

GRAP1 (E-7): sc-398199



The Power to Question

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 the 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

1. Kikuchi, A., et al. 1994. RalGDS family members interact with the effector loop of Ras p21. *Mol. Cell. Biol.* 14: 7483-7491.
2. Spaargaren, M. and Bischoff, J.R. 1994. Identification of the guanine nucleotide dissociation stimulator for Ral as a putative effector molecule of R-Ras, H-Ras, K-Ras, and Rap. *Proc. Natl. Acad. Sci. USA* 91: 12609-12613.
3. Dong, H., et al. 1997. GRIP: a synaptic PDZ domain-containing protein that interacts with AMPA receptors. *Nature* 386: 279-284.
4. Srivastava, S., et al. 1998. Novel anchorage of GluR2/3 to the postsynaptic density by the AMPA receptor-binding protein ABP. *Neuron* 21: 581-591.
5. Dong, H., et al. 1999. Characterization of the glutamate receptor-interacting proteins GRIP1 and GRIP2. *J. Neurosci.* 19: 6930-6941.
6. Ye, B., et al. 2000. GRASP1: 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 (E-7) is a mouse monoclonal antibody raised against amino acids 375-483 mapping within an internal region of GRAP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

GRAP1 (E-7) is recommended for detection of GRAP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

GRAP1 (E-7) is also recommended for detection of GRAP1 in additional species, including porcine.

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.

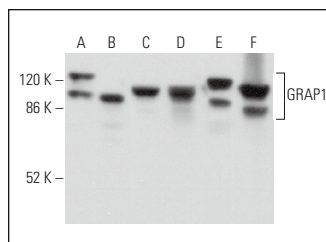
Molecular Weight of GRAP1: 96 kDa.

Positive Controls: RT-4 whole cell lysate: sc-364257, rat cerebellum extract: sc-2398 or Neuro-2A whole cell lysate: sc-364185.

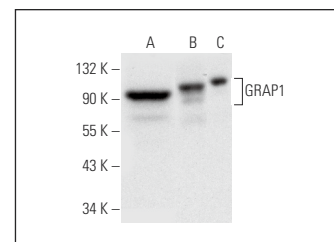
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GRAP1 (E-7): sc-398199. Western blot analysis of GRAP1 expression in RT-4 (A), T24 (B), Neuro-2A (C) and C6 (D) whole cell lysates and mouse cerebellum (E) and rat brain (F) tissue extracts.



GRAP1 (E-7): sc-398199. Western blot analysis of GRAP1 expression in RT-4 whole cell lysate (A) and rat cerebellum (B) and human cerebellum (C) tissue extracts.

RESEARCH USE

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

PROTOCOLS

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