SANTA CRUZ BIOTECHNOLOGY, INC.

p70 S6 kinase α (H-160): sc-9027

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, RPS6KB2 (human) mapping to 11q13.2; Rps6kb1 (mouse) mapping to 11 C, Rps6kb2 (mouse) mapping to 19 A.

SOURCE

p70 S6 kinase α (H-160) is a rabbit polyclonal antibody raised against amino acids 261-430 mapping within an internal region of 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.

APPLICATIONS

p70 S6 kinase α (H-160) is recommended for detection of p70 S6 kinase α and p70 S6 kinase β of mouse, rat, human and *Xenopus laevis* 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).

p70 S6 kinase α (H-160) is also recommended for detection of p70 S6 kinase α and p70 S6 kinase β in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of p70 S6 kinase α: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

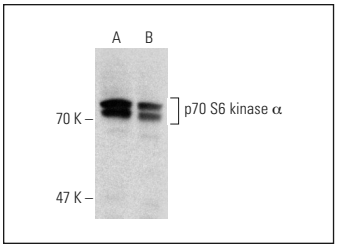
STORAGE

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

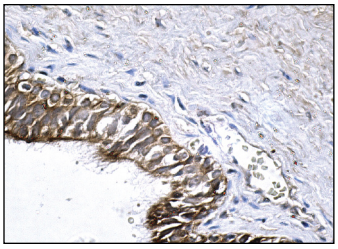
RESEARCH USE

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

DATA



p70 S6 kinase α (H-160): sc-9027. Western blot analysis of p70 S6 kinase α expression in HeLa (**A**) and NIH/3T3 (**B**) whole cell lysates.



p70 S6 kinase α (H-160): sc-9027. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

1. Peterson, R,T., et al. 1999. Protein phosphatase 2A interacts with the 70-kDa S6 kinase and is activated by inhibition of FKBP12-rapamycinas-soci-ated protein. Proc. Natl. Acad. Sci. USA 96: 4438-4442.
2. Huang, Y., et al. 2011. PML-RARα enhances constitutive autophagic activity through inhibiting the Akt/mTOR pathway. Autophagy 7: 1132-1144.
3. Wang, K., et al. 2011. Quercetin induces protective autophagy in gastric cancer cells: involvement of Akt-mTOR- and hypoxia-induced factor 1α-mediated signaling. Autophagy 7: 966-978.
4. López-Pelaéz, M., et al. 2012. Cot/tpl2-MKK1/2-Erk1/2 controls mTORC1-mediated mRNA translation in Toll-like receptor-activated macrophages. Mol. Biol. Cell 23: 2982-2992.
5. Li, H., et al. 2012. Evaluating the therapeutic potential of mTOR inhibitors using mouse genetics. Methods Mol. Biol. 821: 329-347.
6. Wang, J., et al. 2013. Impaired phosphorylation and ubiquitination by p70 S6 kinase (p70S6K) and Smad ubiquitination regulatory factor 1 (Smurf1) promote tribbles homolog 2 (TRIB2) stability and carcinogenic property in liver cancer. J. Biol. Chem. 288: 33667-33681.
7. Benbahouche, N.e.H., et al. 2014. *Drosophila* Spag is the homolog of RNA Polymerase II Associated Protein 3 (RPAP3), and recruits the heat shock proteins 70 and 90 (Hsp70 and Hsp90) during the assembly of cellular machineries. J. Biol. Chem. 289: 6236-6247.