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Datasheet for ABIN747158

## anti-MTOR antibody (pSer2448)

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### Overview

Quantity:	100 µL
Target:	MTOR (mTOR)
Binding Specificity:	pSer2448
Reactivity:	Human, Mouse, Rat, Cow, Fish
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This MTOR antibody is un-conjugated
Application:	Western Blotting (WB), ELISA, Immunohistochemistry (Paraffin-embedded Sections) (IHC (p)), Flow Cytometry (FACS), Immunofluorescence (Paraffin-embedded Sections) (IF (p)), Immunofluorescence (Cultured Cells) (IF (cc)), Immunohistochemistry (Frozen Sections) (IHC (fro))

### Product Details

Immunogen:	KLH conjugated synthetic phosphopeptide derived from human mTOR around the phosphorylation site of Ser2448
Isotype:	IgG
Specificity:	This phosphorylation site is homologous across the listed species.
Cross-Reactivity:	Cow, Fish, Human, Mouse, Rat
Predicted Reactivity:	Dog,Cow,Sheep,Horse,Rabbit
Purification:	Purified by Protein A.

## Target Details

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Target: MTOR (mTOR)

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Alternative Name: mTOR ([mTOR Products](#))

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Background: Synonyms: FRAP, FRAP1, FRAP2, RAFT1, RAPT1, Serine/threonine-protein kinase mTOR, 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

Background: 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.

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Gene ID: 2475

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UniProt: [P42345](#)

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Pathways: [PI3K-Akt Signaling](#), [RTK Signaling](#), [AMPK Signaling](#), [Interferon-gamma Pathway](#), [Fc-epsilon Receptor Signaling Pathway](#), [EGFR Signaling Pathway](#), [Neurotrophin Signaling Pathway](#), [Regulation of Actin Filament Polymerization](#), [Regulation of Muscle Cell Differentiation](#), [Regulation of Cell Size](#), [Skeletal Muscle Fiber Development](#), [Regulation of Carbohydrate](#)

## Target Details

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[Metabolic Process](#), [Autophagy](#), [CXCR4-mediated Signaling Events](#), [BCR Signaling](#), [Warburg Effect](#)

## Application Details

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Application Notes: WB 1:300-5000  
ELISA 1:500-1000  
FCM 1:20-100  
IHC-P 1:200-400  
IHC-F 1:100-500  
IF(IHC-P) 1:50-200  
IF(IHC-F) 1:50-200  
IF(ICC) 1:50-200

Restrictions: For Research Use only

## Handling

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Format: Liquid

Concentration: 1 µg/µL

Buffer: 0.01M TBS( pH 7.4) with 1 % BSA, 0.02 % Proclin300 and 50 % Glycerol.

Preservative: ProClin

Precaution of Use: This product contains ProClin: a POISONOUS AND HAZARDOUS SUBSTANCE, which should be handled by trained staff only.

Storage: 4 °C,-20 °C

Storage Comment: Shipped at 4°C. Store at -20°C for one year. Avoid repeated freeze/thaw cycles.

Expiry Date: 12 months

## Publications

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Product cited in: Gugel, Ebner, Grimm, Czermel, Paulsen, Hagel, Tatagiba, Nahnsen, Tabatabai: "Contribution of mTOR and PTEN to Radioresistance in Sporadic and NF2-Associated Vestibular Schwannomas: A Microarray and Pathway Analysis." in: **Cancers**, Vol. 12, Issue 1, (2020) ([PubMed](#)).

Mei, Xiang, Mei, Fang, Wang, Cao, Hu, Guo: "Pterostilbene inhibits nutrient metabolism and

induces apoptosis through AMPK activation in multiple myeloma cells." in: **International journal of molecular medicine**, Vol. 42, Issue 5, pp. 2676-2688, (2019) ([PubMed](#)).

