

NUDT16 hydrolyses dIDP to dIMP

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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. [↗](#)

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Reactome database release: 88

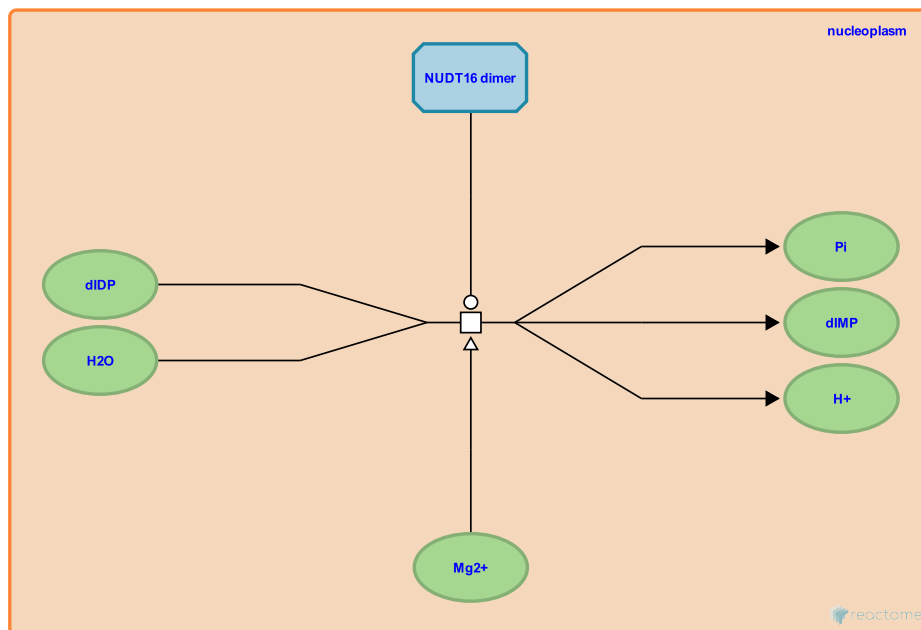
This document contains 1 reaction ([see Table of Contents](#))

NUDT16 hydrolyses dIDP to dIMP [↗](#)

Stable identifier: R-HSA-2509793

Type: transition

Compartments: nucleoplasm



NUDT16 dimer catalyzes the reaction of dIDP and water to form dIMP and Pi (orthophosphate). Mg⁺⁺ is required for enzymatic activity. The protein is mostly located in the nucleus and concentrated in the nucleolus, where it can also mediate the decapping of U8 small nucleolar RNA (Iyama et al. 2010; Peculis et al. 2007).

Literature references

Iyama, T., Nakabeppu, Y., Abolhassani, N., Nonaka, M., Tsuchimoto, D. (2010). NUDT16 is a (deoxy)inosine diphosphatase, and its deficiency induces accumulation of single-strand breaks in nuclear DNA and growth arrest. *Nucleic Acids Res.*, 38, 4834-43. [↗](#)

Peculis, BA., Cleland, M., Reynolds, K. (2007). Metal determines efficiency and substrate specificity of the nuclear NUDIX decapping proteins X29 and H29K (Nudt16). *J. Biol. Chem.*, 282, 24792-805. [↗](#)

Editions

2012-10-05	Authored, Edited	D'Eustachio, P.
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