SANTA CRUZ BIOTECHNOLOGY, INC.

GRIP1 (32): sc-135931

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 GluR-2 and GluR-3 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. and Rothman, S.M. 1990. The role of glutamate neurotoxicity in hypoxic-ischemic neuronal death. Annu. 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. 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.
6. 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.
7. 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.
8. Xia, J., et al. 2002. Cere-bellar long-term depression requires PKC-regulated interactions between GluR-2/-3 and PDZ domain-containing proteins. Neuron 28: 499-510.

CHROMOSOMAL LOCATION

Genetic locus: GRIP1 (human) mapping to 12q14.3; Grip1 (mouse) mapping to 10 D2.

SOURCE

GRIP1 (32) is a mouse monoclonal antibody raised against amino acids 877-1067 of GRIP1 of rat origin.

RESEARCH USE

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

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

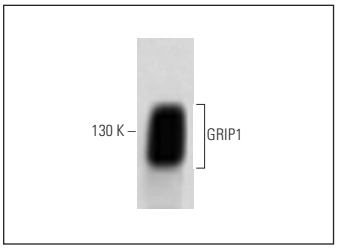
GRIP1 (32) is recommended for detection of GRIP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for GRIP1 siRNA (h): sc-42160, GRIP1 siRNA (m): sc-42161, GRIP1 shRNA Plasmid (h): sc-42160-SH, GRIP1 shRNA Plasmid (m): sc-42161-SH, GRIP1 shRNA (h) Lentiviral Particles: sc-42160-V and GRIP1 shRNA (m) Lentiviral Particles: sc-42161-V.

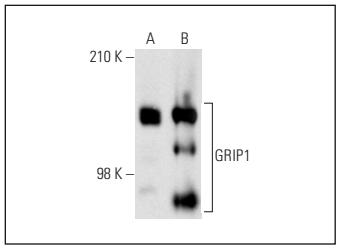
Molecular Weight of GRIP1: 130 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, IMR-32 cell lysate: sc-2409 or rat brain extract: sc-2392.

DATA



GRIP1 (32): sc-135931. Western blot analysis of GRIP1 expression in rat cerebrum tissue extract.



GRIP1 (32): sc-135931. Western blot analysis of GRIP1 expression in IMR-32 (**A**) and C6 (**B**) whole cell lysates.

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 for detailed protocols and support products.