

# GRP1 (A-10): sc-374437

## BACKGROUND

GRP1 (general receptor for phosphoinositides-1) contains a Pleckstrin homology (PH) domain as well as a Sec7 domain. The PH domain has high binding affinity for phosphatidylinositol 3,4,5-trisphosphate (PtdIns(3,4,5)P<sub>3</sub>), while the Sec7 homology domain is responsible for catalyzing guanine nucleotide exchange of ADP-ribosylation factor (ARF) proteins. GRP1 co-localizes with ARF6 and catalyzes GTP/GDP exchange on ARF6. It is known to interact with PtdIns(3,4,5)P<sub>3</sub> localized to the plasma membrane *in vitro* and may also be a PtdIns(3,4,5)P<sub>3</sub> receptor. Additionally, GRP1 may regulate protein sorting and membrane trafficking through interaction with the guanosine triphosphate ARF, and may control cell adhesion through interaction with integrins.

## REFERENCES

1. Klarlund, J.K., et al. 1997. Signaling by phosphoinositide-3,4,5-trisphosphate through proteins containing Pleckstrin and Sec7 homology domains. *Science* 275: 1927-1930.
2. Klarlund, J.K., et al. 1998. Regulation of GRP1-catalyzed ADP ribosylation factor guanine nucleotide exchange by phosphatidylinositol 3,4,5-trisphosphate. *J. Biol. Chem.* 273: 1859-1862.
3. Venkateswarlu, K., et al. 1998. Nerve growth factor- and epidermal growth factor-stimulated translocation of the ADP-ribosylation factor-exchange factor GRP1 to the plasma membrane of PC-12 cells requires activation of phosphatidylinositol 3-kinase and the GRP1 Pleckstrin homology domain. *Biochem. J.* 335: 139-146.
4. Langille, S.E., et al. 1999. ADP-ribosylation factor 6 as a target of guanine nucleotide exchange factor GRP1. *J. Biol. Chem.* 274: 27099-27104.

## CHROMOSOMAL LOCATION

Genetic locus: CYTH3 (human) mapping to 7p22.1; Cyth3 (mouse) mapping to 5 G2.

## SOURCE

GRP1 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-37 near the N-terminus of GRP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374437 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## 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) for detailed protocols and support products.

## APPLICATIONS

GRP1 (A-10) is recommended for detection of GRP1 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).

Suitable for use as control antibody for GRP1 siRNA (h): sc-40472, GRP1 siRNA (m): sc-40473, GRP1 shRNA Plasmid (h): sc-40472-SH, GRP1 shRNA Plasmid (m): sc-40473-SH, GRP1 shRNA (h) Lentiviral Particles: sc-40472-V and GRP1 shRNA (m) Lentiviral Particles: sc-40473-V.

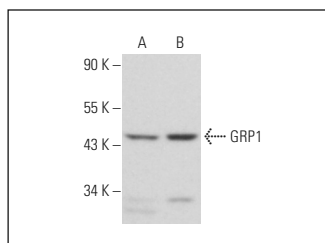
Molecular Weight of GRP1: 46 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, L6 whole cell lysate: sc-364196 or GRP1 (h2): 293T Lysate: sc-171938.

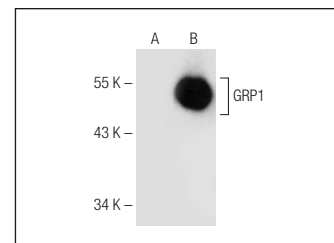
## RECOMMENDED SUPPORT REAGENTS

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



GRP1 (A-10): sc-374437. Western blot analysis of GRP1 expression in PC-12 (A) and L6 (B) whole cell lysates.



GRP1 (A-10): sc-374437. Western blot analysis of GRP1 expression in non-transfected: sc-117752 (A) and human GRP1 transfected: sc-171938 (B) 293T whole cell lysates.

## RESEARCH USE

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