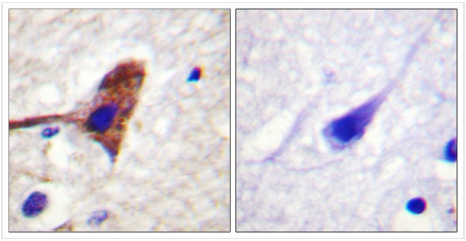
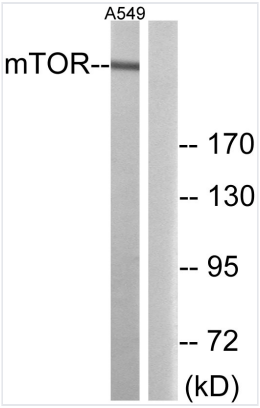
mTOR Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	mTOR, Polyclonal Antibody
Full Product Name	mTOR Antibody
Product Gene Name	anti-mTOR antibody
Product Synonym Names	FRAP; FRAP1; FRAP2; RAFT1; Rapamycin target protein; kinase mTOR
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	Purified from rabbit antiserum by affinity-chromatography using immunogen.
Concentration	1 mg/ml (lot specific)
Specificity	mTOR Antibody detects endogenous levels of total mTOR protein.
Preparation and Storage	Stable at -20 degree C for at least 1 year.
Molecular Weight	2888 kDa
OMIM	L34075 mRNA
3D Structure	ModBase 3D Structure for P42345
Target Modification	Unmodified/Total
Immunogen	The antiserum was produced against synthesized peptide derived from human mTOR.
Immunogen Range	2447-2496
Applications Tested/Suitable for anti-mTOR antibody	Western Blot (WB), Immunohistochemistry (IHC), ELISA (EIA)
Application Notes for anti-mTOR antibody	WB: 1:500~1:1000 IHC: 1:50~1:100 ELISA: 1:10000
Related Product Information for anti-mTOR antibody	MBS9503715 is an antibody targeting mTOR. Also known as mTOR Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.
Other Notes	Small volumes of anti-mTOR antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.



Immunohistochemistry (IHC) of anti-mTOR antibody
Immunohistochemistry analysis of paraffin-embedded human brain tissue, using mTOR Antibody. The picture on the right is blocked with the synthesized peptide.



Western Blot (WB) of anti-mTOR antibody
Western blot analysis of lysates from A549 cells, using mTOR Antibody. The lane on the right is blocked with the synthesized peptide.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for mTOR. It may not necessarily be applicable to this product.

NCBI GI #	4826730
NCBI GeneID	2475
NCBI Accession #	NP_004949.1
UniProt Primary Accession #	P42345
UniProt Secondary Accession #	Q4LE76; Q5TER1; Q6LE87; Q96QG3; Q9Y4I3
UniProt Related Accession #	P42345
GenBank Nucleotide #	NM_004958.3
NCBI Official Full Name	serine/threonine-protein kinase mTOR
NCBI Official Synonym Full Names	mechanistic target of rapamycin kinase
NCBI Official Symbol	MTOR
NCBI Official Synonym Symbols	SKS; FRAP; FRAP1; FRAP2; RAFT1; RAPT1
UniProt Protein Name	Serine/threonine-protein kinase mTOR
UniProt Synonym Protein Names	FK506-binding protein 12-rapamycin complex-associated protein 1; FKBP12-rapamycin complex-associated protein; Mammalian target of rapamycin; mTOR; Mechanistic target of rapamycin; Rapamycin and FKBP12 target 1; Rapamycin target protein 1
Protein Family	Serine/threonine-protein kinase
UniProt Gene Name	MTOR
UniProt Synonym Gene Names	FRAP; FRAP1; FRAP2; RAFT1; RAPT1; mTOR
NCBI Protein Information	serine/threonine-protein kinase mTOR
NCBI Summary for mTOR	The protein encoded by this gene belongs to a family of phosphatidylinositol kinase-related kinases. These kinases mediate cellular responses to stresses such as DNA damage and nutrient deprivation. This protein acts as the target for the cell-cycle arrest and immunosuppressive effects of the FKBP12-rapamycin complex. The ANGPTL7 gene is located in an intron of this gene. [provided by RefSeq, Sep 2008]

