

# mTOR (30): sc-136269

## 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, also known as FRAP, 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 Ser2481 under translationally repressive conditions. Phosphorylation of mTOR at Ser2448 is mediated by p70S6 kinase.

## REFERENCES

- Hartley, K.O., et al. 1995. DNA-dependent protein kinase catalytic subunit: a relative of phosphatidylinositol 3-kinase and the ataxia telangiectasia gene product. *Cell* 82: 849-856.
- Hunter, T. 1995. When is a lipid kinase not a lipid kinase? When it is a protein kinase. *Cell* 83: 1-4.

## CHROMOSOMAL LOCATION

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

## SOURCE

mTOR (30) is a mouse monoclonal antibody raised against amino acids 185-290 of mTOR of rat origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

mTOR (30) is recommended for detection of 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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

Molecular Weight (predicted) of mTOR: 289 kDa.

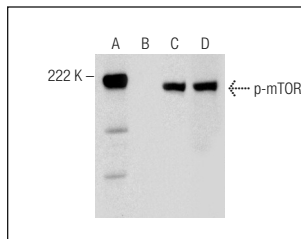
Molecular Weight (observed) of mTOR: 211-245 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

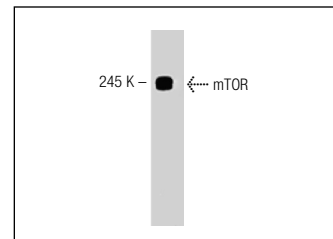
## STORAGE

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

## DATA



Western blot analysis of mTOR phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) HeLa whole cell lysates. Antibodies tested include p-mTOR (59.Ser 2448): sc-293133 (A, B) and mTOR (30): sc-136269 (C, D).



mTOR (30): sc-136269. Western blot analysis of mTOR expression in PC-12 whole cell lysate.

## SELECT PRODUCT CITATIONS

- González, I.M., et al. 2012. Leucine and arginine regulate trophoblast motility through mTOR-dependent and independent pathways in the preimplantation mouse embryo. *Dev. Biol.* 361: 286-300.
- Sengupta, S., et al. 2013. Regulation of OSR1 and the sodium, potassium, two chloride cotransporter by convergent signals. *Proc. Natl. Acad. Sci. USA* 110: 18826-18831.
- Wang, X.J., et al. 2016. Dibutyl phthalate inhibits the effects of follicle-stimulating hormone on rat granulosa cells through down-regulation of follicle-stimulating hormone receptor. *Biol. Reprod.* 94: 144.
- Kim, C.H., et al. 2016. Schisandrae fructus enhances myogenic differentiation and inhibits atrophy through protein synthesis in human myotubes. *Int. J. Nanomedicine* 11: 2407-2415.
- Mitrovic, N., et al. 2016. 17β-estradiol-induced synaptic rearrangements are accompanied by altered ectonucleotidase activities in male rat hippocampal synaptosomes. *J. Mol. Neurosci.* E-published.

## RESEARCH USE

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

## PROTOCOLS

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



See **mTOR (55.42): sc-293089** for mTOR antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647.