10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MAPKAP1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14132b

Product Information

Application	WB, E
Primary Accession	Q9BPZ7
Other Accession	Q6AYF1, A2VDU2, NP_001006618.1, NP_001006619.1, NP_001006621.1
Reactivity	Human
Predicted	Bovine, Rat, Mouse, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34225
Calculated MW	59123
Antigen Region	481-510

Additional Information

Gene ID	79109
Other Names	Target of rapamycin complex 2 subunit MAPKAP1, TORC2 subunit MAPKAP1, Mitogen-activated protein kinase 2-associated protein 1, Stress-activated map kinase-interacting protein 1, SAPK-interacting protein 1, mSIN1, MAPKAP1, MIP1, SIN1
Target/Specificity	This MAPKAP1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 481-510 amino acids from the C-terminal region of human MAPKAP1.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	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.
Storage	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.
Precautions	MAPKAP1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAPKAP1 {ECO:0000303|PubMed:15363842, ECO:0000312|HGNC:HGNC:18752}

Function	Component of the mechanistic target of rapamycin complex 2 (mTORC2), which transduces signals from growth factors to pathways involved in proliferation, cytoskeletal organization, lipogenesis and anabolic output (PubMed:15467718, PubMed:16919458, PubMed:16962653, PubMed:17043309, PubMed:21806543, PubMed:28264193, PubMed:28968999, PubMed:30837283, PubMed:35926713). In response to growth factors, mTORC2 phosphorylates and activates AGC protein kinase family members, including AKT (AKT1, AKT2 and AKT3), PKC (PRKCA, PRKCB and PRKCE) and SGK1 (PubMed:16919458, PubMed:16962653, PubMed:21806543, PubMed:28264193, PubMed:28968999, PubMed:30837283, PubMed:35926713). In contrast to mTORC1, mTORC2 is nutrient-insensitive (PubMed:16962653). Within the mTORC2 complex, MAPKAP1/SIN1 acts as a substrate adapter which recognizes and binds AGC protein kinase family members for phosphorylation by MTOR (PubMed:21806543, PubMed:28264193). mTORC2 plays a critical role in AKT1 activation by mediating phosphorylation of different sites depending on the context, such as 'Thr-450', 'Ser- 473', 'Ser-477' or 'Thr-479', facilitating the phosphorylation of the activation loop of AKT1 on 'Thr-308' by PDPK1/PDK1 which is a prerequisite for full activation (PubMed:28264193, PubMed:35926713). mTORC2 catalyzes the phosphorylation of SGK1 at 'Ser-422' and of PRKCA on 'Ser-657' (PubMed:30837283, PubMed:35926713). The mTORC2 complex also phosphorylates various proteins involved in insulin signaling, such as FBXW8 and IGF2BP1 (By similarity). mTORC2 acts upstream of Rho GTPases to regulate the actin cytoskeleton, probably by activating one or more Rho-type guanine nucleotide exchange factors (PubMed:15467718). mTORC2 promotes the serum-induced formation of stress-fibers or F-actin (PubMed:15467718). MAPKAP1 inhibits MAP3K2 by preventing its dimerization and autophosphorylation (PubMed:15988011). Inhibits HRAS and KRAS independently of mTORC2 complex (PubMed:17303383, PubMed:34380736, PubMed:35522713). Enhances osmotic stress-induced phosphorylation of ATF2 and ATF2-mediated transcription (PubMed:17054722). Involved in ciliogenesis, regulates cilia length through its interaction with CCDC28B independently of mTORC2 complex (PubMed:23727834).
Cellular Location	Cell membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Early endosome membrane; Peripheral membrane protein. Late endosome membrane; Peripheral membrane protein. Lysosome membrane; Peripheral membrane protein. Golgi apparatus membrane; Peripheral membrane protein. Mitochondrion outer membrane; Peripheral membrane protein. Cytoplasm, perinuclear region. Nucleus Note=The mTORC2 complex localizes to membranes: mTORC2 is active at the plasma membrane, endoplasmic reticulum membrane, lysosomes and perinuclear region (PubMed:17303383, PubMed:21867682, PubMed:30837283) In lysosomal membrane, mTORC2 is sensitive to lysosomal positioning in the cell (PubMed:31130364). Following phosphorylation by PKC, localizes to the perinuclear region, where the mTORC2 complex specifically phosphorylates SGK1, but not AKT (PubMed:30837283) [Isoform 2]: Cell membrane. Nucleus [Isoform 6]: Cytoplasm. Nucleus
Tissue Location	Ubiquitously expressed, with highest levels in heart and skeletal muscle.

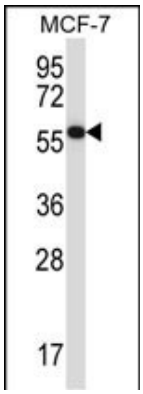
Background

This gene encodes a protein that is highly similar to the yeast SIN1 protein, a stress-activated protein kinase. Alternatively spliced transcript variants encoding distinct isoforms have been described. Alternate polyadenylation sites as well as alternate 3' UTRs have been identified for transcripts of this gene.

References

Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) :
Yoshida, T., et al. Int. J. Mol. Med. 25(4):649-656(2010)
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Talmud, P.J., et al. Am. J. Hum. Genet. 85(5):628-642(2009)

Images



MAPKAP1 Antibody (C-term) (Cat. #AP14132b) western blot analysis in MCF-7 cell line lysates (35ug/lane).This demonstrates the MAPKAP1 antibody detected the MAPKAP1 protein (arrow).

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