

GRAP1 (A-13): sc-15568

BACKGROUND

GRAP1, also designated GRASP-1 or GRIP-associated protein contains a rasGEF (ras GDP/GTP exchange factor) domain, a caspase-3 cleavage site, a region homologous to RBD (ras binding domain), and a PDZ domain. The caspase-3 cleavage site separates these domains into an amino terminal GEF catalytic domain and a carboxyl-terminal regulatory domain, which is a proteolytic fragment. This overall structure is similar to ralGDS. GRAP1 is a member of rasGEF (Ras protein GDP/GTP exchange factors) family. GRAP1 is expressed in the cytosol and partially localized to the membrane in all tissues of the nervous system, while the fragment is located only in the cytosol. GRAP1 associates with the seventh GRIP-1 (glutamate receptor interacting protein) PDZ domain. GRIP-1 binds to the C termini of AMPA receptors and may be an adapter protein that links AMPA receptors to other proteins. GRAP1 may be involved in the regulation of ras signaling and AMPA receptor distribution, through the activation of NMDA receptors. Caspase-3 may disrupt the proper regulation or targeting of GEF by cleaving the regulatory domain from the catalytic domain.

REFERENCES

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3. Dong, H., O'Brien, R.J., Fung, E.T., Lanahan, A.A., Worley, P.F. and Huganir, R.L. 1997. GRIP: a synaptic PDZ domain-containing protein that interacts with AMPA receptors. *Nature* 386: 279-284.
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5. Dong, H., Zhang, P., Song, I., Petralia, R.S., Liao, D. and Huganir, R.L. 1999. Characterization of the glutamate receptor-interacting proteins GRIP1 and GRIP2. *J. Neurosci.* 19: 6930-6941.
6. Ye, B., Liao, D., Zhang, X., Zhang, P., Dong, H. and Huganir, R.L. 2000. GRASP-1: a neuronal RasGEF associated with the AMPA receptor/GRIP complex. *Neuron* 26: 603-617.

CHROMOSOMAL LOCATION

Genetic locus: GRIPAP1 (human) mapping to Xp11.23; Gripap1 (mouse) mapping to X A1.1.

SOURCE

GRAP1 (A-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GRAP1 of rat origin.

STORAGE

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

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-15568 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GRAP1 (A-13) is recommended for detection of GRAP1 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).

Suitable for use as control antibody for GRAP1 siRNA (h): sc-105416, GRAP1 siRNA (m): sc-145757, GRAP1 shRNA Plasmid (h): sc-105416-SH, GRAP1 shRNA Plasmid (m): sc-145757-SH, GRAP1 shRNA (h) Lentiviral Particles: sc-105416-V and GRAP1 shRNA (m) Lentiviral Particles: sc-145757-V.

Molecular Weight of GRAP1: 96 kDa.

Positive Controls: rat cerebellum tissue extract: sc-2398 or mouse brain extract: sc-2253.

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. Bakshi, K., Kosciuk, M., Nagele, R.G., Friedman, E. and Wang, H.Y. 2011. Prenatal cocaine exposure increases synaptic localization of a neuronal RasGEF, GRASP-1 via hyperphosphorylation of AMPAR anchoring protein, GRIP. *PLoS ONE* 6: e25019.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.