

## RSK2 (RPS6KA3) Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP7943b

### Product Information

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<b>Application</b>	IHC-P, WB, E
<b>Primary Accession</b>	<a href="#">P51812</a>
<b>Other Accession</b>	<a href="#">P18654</a>
<b>Reactivity</b>	Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	Rabbit IgG
<b>Calculated MW</b>	83736
<b>Antigen Region</b>	13-42

### Additional Information

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<b>Gene ID</b>	6197
<b>Other Names</b>	Ribosomal protein S6 kinase alpha-3, S6K-alpha-3, 90 kDa ribosomal protein S6 kinase 3, p90-RSK 3, p90RSK3, Insulin-stimulated protein kinase 1, ISPK-1, MAP kinase-activated protein kinase 1b, MAPK-activated protein kinase 1b, MAPKAP kinase 1b, MAPKAPK-1b, Ribosomal S6 kinase 2, RSK-2, pp90RSK2, RPS6KA3, ISPK1, MAPKAPK1B, RSK2
<b>Target/Specificity</b>	This RSK2 (RPS6KA3) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 13-42 amino acids from the N-terminal region of human RSK2 (RPS6KA3).
<b>Dilution</b>	IHC-P~~1:100~500 WB~~1:1000 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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
<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>	RSK2 (RPS6KA3) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

### Protein Information

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<b>Name</b>	RPS6KA3
<b>Synonyms</b>	ISPK1, MAPKAPK1B, RSK2

<b>Function</b>	<p>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:<a href="#">16213824</a>, PubMed:<a href="#">16223362</a>, PubMed:<a href="#">17360704</a>, PubMed:<a href="#">9770464</a>). In fibroblast, is required for EGF- stimulated phosphorylation of CREB1 and histone H3 at 'Ser-10', which results in the subsequent transcriptional activation of several immediate-early genes (PubMed:<a href="#">10436156</a>, PubMed:<a href="#">9770464</a>). In response to mitogenic stimulation (EGF and PMA), phosphorylates and activates NR4A1/NUR77 and ETV1/ER81 transcription factors and the cofactor CREBBP (PubMed:<a href="#">16223362</a>). Upon insulin-derived signal, acts indirectly on the transcription regulation of several genes by phosphorylating GSK3B at 'Ser-9' and inhibiting its activity (PubMed:<a href="#">8250835</a>). Phosphorylates RPS6 in response to serum or EGF via an mTOR-independent mechanism and promotes translation initiation by facilitating assembly of the preinitiation complex (PubMed:<a href="#">17360704</a>). In response to insulin, phosphorylates EIF4B, enhancing EIF4B affinity for the EIF3 complex and stimulating cap-dependent translation (PubMed:<a href="#">18508509</a>, PubMed:<a href="#">18813292</a>). Is involved in the mTOR nutrient-sensing pathway by directly phosphorylating TSC2 at 'Ser-1798', which potentially 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:<a href="#">18722121</a>). Mediates cell survival by phosphorylating the pro- apoptotic proteins BAD and DAPK1 and suppressing their pro-apoptotic function (PubMed:<a href="#">16213824</a>). Promotes the survival of hepatic stellate cells by phosphorylating CEBPB in response to the hepatotoxin carbon tetrachloride (CCl4) (PubMed:<a href="#">18508509</a>, PubMed:<a href="#">18813292</a>). 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 (By similarity). In LPS-stimulated dendritic cells, is involved in TLR4- induced macropinocytosis, and in myeloma cells, acts as effector of FGFR3-mediated transformation signaling, after direct phosphorylation at Tyr-529 by FGFR3 (By similarity). Negatively regulates EGF-induced MAPK1/3 phosphorylation via phosphorylation of SOS1 (By similarity). Phosphorylates SOS1 at 'Ser-1134' and 'Ser-1161' that create YWHAB and YWHAЕ binding sites and which contribute to the negative regulation of MAPK1/3 phosphorylation (By similarity). Phosphorylates EPHA2 at 'Ser- 897', the RPS6KA-EPHA2 signaling pathway controls cell migration (PubMed:<a href="#">26158630</a>). Acts as a regulator of osteoblast differentiation by mediating phosphorylation of ATF4, thereby promoting ATF4 transactivation activity (By similarity).</p>
<b>Cellular Location</b>	Nucleus. Cytoplasm
<b>Tissue Location</b>	Expressed in many tissues, highest levels in skeletal muscle

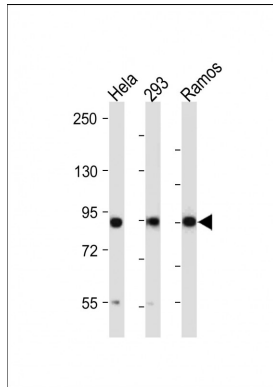
## Background

RSK3 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 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. Mutations in the gene have been associated with Coffin-Lowry syndrome (CLS).

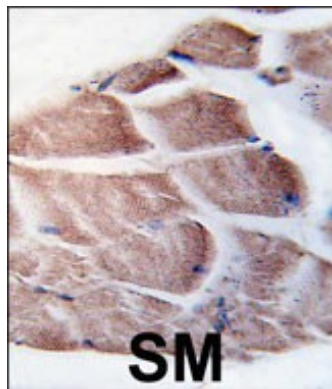
## References

Yang, X., et al., Cell 117(3):387-398 (2004).  
 Guimiot, F., et al., Gene Expr. Patterns 4(1):111-114 (2004).  
 Zeniou, M., et al., (er) Nucleic Acids Res. 32(3):1214-1223 (2004).  
 Vaidyanathan, H., et al., J. Biol. Chem. 278(34):32367-32372 (2003).  
 Zhang, Y., et al., J. Biol. Chem. 278(15):12650-12659 (2003).

## Images



All lanes : Anti-RSK3 Antibody (N-term) at 1:2000 dilution  
 Lane 1: HeLa whole cell lysate Lane 2: 293 whole cell lysate Lane 3: Ramos whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 84 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human skeletal muscle tissue reacted with RSK3 antibody (N-term) (Cat.#AP7943b), 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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