

# p-mTOR (Ser 2448): sc-101738

## 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 FRAP at Ser 2448 is mediated by p70 S6 kinase.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-mTOR (Ser 2448) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 2448 phosphorylated mTOR of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

p-mTOR (Ser 2448) is recommended for detection of Ser 2448 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) and immunohistochemistry (including paraffin-embedded sections) (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.

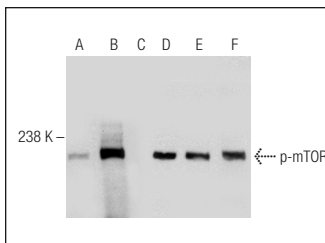
Molecular Weight of p-mTOR: 220 kDa.

Positive Controls: Jurkat + Calyculin A cell lysate: sc-2277, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

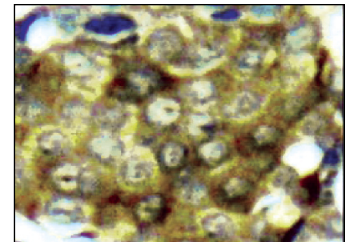
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## 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 (Ser 2448): sc-101738 (A, B, C) and mTOR (30): sc-136269 (D, E, F).



p-mTOR (Ser 2448): sc-101738. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

- Chen, L., et al. 2011. Cadmium induction of reactive oxygen species activates the mTOR pathway, leading to neuronal cell death. *Free Radic. Biol. Med.* 50: 624-632.
- Tiriveedhi, V., et al. 2012. HIF-1 $\alpha$  signaling by airway epithelial cell K- $\alpha$ 1-tubulin: role in fibrosis and chronic rejection of human lung allografts. *Cell. Immunol.* 273: 59-66.
- Perluigi, M., et al. 2014. Neuropathological role of PI3K/Akt/mTOR axis in Down syndrome brain. *Biochim. Biophys. Acta* 1842: 1144-1153.
- Wang, N., et al. 2014. Obesity accelerates ovarian follicle development and follicle loss in rats. *Metabolism* 63: 94-103.


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