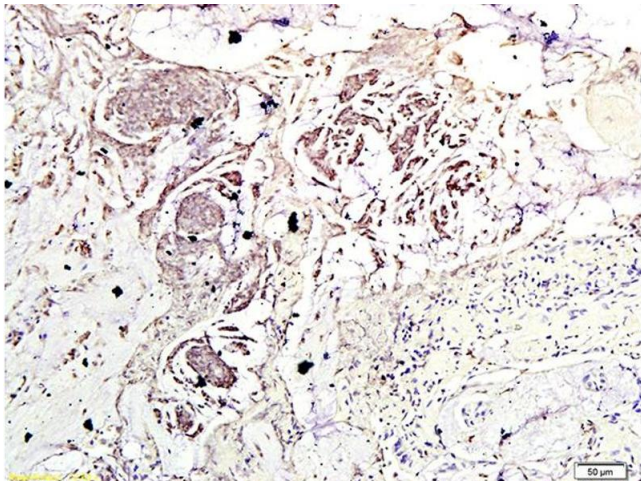
Qiu, Li, He, Sun, Li, Xin: "Distinct subgroup of the Ras family member 3 (DIRAS3) expression impairs metastasis and induces autophagy of gastric cancer cells in mice." in: **Journal of cancer research and clinical oncology**, Vol. 144, Issue 10, pp. 1869-1886, (2018) ([PubMed](#)).

Yang, Wang, Wang, Zhang, Zhang, Lu, Wang: "mTOR is involved in 17 $\beta$ -estradiol-induced, cultured immature boar Sertoli cell proliferation via regulating the expression of SKP2, CCND1, and CCNE1." in: **Molecular reproduction and development**, Vol. 82, Issue 4, pp. 305-14, (2015) ([PubMed](#)).

Lin, Lin, Kang, Liu, Wang, Zheng, Yu, Lin: "Similar PDK1-AKT-mTOR pathway activation in balloon cells and dysmorphic neurons of type II focal cortical dysplasia with refractory epilepsy." in: **Epilepsy research**, Vol. 112, pp. 137-49, (2015) ([PubMed](#)).

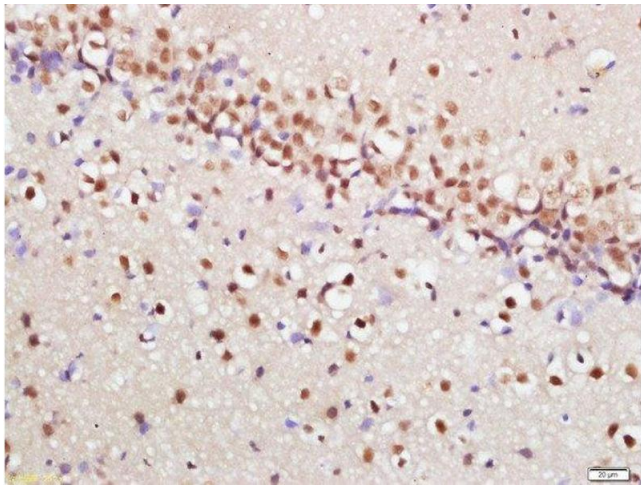
## Images

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### Immunohistochemistry

**Image 1.** Formalin-fixed and paraffin embedded mouse kidney labeled with Anti-Phospho-FRAP1/mTOR(Ser2448) Polyclonal Antibody, Unconjugated (ABIN747158) at 1:200 followed by conjugation to the secondary antibody and DAB stainin



### Immunohistochemistry (Paraffin-embedded Sections)

**Image 2.** Paraformaldehyde-fixed, paraffin embedded rat brain, Antigen retrieval by boiling in sodium citrate buffer (pH6) for 15min, Block endogenous peroxidase by 3% hydrogen peroxide for 30 minutes, Blocking buffer (normal goat serum) at 37°C for 20min, Antibody incubation with mTOR (Ser2448) Polyclonal Antibody, Unconjugated at 1:200 overnight at 4°C, followed by a conjugated secondary and DAB staining.