Cip/Kip CDK inhibitors bind CDK4/6:CCND complexes

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03/04/2024

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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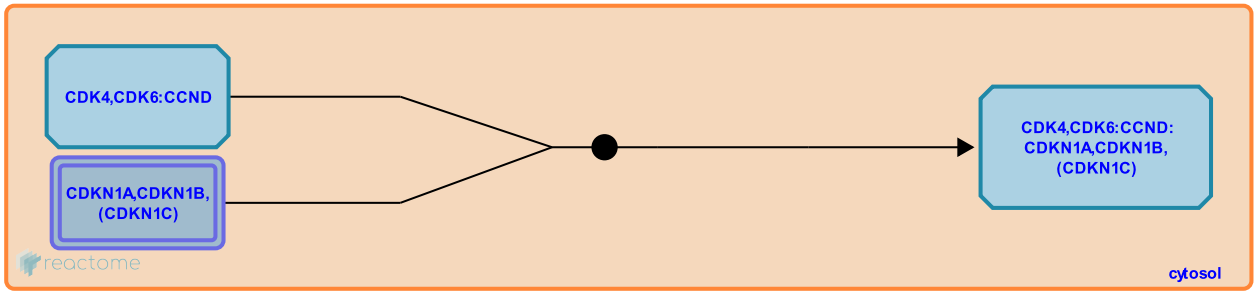
Stable identifier: R-HSA-8941915

Type: binding

Compartments: cytosol



Binding of CDK inhibitors of the Cip/Kip family, CDKNA1 (p21Cip), CDKN1B (p27Kip) or CDKN1C (p57Kip2) to the complex of CDK4 or CDK6 and cyclin D family members (CCND1, CCND2 or CCND3), inhibits kinase activity of the CDK4/6:CCND complexes but at the same time increases their stability and, hence, their abundance (La Baer et al. 1997, Bagui et al. 2003, Cerqueira et al. 2014; reviewed by Bockstaele et al. 2006). Based on structural studies of CDKN1B, Cip/Kip inhibitors simultaneously interact with CDK4/6 and CCNDs (Liu et al. 2010). Phosphorylation of CDKN1B on threonine residues T157 and T198 by activated AKT in early G1 may precede binding of CDKN1B to CDK4/6:CCND complexes (Larrea et al. 2008).

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Editions

2006-07-03	Authored	Matthews, L.
2016-10-07	Edited	Orlic-Milacic, M.
2016-10-19	Reviewed	D'Eustachio, P.
2016-11-04	Reviewed	Roger, PP.