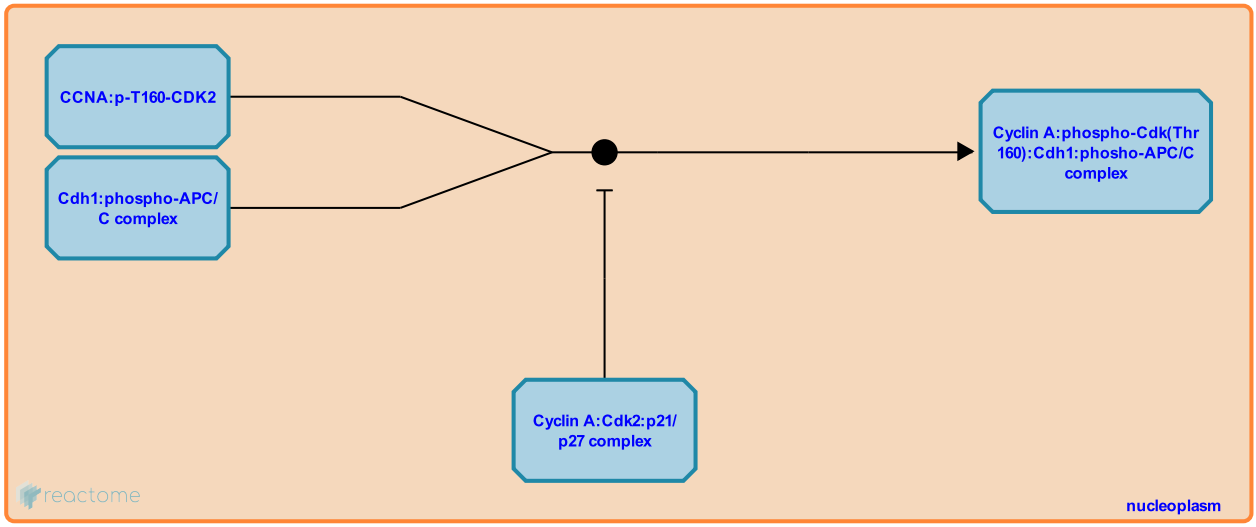
CDKN1A (p21) prevents association of Cyclin A:Cdk2 with Cdh1 ↗

Stable identifier: R-HSA-3788708

Type: binding

Compartments: nucleoplasm



Cyclin A-Cdk2 (CCNA:CDK2) prevents unscheduled APC reactivation during S phase by binding and subsequently phosphorylating FZR1 (Cdh1). Phosphorylation-dependent dissociation of the Cdh1-activating subunit inhibits the APC/C (Sorensen et al. 2001). DNA damage activates ATM kinase, resulting in TP53-mediated induction of CDKN1A (p21) expression. CDKN1A binds CCNA:CDK2 complex and prevents its association with Cdh1 (Takahashi et al. 2012).

Literature references

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Editions

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