

Endocytosis of Ca impermeable AMPA receptors

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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

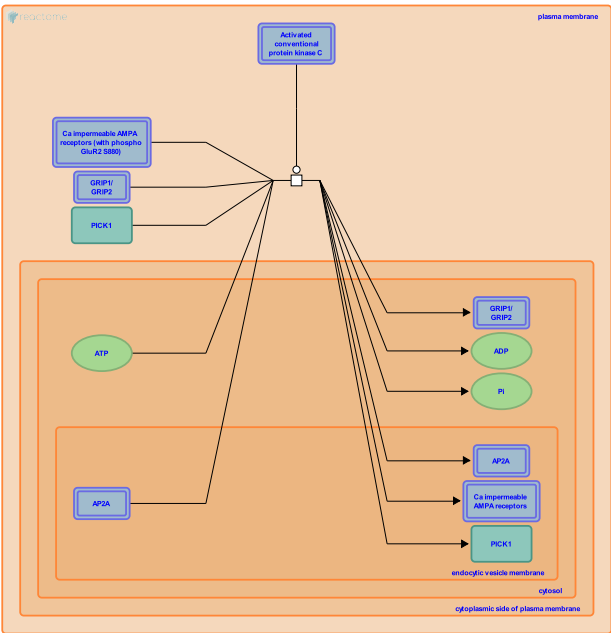
This document contains 1 reaction ([see Table of Contents](#))

Endocytosis of Ca impermeable AMPA receptors ↗

Stable identifier: R-HSA-421007

Type: transition

Compartments: plasma membrane



GluR2 containing AMPA receptors are constitutively recycled between the endosome membrane and the plasma membrane. GRIP and PICK compete for the binding to the C tail of GluR2. Once the GluR2 containing AMPA receptors are in the plasmamembrane, phosphorylation of GluR2 at S880 by PKC causes disruption of GRIP interaction, but not PICK interaction which facilitates internalization of GluR2 containing AMPA receptors into endosomes.

Literature references

Ziff, EB., Lu, W. (2005). PICK1 interacts with ABP/GRIP to regulate AMPA receptor trafficking. *Neuron*, 47, 407-21. ↗

Editions

2008-01-14	Authored	Mahajan, SS.
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