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Raptor Antibody
Catalog # ASC10310

Specification

Raptor Antibody - Product Information

Application	WB, ICC, IF
Primary Accession	Q8K4Q0
Other Accession	Q8K4Q0, 46577497
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	Raptor antibody can be used for the detection of Raptor by Western blot at 2 and 4 µg/mL. Antibody can also be used for immunocytochemistry starting at 10 µg/mL. For immunofluorescence start at 10 µg/mL.

Raptor Antibody - Additional Information

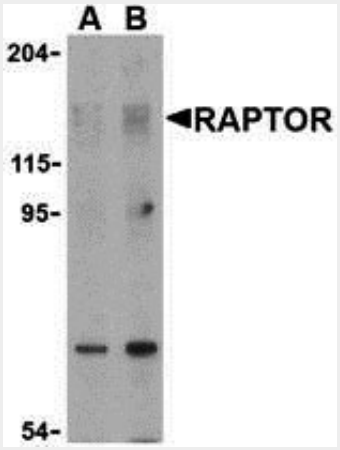
Gene ID 74370

Other Names
Raptor Antibody: Rap, Raptor, mKIAA1303, 4932417H02Rik, Regulatory-associated protein of mTOR, regulatory associated protein of MTOR, complex 1

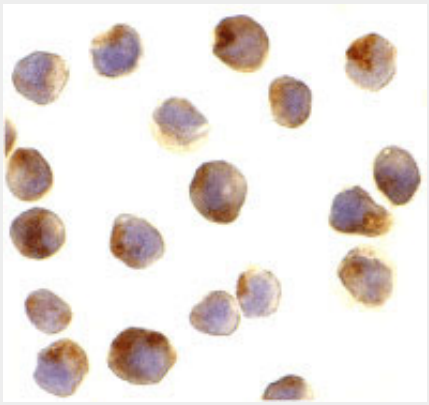
Target/Specificity
Rptor; Raptor has multiple isoforms that may also be recognized by antibody.

Reconstitution & Storage
Raptor 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.

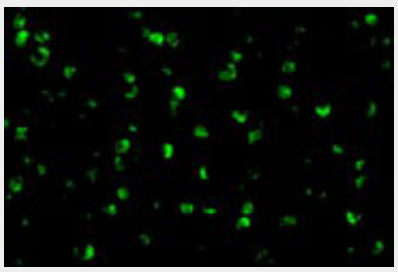
Precautions
Raptor Antibody is for research use only and not for use in diagnostic or therapeutic procedures.



Western blot analysis of Raptor in L1210 cell lysate with Raptor antibody at (A) 2 and (B) 4 µg/mL.



Immunocytochemistry of RAPTOR in L1210 cells with RAPTOR antibody at 10 µg/mL.



Immunofluorescence of Raptor in L1210 cells with Raptor antibody at 10 µg/mL.

Raptor Antibody - Background

Raptor Antibody - Protein Information

Name Rptor {ECO:0000312|MGI:MGI:1921620}

Function
Involved in the control of the mammalian target of rapamycin complex 1 (mTORC1) activity which regulates cell growth and survival, and autophagy in response to nutrient and hormonal signals; functions as a scaffold for recruiting mTORC1 substrates. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1- TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1 phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eiF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Involved in ciliogenesis. mTORC1 complex in excitatory neuronal transmission is required for the prosocial behavior induced by the psychoactive substance lysergic acid diethylamide (LSD) (PubMed:33495318).

Cellular Location
Cytoplasm. Lysosome. Cytoplasmic granule {ECO:0000250|UniProtKB:Q8N122}. Note=Targeting to lysosomes depends on amino acid availability. In arsenite-stressed cells, accumulates in stress granules when associated with SPAG5 and association with lysosomes is drastically decreased.

Raptor Antibody: The mammalian Target of Rapamycin (TOR, also known as mTOR) is 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. Rapamycin inhibits TOR activity resulting in reduced cell growth and reduced rates of cell cycle and cell proliferation. Raptor (regulatory associated protein of TOR) is a TOR-binding protein essential for TOR signaling in vivo. It acts as a TOR scaffold protein whose binding by TOR substrates is necessary for effective TOR-catalyzed phosphorylation. These substrates include the ribosomal protein S6 kinase (RP S6K) and the eukaryotic initiation factor 4E binding protein 4EBP1, proteins necessary for cell growth and proliferation and responsive to nutrient and mitogen levels. Raptor binds these proteins through a common 5 amino acid TOR-signaling (TOS) motif; mutation of this motif prevents the TOR-dependent phosphorylation of these proteins.

Raptor Antibody - References

Shamji AF, Ngheim P, and Schreiber SL. Integration of growth factor and nutrient signaling: implications for cancer biology. Mol. Cell 2003; 12:271-80.
Fingar DC and Blenis J. Target of rapamycin (TOR): an integrator of nutrient and growth factor signals and coordinator of cell growth and cell cycle progression. Oncogene 2004; 23:3151-71.
Yonezawa K, Tokunaga C, Oshiro N, et al. Raptor, a binding partner of target of rapamycin. Biochem. Biophys. Res. Commun. 2004; 313:437-441.
Hara K, Yonezawa K, Weng QP, et al. Amino acid sufficiency and mTOR regulate p70 S6 kinase and eIF-4E BP1 through a common effector mechanism. J. Biol. Chem. 1998; 273:14484-94.

Raptor 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