

# p-p70 S6 kinase $\alpha$ (Thr 389): sc-11759

## 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 17q23.2; Rps6kb1 (mouse) mapping to 11 C.

## SOURCE

p-p70 S6 kinase  $\alpha$  (Thr 389) is available as either goat (sc-11759) or rabbit (sc-11759-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Thr 389 of p70 S6 kinase  $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11759 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-p70 S6 kinase  $\alpha$  (Thr 389)-R is recommended for detection of Thr 389 phosphorylated p70 S6 kinase  $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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  $\alpha$  (Thr 389) is also recommended for detection of correspondingly phosphorylated thr on p70 S6 kinase  $\alpha$  in additional species, including equine, canine, bovine, porcine and avian.

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

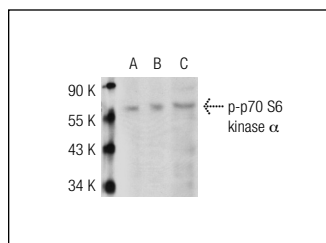
Molecular Weight of p-p70 S6 kinase  $\alpha$ : 70 kDa.

Positive Controls: serum starved + serum NIH/3T3 cells, Insulin-treated 293 whole cell lysate or p70 S6 kinase  $\alpha$  (m): 293T Lysate: sc-125770.

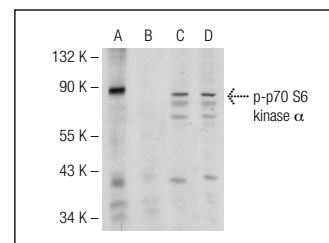
## STORAGE

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

## DATA



p-p70 S6 kinase  $\alpha$  (Thr 389)-R: sc-11759-R. Western blot analysis of p70 S6 kinase  $\alpha$  phosphorylation in non-transfected 293T: sc-117752 (A), mouse p70 S6 kinase  $\alpha$  transfected 293T: sc-125770 (B) and NIH/3T3 (C) whole cell lysates.



Western blot analysis of p70 S6 kinase  $\alpha$  phosphorylation in untreated (A, C), and lambda protein phosphatase (sc-200312A) treated (B, D) NIH/3T3 whole cell lysates. Antibodies tested include p-p70 S6 kinase  $\alpha$  (Thr 389)-R: sc-11759-R (A, B) and p70 S6 kinase  $\alpha$  (H-160): sc-9027 (C, D).

## SELECT PRODUCT CITATIONS

- Xiao, H., et al. 2002. Specificity of interleukin-2 receptor  $\gamma$  chain superfamily cytokines is mediated by Insulin receptor substrate-dependent pathway. *J. Biol. Chem.* 277: 8091-8098.
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- Escobar, J., et al. 2006. Regulation of cardiac and skeletal muscle protein synthesis by individual branched-chain amino acids in neonatal pigs. *Am. J. Physiol. Endocrinol. Metab.* 290: E612-621.
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- Djouder, N., et al. 2007. S6K1-mediated disassembly of mitochondrial URI/PP1 $\gamma$  complexes activates a negative feedback program that counters S6K1 survival signaling. *Mol. Cell* 28: 28-40.
- Frew, I.J., et al. 2008. pVHL and PTEN tumour suppressor proteins cooperatively suppress kidney cyst formation. *EMBO J.* 27: 1747-1757.
- Chen, L., et al. 2010. Hydrogen peroxide inhibits mTOR signaling by activation of AMPK $\alpha$  leading to apoptosis of neuronal cells. *Lab. Invest.* 90: 762-773.

## RESEARCH USE

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