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Anti-S6K1 (Phospho-T421) Antibody

Catalog # AP59693

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P23443
Reactivity	Human, Mouse, Rat, Rabbit, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	59140

Additional Information

Gene ID	6198
Other Names	STK14A; Ribosomal protein S6 kinase beta-1; S6K-beta-1; S6K1; 70 kDa ribosomal protein S6 kinase 1; P70S6K1; p70-S6K 1; Ribosomal protein S6 kinase I; Serine/threonine-protein kinase 14A; p70 ribosomal S6 kinase alpha; p70 S6 kinase alpha; p70 S6K-alpha; p70 S6KA
Target/Specificity	KLH-conjugated synthetic phosphopeptide corresponding to residues surrounding T421 of human S6K1 protein. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000), IHC (1/100 - 1/200) IHC~~WB (1/500 - 1/1000), IHC (1/100 - 1/200) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	RPS6KB1
Synonyms	STK14A
Function	Serine/threonine-protein kinase that acts downstream of mTOR signaling in response to growth factors and nutrients to promote cell proliferation, cell growth and cell cycle progression (PubMed:11500364, PubMed:12801526, PubMed:14673156, PubMed:15071500, PubMed:15341740, PubMed:16286006, PubMed:17052453, PubMed:17053147, PubMed:17936702, PubMed:18952604, PubMed:19085255, PubMed:19720745, PubMed:19935711, PubMed:19995915, PubMed:22017876, PubMed:23429703, PubMed:28178239). Regulates protein synthesis through phosphorylation of EIF4B, RPS6 and EEF2K, and contributes to cell survival by repressing the pro-apoptotic function of BAD

(PubMed:11500364, PubMed:12801526, PubMed:14673156, PubMed:15071500, PubMed:15341740, PubMed:16286006, PubMed:17052453, PubMed:17053147, PubMed:17936702, PubMed:18952604, PubMed:19085255, PubMed:19720745, PubMed:19935711, PubMed:19995915, PubMed:22017876, PubMed:23429703, PubMed:28178239). Under conditions of nutrient depletion, the inactive form associates with the EIF3 translation initiation complex (PubMed:16286006). Upon mitogenic stimulation, phosphorylation by the mechanistic target of rapamycin complex 1 (mTORC1) leads to dissociation from the EIF3 complex and activation (PubMed:16286006). The active form then phosphorylates and activates several substrates in the pre-initiation complex, including the EIF2B complex and the cap-binding complex component EIF4B (PubMed:16286006). Also controls translation initiation by phosphorylating a negative regulator of EIF4A, PDCD4, targeting it for ubiquitination and subsequent proteolysis (PubMed:17053147). Promotes initiation of the pioneer round of protein synthesis by phosphorylating POLDIP3/SKAR (PubMed:15341740). In response to IGF1, activates translation elongation by phosphorylating EEF2 kinase (EEF2K), which leads to its inhibition and thus activation of EEF2 (PubMed:11500364). Also plays a role in feedback regulation of mTORC2 by mTORC1 by phosphorylating MAPKAP1/SIN1, MTOR and RICTOR, resulting in the inhibition of mTORC2 and AKT1 signaling (PubMed:15899889, PubMed:19720745, PubMed:19935711, PubMed:19995915). Also involved in feedback regulation of mTORC1 and mTORC2 by phosphorylating DEPTOR (PubMed:22017876). Mediates cell survival by phosphorylating the pro-apoptotic protein BAD and suppressing its pro-apoptotic function (By similarity). Phosphorylates mitochondrial URI1 leading to dissociation of a URI1-PPP1CC complex (PubMed:17936702). The free mitochondrial PPP1CC can then dephosphorylate RPS6KB1 at Thr-412, which is proposed to be a negative feedback mechanism for the RPS6KB1 anti-apoptotic function (PubMed:17936702). Mediates TNF-induced insulin resistance by phosphorylating IRS1 at multiple serine residues, resulting in accelerated degradation of IRS1 (PubMed:18952604). In cells lacking functional TSC1-2 complex, constitutively phosphorylates and inhibits GSK3B (PubMed:17052453). May be involved in cytoskeletal rearrangement through binding to neurabin (By similarity). Phosphorylates and activates the pyrimidine biosynthesis enzyme CAD, downstream of MTOR (PubMed:23429703). Following activation by mTORC1, phosphorylates EPRS and thereby plays a key role in fatty acid uptake by adipocytes and also most probably in interferon-gamma-induced translation inhibition (PubMed:28178239).

Cellular Location

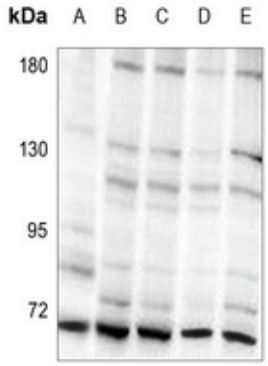
Synapse, synaptosome. Mitochondrion outer membrane. Mitochondrion. Note=Colocalizes with URI1 at mitochondrion [Isoform Alpha II]: Cytoplasm.

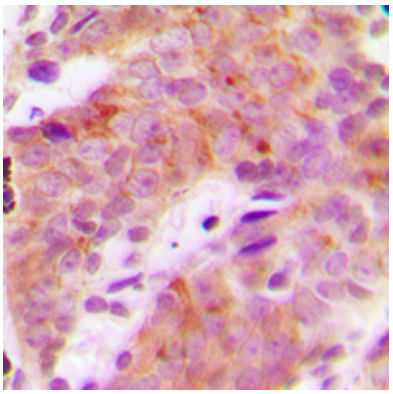
Tissue Location

Widely expressed..

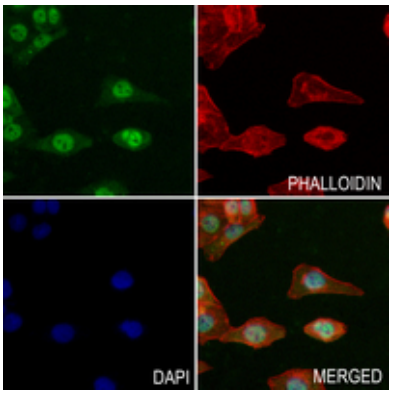
Images

Western blot analysis of S6K1 (Phospho-T421) expression in rat muscle (A), HEK293T-PMA-30min (B), HEK293T-PMA-15min (C), HEK293T-PMA-5min (D), HEK293T (E) whole cell lysates. (Predicted band size: 59 kD; Observed band size: 70 kD)

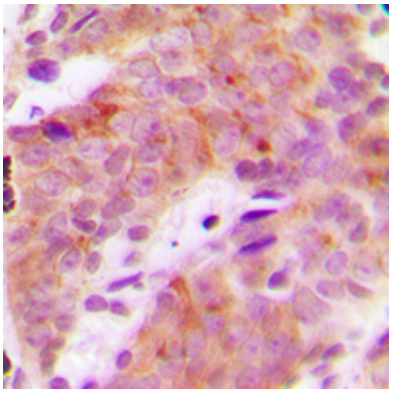




Immunohistochemical analysis of S6K1 (Phospho-T421) staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of S6K1 (Phospho-T421) staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).



Immunohistochemical analysis of S6K1 (pT421) staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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