SANTA CRUZ BIOTECHNOLOGY, INC.

Zizimin-1 (H-77): sc-135283

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Zizimin-1, also known as DOCK 9 (dedicator of cytokinesis 9), is a 2,069 amino acid protein that localizes to the intracytoplasmic membrane and contains one PH domain, one DHR-1 domain and one DHR-2 domain. Expressed in a variety of tissues with highest expression in placenta and heart and lower expression in lung, kidney, brain and skeletal muscle, Zizimin-1 functions as a guanine nucleotide-exchange factor (GEF) that specifically activates Cdc42 by exchanging bound GDP for free GTP. Four isoforms of Zizimin-1 exist due to alternative splicing events. The gene encoding Zizimin-1 maps to human chromosome 13, which houses over 400 genes, such as BRCA2 and RB1, and comprises nearly 4% of the human genome. Trisomy 13, also known as Patau syndrome, is deadly and the few who survive past one year suffer from permanent neurologic defects, difficulty eating and vulnerability to serious respiratory infections.

REFERENCES

1. Kikuno, R., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 197-205.
2. Côte, J.F. and Vuori, K. 2002. Identification of an evolutionarily conserved superfamily of DOCK 180-related proteins with guanine nucleotide exchange activity. J. Cell Sci. 115: 4901-4913.
3. Meller, N., et al. 2002. Zizimin-1, a novel Cdc42 activator, reveals a new GEF domain for Rho proteins. Nat. Cell Biol. 4: 639-647.
4. Detera-Wadleigh, S.D., et al. 2007. Sequence variation in DOCK 9 and heterogeneity in bipolar disorder. Psychiatr. Genet. 17: 274-286.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 607325. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Meller, N., et al. 2008. Function of the N-terminus of Zizimin-1: autoinhibition and membrane targeting. Biochem. J. 409: 525-533.
7. Kwofie, M.A. and Skowronski, J. 2008. Specific recognition of Rac 2 and Cdc42 by DOCK 2 and DOCK 9 guanine nucleotide exchange factors. J. Biol. Chem. 283: 3088-3096.

CHROMOSOMAL LOCATION

Genetic locus: DOCK9 (human) mapping to 13q32.3; Dock9 (mouse) mapping to 14 E5.

SOURCE

Zizimin-1 (H-77) is a rabbit polyclonal antibody raised against amino acids 1431-1507 mapping within an internal region of Zizimin-1 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.

RESEARCH USE

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

APPLICATIONS

Zizimin-1 (H-77) is recommended for detection of Zizimin-1 of mouse, rat and human 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)], 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).

HBO1 (N-18) is also recommended for detection of HBO1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Zizimin-1 siRNA (h): sc-76966, Zizimin-1 siRNA (m): sc-76967, Zizimin-1 shRNA Plasmid (h): sc-76966-SH, Zizimin-1 shRNA Plasmid (m): sc-76967-SH, Zizimin-1 shRNA (h) Lentiviral Particles: sc-76966-V and Zizimin-1 shRNA (m) Lentiviral Particles: sc-76967-V.

Molecular Weight of Zizimin-1: 236 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, Caki-1 cell lysate: sc-2224 or mouse placenta extract: sc-364247.

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). 3) 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.

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 or our catalog for detailed protocols and support products.