

RIOK1 (D-16): sc-244010

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. RIOK1 (RIO kinase 1), also known as RIO1 or AD034, is a 568 amino acid protein that contains one protein kinase domain and belongs to the RIO subfamily of atypical Ser/Thr protein kinases. Existing as two alternatively spliced isoforms, RIOK1 functions to catalyze the ATP-dependent phosphorylation of target proteins and is thought to play an important role in ribosome biogenesis and cell cycle progression.

REFERENCES

- Hanks, S.K., et al. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science* 241: 42-52.
- Hunter, T. 1991. Protein kinase classification. *Methods Enzymol.* 200: 3-37.
- Hanks, S.K. and Quinn, A.M. 1991. Protein kinase catalytic domain sequence database: identification of conserved features of primary structure and classification of family members. *Methods Enzymol.* 200: 38-62.
- Angermayr, M. and Bandlow, W. 2002. RIO1, an extraordinary novel protein kinase. *FEBS Lett.* 524: 31-36.
- Jin, J., et al. 2004. Proteomic, functional, and domain-based analysis of *in vivo* 14-3-3 binding proteins involved in cytoskeletal regulation and cellular organization. *Curr. Biol.* 14: 1436-1450.
- LaRonde-LeBlanc, N. and Wlodawer, A. 2005. The RIO kinases: an atypical protein kinase family required for ribosome biogenesis and cell cycle progression. *Biochim. Biophys. Acta* 1754: 14-24.
- LaRonde-LeBlanc, N., et al. 2005. Structure and activity of the atypical serine kinase Rio1. *FEBS J.* 272: 3698-3713.
- LaRonde-LeBlanc, N. and Wlodawer, A. 2005. A family portrait of the RIO kinases. *J. Biol. Chem.* 280: 37297-37300.
- Suzuki, C., et al. 2007. Identification of Myc-associated protein with JmjC domain as a novel therapeutic target oncogene for lung cancer. *Mol. Cancer Ther.* 6: 542-551.

CHROMOSOMAL LOCATION

Genetic locus: RIOK1 (human) mapping to 6p24.3; Riok1 (mouse) mapping to 13 A3.3.

SOURCE

RIOK1 (D-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RIOK1 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-244010 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RIOK1 (D-16) is recommended for detection of RIOK1 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).

RIOK1 (D-16) is also recommended for detection of RIOK1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for RIOK1 siRNA (h): sc-95193, RIOK1 siRNA (m): sc-152972, RIOK1 shRNA Plasmid (h): sc-95193-SH, RIOK1 shRNA Plasmid (m): sc-152972-SH, RIOK1 shRNA (h) Lentiviral Particles: sc-95193-V and RIOK1 shRNA (m) Lentiviral Particles: sc-152972-V.

Molecular Weight of RIOK1: 66 kDa.

Positive Controls: A-375 cell lysate: sc-3811.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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.

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.