UBA1 conjugates ubiquitin to UBA1 in the nucleus

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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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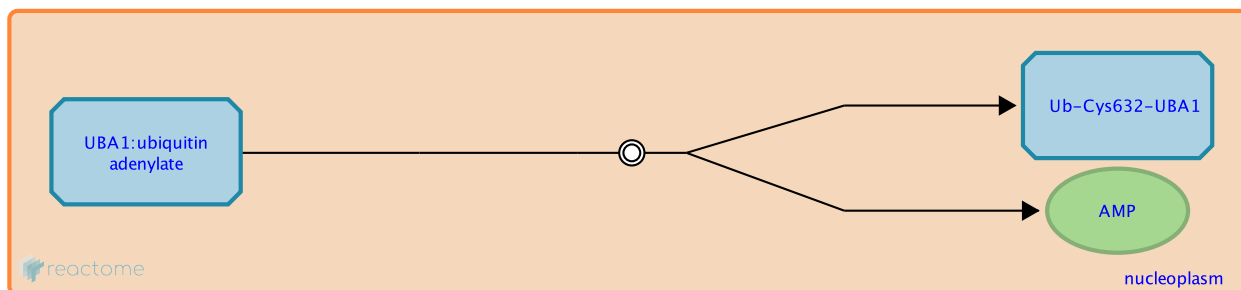
Reactome database release: 77

This document contains 1 reaction ()

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Stable identifier: R-HSA-8852136

Type: dissociation

Compartments: nucleoplasm

UBA1 is located in both the nucleus and cytoplasm (Grenfell 1994). Activation of ubiquitin by UBA1 proceeds through 3 steps: adenylation of ubiquitin, conjugation of ubiquitin from adenyl-ubiquitin to an internal cysteine residue of UBA1, and adenylation of a second molecule of ubiquitin. In the second step, the thiol group of an internal cysteine residue of UBA1 attacks the acyl-adenyl bond of the C-terminal glycine of adenylated ubiquitin, resulting in a thioester bond between the cysteine residue and the C-terminal glycine of ubiquitin (Jin et al. 2007, inferred from the rabbit homologue in Haas et al. 1982, Hershko et al. 1983, reviewed in Groettrup et al. 2008).

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Editions

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