SANTA CRUZ BIOTECHNOLOGY, INC.

p-mTOR (59.Ser 2448): sc-293133

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

The PIK-related kinases include Atm, DNA-PK_{CS} 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_{CS}, 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 (59.Ser 2448) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 2448 phosphorylated mTOR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-mTOR (59.Ser 2448) is available conjugated to agarose (sc-293133 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-293133 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

p-mTOR (59.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), 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, 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: HeLa whole cell lysate: sc-2200 or Jurkat + Calyculin A cell lysate: sc-2277.

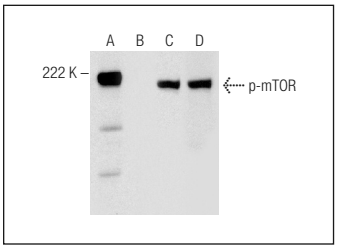
RESEARCH USE

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

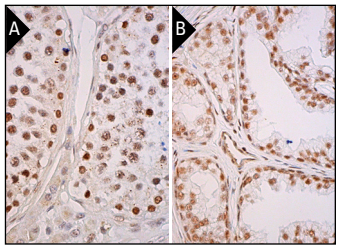
STORAGE

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-517464 (**C**,**D**).



p-mTOR (59.Ser 2448): sc-293133. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of cells in seminiferous ducts and Leydig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Zou, Z., et al. 2014. 3-Methyladenine can depress drug efflux transporters via blocking the PI3K-Akt-mTOR pathway thus sensitizing MDR cancer to chemotherapy. J. Drug Target. 22: 839-848.
2. Tramutola, A., et al. 2016. Increased mammalian target of rapamycin signaling contributes to the accumulation of protein oxidative damage in a mouse model of Down's syndrome. Neurodegener. Dis. 16: 62-68.
3. Wang, X., et al. 2017. Sestrin2 and sestrin3 suppress NK-92 cell-mediated cytotoxic activity on ovarian cancer cells through AMPK and mTORC1 signaling. Oncotarget 8: 90132-90143.
4. Zhu, G., et al. 2018. Increased mTOR cancels out the effect of reduced Xbp-1 on antibody secretion in IL-1α-deficient B cells. Cell. Immunol. 328: 9-17.
5. Zhang, Y., et al. 2018. Tudor-staphylococcal nuclease regulates the expression and biological function of alkylglycerone phosphate synthase via nuclear factor-κB and microRNA-127 in human glioma U87MG cells. Oncol. Lett. 15: 9553-9558.
6. Qin, G., et al. 2018. Triptolide induces protective autophagy and apoptosis in human cervical cancer cells by downregulating Akt/mTOR activation. Oncol. Lett. 16: 3929-3934.
7. Huang, L., et al. 2018. Inhibition of protein arginine methyltransferase 5 enhances hepatic mitochondrial biogenesis. J. Biol. Chem. 293: 10884-10894.
8. Xu, M., et al. 2018. SB225002 inhibits prostate cancer invasion and attenuates the expression of BSP, OPN and MMP-2. Oncol. Rep. 40: 726-736.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.