**BACKGROUND**

The PIK-related kinases include Atn, DNA-PKcs and mTOR. The Atn 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-PKcs, and two smaller subunits collectively known as Ku. The loss of DNA-PK leads to defects in DSBR repair and VDJ recombination. mTOR can autophosphorylate on serine and bind to rapamycin/FKBPs. mTOR is also an upstream regulator of S6 kinase and has been implicated in the regulation of p27 and p21 expression. mTOR 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-PKcs is a heterotrimeric DNA binding enzyme that is composed of a large subunit, DNA-PKcs, and two smaller subunits collectively known as Ku. The loss of DNA-PK leads to defects in DSBR repair and VDJ recombination.

**CHROMOSOMAL LOCATION**

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

**SOURCE**

p-mTOR (296.Ser 2481) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 2481 phosphorylated mTOR of human origin.

**PRODUCT**

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

p-mTOR (296.Ser 2481) is available conjugated to agarose (sc-293132 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-293132 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

**STORAGE**

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

**APPLICATIONS**

p-mTOR (296.Ser 2481) is recommended for detection of Ser 2481 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 shRNA Plasmid (m): sc-354010, mTOR shRNA Plasmid (h): sc-35409-SH, FRAP shRNA Plasmid (m): sc-35410-SH, mTOR shRNA (h) Lentiviral Particles: sc-35409-V and FRAP 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 SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048.
2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml), Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

**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 (296. Ser2481) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 0.5-1 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).

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

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