Interaction of nephrin with adherens junction-associated proteins

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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. ↗

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Reactome database release: 88
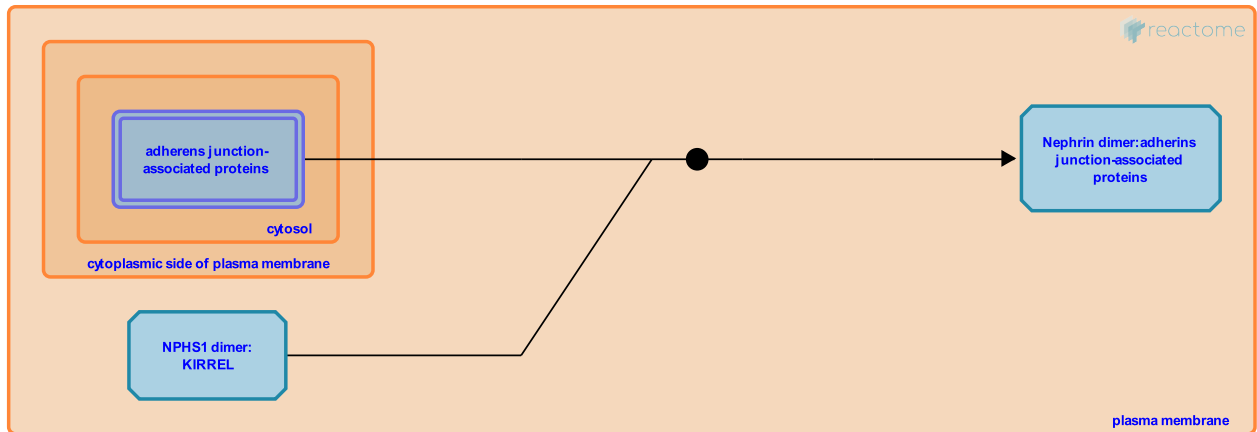
This document contains 1 reaction (see Table of Contents)

Interaction of nephrin with adherens junction-associated proteins ↗

Stable identifier: R-HSA-451403

Type: binding

Compartments: plasma membrane

Inferred from: Interaction of nephrin with adherens junction-associated proteins (Rattus norvegicus)

The nephrin-slit diaphragm protein complex contains a group of scaffolding proteins that function to connect junctional membrane proteins to the actin cytoskeleton and signaling cascades. By mass spectrometry four of the proteins identified, alphaII spectrin, betaII spectrin, alpha-actinin, and IQGAP1, represent adherens junction-associated proteins, and two, MAGI-2/S-SCAM and CASK, represent MAGUK family scaffolding proteins that associate with Ig superfamily proteins. The presence of these proteins in slit diaphragms and their association with nephrin suggests that they may form a scaffolding protein complex in the podocyte slit diaphragm and thus contribute to the regulation of ultrafiltration by binding slit membrane proteins and establishing their cytosolic connections.

Editions

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