SANTA CRUZ BIOTECHNOLOGY, INC.

p-Rho GDIα (Ser 101): sc-33047

BACKGROUND

Members of the Ras superfamily of small GTP-binding proteins are critical mediators of diverse cell signaling pathways, including those leading to cell proliferation, cytoskeletal organization and secretion. The counter-conversion of the active GTP-bound form of these proteins to their inactive GDP-bound form is influenced by two types of regulatory proteins: those that alter the intrinsic GTPase activity of the GTP-binding proteins and those that alter the rate of GDP/GTP exchange. Guanine nucleotide-releasing factors (GRFs) increase the GDP dissociation rate, while GDP-dissociation inhibitors (GDIs) decrease the dissociation rate. Rho GDIα, also known as ARHGDIA or GDIA1, is a 204 amino acid member of the Rho GDI family of proteins. Localized to the cytoplasm, Rho GDIα inhibits the dissociation of GDP from Rho proteins, thereby preventing GTP from binding to and subsequently activating Rho proteins. In humans, Rho GDIα can be phosphorylated at Ser 101 by p21-activated kinase (αPAK), an event that inhibits Rho GDIα activity and may result in positive feedback regulation of certain Rho GDIα target proteins.

REFERENCES

1. Leffers, H., et al. 1993. Identification of two human Rho GDP dissociation inhibitor proteins whose overexpression leads to disruption of the actin cytoskeleton. Exp. Cell Res. 209: 165-174.
2. Wagner, T., et al. 1997. A somatic cell hybrid panel for distal 17q: GDIA1 maps to 17q25.3. Cytogenet. Cell Genet. 76: 172-175.
3. Di-Poï, N., et al. 2001. Mechanism of NADPH oxidase activation by the Rac/Rho-GDI complex. Biochemistry 40: 10014-10022.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601925. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. DerMardirossian, C., et al. 2004. Phosphorylation of Rho GDI by Pak1 mediates dissociation of Rac GTPase. Mol. Cell 15: 117-127.
6. Dransart, E., et al. 2005. Uncoupling of inhibitory and shuttling functions of Rho GDP dissociation inhibitors. J. Biol. Chem. 280: 4674-4683.
7. DerMardirossian, C., et al. 2006. Phosphorylation of Rho GDI by Src regulates Rho GTPase binding and cytosol-membrane cycling. Mol. Biol. Cell 17: 4760-4768.
8. El Marzouk, S., et al. 2007. Rho GDP dissociation inhibitor α interacts with estrogen receptor α and influences estrogen responsiveness. J. Mol. Endocrinol. 39: 249-259.

CHROMOSOMAL LOCATION

Genetic locus: ARHGDIA (human) mapping to 17q25.3; Arhgdia (mouse) mapping to 11 E2.

SOURCE

p-Rho GDIα (Ser 101) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 101 Rho GDIα of human origin.

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-33047 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Rho GDIα (Ser 101) is recommended for detection of Ser 101 phosphorylated Rho GDI α 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).

p-Rho GDIα (Ser 101) is also recommended for detection of correspondingly phosphorylated Rho GDI α in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rho GDIα siRNA (h): sc-36417, Rho GDIα siRNA (m): sc-36416, Rho GDIα siRNA (r): sc-61880, Rho GDIα shRNA Plasmid (h): sc-36417-SH, Rho GDIα shRNA Plasmid (m): sc-36416-SH, Rho GDIα shRNA Plasmid (r): sc-61880-SH, Rho GDIα shRNA (h) Lentiviral Particles: sc-36417-V, Rho GDIα shRNA (m) Lentiviral Particles: sc-36416-V and Rho GDIα shRNA (r) Lentiviral Particles: sc-61880-V.

Molecular Weight of p-Rho GDIα: 30 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, PC-12 cell lysate: sc-2250 or HL-60 whole cell lysate: sc-2209.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Daily, A., et al. 2010. Abrogation of microcystin cytotoxicity by MAP kinase inhibitors and N-acetyl cysteine is confounded by OATPIB1 uptake activity inhibition. Toxicon 55: 827-837.

STORAGE

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

RESEARCH USE

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