

PRODUCT INFORMATION



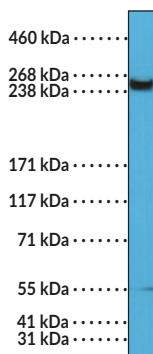
mTOR Rabbit Monoclonal Antibody (Clone RM274)

Item No. 32224

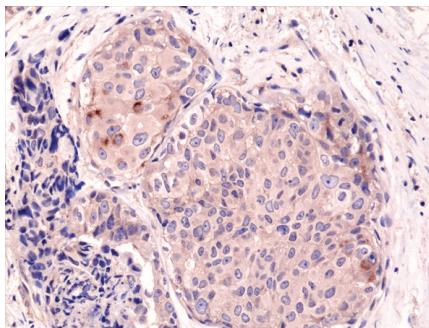
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Mammalian Target of Rapamycin, Mechanistic Target of Rapamycin Kinase, RAFT, RAPT1
Immunogen:	Peptide corresponding to human mTOR
Cross Reactivity:	(+) mTOR
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM274
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:500-1:1,000 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of HeLa cell lysates using mTOR Rabbit Monoclonal Antibody (Clone RM274) at a dilution of 1:1,500.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using mTOR Rabbit Monoclonal Antibody (Clone RM274) at a 1:1,000 dilution.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Mammalian target of rapamycin (mTOR) is a serine/threonine kinase and member of the PI3K-related kinase family with roles in the regulation of cell growth and metabolism.^{1,2} It is comprised of N-terminal tandemly repeated HEAT motifs that facilitate protein-protein interactions, a FRAP, ATM, and TRRAP (FAT) domain, an FKBP12-rapamycin binding (FRB) domain, a catalytic kinase domain, an autoinhibitory/repressor domain, and a FAT carboxy-terminal (FATC) domain that is essential to kinase activity.² mTOR is ubiquitously expressed in the cytosol and is the catalytic subunit of mTOR complex 1 (mTORC1) and mTORC2, which have roles in aging, autophagy, stem cell and immune function, cellular senescence, and macromolecule biogenesis, and cell survival, cytoskeletal organization, and metabolism, respectively.^{2,3} It is a component of the PI3K/AKT/mTOR signaling pathway that acts as a junction point both upstream and downstream of AKT.⁴ Dysregulation of the mTOR signaling pathway is associated with various pathologies, including cancer, rheumatoid arthritis, epilepsy, neurodegenerative diseases, and diabetes.^{2,4,5} Cayman's mTOR Rabbit Monoclonal Antibody (Clone RM274) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Weichhart, T. mTOR as regulator of lifespan, aging, and cellular senescence: A mini-review. *Gerontology* **64(2)**, 127-134 (2018).
2. Showkat, M., Beigh, M.A., and Andrabi, K.I. mTOR signaling in protein translation regulation: Implications in cancer genesis and therapeutic interventions. *Mol. Biol. Int.* 686984 (2014).
3. Zarogoulidis, P., Lampaki, S., Turner, J.F., et al. mTOR pathway: A current, up-to-date mini-review (review). *Oncol. Lett.* **8(6)**, 2367-2370 (2014).
4. Laplante, M. and Sabatini, D.M. mTOR signaling at a glance. *J. Cell Sci.* **122(pt 20)**, 3589-3594 (2009).
5. Wong, M. A critical review of mTOR inhibitors and epilepsy: From basic science to clinical trials. *Expert Rev. Neurother.* **13(6)**, 657-669 (2013).

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