

Product datasheet

Recombinant human S6K1 protein ab62291

2 Images

Description

Product name	Recombinant human S6K1 protein
Biological activity	Note that this is the p70 form of S6K.
Purity	> 90 % SDS-PAGE. Purity determined >90% by SDS-PAGE and Coomassie blue staining. Affinity purified.
Expression system	Baculovirus infected Sf9 cells
Protein length	Full length protein
Animal free	No
Nature	Recombinant
Species	Human

Specifications

Our [Abpromise guarantee](#) covers the use of **ab62291** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	SDS-PAGE Functional Studies
Form	Liquid
Additional notes	Note that this is the p70 form of S6K.

Preparation and Storage

Stability and Storage	Shipped at 4°C. Upon delivery aliquot. Store at -80°C. Avoid freeze / thaw cycle. pH: 7.50 Constituents: 0.0038% EGTA, 0.00174% PMSF, 0.00385% DTT, 0.79% Tris HCl, 0.00292% EDTA, 25% Glycerol, 0.87% Sodium chloride This product is an active protein and may elicit a biological response in vivo, handle with caution.
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General Info

Function	Acts to integrate nutrient and growth factor signals in regulation of protein synthesis, cell
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proliferation, cell growth, cell cycle progression and cell survival. Downstream effector of the mTOR signaling pathway. Phosphorylates specifically ribosomal protein S6 in response to insulin or several classes of mitogens. During translation initiation, the inactive form associates with the eIF-3 complex under conditions of nutrient depletion. Mitogenic stimulation leads to phosphorylation and dissociation from the eIF-3 complex and the free activated form can phosphorylate other translational targets including EIF4B. Promotes protein synthesis by phosphorylating PDCD4 at 'Ser-67' and targeting it for degradation. Phosphorylates RICTOR leading to regulation of mammalian target of rapamycin complex 2 (mTORC2) signaling; probably phosphorylates RICTOR at 'Thr-1135'. Phosphorylates IRS1 at multiple serine residues coupled with insulin resistance; probably phosphorylates IRS1 at 'Ser-270'. Required for TNF-alpha induced IRS-1 degradation. Phosphorylates EEF2K in response to IGF1 and inhibits EEF2K activity. Phosphorylates BAD at 'Ser-99' in response to IGF1 leading to BAD inactivation and inhibition of BAD-induced apoptosis. Phosphorylates mitochondrial RMP leading to dissociation of a RMP:PPP1CC complex; probably phosphorylates RMP at 'Ser-99'. The free mitochondrial PPP1CC can dephosphorylate RPS6KB1 at Thr-412 which is proposed to be a negative feed back mechanism for the RPS6KB1 antiapoptotic function. Phosphorylates GSK3B at 'Ser-9' under conditions leading to loss of the TSC1-TSC2 complex. Phosphorylates POLDIP3.

Tissue specificity

Widely expressed.

Sequence similarities

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. S6 kinase subfamily.
 Contains 1 AGC-kinase C-terminal domain.
 Contains 1 protein kinase domain.

Domain

The autoinhibitory domain is believed to block phosphorylation within the AGC-kinase C-terminal domain and the activation loop.
 The TOS (TOR signaling) motif is essential for activation by mTORC1.

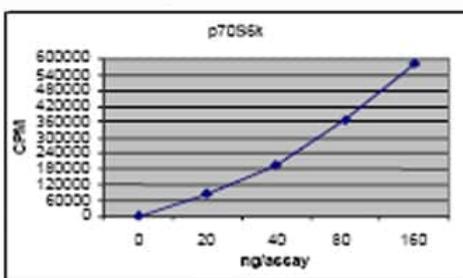
Post-translational modifications

Phosphorylation at Thr-412 is regulated by mTORC1. The phosphorylation at this site is maintained by an agonist-dependent autophosphorylation mechanism.

Cellular localization

Cytoplasm; Nucleus. Cytoplasm and Cell junction > synapse > synaptosome. Mitochondrion outer membrane.

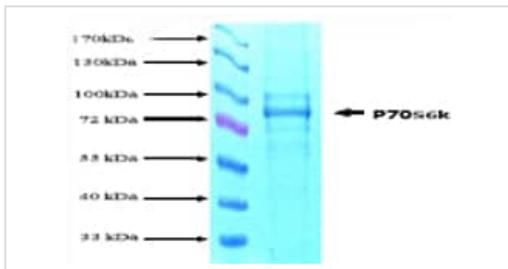
Images



Functional Studies - Recombinant human S6K1 protein (ab62291)

ab62291 was diluted to 20ng/μl with assay dilution buffer (4 mM MOPS, pH 7.2, 2.5 mM β-glycerophosphate, 1 mM EGTA, 0.4 mM EDTA, 4 mM MgCl₂, 0.05 mM DTT), followed by 2-fold serial dilutions, and then the 10μl diluted proteins were used to phosphorylate the S6K substrate peptide (CKRRRLASLR) in the following assay condition: 10 μl diluted ab62291 10 μl S6K substrate peptide (1 mg/ml stock) 5 μl [32P] ATP mixture (250 μM ATP, 0.16 μCi/μl in 4x assay dilution buffer) The various reaction components, except [32P] ATP, were incubated at 30 C and the reaction started by the addition of [32P] ATP. After 15 minutes, the reaction was terminated by spotting 20 μl of the reaction mixture onto a phosphocellulose P81 paper. The P81 paper was dried and washed several times in 1% phosphoric acid prior to counting in the presence of scintillation fluid in a scintillation counter. The actual

counts, using various dilutions of the enzyme in the assay, are shown in graph above. ab62291 Kinase activi



SDS-PAGE - Recombinant human S6K1 protein
(ab62291)

ab62291 on SDS-PAGE, band detected at ~76kDa.

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