

**RSK2 Antibody**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO1636a****Specification****RSK2 Antibody - Product Information**

Application	<b>E, WB, IF, FC</b>
Primary Accession	<a href="#">P51812</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG1</b>
Calculated MW	<b>80kDa KDa</b>

**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 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 this gene have been associated with Coffin-Lowry syndrome (CLS).

**Immunogen**

Purified recombinant fragment of human RSK2 expressed in E. Coli. <br />

**Formulation**

Ascitic fluid containing 0.03% sodium azide.

**RSK2 Antibody - Additional Information**

**Gene ID** 6197

**Other Names**

Ribosomal protein S6 kinase alpha-3, S6K-alpha-3, 2.7.11.1, 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

**Dilution**

E~~1/10000  
WB~~1/500 - 1/2000  
IF~~1/200 - 1/1000  
FC~~1/200 - 1/400

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

RSK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## RSK2 Antibody - Protein Information

**Name** RPS6KA3

**Synonyms** ISPK1, MAPKAPK1B, RSK2

### 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:<a href="http://www.uniprot.org/citations/9770464" target="\_blank">9770464</a>, PubMed:<a href="http://www.uniprot.org/citations/16223362" target="\_blank">16223362</a>, PubMed:<a href="http://www.uniprot.org/citations/17360704" target="\_blank">17360704</a>, PubMed:<a href="http://www.uniprot.org/citations/16213824" target="\_blank">16213824</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="http://www.uniprot.org/citations/9770464" target="\_blank">9770464</a>, PubMed:<a href="http://www.uniprot.org/citations/10436156" target="\_blank">10436156</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="http://www.uniprot.org/citations/16223362" target="\_blank">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="http://www.uniprot.org/citations/8250835" target="\_blank">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="http://www.uniprot.org/citations/17360704" target="\_blank">17360704</a>). In response to insulin, phosphorylates EIF4B, enhancing EIF4B affinity for the EIF3 complex and stimulating cap-dependent translation (PubMed:<a href="http://www.uniprot.org/citations/18508509" target="\_blank">18508509</a>, PubMed:<a href="http://www.uniprot.org/citations/18813292" target="\_blank">18813292</a>). 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:<a href="http://www.uniprot.org/citations/18722121" target="\_blank">18722121</a>). Mediates cell survival by phosphorylating the pro- apoptotic proteins BAD and DAPK1 and suppressing their pro-apoptotic function (PubMed:<a href="http://www.uniprot.org/citations/16213824" target="\_blank">16213824</a>). Promotes the survival of hepatic stellate cells by phosphorylating CEBPB in response to the hepatotoxin carbon tetrachloride (CCl4) (PubMed:<a href="http://www.uniprot.org/citations/18508509" target="\_blank">18508509</a>, PubMed:<a href="http://www.uniprot.org/citations/18813292" target="\_blank">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 YWHAE 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="http://www.uniprot.org/citations/26158630" target="\_blank">26158630</a>). Acts as a regulator of osteoblast differentiation by mediating phosphorylation of ATF4, thereby promoting ATF4 transactivation activity (By similarity).

## Cellular Location

Nucleus. Cytoplasm

## Tissue Location

Expressed in many tissues, highest levels in skeletal muscle

## RSK2 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

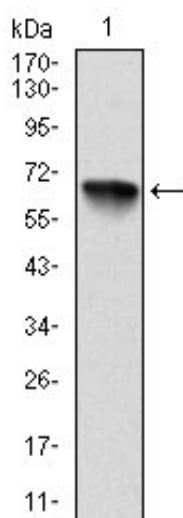
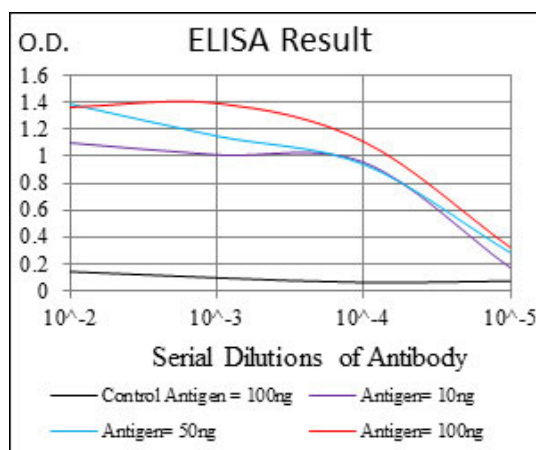


Figure 1: Western blot analysis using RSK2 mAb against human RSK2 (AA: 1-212) recombinant protein. (Expected MW is 49.7 kDa)

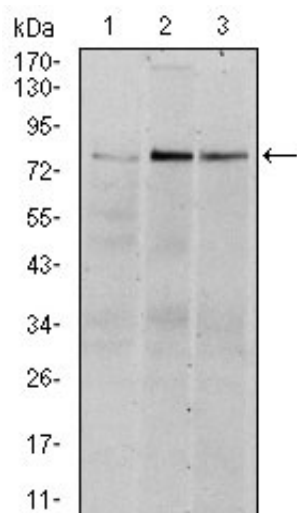


Figure 2: Western blot analysis using RSK2 mouse mAb against HeLa (1), MCF-7 (2), and HepG2 (3) cell lysate.

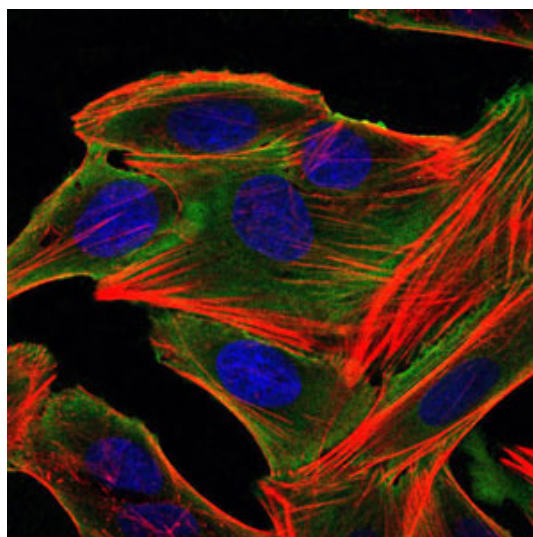


Figure 3: Immunofluorescence analysis of HepG2 cells using RSK2 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

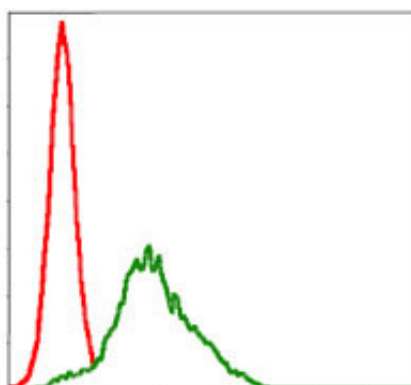


Figure 4: Flow cytometric analysis of HepG2 cells using RSK2 mouse mAb (green) and negative control (red).

**RSK2 Antibody - References**

1. Mol Cell. 2009 Jan 16;33(1):109-16.
2. Cancer Res. 2009 May 15;69(10):4398-406.