

USP7 deubiquitinates monoubiquitinated PTEN

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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

Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics*, 18, 142. [↗](#)

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)

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. [↗](#)

Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 88

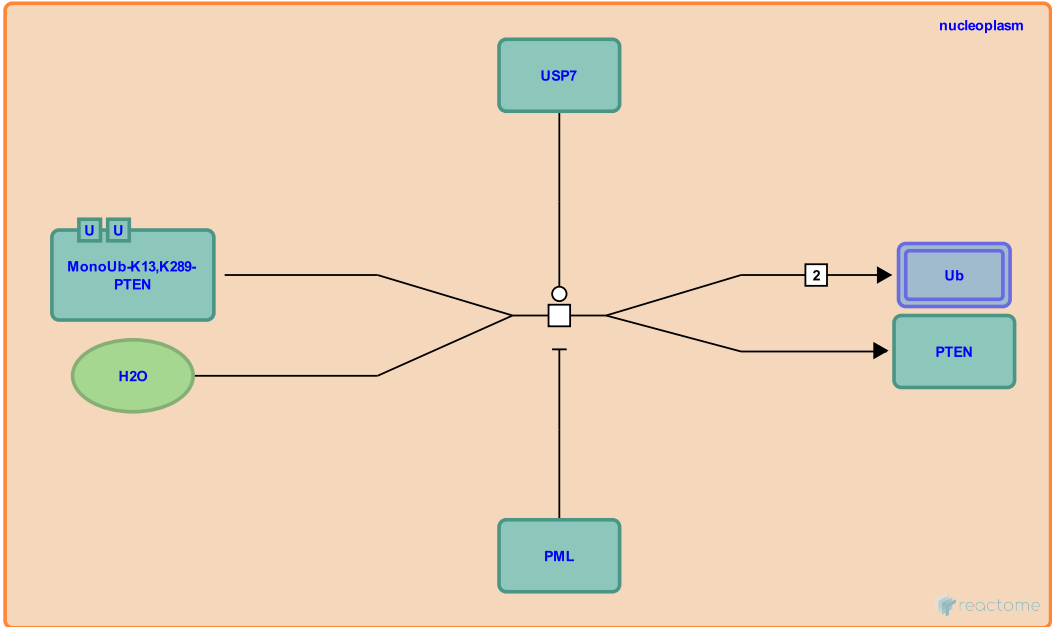
This document contains 1 reaction ([see Table of Contents](#))

USP7 deubiquitinates monoubiquitinated PTEN ↗

Stable identifier: R-HSA-6807118

Type: transition

Compartments: nucleoplasm



USP7 (HAUSP) deubiquitinates monoubiquitinated nuclear PTEN, thus promoting relocation of PTEN to the cytosol. USP7-mediated deubiquitination of PTEN is negatively regulated by PML in the presence of DAXX, but the exact mechanism has not been elucidated (Song et al. 2008).

Literature references

Pandolfi, PP., Carracedo, A., Egia, A., Song, MS., Teruya-Feldstein, J., Lo-Coco, F. et al. (2008). The deubiquitinylation and localization of PTEN are regulated by a HAUSP-PML network. *Nature*, 455, 813-7. ↗

Editions

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