

p-p70 S6 kinase α (A-6): sc-8416

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

- 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.
- 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 (A-6) is a mouse monoclonal antibody raised against a sequence containing Ser 434 phosphorylated p70 S6 kinase α of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-p70 S6 kinase α (A-6) is available conjugated to agarose (sc-8416 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8416 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8416 PE), fluorescein (sc-8416 FITC), Alexa Fluor® 488 (sc-8416 AF488), Alexa Fluor® 546 (sc-8416 AF546), Alexa Fluor® 594 (sc-8416 AF594) or Alexa Fluor® 647 (sc-8416 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8416 AF680) or Alexa Fluor® 790 (sc-8416 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8416 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

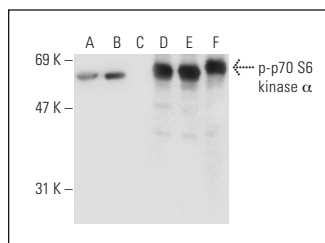
p-p70 S6 kinase α (A-6) is recommended for detection of p70 S6 kinase α phosphorylated at Ser 434 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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).

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.

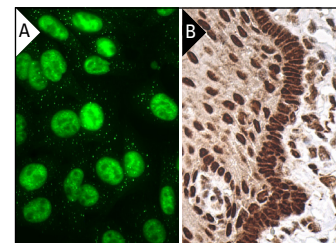
Molecular Weight of p-p70 S6 kinase α : 70 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HEK293 whole cell lysate: sc-45136 or MCF7 whole cell lysate: sc-2206.

DATA



Western blot analysis of p70 S6 kinase α phosphorylation in untreated (A), insulin treated (B), insulin treated and lambda protein phosphatase (C) HEK293 whole cell lysates. Antibodies tested include p-p70 S6 kinase α (A-6): sc-8416 (A,B,C) and p70 S6 kinase α (C-18): sc-230 (D,E,F).



p-p70 S6 kinase α (A-6) Alexa Fluor® 488: sc-8416 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells, showing nuclear and cytoplasmic vesicles localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (A). p-p70 S6 kinase α (A-6): sc-8416. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing nuclear staining of squamous epithelial cells (B).

SELECT PRODUCT CITATIONS

- Zhang, Y., et al. 2001. Signal transduction pathways involved in phosphorylation and activation of p70S6K following exposure to UVA irradiation. *J. Biol. Chem.* 276: 20913-20923.
- Ray, R., et al. 2021. Atx regulates skeletal muscle regeneration via LPAR1 and promotes hypertrophy. *Cell Rep.* 34: 108809.
- Magalhaes-Novais, S., et al. 2022. Mitochondrial respiration supports autophagy to provide stress resistance during quiescence. *Autophagy* 18: 2409-2426.
- Al-Mohanna, M., et al. 2023. The curcumin analogue PAC has potent anti-anaplastic thyroid cancer effects. *Sci. Rep.* 13: 4217.

RESEARCH USE

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