

Nephrin interacts with Podocin

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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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Reactome database release: 88

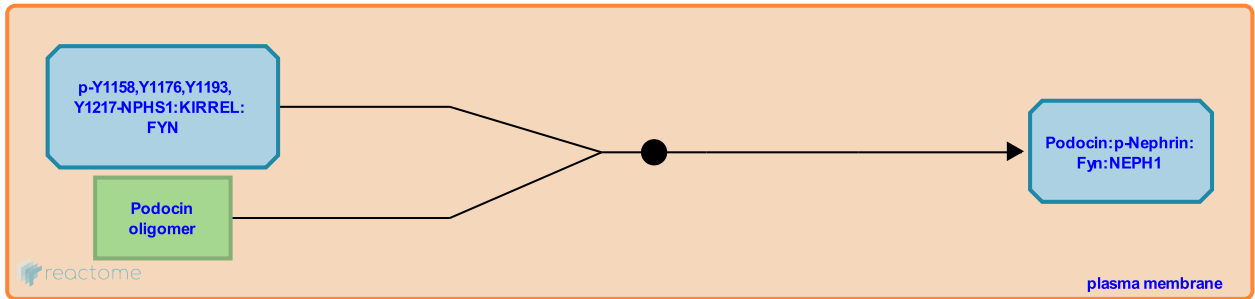
This document contains 1 reaction ([see Table of Contents](#))

Nephrin interacts with Podocin [↗](#)

Stable identifier: R-HSA-373734

Type: binding

Compartments: plasma membrane



NPHS2 encodes podocin, a protein exclusively expressed in podocytes in developing and mature glomeruli. Podocin is a member of the stomatin protein family with a short N terminal domain, a membrane-anchoring region, and a cytosolic C-terminal domain. Podocin accumulates in an oligomeric form in lipid rafts of the slit diaphragm. The C-terminal domain of Podocin binds to the cytoplasmic domain of nephrin thus it may function as a scaffolding protein connecting nephrin with the actin cytoskeleton. Beside nephrin it was shown that podocin also interacts with several other SD proteins, hence forming functional microdomains

Literature references

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Walz, G., Sernetz, L., Saleem, MA., Simons, M., Hartleben, B., Benzing, T. et al. (2003). Molecular basis of the functional podocin-nephrin complex: mutations in the NPHS2 gene disrupt nephrin targeting to lipid raft microdomains. *Hum Mol Genet*, 12, 3397-405. [↗](#)

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Editions

2008-02-26	Authored	de Bono, B., Garapati, P V.
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