

## S6K (RPS6KB1) Antibody (S424)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP3289G

### Product Information

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<b>Application</b>	WB, IHC-P, E
<b>Primary Accession</b>	<a href="#">P23443</a>
<b>Other Accession</b>	<a href="#">P67999</a> , <a href="#">P67998</a> , <a href="#">Q8BSK8</a> , <a href="#">Q6TJY3</a>
<b>Reactivity</b>	Human, Rat, Mouse
<b>Predicted</b>	Bovine, Mouse, Rabbit, Rat
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	Rabbit IgG
<b>Clone Names</b>	RB11404
<b>Calculated MW</b>	59140
<b>Antigen Region</b>	425-454

### Additional Information

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<b>Gene ID</b>	6198
<b>Other Names</b>	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, RPS6KB1, STK14A
<b>Target/Specificity</b>	This S6K (RPS6KB1) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 425-454 amino acids from human S6K (RPS6KB1).
<b>Dilution</b>	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
<b>Format</b>	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
<b>Storage</b>	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
<b>Precautions</b>	S6K (RPS6KB1) Antibody (S424) is for research use only and not for use in diagnostic or therapeutic procedures.

### Protein Information

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<b>Name</b>	RPS6KB1
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**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-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..

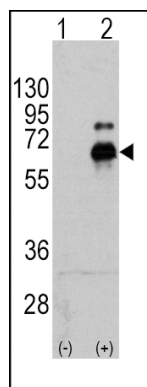
## Background

RPS6KB1 is 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. The kinase activity of this protein leads to an increase in protein synthesis and cell proliferation. Amplification of the region of DNA encoding the gene for RPS6KB1 and overexpression of this kinase are seen in some breast cancer cell lines.

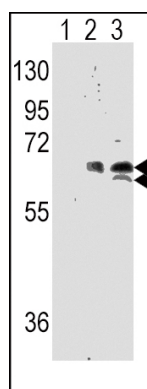
## References

Adem, C., et al., *Genes Chromosomes Cancer* 41(1):1-11 (2004).  
Suzuki, Y., et al., *Genome Res.* 14(9):1711-1718 (2004).  
Gomez-Cambronero, J., et al., *Leuk. Res.* 28(7):755-762 (2004).  
Raught, B., et al., *EMBO J.* 23(8):1761-1769 (2004).  
Miyakawa, M., et al., *Endocr. J.* 50(1):77-83 (2003).

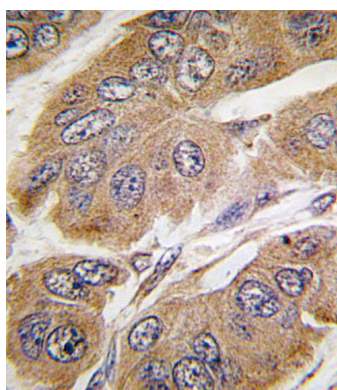
## Images



Western blot analysis of RPS6KB1 (arrow) using rabbit polyclonal RPS6KB1 Antibody (S424) (RB11404). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the RPS6KB1 gene (Lane 2) (Origene Technologies). )



Western blot analysis of Phospho-RPS6KB1-pS424 Antibody (AP3352a) and RPS6KB1 Antibody (S424) (AP3289g) in human TNF alpha activated Hela cell line lysates. RPS6KB1 and Phospho-RPS6KB1 (arrow) was detected using the purified PAb. (lane 1: without TNF alpha; lane 2: TNF alpha activated, Phospho-RPS6KB1-pS424 Antibody (AP3352a); lane 3: TNF alpha activated, RPS6KB1 Antibody (S424) (AP3289g)



Formalin-fixed and paraffin-embedded human breast carcinoma tissue reacted with RPS6KB1 Antibody (T421) (Cat.#AP3289g), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.