

# GRIP2 (S-15): sc-102579

## BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and neuro-degeneration. The glutamate receptor interacting proteins, GRIP1 and GRIP2, are members of the PDZ domain-containing protein family, and they specifically bind to the carboxy terminus of AMPA receptor subunits, GluR-2 and GluR-3. GRIP1 and GRIP2 are involved in the targeting of these AMPA receptor subunits, which also bind to the AMPA receptor binding protein (ABP) and protein interacting with C kinase 1 (PICK1), to the synapse. GRIP1 and GRIP2 are widely expressed in brain, with the highest levels in the cerebral cortex, hippocampus and olfactory bulb. They are both enriched in synaptic plasma and postsynaptic density fractions. GRIP1 is expressed in early development before the expression of AMPA receptors, specifically postnatal days 8-10, while GRIP2 expression parallels that of AMPA receptors during later developmental stages. GRIP1 and GRIP2 may mediate the endocytotic rate of GluR-2 and GluR-3 in response to the phosphorylation of the receptors on Ser-880 by PKC, which is implicated in the induction of cerebellar long-term depression (LTD).

## REFERENCES

- Choi, D.W. and Rothman, S.M. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. *Annu. Rev. Neurosci.* 13: 171-182.
- Nakanishi, S. 1992. Molecular diversity of glutamate receptors and implications for brain function. *Science* 258: 597-603.
- Wyszynski, M., et al. 1999. Association of AMPA receptors with a subset of glutamate receptor-interacting protein *in vivo*. *J. Neurosci.* 19: 6528-6537.
- Dong, H., et al. 1999. Characterization of the glutamate receptor-interacting proteins GRIP1 and GRIP2. *J. Neurosci.* 19: 6930-6941.
- Osten, P., et al. 2000. Mutagenesis reveals a role for ABP/GRIP binding to GluR-2 in synaptic surface accumulation of the AMPA receptor. *Neuron* 27: 313-325.
- Xia, J., et al. 2000. Cerebellar long-term depression requires PKC-regulated interactions between GluR-2/3 and PDZ domain-containing proteins. *Neuron* 28: 499-510.
- Matsuda, S., et al. 2000. Disruption of AMPA receptor GluR-2 clusters following long-term depression induction in cerebellar Purkinje neurons. *EMBO J.* 19: 2765-2774.
- Yamazaki, M., et al. 2001. Differential palmitoylation of two mouse glutamate receptor interacting protein 1 forms with different N-terminal sequences. *Neurosci. Lett.* 304: 81-84.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## CHROMOSOMAL LOCATION

Genetic locus: GRIP2 (human) mapping to 3p25.1.

## SOURCE

GRIP2 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GRIP2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-102579 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GRIP2 (S-15) is recommended for detection of GRIP2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with isoform GRIP2-3.

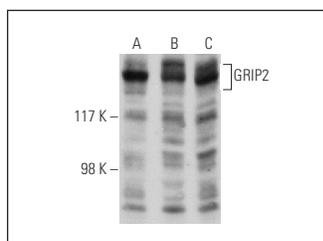
GRIP2 (S-15) is also recommended for detection of GRIP2 in additional species, including equine and canine.

Suitable for use as control antibody for GRIP2 siRNA (h): sc-42162, GRIP2 shRNA Plasmid (h): sc-42162-SH and GRIP2 shRNA (h) Lentiviral Particles: sc-42162-V.

Molecular Weight of GRIP2: 113 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, IMR-32 cell lysate: sc-2409 or TE671 cell lysate: sc-2416.

## DATA



GRIP2 (S-15): sc-102579. Western blot analysis of GRIP2 expression in HeLa (A), IMR-32 (B) and TE671 (C) whole cell lysates.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.