SANTA CRUZ BIOTECHNOLOGY, INC.

GRP1 (E-8): sc-271740

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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)P3), 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)P3 localized to the plasma membrane *in vitro* and may also be a PtdIns(3,4,5)P3 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., Guilherme, A., Holik, J.J., Virbasius, J.V., Chawla, A. and Czech, M.P. 1997. Signaling by phosphoinositide-3,4,5-trisphosphate through proteins containing Pleckstrin and Sec7 homology domains. Science 275: 1927-1930.
2. Klarlund, J.K., Rameh, L.E., Cantley, L.C., Buxton, J.M., Holik, J.J., Sakelis, C., Patki, V., Corvera, S. and Czech, M.P. 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., Gunn-Moore, F., Oatey, P.B., Tavare, J.M. and Cullen, P.J. 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., Patki, V., Klarlund, J.K., Buxton, J.M., Holik, J.J., Chawla, A., Corvera, S. and Czech, M.P. 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 (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 365-397 at the C-terminus of GRP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-271740 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.

APPLICATIONS

GRP1 (E-8) 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.

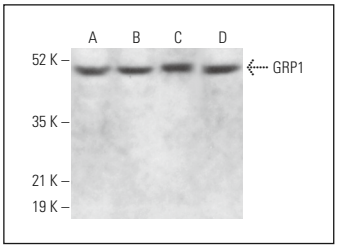
Molecular Weight of GRP1: 46 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, C6 whole cell lysate: sc-364373 or GRP1 (m): 293T Lysate: sc-120646.

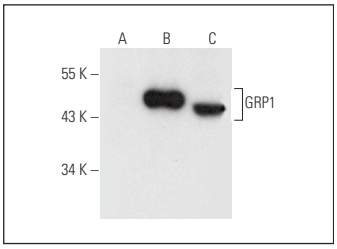
RECOMMENDED SUPPORT REAGENTS

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 (E-8): sc-271740. Western blot analysis of GRP1 expression in A549 (**A**), J774.A1 (**B**), 3T3-L1 (**C**) and C6 (**D**) whole cell lysates.



GRP1 (E-8): sc-271740. Western blot analysis of GRP1 expression in non-transfected 293T: sc-117752 (**A**), mouse GRP1 transfected 293T: sc-120646 (**B**) and PC-12 (**C**) whole cell lysates.

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.