SHPRH polyubiquitinates monoubiquitinated PCNA

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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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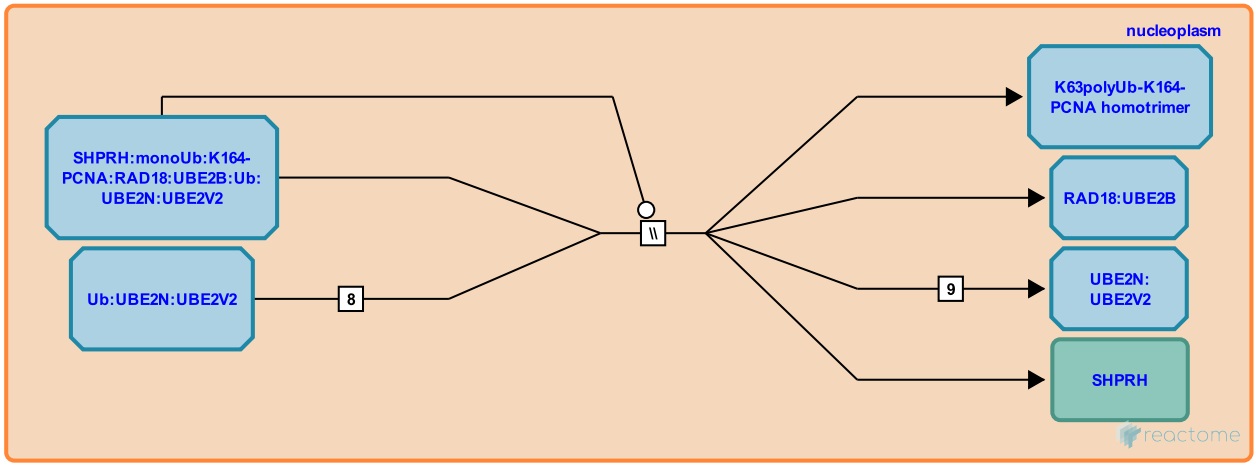
Stable identifier: R-HSA-8943003

Type: omitted

Compartments: nucleoplasm



In response to a stalled replication fork, SHPRH polyubiquitinates lysine-164 of PCNA that has already been monoubiquitinated on lysine-164 by RAD18:UBE2B (RAD18:RAD6) (Unk et al. 2006, Motegi et al. 2006, Motegi et al. 2008). The ubiquitin donor is the E2 complex UBE2N:UBE2V2 (UBC13:MMS2) containing ubiquitin conjugated to UBE2N. The resulting polyubiquitin chain contains lysine-63 (K63) linkages and appears to change the repair process from translesion synthesis (TLS) to template switching (TS). SHPRH interacts directly with PCNA, RAD18:UBE2B, and UBE2N:UBE2V2.

Literature references

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Editions

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