SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc42 (y-191): sc-7172

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rho GTPases are molecular switches that regulate many essential cellular processes, including Actin dynamics, cell adhesion, cell-cycle progression and transcription. The Rho-type guanosine triphosphatase (GTPase), Cdc42, has been implicated in a variety of functions in the yeast life cycle, including septin organization for cytokinesis, pheromone response, haploid invasive growth and the establishment and maintenance of cell polarity. In yeast, the role of Cdc42 in polarization of cell growth includes polarization of the Actin cytoskeleton, which delivers secretory vesicles to growth sites at the plasma membrane. A group of proteins (Rga1, Rga2 and Bem3) called GTPase-activating proteins (GAPs) catalyze the hydrolysis of GTP to GDP, thereby inactivating Cdc42. Phosphorylation states of Cdc42 regulate its interaction with Rho GDP dissociation inhibitor and its extraction from biological membranes. Yeast Cdc42 functions at a late step in exocytosis, specifically during polarized growth of the emerging bud.

REFERENCES

1. Adamo, J.E., et al. 2001. Yeast Cdc42 functions at a late step in exocytosis, specifically during polarized growth of the emerging bud. J. Cell Biol. 155: 581-592.
2. Forget, M.A., et al. 2002. Phos-phorylation states of Cdc42 and RhoA regulate their interactions with Rho GDP dissociation inhibitor and their extraction from biological membranes. Biochem. J. 361: 243-254.
3. Smith, G.R., et al. 2002. GTPase-activating proteins for Cdc42. Eukaryot. Cell 1: 469-480.
4. Hazan, I. and Liu, H. 2002. Hyphal tip-associated localization of Cdc42 is F-Actin dependent in *Candida albicans*. Eukaryot. Cell 1: 856-864.
5. Choi, S.C. and Han, J.K. 2002. *Xenopus* Cdc42 regulates convergent extension movements during gastrulation through Wnt/Ca^{2+} signaling pathway. Dev. Biol. 244: 342-357.

SOURCE

Cdc42 (y-191) is a rabbit polyclonal antibody raised against amino acids 1-191 of Cdc42 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG 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.

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.

APPLICATIONS

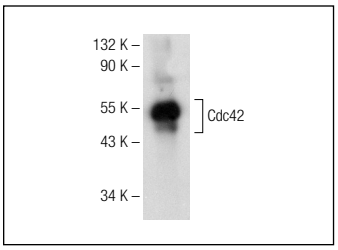
Cdc42 (y-191) is recommended for detection of Cdc42 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Cdc42: 25 kDa.

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 A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Cdc42 (y-191): sc-7172. Western blot analysis of yeast recombinant Cdc42.

SELECT PRODUCT CITATIONS

1. Ye, X. and Szaniszlo, P.J. 2000. Expression of a constitutively active Cdc42 homologue promotes development of sclerotic bodies but represses hyphal growth in the zoopathogenic fungus Wangiella *Exophiala dermatitidis*. J. Bacteriol. 182: 4941-4950.
2. Mosch, H.U., et al. 2001. Different domains of the essential GTPase Cdc42p required for growth and development of *Saccharomyces cerevisiae*. Mol. Cell. Biol. 21: 235-248.
3. Schmidt, M., et al. 2002. In budding yeast, contraction of the actomyosin ring and formation of the primary septum at cytokinesis depend on each other. J. Cell Sci. 115: 293-302.
4. Barale, S., et al. 2006. Cdc42p GDP/GTP cycling is necessary for efficient cell fusion during yeast mating. Mol. Biol. Cell 17: 2824-2838.
5. Menotta, M., et al. 2007. Molecular characterisation of the small GTPase CDC42 in the ectomycorrhizal fungus *Tuber borchii Vittad*. Protoplasma 231: 227-237.