SANTA CRUZ BIOTECHNOLOGY, INC.

mTOR (C-19)-R: sc-1550-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The phosphatidylinositol kinase (PIK) family members fall into two distinct subgroups. The first subgroup contains proteins such as the PI 3- and PI 4-kinases and the second group comprises the PIK-related kinases. The PIK-related kinases include Atm, DNA-PK_{CS} and mTOR. These proteins have in common a region of homology at their carboxy-termini that is not present in the PI 3- and PI 4-kinases. The Atm gene is mutated in the autosomal recessive disorder ataxia telangiectasia (AT) that is characterized by cerebellar degeneration (ataxia) and the appearance of dilated blood vessels (telangiectases) 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.

CHROMOSOMAL LOCATION

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

SOURCE

mTOR (C-19)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of mTOR of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1550 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

mTOR (C-19)-R 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

mTOR (C-19)-R is also recommended for detection of mTOR in additional species, including equine, canine, bovine and porcine.

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.

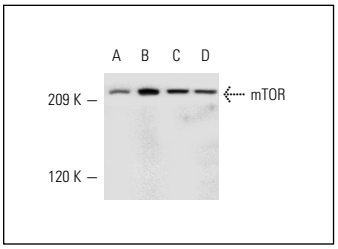
Molecular Weight (observed) of mTOR: 211-245 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or MOLT-4 cell lysate: sc-2233.

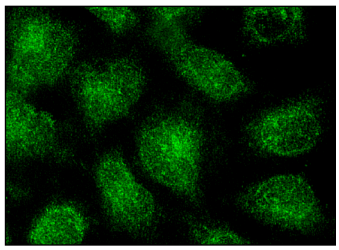
STORAGE

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

DATA



mTOR (C-19): sc-1550. Western blot analysis of mTOR expression in HeLa (**A**), K-562 (**B**), Jurkat (**C**) and MOLT-4 (**D**) whole cell lysates.



mTOR (C-19)-R: sc-1550-R. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Smith, K.D., et al. 2003. Delayed graft function and cast nephropathy associated with tacrolimus plus Rapamycin use. J. Am. Soc. Nephrol. 14: 1037-1045.
2. Panieri, E., et al. 2010. Nutrient withdrawal rescues growth factor-deprived cells from mTOR-dependent damage. Aging 2: 487-503.
3. Liu, L., et al. 2010. Rapamycin inhibits cytoskeleton reorganization and cell motility by suppressing RhoA expression and activity. J. Biol. Chem. 285: 38362-38373.
4. Liu, L., et al. 2010. Rapamycin inhibits IGF-1 stimulated cell motility through PP2A pathway. PLoS ONE 5: e10578.

RESEARCH USE

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

PROTOCOLS

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