SANTA CRUZ BIOTECHNOLOGY, INC.

p-p70 S6 kinase α (Thr 421/Ser 424)-R: sc-7984-R

BACKGROUND

In studies to elucidate key regulatory pathways in signal transduction, several protein serine/threonine (Ser/Thr) kinases have been identified, including two distinct families of 40S ribosomal protein S6 Ser/Thr kinases present in somatic animal cells, designated p70 S6 kinase and p90 Rsk kinase. p90 Rsk kinase is maximally activated within minutes of addition of growth factors or phorbol ester to cultured cells followed by activation of p70 S6 kinase. Both enzymes are regulated by serine/threonine phosphorylation, suggesting that specific kinases may exist upstream in the signaling pathway that regulate these kinases. In fact, evidence suggests that one such family of activating enzymes includes the members of the ERK MAP kinase family. The ERK MAP kinases are, in turn, regulated by phosphorylation at Threonine and Tyrosine residues by a protein kinase designated MEK.

CHROMOSOMAL LOCATION

Genetic locus: RPS6KB1 (human) mapping to 17q23.1; Rps6kb1 (mouse) mapping to 11 C.

SOURCE

p-p70 S6 kinase α (Thr 421/Ser 424)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 421 and Ser 424 phosphorylated p70 S6 kinase α 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-7984 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-p70 S6 kinase α (Thr 421/Ser 424)-R is recommended for detection of Thr 421 and Ser 424 dually phosphorylated p70 S6 kinase α 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), immunohistochemistry (including paraffin-embedded sections) (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-p70 S6 kinase α (Thr 421/Ser 424)-R is also recommended for detection of correspondingly phosphorylated p70 S6 kinase α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for p70 S6 kinase α siRNA (h): sc-36165, p70 S6 kinase α siRNA (m): sc-36166, p70 S6 kinase α shRNA Plasmid (h): sc-36165-SH, p70 S6 kinase α shRNA Plasmid (m): sc-36166-SH, p70 S6 kinase α shRNA (h) Lentiviral Particles: sc-36165-V and p70 S6 kinase α shRNA (m) Lentiviral Particles: sc-36166-V.

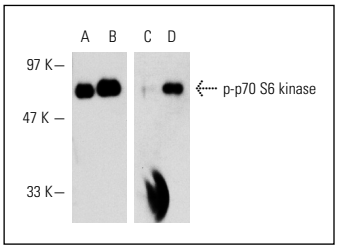
Molecular Weight of p70 S6 kinase α: 70 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or NIH/3T3 whole cell lysate: sc-2210.

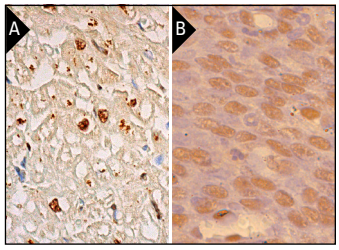
STORAGE

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

DATA



Western blot analysis of l phosphatase treated (**A**,**C**) and untreated (**B**,**D**) His-tagged active human recombinant PKCa. Antibodies tested include: His-probe (H-3): sc-8036 (**A**,**B**) and p-p70 S6 kinase (Thr 421/Ser424)-R: sc-7984-R (**C**,**D**).



p-p70 S6 kinase α (Thr 421/Ser 424)-R: sc-7984-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing nuclear staining of subset of myocytes (**A**), and of mouse uterus tissue showing nuclear localization of activated p70 S6 kinase (**B**).

SELECT PRODUCT CITATIONS

1. Pawelczyk, T., et al. 2003. Insulin induces expression of adenosine kinase gene in rat lymphocytes by signaling through the mitogen-activated protein kinase pathway. Exp. Cell Res. 286: 152-163.
2. Baldelli, S., et al. 2014. PGC-1α buffers ROS-mediated removal of mitochondria during myogenesis. Cell Death Dis. 5: e1515.
3. Jiang, F., et al. 2014. Activation of mammalian target of rapamycin contributes to pain nociception induced in rats by BmK I, a sodium channel-specific modulator. Neurosci. Bull. 30: 21-32.
4. Osman, A.M., 2014. The immunosuppressant tributyltin oxide blocks the mTOR pathway, like rapamycin, albeit by a different mechanism. J. Appl. Toxicol. 34: 1361-1367.
5. Porter, K.M., 2014. MTOR-independent induction of autophagy in trabecular meshwork cells subjected to biaxial stretch. Biochim. Biophys. Acta 1843: 1054-1062.
6. Bernusso, V.A., et al. 2015. Imatinib restores VASP activity and its interaction with Zyxin in Bcr-Abl leukemic cells. Biochim. Biophys. Acta 1853: 388-395.
7. Pereira, J.K., et al. 2015. Molecular effects of the phosphatidylinositol-3-kinase inhibitor NVP-BKM120 on T and B-cell acute lymphoblastic leukaemia. Eur. J. Cancer 51: 2076-2085.

RESEARCH USE

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