

# VAV1 is a GEF for Rho/Rac family GTPases

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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

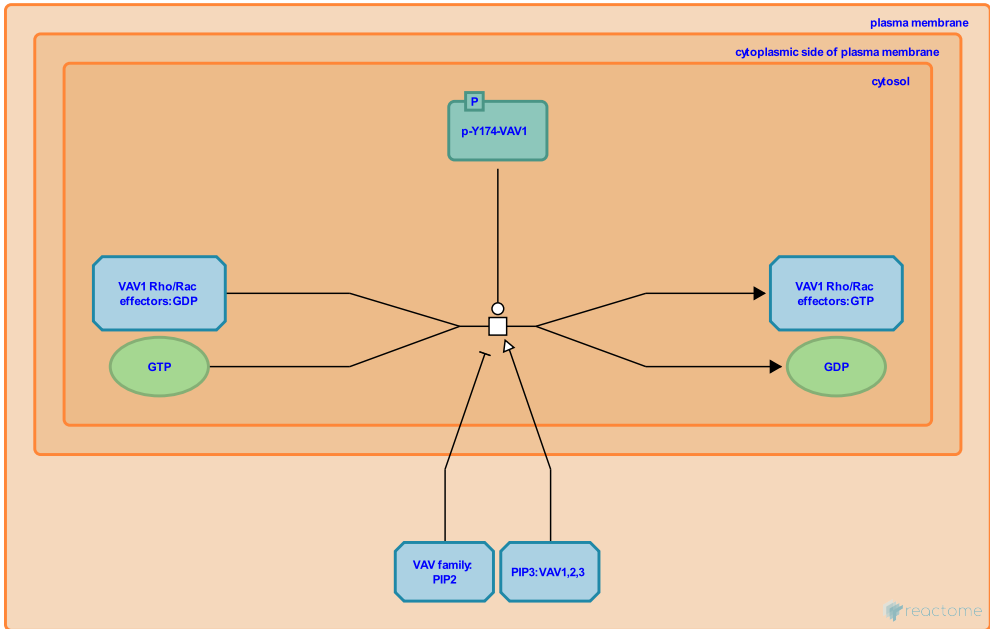
This document contains 1 reaction ([see Table of Contents](#))

VAV1 is a GEF for Rho/Rac family GTPases ↗

Stable identifier: R-HSA-442273

Type: transition

Compartments: cytosol



Vav family members are guanine nucleotide exchange factors (GEFs) for Rho-family GTPases. Vav1 is a GEF for Rac1, Rac2 and RhoG, and possibly RhoA and Cdc42

Literature references

Ostrom, AA., Bustelo, XR., Gutkind, JS., Crespo, P., Schuebel, KE. (1997). Phosphotyrosine-dependent activation of Rac-1 GDP/GTP exchange by the vav proto-oncogene product. *Nature*, 385, 169-72. ↗

Kuhn, P., Tainer, JA., Streiff, M., Zhang, H., Widmer, H., Hura, GL. et al. (2008). Structural basis of guanine nucleotide exchange mediated by the T-cell essential Vav1. *J Mol Biol*, 380, 828-43. ↗

Editions

2009-09-04	Authored	Akkerman, JW.
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