

SMEK2 (D-13): sc-169368

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine protein phosphatases. In general, the protein phosphatase (PP) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit and a catalytic subunit. Protein phosphatase 4 (PP4) is comprised of different regulatory subunits that exhibit mutually exclusive interactions with the PP4 catalytic subunit, designated PPX. SMEK2, also known as PP4R3B or KIAA1387, is an 849 amino acid protein that contains one WH1 domain and localizes to the nucleus and the cytoplasm, as well as to the centrosome. Functioning as a regulatory subunit of PP4, SMEK2 may regulate the activity of PPP4C at centrosomal microtubule organizing centers. SMEK2 exists as multiple isoforms produced by alternative splicing events.

REFERENCES

1. Gingras, A.C., et al. 2005. A novel, evolutionarily conserved protein phosphatase complex involved in cisplatin sensitivity. *Mol. Cell. Proteomics* 4: 1725-1740.
2. Mendoza, M.C., et al. 2005. Loss of SMEK, a novel, conserved protein, suppresses MEK1 null cell polarity, chemotaxis, and gene expression defects. *Mol. Cell. Biol.* 25: 7839-7853.
3. Mendoza, M.C., et al. 2007. MEK1 and protein phosphatase 4 coordinate Dictyostelium development and chemotaxis. *Mol. Cell. Biol.* 27: 3817-3827.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610351. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Martin-Granados, C., et al. 2008. Depletion of protein phosphatase 4 in human cells reveals essential roles in centrosome maturation, cell migration and the regulation of Rho GTPases. *Int. J. Biochem. Cell Biol.* 40: 2315-2332.

CHROMOSOMAL LOCATION

Genetic locus: SMEK2 (human) mapping to 2p16.1; Smek2 (mouse) mapping to 11 A3.3.

SOURCE

SMEK2 (D-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SMEK2 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-169368 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

SMEK2 (D-13) is recommended for detection of SMEK2 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); non cross-reactive with SMEK1.

SMEK2 (D-13) is also recommended for detection of SMEK2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SMEK2 siRNA (h): sc-94851, SMEK2 siRNA (m): sc-153627, SMEK2 shRNA Plasmid (h): sc-94851-SH, SMEK2 shRNA Plasmid (m): sc-153627-SH, SMEK2 shRNA (h) Lentiviral Particles: sc-94851-V and SMEK2 shRNA (m) Lentiviral Particles: sc-153627-V.

Molecular Weight of SMEK2: 97 kDa.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.