RNF8 binds phosphorylated MDC1 at DNA DSBs

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03/05/2024

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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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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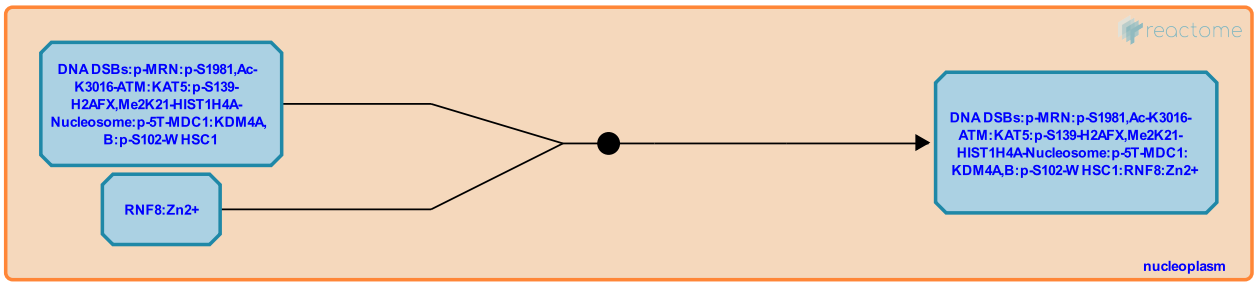
Stable identifier: R-HSA-5682588

Type: binding

Compartments: nucleoplasm



RNF8 is an E3 ubiquitin ligase that, through its FHA domain, binds MDC1 phosphorylated at T-Q-X-F (Thr-Gln-X-Phe) sites by ATM. The phosphorylation of at least four T-Q-X-F sites of MDC1 (T699, T719, T752, T765) increases RNF8 binding to MDC1 (Kolas et al. 2007). RNF8 functions as a homodimer formed by interactions of the RNF8 coiled-coil domains (Cambell et al. 2012).

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Editions

2015-05-12	Authored, Edited	Orlic-Milacic, M.
2015-06-12	Reviewed	Borowiec, JA.