

#21515

mTOR (Ab-2481) Antibody

Catalog: #21515-1 50µl **Orders:** order@signalwayantibody.com
#21515-2 100µl **Support:** tech@signalwayantibody.com
Storage: Store at -20°C/1 year **Web:** www.signalwayantibody.com



Application	Species Reactivity	Source	Molecular Wt.
IHC	Human Mouse Rat	Rabbit Polyconal Ab	289KD

Description: Antibodies were produced by immunizing rabbits with synthetic peptide and KLH conjugates. Antibodies were purified by affinity-chromatography using epitope-specific peptide.

Recommended Dilutions:

Immunohistochemistry 1:50~1:100

Specificity: The antibody detects endogenous level of total mTOR protein.

Immunogen: Peptide sequence around aa.2479~2483 (I-H-S-F-I) derived from Human mTOR.

Formulation: Supplied at 1.0mg/mL in phosphate buffered saline (without Mg²⁺ and Ca²⁺), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

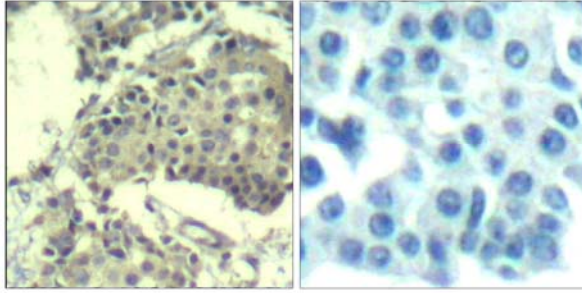
Synonyms: FRAP FRAP1 FRAP2 RAFT1 Rapamycin target protein

Accession No.: Swiss-Prot#: P42345 NCBI Gene#: 2475
NCBI Protein#: NP_004949.1

Background: Kinase subunit of both mTORC1 and mTORC2, which regulate cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino-acids. Amino-acid-signaling to mTORC1 is mediated by Rag GTPases, which cause amino-acid-induced relocalization of mTOR within the endomembrane system. Growth factor-stimulated mTORC1 activation involves AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. 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-421', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. mTORC2 is also activated by growth factors, but seems to be nutrient-insensitive. mTORC2 seems to function upstream of Rho GTPases to regulate the actin cytoskeleton, probably by activating one or more Rho-type guanine nucleotide exchange factors. mTORC2 promotes the serum-induced formation of stress-fibers or F-actin. mTORC2 plays a critical role in AKT1 'Ser-473' phosphorylation, which may facilitate the phosphorylation of the activation loop of AKT1 on 'Thr-308' by PDK1 which is a prerequisite for full activation. mTORC2 regulates the phosphorylation of SGK1 at 'Ser-422'. mTORC2 also modulates the phosphorylation of PRKCA on 'Ser-657'.

References:

- Sabers, C.J. et al. (1995) J. Biol. Chem. 270, 815-822.
- Brown, E.J. et al. (1994) Nature 369, 756-758.
- Dennis, P.B. et al. (2001) Science 294, 1102-1105.
- Sabatini, D.M. et al. (1994) Cell 78, 35-43.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using mTOR (Ab-2481) Antibody #21515 (left) or the same antibody preincubated with blocking peptide (right).

Citation:

If you publish research using #21515 please [let us know](#).

Related Pathway: cellcycle Kinase/Phosphatases Akt Translation Insulin/Glucose Jak/Stat

Note: For western blotting, incubate membrane with diluted antibody in 5% nonfat milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.