

Product Information

Product No. S4047
Anti-S6 kinase (p70^{s6k})

Developed in Rabbit
Delipidized, Whole Antiserum

Product Description

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

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 stimulation⁷, suggesting that it plays a central role in cell-cycle regulation. This kinase consists of two alternatively spliced isoforms, the cytosolic 70 kDa 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 Thr²⁵⁶ 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 AKT¹¹, 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.

Reagents

Rabbit Anti-S6 Kinase is supplied as a liquid containing 0.1% sodium azide as preservative. It has been treated to remove lipoproteins.

Precautions and Disclaimer

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.

Storage/Stability

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.

Product Profile

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

References

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