Phosphorylated LEPR Binds SHP2 (PT-PN11)

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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

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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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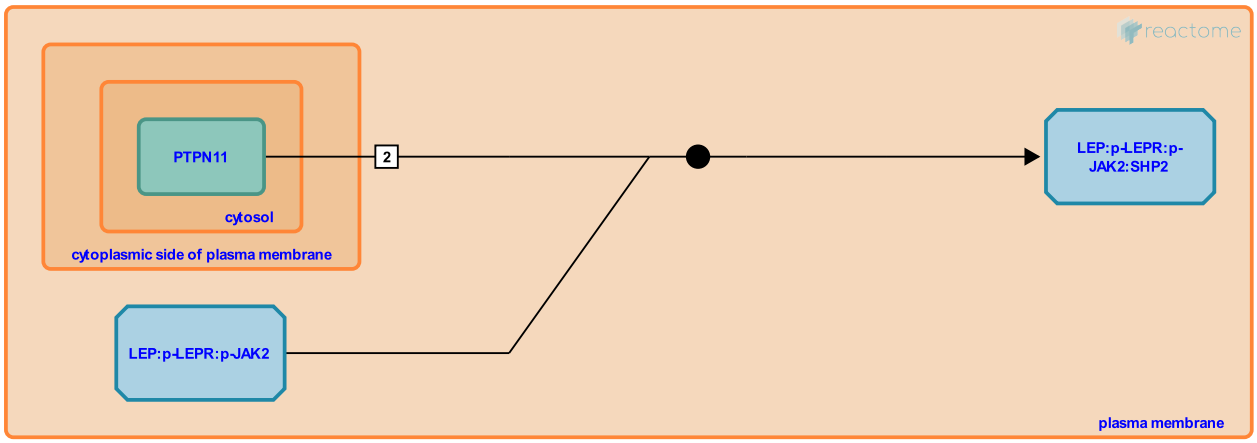
Stable identifier: R-HSA-2671747

Type: binding

Compartments: plasma membrane, cytosol

Inferred from: Phosphorylated Lepr Binds Shp2 (Mus musculus)



SHP2 (PTPN11) interacts with phosphotyrosine-986 of the phosphorylated Leptin receptor (LEPR) (Carpenter et al. 1998). The corresponding site in mouse is phosphotyrosine-985 and in rat phosphotyrosine-986.
SHP2 and SOCS3 compete for the same binding site on LEPR. SHP2 activates MAPK signaling, probably by recruiting GRB2:SOS which activates RAS.

Literature references

Symes, A., Stahl, N., Farruggella, TJ., Yancopoulos, GD., Carpenter, LR., Karow, ML. (1998). Enhancing leptin response by preventing SH2-containing phosphatase 2 interaction with Ob receptor. *Proc. Natl. Acad. Sci. U.S.A., 95* , 6061-6. ↗

Editions

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