MTOR Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	MTOR, Polyclonal Antibody
Full Product Name	MTOR Antibody, HRP conjugated
Product Gene Name	anti-MTOR antibody
Product Synonym Names	Serine/threonine-protein kinase mTOR; FK506-binding protein 12-rapamycin complex-associated protein 1; FKBP12-rapamycin complex-associated protein; Mammali; MTOR; FRAP; FRAP1; FRAP2; RAFT1; RAPT1
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Liquid
Purity/Purification	>95%, Protein G purified
Preparation and Storage	Shipped at 4 degree C. Upon delivery aliquot and store at -20 degree C or -80 degree C. Avoid repeated freeze.
Matching Pairs	Unconjugated Antibody: MTOR (MBS7044889) HRP Conjugated Antibody: MTOR (MBS7043638)
Molecular Weight	288,892 Da
OMIM	601231
3D Structure	ModBase 3D Structure for P42345
Species	Human
Immunogen	Recombinant human Serine/threonine-protein kinase mTOR protein
Conjugate	HRP
Buffer	Preservative: 0.03% Proclin 300 Constituents: 50% Glycerol, 0.01M PBS, PH 7.4
Santa Cruz Alternative	Potential replacement for Santa Cruz Biotechnology antibody catalog# sc-1549 / sc-1550-R / sc-8319
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-MTOR antibody	ELISA (EIA)

Related Product Information for anti-MTOR antibody	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'. Regulates osteoclastogensis by adjusting the expression of CEBPB isoforms (By similarity).
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.
Searchable Terms for MTOR purchase	MBS7043638 is an antibody targeting MTOR. Also known as MTOR Antibody, HRP conjugated. Reactive in Human. Host: Rabbit.

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
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
UniProt Entry Name	MTOR_HUMAN
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	mTOR: an atypical kinase belonging to the PIKK family of kinases. Is the catalytic subunit of two protein complexes, mTORC1 and mTORC2. mTORC1 activates S6K and inactivates 4E-BP1, up-regulating protein synthesis. mTORC1 contains Raptor, a positive regulatory subunit and scaffold for recruiting substrates, two negative regulators, PRAS40 and DEPTOR, and mLST8; it is a target for the cell-cycle arrest and immunosuppressive effects of the FKBP12-rapamycin complex. mTORC2, a downstream effector of PI3K, is insensitive to rapamycin and activates Akt by phosphorylating a key activation site. mTORC2 contains regulatory subunits Rictor and mSIN1, PROTOR, mLST8, and the negative regulator DEPTOR. mTORC1 suppresses PI3K activity via a strong negative feedback loop that involves S6K1. Inhibiting mTORC1 ablates this negative feedback loop and potentiates PI3K signaling. Known inhibitors of mTOR include rapamycin, temsirolimus (CCI-779). Protein type: Kinase, protein; Motility/polarity/chemotaxis; Autophagy; Protein kinase, Ser/Thr (non-receptor); EC 2.7.11.1; Protein kinase, atypical; ATYPICAL group; PIKK family; FRAP subfamily Chromosomal Location of Human Ortholog: 1p36.2 Cellular Component: cytoplasm; cytosol; endomembrane system; lysosomal membrane; lysosome; membrane; nucleoplasm; nucleus; PML body; TORC2 complex Molecular Function: kinase activity; phosphoprotein binding; protein binding; protein kinase activity; protein serine/threonine kinase activity Biological Process: cell cycle arrest; cell growth; cellular response to nutrient levels; DNA repair; macroautophagy; negative regulation of autophagy; peptidyl-serine phosphorylation; phosphoinositide-mediated signaling; phosphorylation; positive regulation of lipid biosynthetic process; positive regulation of protein amino acid phosphorylation; positive regulation of transcription from RNA polymerase III promoter; positive regulation of translation; protein amino acid autophosphorylation; protein amino acid phosphorylation; protein catabolic process; regulation of actin cytoskeleton organization and biogenesis; regulation of osteoclast differentiation; response to amino acid stimulus; response to stress; T cell costimulation; TOR signaling pathway Disease: Smith-kingsmore Syndrome
Research Articles on MTOR	**1.** Activation of the PI3K/mTOR Pathway following PARP Inhibition in Small Cell Lung Cancer.
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