

# RPS6KA1 Antibody (S732)

Affinity Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7941e

## Product Information

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<b>Application</b>	WB, IHC-P, E
<b>Primary Accession</b>	<a href="#">Q15418</a>
<b>Other Accession</b>	<a href="#">Q63531</a> , <a href="#">P18653</a>
<b>Reactivity</b>	Human
<b>Predicted</b>	Mouse, Rat
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	Rabbit IgG
<b>Clone Names</b>	RB13297
<b>Calculated MW</b>	82723
<b>Antigen Region</b>	710-735

## Additional Information

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<b>Gene ID</b>	6195
<b>Other Names</b>	Ribosomal protein S6 kinase alpha-1, S6K-alpha-1, 90 kDa ribosomal protein S6 kinase 1, p90-RSK 1, p90RSK1, p90S6K, MAP kinase-activated protein kinase 1a, MAPK-activated protein kinase 1a, MAPKAP kinase 1a, MAPKAPK-1a, Ribosomal S6 kinase 1, RSK-1, RPS6KA1, MAPKAPK1A, RSK1
<b>Target/Specificity</b>	This RPS6KA1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 710-735 amino acids from human RPS6KA1.
<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>	RPS6KA1 Antibody (S732) is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	RPS6KA1
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## Synonyms

MAPKAPK1A, RSK1

## Function

Serine/threonine-protein kinase that acts downstream of ERK (MAPK1/ERK2 and MAPK3/ERK1) signaling and mediates mitogenic and stress-induced activation of the transcription factors CREB1, ETV1/ER81 and NR4A1/NUR77, regulates translation through RPS6 and EIF4B phosphorylation, and mediates cellular proliferation, survival, and differentiation by modulating mTOR signaling and repressing pro- apoptotic function of BAD and DAPK1 (PubMed:[10679322](#), PubMed:[12213813](#), PubMed:[15117958](#), PubMed:[16223362](#), PubMed:[17360704](#), PubMed:[18722121](#), PubMed:[26158630](#), PubMed:[35772404](#), PubMed:[9430688](#)). In fibroblast, is required for EGF-stimulated phosphorylation of CREB1, which results in the subsequent transcriptional activation of several immediate-early genes (PubMed:[18508509](#), PubMed:[18813292](#)). In response to mitogenic stimulation (EGF and PMA), phosphorylates and activates NR4A1/NUR77 and ETV1/ER81 transcription factors and the cofactor CREBBP (PubMed:[12213813](#), PubMed:[16223362](#)). Upon insulin-derived signal, acts indirectly on the transcription regulation of several genes by phosphorylating GSK3B at 'Ser-9' and inhibiting its activity (PubMed:[18508509](#), PubMed:[18813292](#)). Phosphorylates RPS6 in response to serum or EGF via an mTOR-independent mechanism and promotes translation initiation by facilitating assembly of the pre-initiation complex (PubMed:[17360704](#)). In response to insulin, phosphorylates EIF4B, enhancing EIF4B affinity for the EIF3 complex and stimulating cap- dependent translation (PubMed:[16763566](#)). Is involved in the mTOR nutrient-sensing pathway by directly phosphorylating TSC2 at 'Ser-1798', which potently inhibits TSC2 ability to suppress mTOR signaling, and mediates phosphorylation of RPTOR, which regulates mTORC1 activity and may promote rapamycin-sensitive signaling independently of the PI3K/AKT pathway (PubMed:[15342917](#)). Also involved in feedback regulation of mTORC1 and mTORC2 by phosphorylating DEPTOR (PubMed:[22017876](#)). Mediates cell survival by phosphorylating the pro- apoptotic proteins BAD and DAPK1 and suppressing their pro-apoptotic function (PubMed:[10679322](#), PubMed:[16213824](#)). Promotes the survival of hepatic stellate cells by phosphorylating CEBPB in response to the hepatotoxin carbon tetrachloride (CCl4) (PubMed:[11684016](#)). Mediates induction of hepatocyte proliferation by TGFA through phosphorylation of CEBPB (PubMed:[18508509](#), PubMed:[18813292](#)). Is involved in cell cycle regulation by phosphorylating the CDK inhibitor CDKN1B, which promotes CDKN1B association with 14-3-3 proteins and prevents its translocation to the nucleus and inhibition of G1 progression (PubMed:[18508509](#), PubMed:[18813292](#)). Phosphorylates EPHA2 at 'Ser-897', the RPS6KA-EPHA2 signaling pathway controls cell migration (PubMed:[26158630](#)). In response to mTORC1 activation, phosphorylates EIF4B at 'Ser-406' and 'Ser-422' which stimulates bicarbonate cotransporter SLC4A7 mRNA translation, increasing SLC4A7 protein abundance and function (PubMed:[35772404](#)).

## Cellular Location

Nucleus. Cytoplasm.

## Background

RPS6KA1 is a member of the RSK (ribosomal S6 kinase) family of serine/threonine kinases. This kinase contains 2 nonidentical kinase catalytic domains and phosphorylates various substrates, including members of the mitogen-activated kinase (MAPK) signalling pathway. The activity of this protein has been implicated in controlling cell growth and differentiation.

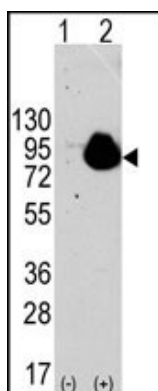
## References

Cavet, M.E., et al., J. Biol. Chem. 278(20):18376-18383 (2003).

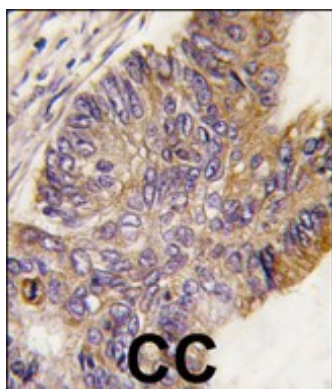
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Fingar, D.C., et al., Genes Dev. 16(12):1472-1487 (2002).  
Lu, H., et al., J. Pharmacol. Exp. Ther. 300(3):818-823 (2002).  
Saitoh, M., et al., J. Biol. Chem. 277(22):20104-20112 (2002).

## Images

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Western blot analysis of RPS6KA1 (arrow) using rabbit polyclonal RPS6KA1 Antibody (S732). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the RPS6KA1 gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human colon carcinoma tissue reacted with RPS6KA1 Antibody (S732), 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.

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