

# p-mTOR (296.Ser 2481): sc-293132

## BACKGROUND

The PIK-related kinases include Atm, DNA-PK<sub>CS</sub> and mTOR. The Atm gene is mutated in the autosomal recessive disorder ataxia telangiectasia (AT) that is characterized by cerebellar degeneration and the appearance of dilated blood vessels in the conjunctivae of the eyes. AT cells are hypersensitive to ionizing radiation, impaired in mediating the inhibition of DNA synthesis and they display delays in p53 induction. DNA-PK is a heterotrimeric DNA binding enzyme that is composed of a large subunit, DNA-PK<sub>CS</sub>, and two smaller subunits collectively known as Ku. The loss of DNA-PK leads to defects in DSB repair and V(D)J recombination. mTOR can autophosphorylate on serine and bind to rapamycin/FKBP. mTOR is also an upstream regulator of S6 kinase and has been implicated in the regulation of p27 and p21 expression. mTOR autophosphorylates at Ser 2481 under translationally repressive conditions. Phosphorylation of mTOR at Ser 2448 is mediated by p70S6 kinase.

## CHROMOSOMAL LOCATION

Genetic locus: MTOR (human) mapping to 1p36.22; Mtor (mouse) mapping to 4 E2.

## SOURCE

p-mTOR (296.Ser 2481) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 2481 phosphorylated mTOR of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-mTOR (296.Ser 2481) is available conjugated to agarose (sc-293132 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-293132 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

## APPLICATIONS

p-mTOR (296.Ser 2481) is recommended for detection of Ser 2481 phosphorylated mTOR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for mTOR siRNA (h): sc-35409, mTOR siRNA (m): sc-35410, mTOR shRNA Plasmid (h): sc-35409-SH, FRAP shRNA Plasmid (m): sc-35410-SH, mTOR shRNA (h) Lentiviral Particles: sc-35409-V and FRAP shRNA (m) Lentiviral Particles: sc-35410-V.

Molecular Weight of p-mTOR: 220 kDa.

Positive Controls: Jurkat + Calyculin A cell lysate: sc-2277 or HeLa whole cell lysate: sc-2200.

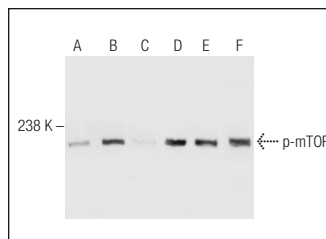
## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

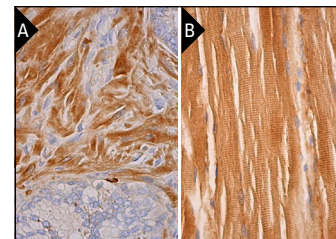
## RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

## DATA



Western blot analysis of mTOR phosphorylation in untreated (A,D), Calyculin A treated (B,E) and Calyculin A and lambda protein phosphatase (sc-200312A) treated (C,F) Jurkat whole cell lysates. Antibodies tested include p-mTOR (296.Ser 2481): sc-293132 (A,B,C) and mTOR (30): sc-517464 (D,E,F).



p-mTOR (296.Ser 2481): sc-293132. Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing cytoplasmic staining of smooth muscle cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

## SELECT PRODUCT CITATIONS

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- Vazquez-Martin, A., et al. 2012. Ser2481-autophosphorylated mTOR colocalizes with chromosomal passenger proteins during mammalian cell cytokinesis. *Cell Cycle* 11: 4211-4221.
- Fu, Y., et al. 2016. Alisertib induces apoptosis and autophagy through targeting the Akt/mTOR/AMPK/p38 pathway in leukemic cells. *Mol. Med. Rep.* 14: 394-398.
- Xu, H., et al. 2017. AXIN1 protects against testicular germ cell tumors via the PI3K/Akt/mTOR signaling pathway. *Oncol. Lett.* 14: 981-986.
- Li, W.D., et al. 2017. Metformin inhibits endothelial progenitor cell migration by decreasing matrix metalloproteinases, MMP-2 and MMP-9, via the AMPK/mTOR/autophagy pathway. *Int. J. Mol. Med.* 39: 1262-1268.
- Liu, R., et al. 2018. Curcumin alleviates isoproterenol-induced cardiac hypertrophy and fibrosis through inhibition of autophagy and activation of mTOR. *Eur. Rev. Med. Pharmacol. Sci.* 22: 7500-7508.
- Lee, M.K., et al. 2018. *Pyropia yezoensis* protein supplementation prevents dexamethasone-induced muscle atrophy in C57BL/6 mice. *Mar. Drugs* 16: 328.
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- Chang, L., et al. 2019. MiR-181b-5p suppresses starvation-induced cardiomyocyte autophagy by targeting Hspa5. *Int. J. Mol. Med.* 43: 143-154.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.