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Phospho-S6K1 (T421 + S424) Antibody

Rabbit mAb Catalog # AP90305

Product Information

ApplicationWB, IPPrimary AccessionP23443ReactivityRat, HumanClonalityMonoclonal

Other Names EC 2.7.11.1, KS6B1, P70-S6K, RPS6KB1, Ribosomal protein S6 kinase,

Ribosomal protein S6 kinase, 70kDa, polypeptide 1, S6K, kinase p70S6K,

p70-S6K

IsotypeRabbit IgGHostRabbitCalculated MW59140

Additional Information

Dilution WB 1:500~1:2000 IP 1:30 **Purification** Affinity-chromatography

Immunogen A synthesized peptide derived from human Phospho-S6K1 (T421 +

S424); Phospho-S6K1 (T444 + S447)

Description This gene encodes a member of the RSK (ribosomal S6 kinase) family of

serine/threonine kinases. This kinase contains 2 non-identical kinase catalytic domains and phosphorylates several residues of the S6 ribosomal protein.

Storage Condition and Buffer Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium

azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term.

Avoid freeze / thaw cycle.

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:<u>22017876</u>, PubMed:<u>23429703</u>, PubMed:<u>28178239</u>). 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: <u>17936702</u>). 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-alpha-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

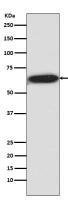
Synapse, synaptosome. Mitochondrion outer membrane. Mitochondrion. Note=Colocalizes with URI1 at mitochondrion [Isoform Alpha II]: Cytoplasm.

Tissue Location

Widely expressed..

Images

Western blot analysis of SK61 phosphorylation expression in HEK293 cell lysate.



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