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RPS6K1 Antibody
Catalog # ASC10319

Specification

RPS6K1 Antibody - Product Information

Application	**WB, ICC, IF**
Primary Accession	Q15418
Other Accession	AAC82497, 292457
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**RPS6K1antibody can be used for the detection of RPS6K1 by Western blot at 2.5 - 10 µg/mL. Antibody can also be used for immunocytochemistry starting at 10 µg/mL. For immunofluorescence start at 20 µg/mL.**

RPS6K1 Antibody - Additional Information

Gene ID **6195**

Other Names
RPS6K1 Antibody: RSK, HU-1, RSK1, MAPKAPK1A, Ribosomal protein S6 kinase alpha-1, 90 kDa ribosomal protein S6 kinase 1, S6K-alpha-1, ribosomal protein S6 kinase, 90kDa, polypeptide 1

Target/Specificity
RPS6KA1;

Reconstitution & Storage
RPS6K1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
RPS6K1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

RPS6K1 Antibody - Protein Information

Name RPS6KA1

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 prolifration 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.

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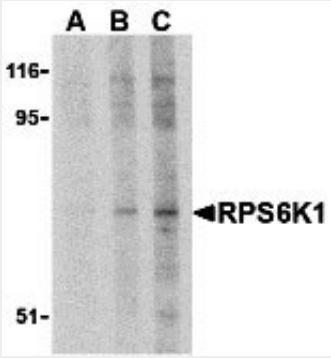
RPS6K1 Antibody - Protocols

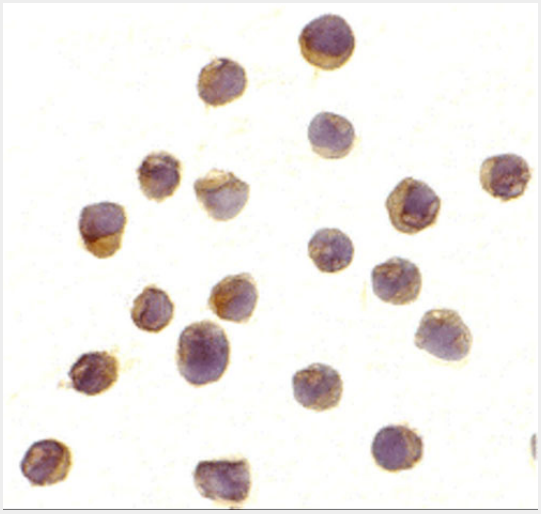
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

RPS6K1 Antibody - Images



Western blot analysis of RPS6K1 in Jurkat cell lysate with RPS6K1 antibody at (A) 2.5, (B) 5 and (C) 10 µg/mL.



Immunocytochemistry of RPS6K1 in Jurkat cells with RPS6K1 antibody at 10 µg/mL.

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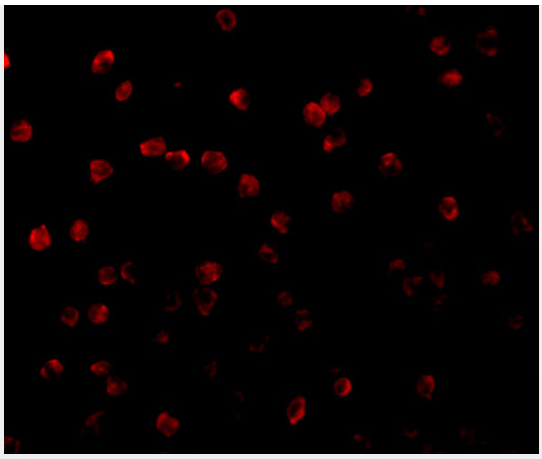

Immunofluorescence of RP S6 Kinase in Jurkat cells with RP S6 Kinase antibody at 20 µg/mL.

RPS6K1 Antibody - Background

RPS6K1 Antibody: Ribosomal protein S6 kinase 1 (RPS6K1) is the best characterized effector of the mammalian Target of Rapamycin (TOR), an evolutionarily conserved serine/threonine kinase that regulates cell growth and cell cycle through its ability to integrate signals from nutrient levels and growth factors. Nutrients and growth factors stimulate a complex including TOR, raptor (regulatory associated protein of TOR), and GbetaL to phosphorylate RPS6K1 and the eukaryotic initiation factor 4E binding protein (4EBP1), leading to increased protein synthesis and cell growth. RPS6K1 is thought to desensitize tissues to insulin as mice deficient in RPS6K1 have been shown to be hypersensitive to insulin and impervious to obesity-induced insulin resistance seen in wild type obese mice.

RPS6K1 Antibody - References

Burnett PE, Barrow RK, Cohen NA, et al. RAFT1 phosphorylation of the translational regulators p70 S6 kinase and 4E-BP1. Proc. Natl. Acad. Sci. USA. 1998; 95:1432-7.
Inoki K, Ouyang H, Li Y, et al. Signaling by target of rapamycin proteins in cell growth control. Microbiol. Mol. Biol. Rev. 2005; 69:79-100.
Manning BD. Balancing Akt with S6K: implications for both metabolic diseases and tumorigenesis. J. Cell Biol. 2004; 167:399-403.
Um SH, Frigerio F, Watanabe M, et al. Absences of S6K1 protects against age- and diet-induced obesity while enhancing insulin sensitivity. Nature 2004; 431:200-5.