SANTA CRUZ BIOTECHNOLOGY, INC.

GRIP2 (K-17): sc-15476

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glutamate receptors mediate most excitatory neurotransmission in the brain and play an important role in neural plasticity, neural development and neurodegeneration. 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

1. Choi, D.W., et al. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. Ann. Rev. Neurosci. 13: 171-182.
2. Nakanishi, S. 1992. Molecular diversity of glutamate receptors and implications for brain function. Science 258: 597-603.
3. Wyszynski, M., et al. 1999. Association of AMPA receptors with a subset of glutamate receptor-interacting protein *in vivo*. J. Neurosci. 19: 6528-6537.
4. Dong, H., et al. 1999. Characterization of the glutamate receptor-interacting proteins GRIP1 and GRIP2. J. Neurosci. 19: 6930-6941.
5. Xia, J., et al. 2000. Cerebellar long-term depression requires PKC-regulated interactions between GluR2/3 and PDZ domain-containing proteins. Neuron 28: 499-510.
6. Matsuda, S., et al. 2000. Disruption of AMPA receptor GluR2 clusters following long-term depression induction in cerebellar Purkinje neurons. EMBO J. 19: 2765-2774.
7. Osten, P., et al. 2000. Mutagenesis reveals a role for ABP/GRIP binding to GluR2 in synaptic surface accumulation of the AMPA receptor. Neuron 27: 313-325.
8. 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.

CHROMOSOMAL LOCATION

Genetic locus: GRIP2 (human) mapping to 3p25.1; Grip2 (mouse) mapping to 6 D1.

SOURCE

GRIP2 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GRIP2 of rat 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-15476 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GRIP2 (K-17) is recommended for detection of GRIP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GRIP2 (K-17) is also recommended for detection of GRIP2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GRIP2 siRNA (h): sc-42162, GRIP2 siRNA (m): sc-42163, GRIP2 shRNA Plasmid (h): sc-42162-SH, GRIP2 shRNA Plasmid (m): sc-42163-SH, GRIP2 shRNA (h) Lentiviral Particles: sc-42162-V and GRIP2 shRNA (m) Lentiviral Particles: sc-42163-V.

Molecular Weight of GRIP2: 113 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Akaneya, Y., Jiang, B. and Tsumoto, T. 2005. RNAi-induced gene silencing by local electroporation in targeting brain region. J. Neurophysiol. 93: 594-602.
2. Yukio Akaneya, et al. 2005. RNAi-induced gene silencing by local electroporation in targeting brain region. J. Neurophysiol. 93: 594-602.

STORAGE

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

RESEARCH USE

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