

# Ankyrins link voltage-gated sodium and potassium channels to spectrin and L1

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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. [↗](#)

Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 88

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

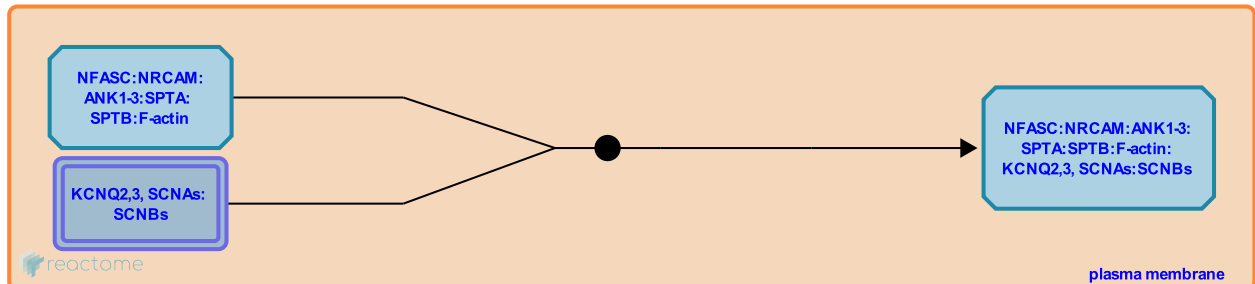
## Ankyrins link voltage-gated sodium and potassium channels to spectrin and L1 [↗](#)

**Stable identifier:** R-HSA-373739

**Type:** binding

**Compartments:** plasma membrane

**Inferred from:** [Ankyrins link voltage-gated sodium and potassium channels to spectrin and L1 \(Rattus norvegicus\)](#)



Ankyrins link both L1 and ion channel proteins, coupling them to the spectrin actin cytoskeleton. In the nervous system ankyrins interact with voltage gated channels and cluster them in axon initial segments to generate action potentials. At these points the actin spectrin network is linked via ankyrins to voltage gated sodium channels, L1, and the voltage gated potassium ion channel subunits, KCNQ2 and KCNQ3.

### Editions

2008-07-30	Authored, Edited	Garapati, P V.
2010-02-16	Reviewed	Maness, PF.