SANTA CRUZ BIOTECHNOLOGY, INC.

p-mTOR (Ser 2481 55.42): sc-293089

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, 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 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.

SOURCE

p-mTOR (Ser 2481 55.42) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to a short amino acid sequence containing Ser 2481 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 (Ser 2481 55.42) is available conjugated to agarose (sc-293089 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-293089 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

p-mTOR (Ser 2481 55.42) is recommended for detection of Ser 2481 phosphorylated mTOR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 shRNA Plasmid (h): sc-35409-SH and mTOR shRNA (h) Lentiviral Particles: sc-35409-V.

Molecular Weight (predicted) of p-mTOR: 289 kDa.

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

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or MOLT-4 cell lysate: sc-2233.

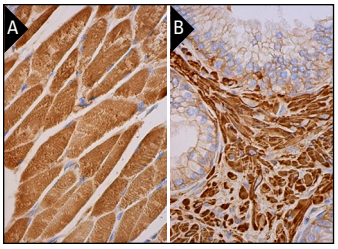
STORAGE

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.

DATA



p-mTOR (Ser 2481 55.42): sc-293089. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing membrane staining of glandular cells and cytoplasmic staining of smooth muscle cells (**B**).

SELECT PRODUCT CITATIONS

1. Wu, Y., et al. 2016. Autophagic death induced by thermo-chemotherapy in gastric cancer cells results from the reactive oxygen species pathway. Mol. Med. Rep. 14: 1210-1218.
2. Fazioli, F., et al. 2017. Post-surgery fluids promote transition of cancer stem cell-to-endothelial and AKT/mTOR activity, contributing to relapse of giant cell tumors of bone. Oncotarget 8: 85040-85053.
3. Wen, Z., et al. 2018. Overexpression of miR-185 inhibits autophagy and apoptosis of dopaminergic neurons by regulating the AMPK/mTOR signaling pathway in Parkinson's disease. Mol. Med. Rep. 17: 131-137.
4. 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.
5. Shokrzadeh, N., et al. 2018. Up-regulation of HB-EGF, Msx.1 and miRNA Let-7a by administration of calcitonin through mTOR and ERK1/2 pathways during a window of implantation in mice. Mol. Reprod. Dev. 85: 790-801.
6. Zhao, J., et al. 2018. MicroRNA-411 inhibits malignant biological behaviours of colorectal cancer cells by directly targeting PIK3R3. Oncol. Rep. 39: 633-642.
7. Shariati, M.B.H., et al. 2019. Administration of dexamethasone disrupts endometrial receptivity by alteration of expression of miRNA 223, 200a, LIF, Muc1, SGK1, and ENaC via the ERK1/2-mTOR pathway. J. Cell. Physiol. 234: 19629-19639.
8. Hesam Shariati, M.B., et al. 2019. The effect of fludrocortisone on the uterine receptivity partially mediated by ERK1/2-mTOR pathway. J. Cell. Physiol. 234: 20098-20110.

PROTOCOLS

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