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MAPKAP1/SIN1 Rabbit pAb

Catalog # AP99907

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q9BPZ7
Other Accession	Q9BPZ7
Reactivity	Mouse
Predicted	Rat, Pig, Orangutan, Gorilla, Human, Rabbit, Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	59123
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human MAPKAP1/SIN1
Epitope Specificity	61-160/522
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the SIN1 family.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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. [provided by RefSeq, Jul 2008]

Additional Information

Gene ID	79109
Other Names	SIN1; JC310; MIP1; SIN1b; SIN1g; D230039K05Rik; SIN1_CHICK; MAPKAP1; TORC2 subunit MAPKAP1; Mitogen-activated protein kinase 2-associated protein 1; Stress-activated map kinase-interacting protein 1 (SAPK-interacting protein 1); SIN1_HUMAN; Stress-activated map kinase-interacting protein 1 (SAPK-interacting protein 1 | mSIN1); SIN1_MOUSE; SIN1_RAT; MAPK associated protein 1; mitogen-activated protein kinase associated protein 1; stress-activated protein kinase-interacting 1
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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.

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