SH2B binds JAK2

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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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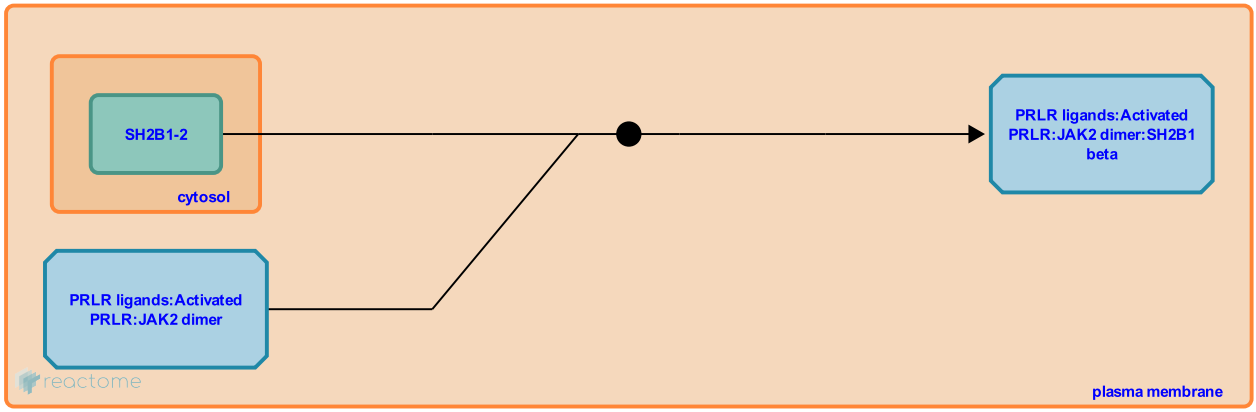
Stable identifier: R-HSA-1675473

Type: binding

Compartments: plasma membrane, cytosol



The SH2 domains of SH2B beta (Uniprot isoform Q9NRF2-2) binds JAK2 at Tyr813. SH2B beta is able to homodimerize while bound to JAK2 molecules, suggesting that SH2B binding and dimerization may help induce JAK2 transactivation (Nishi et al. 2005). Computational modeling suggests that SH2B beta can enhance Jak2 activation (Barua et al. 2009). The relevance of this for PRLR signalling has yet to be demonstrated.

Literature references

Nishi, M., Werner, ED., Oh, BC., Frantz, JD., Dhe-Paganon, S., Hansen, L. et al. (2005). Kinase activation through dimerization by human SH2-B. *Mol Cell Biol, 25*, 2607-21.

Editions

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