# PIP3 recruits PDPK1 to the membrane

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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.
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

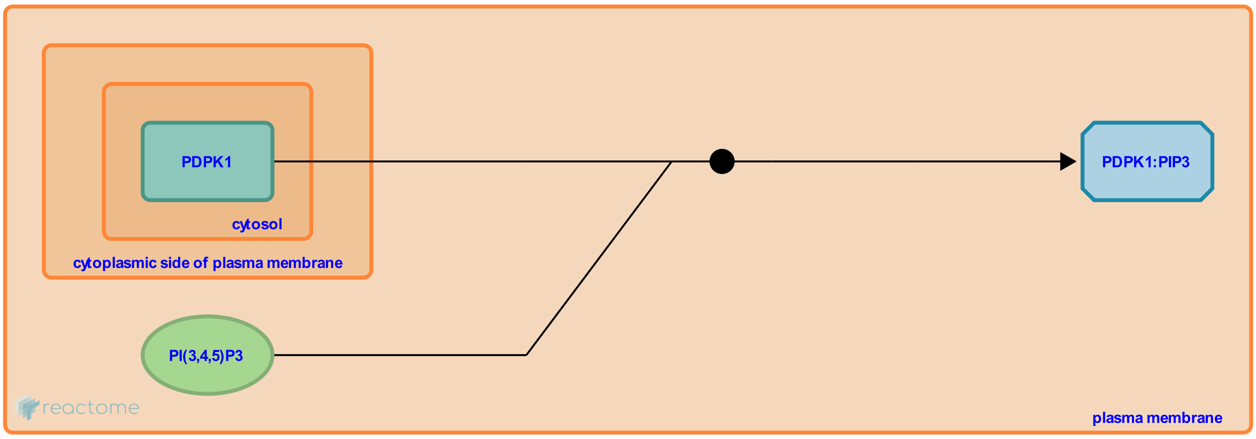
This document contains 1 reaction (see Table of Contents)

## PIP3 recruits PDPK1 to the membrane ↗

**Stable identifier:** R-HSA-2316429

**Type:** binding

**Compartments:** cytosol, plasma membrane


PDPK1
cytosol
cytoplasmic side of plasma membrane
PI(3,4,5)P3
PDPK1:PIP3
reactome
plasma membrane

PIP3 generated by PI3K recruits phosphatidylinositide-dependent protein kinase 1 (PDPK1 i.e. PDK1) to the membrane, through its PH (pleckstrin-homology) domain. PDPK1 binds PIP3 with high affinity, and also shows low affinity for PIP2 (Currie et al. 1999).

## Literature references

Alessi, DR., Cohen, P., Downes, CP., Casamayor, A., Lucocq, J., Currie, RA. et al. (1999). Role of phosphatidylinositol 3,4,5-trisphosphate in regulating the activity and localization of 3-phosphoinositide-dependent protein kinase-1. *Biochem J, 337*, 575-83. ↗

## Editions

| | | |
|---|---|---|
| 2006-10-10 | Authored | Annibali, D., Nasi, S. |
| 2007-11-08 | Reviewed | Greene, LA. |
| 2012-07-18 | Revised | Orlic-Milacic, M. |
| 2012-08-03 | Edited | Matthews, L. |
| 2012-08-13 | Reviewed | Zhao, JJ., Yuzugullu, H., Thorpe, L. |