FBXL7 down-regulates AURKA during mitotic entry and in early mitosis

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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


Reactome database release: 71

This document contains 1 pathway and 6 reactions (see Table of Contents)
FBXL7 down-regulates AURKA during mitotic entry and in early mitosis

**Stable identifier:** R-HSA-8854050

**Compartments:** cytosol

The protein levels of aurora kinase A (AURKA) during mitotic entry and in early mitosis can be reduced by the action of the SCF-FBXL7 E3 ubiquitin ligase complex consisting of SKP1, CUL1, RBX1 and FBXL7 subunits. FBXL7 is the substrate recognition subunit of the SCF-FBXL7 complex that associates with the centrosome-bound AURKA, promoting its ubiquitination and proteasome-mediated degradation. Overexpression of FBXL7 results in G2/M cell cycle arrest and apoptosis (Coon et al. 2011).

FBXL7 protein levels are down-regulated by the action of the SCF-FBXL18 E3 ubiquitin ligase complex, consisting of SKP1, CUL1, RBX1 and the substrate recognition subunit FBXL18. FBXL18 binds to the FQ motif of FBXL7, targeting it for ubiquitination and proteasome-mediated degradation, counteracting its pro-apoptotic activity (Liu et al. 2015). Cell cycle stage-dependency of down-regulation of FBXL7 by FBXL18 is unknown.

**Literature references**


**Editions**

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Formation of the SCF-FBXL7 complex

Location: FBXL7 down-regulates AURKA during mitotic entry and in early mitosis

Stable identifier: R-HSA-8854052

Type: binding

Compartments: cytosol