EPHA binds TIAM1

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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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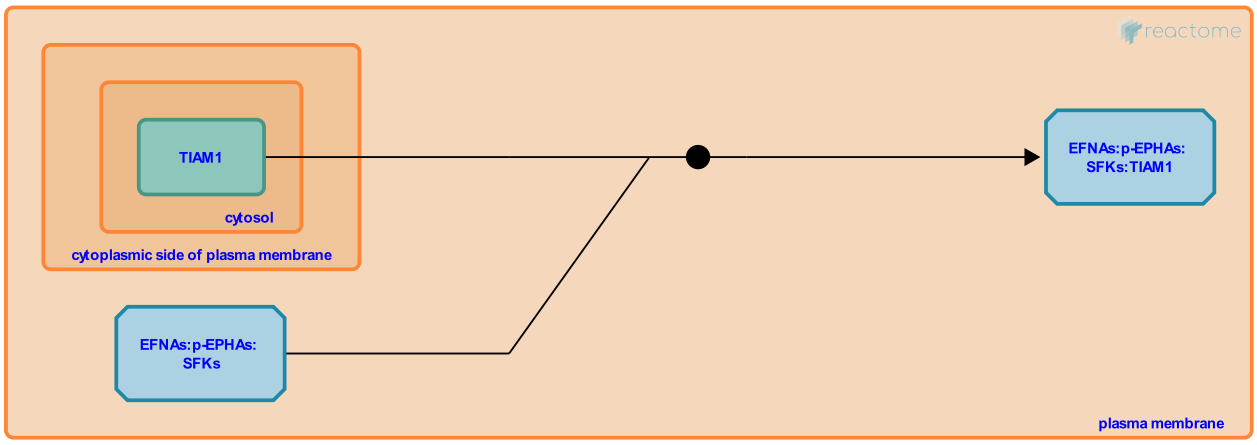
Stable identifier: R-HSA-4093327

Type: binding

Compartments: cytosol, plasma membrane



T-lymphoma invasion and metastasis-inducing protein 1 (TIAM1) is a GEF exhibiting highest specificity for RAC1 and is critically involved in EPH/ephrin (EFN)-mediated neurite outgrowth and dendritic spine development (Tanaka et al. 2004, Tolias et al. 2007). TIAM1 has a role in regulating the endocytosis of EPHA receptors, by regulating the RAC1 signaling downstream of the EPHA8 receptor. Yoo and his colleagues found that TIAM1, a RAC-specific guanine nucleotide exchange factor, co-immunoprecipitates with EPHA8 in response to EFNA5 stimulation. TIAM1 associates with EPHA8 in the juxtamembrane (JM) region. Deletion of the JM region or down-regulation of TIAM1 expression compromises EPHA8:EFNA5 endocytosis (Yoo et al. 2010).

Literature references

Shin, J., Park, S., Yoo, S. (2010). EphA8-ephrinA5 signaling and clathrin-mediated endocytosis is regulated by Tiam-1, a Rac-specific guanine nucleotide exchange factor. *Mol. Cells, 29*, 603-9. ↗

Editions

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