

# Immunotag™ Phospho-mTOR (Ser2448) Antibody

| Antibody Specification |                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Catalog No.            | ITA1077                                                                                                                                                            |
| Product Description    | Immunotag™ Phospho-mTOR (Ser2448) Antibody                                                                                                                         |
| Size                   | 100 µg, 200 µg                                                                                                                                                     |
| Conjugation            | HRP, Biotin, FITC, Alexa Fluor® 350, Alexa Fluor® 405, Alexa Fluor® 488, Alexa Fluor® 555, Alexa Fluor® 594, Alexa Fluor® 647                                      |
| IMPORTANT NOTE         | This product is custom manufactured with a lead time of 3-4 weeks. Once in production, this item cannot be cancelled from an order and is not eligible for return. |
| Target Protein         | Phospho-mTOR (Ser2448)                                                                                                                                             |
| Clonality              | Polyclonal                                                                                                                                                         |
| Storage/Stability      | -20°C/1 year                                                                                                                                                       |
| Application            | WB,IHC,ELISA                                                                                                                                                       |
| Recommended Dilution   | WB 1:500-1:2000 IHC 1:50-1:200                                                                                                                                     |
| Concentration          | 1 mg/ml                                                                                                                                                            |
| Reactive Species       | Human,Mouse,Rat,Fish                                                                                                                                               |
| Host Species           | Rabbit                                                                                                                                                             |
| Immunogen              | A synthesized peptide derived from human mTOR around the phosphorylation site of Serine 2448                                                                       |
| Specificity            | Phospho-mTOR (Ser2448) Antibody detects endogenous levels of mTOR only when phosphorylated at Serine 2448                                                          |
| Purification           | The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho- and non-phospho-peptide affinity columns.            |
| Form                   | Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.Store at -20 °C.Stable for 12 months from date of receipt        |
| Gene Name              | MTOR                                                                                                                                                               |
| Accession No.          | P42345                                                                                                                                                             |

## Antibody Specification

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| Alternate Names           | dj576K7.1 (FK506 binding protein 12 rapamycin associated protein 1); FK506 binding protein 12 rapamycin associated protein 1; FK506 binding protein 12 rapamycin associated protein 2; FK506 binding protein 12 rapamycin complex associated protein 1; FK506-binding protein 12-rapamycin complex-associated protein 1; FKBP rapamycin associated protein; FKBP12 rapamycin complex associated protein; FKBP12-rapamycin complex-associated protein 1; FKBP12-rapamycin complex-associated protein; FLJ44809; FRAP; FRAP1; FRAP2; Mammalian target of rapamycin; Mechanistic target of rapamycin; mTOR; MTOR_HUMAN; OTTHUMP00000001983; RAFT1; Rapamycin and FKBP12 target 1; Rapamycin associated protein FRAP2; Rapamycin target protein 1; Rapamycin target protein; RAPT1; Serine/threonine-protein kinase mTOR;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description               | <p>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 (By similarity).</p> |
| Cell Pathway/<br>Category | Primary Polyclonal Antibody                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Antibody Specification

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|------------|----------------------------------------------------------------------|
| Protein MW | 289kDa                                                               |
| Usage      | For Research Use Only! Not for diagnostic or therapeutic procedures. |