Product No. S-4047
Lot 036H4837

Anti-S6 kinase ($p70^{s6k}$)
Developed in Rabbit
Delipidized, Whole Antiserum

Anti-S6 Kinase ($p70^{s6k}$) is developed in rabbit using a synthetic peptide (Lys-Asp-Ile-Asp-Leu-Asp-Gln-Pro-Glu-Asp-Ala-Gly-Ser-Glu-Asp-Glu-Leu-Glu-Glu), corresponding to the N-terminal region (amino acids 6-23 with N-terminally added lysine) of human S6 kinase, coupled to KLH as the immunogen. This sequence is identical in human, rat and mouse S6 kinase. The antiserum has been treated to remove lipoproteins. Rabbit Anti-S6 Kinase is supplied as a liquid containing 0.1% sodium azide (see MSDS)* as preservative.

Specificity

Anti-S6 Kinase reacts in immunoblotting with S6 kinase (70 kD protein) using NIH 3T3 mouse fibroblasts cell lysate. Staining of the 70 kD band is specifically inhibited with human S6 kinase peptide (6-23).

Protein Concentration: 60.5 mg/ml by Biuret.

Working Dilution

A working dilution of 1:10,000 was determined by indirect immunoblotting using NIH 3T3 fibroblasts lysate.

In order to obtain best results, it is recommended that each individual user determine their opitmum working dilution by titration assay.

Description

The S6 kinases $p70^{s6k}$ and $p90^{rsk}$ are ubiquitously expressed, mitogen-activated serine/threonine protein kinases. Both enzymes are able to phosphorylate the 40S ribosomal protein S6 *in vitro*[1-3], however in intact cells this phosphorylation occurs primarily by $p70^{s6k}$.[4] In addition, $p70^{s6k}$ and $p90^{rsk}$ kinases appear to be regulated via separate signal transduction pathways in response to mitogenic stimulation.[5,6] S6 kinase $p70^{s6k}$ is necessary for cells to enter the S phase after mitogen stimulation[7], suggesting that it plays a central role in cell-cycle regulation. This kinase consists of two alternatively spliced isoforms, the cytosolic 70 kD isoform and the $p85^{s6k}$ isoform which is identical to $p70^{s6k}$ except for a 23 amino acids at its N-terminus, which targets it to the nucleus.[2,3] Both isoforms are activated by phosphorylation at multiple sites in response to mitogens. One input has been suggested to be directed at the pseudosubstrate autoinhibitory (SKAIPS) domain removing its inhibition.[8] However, recent studies indicate that the main regulatory site of S6 kinase is Thr^{256} located in its catalytic kinase domain.[9] Activation of $p70^{s6k}$ in mitogen-stimulated cells appears to be directly mediated by the phosphoinositide kinase FRAP (FKB12-rapamycin-associated-protein)[10] or by the proto-oncogene AKT[11], both located downstream of PI3-kinase, which is a well established activator of $p70^{s6k}$. S6 kinases are widely expressed in many tissues and cells. Antibodies that react specifically with p70 S6 kinase may be used to detect $p70^{s6k}$ and to study its differential tissue expression, intracellular localization of in normal and neoplastic tissue.

Uses

Anti-S6 Kinase may be used for the detection of p70 S6 kinase by immunoblotting using cell culture extracts.

Storage

For continuous use, store at 2-8°C. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

* Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

References

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