

I(1,4,5)P₃ is dephosphorylated to I(1,4)P₂ by INPP5A/B at the plasma membrane

Williams, MG., Wundenberg, T.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of [Creative Commons Attribution 4.0 International \(CC BY 4.0\) License](#). For more information see our [license](#).

05/05/2024

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

- 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

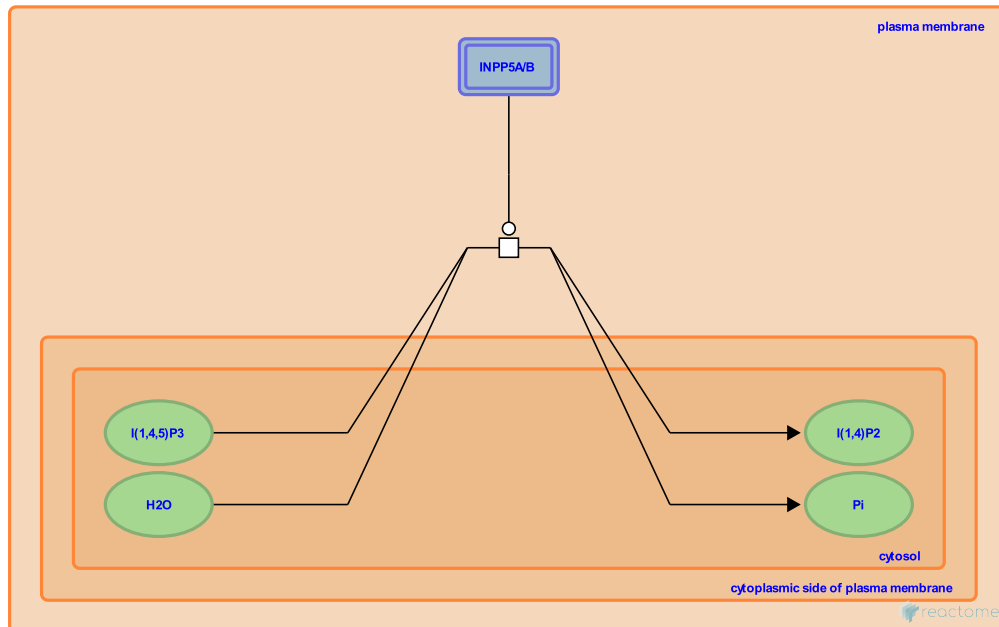
This document contains 1 reaction ([see Table of Contents](#))

I(1,4,5)P3 is dephosphorylated to I(1,4)P2 by INPP5A/B at the plasma membrane [↗](#)

Stable identifier: R-HSA-1855222

Type: transition

Compartments: plasma membrane, cytosol



Type I inositol-1,4,5-trisphosphate 5-phosphatase (INPP5A) and the Type II phosphatase (INPP5B) are isoprenylated to the plasma membrane and act as a lipid anchor. Here they dephosphorylate inositol 1,4,5-trisphosphate (I(1,4,5)P3) to inositol 1,4-bisphosphate I(1,4)P2.).

The following lists the above proteins with their corresponding literature references: INPP5A (Laxminarayan et al. 1994); INPP5B (Jefferson & Majerus 1995, Ross et al. 1991, Schmid et al. 2004).

Literature references

- Bird, PI., Chan, BK., Tetaz, T., Mitchell, CA., Laxminarayan, KM. (1994). Characterization of a cDNA encoding the 43-kDa membrane-associated inositol-polyphosphate 5-phosphatase. *J Biol Chem*, 269, 17305-10. [↗](#)
- Woscholski, R., Schmid, AC., Nussbaum, R., Mitchell, CA., Wise, HM. (2004). Type II phosphoinositide 5-phosphatases have unique sensitivities towards fatty acid composition and head group phosphorylation. *FEBS Lett*, 576, 9-13. [↗](#)
- Jefferson, AB., Majerus, PW. (1995). Properties of type II inositol polyphosphate 5-phosphatase. *J Biol Chem*, 270, 9370-7. [↗](#)
- Ross, TS., Jefferson, AB., Majerus, PW., Mitchell, CA. (1991). Cloning and expression of human 75-kDa inositol polyphosphate-5-phosphatase. *J Biol Chem*, 266, 20283-9. [↗](#)

Editions

2011-10-28

Authored, Edited

Williams, MG.

2012-11-07

Reviewed

Wundenberg, T.