SANTA CRUZ BIOTECHNOLOGY, INC.

p-p70 S6 kinase α (E-5): sc-377529

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. Included among such kinases are 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.

REFERENCES

1. Alcorta, D.A., et al. 1989. Sequence and expression of chicken and mouse Rsk: homologs of *Xenopus laevis* ribosomal S6 kinase. Mol. Cell. Biol. 9: 3850-3859.
2. Pelech, S.L., et al. 1990. Protein kinase cascades in meiotic and mitotic cell cycle control. Biochem. Cell Biol. 68: 1297-1330.

CHROMOSOMAL LOCATION

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

SOURCE

p-p70 S6 kinase α (E-5) is a mouse monoclonal antibody epitope corresponding to 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-p70 S6 kinase α (E-5) is available conjugated to agarose (sc-377529 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377529 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377529 PE), fluorescein (sc-377529 FITC), Alexa Fluor® 488 (sc-377529 AF488), Alexa Fluor® 546 (sc-377529 AF546), Alexa Fluor® 594 (sc-377529 AF594) or Alexa Fluor® 647 (sc-377529 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377529 AF680) or Alexa Fluor® 790 (sc-377529 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377529 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

p-p70 S6 kinase α (E-5) 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 1:100, 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).

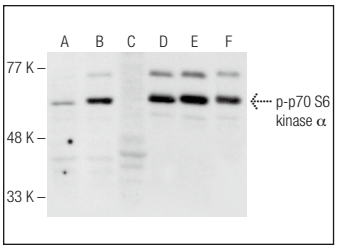
p-p70 S6 kinase α (E-5) is also recommended for detection of correspondingly phosphorylated p70 S6 kinase α in additional species, including equine, canine, bovine, porcine and avian.

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 p-p70 S6 kinase α: 70 kDa.

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

DATA



Western blot analysis of p70 S6 kinase α phosphorylation in untreated (**A**,**D**), EGF treated (**B**,**E**) and EGF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) MCF7 whole cell lysates. Antibodies tested include p-p70 S6 kinase α (E-5): sc-377529 (**A**,**B**,**C**) and p70 S6 kinase α (S-04): sc-100423 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Ivanovska, J., et al. 2017. mTOR-Notch3 signaling mediates pulmonary hypertension in hypoxia-exposed neonatal rats independent of changes in autophagy. Pediatr. Pulmonol. 52: 1443-1454.
2. Lu, Z., et al. 2020. RICTOR/mTORC2 affects tumorigenesis and therapeutic efficacy of mTOR inhibitors in esophageal squamous cell carcinoma. Acta Pharm. Sin. B 10: 1004-1019.
3. Das, H.K. and Hontiveros, S.S. 2020. Inhibition of p-mTOR represses transcription of PS1 and Notch 1-signaling. Front. Biosci. 25: 1172-1183.
4. Wang, X., et al. 2021. Cytosolic adaptation to mitochondria-induced proteostatic stress causes progressive muscle wasting. iScience 25: 103715.

RESEARCH USE

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