UniProt Comments for mTOR	Serine/threonine protein kinase which is a central regulator of cellular metabolism, growth and survival in response to hormones, growth factors, nutrients, energy and stress signals. MTOR directly or indirectly regulates the phosphorylation of at least 800 proteins. Functions as part of 2 structurally and functionally distinct signaling complexes mTORC1 and mTORC2 (mTOR complex 1 and 2). Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. This includes phosphorylation of EIF4EBP1 and release of its inhibition toward the elongation initiation factor 4E (eiF4E). Moreover, phosphorylates and activates RPS6KB1 and RPS6KB2 that promote protein synthesis by modulating the activity of their downstream targets including ribosomal protein S6, eukaryotic translation initiation factor EIF4B, and the inhibitor of translation initiation PDCD4. Stimulates the pyrimidine biosynthesis pathway, both by acute regulation through RPS6KB1-mediated phosphorylation of the biosynthetic enzyme CAD, and delayed regulation, through transcriptional enhancement of the pentose phosphate pathway which produces 5-phosphoribosyl-1-pyrophosphate (PRPP), an allosteric activator of CAD at a later step in synthesis, this function is dependent on the mTORC1 complex. Regulates ribosome synthesis by activating RNA polymerase III-dependent transcription through phosphorylation and inhibition of MAF1 an RNA polymerase III-repressor. In parallel to protein synthesis, also regulates lipid synthesis through SREBF1/SREBP1 and LPIN1. To maintain energy homeostasis mTORC1 may also regulate mitochondrial biogenesis through regulation of PPARGC1A. mTORC1 also negatively regulates autophagy through phosphorylation of ULK1. Under nutrient sufficiency, phosphorylates ULK1 at 'Ser-758', disrupting the interaction with AMPK and preventing activation of ULK1. Also prevents autophagy through phosphorylation of the autophagy inhibitor DAP. mTORC1 exerts a feedback control on upstream growth factor signaling that includes phosphorylation and activation of GRB10 a INSR-dependent signaling suppressor. Among other potential targets mTORC1 may phosphorylate CLIP1 and regulate microtubules. As part of the mTORC2 complex MTOR may regulate other cellular processes including survival and organization of the cytoskeleton. Plays a critical role in the phosphorylation at 'Ser-473' of AKT1, a pro-survival effector of phosphoinositide 3-kinase, facilitating its activation by PDK1. mTORC2 may regulate the actin cytoskeleton, through phosphorylation of PRKCA, PXN and activation of the Rho-type guanine nucleotide exchange factors RHOA and RAC1A or RAC1B. mTORC2 also regulates the phosphorylation of SGK1 at 'Ser-422' (PubMed:12087098, PubMed:12150925, PubMed:12150926, PubMed:12231510, PubMed:12718876, PubMed:14651849, PubMed:15268862, PubMed:15467718, PubMed:15545625, PubMed:15718470, PubMed:18497260, PubMed:18762023, PubMed:18925875, PubMed:20516213, PubMed:20537536, PubMed:21659604, PubMed:23429703, PubMed:23429704, PubMed:25799227, PubMed:26018084). Regulates osteoclastogenesis by adjusting the expression of CEBPB isoforms ().
Research Articles on mTOR	**1.** PI3K-PTEN upregulated-mTORC1 and mTORC2 complex plays a critical role in controlling BMAL1, establishing a connection between PI3K signaling and the regulation of circadian rhythm, ultimately resulting in deregulated BMAL1 in tumor cells with disrupted PI3K signaling
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