

Atm (5C2): sc-23922

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 FRAP. 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 display delays in p53 induction.

REFERENCES

1. Hartley, K.O., et al. 1995. DNA-dependent protein kinase catalytic subunit: a relative of phosphatidylinositol 3-kinase and the ataxia telangiectasia gene product. *Cell* 82: 849-856.
2. Nowak, R. 1995. Discovery of AT gene sparks biomedical research bonanza. *Science* 268: 1700-1701.

CHROMOSOMAL LOCATION

Genetic locus: ATM (human) mapping to 11q22.3; Atm (mouse) mapping to 9 A5.3.

SOURCE

Atm (5C2) is a mouse monoclonal antibody raised against amino acids 980-1512 of Atm of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Atm (5C2) is recommended for detection of Atm 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Atm siRNA (h): sc-29761, Atm siRNA (m): sc-29762, Atm shRNA Plasmid (h): sc-29761-SH, Atm shRNA Plasmid (m): sc-29762-SH, Atm shRNA (h) Lentiviral Particles: sc-29761-V and Atm shRNA (m) Lentiviral Particles: sc-29762-V.

Molecular Weight of Atm: 370 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, HeLa whole cell lysate: sc-2200 or RAW 264.7 whole cell lysate: sc-2211.

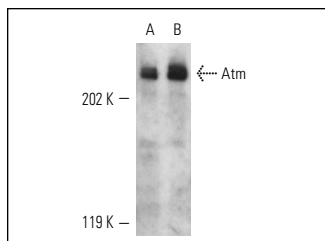
STORAGE

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



Atm (5C2): sc-23922. Western blot analysis of Atm expression in HeLa (A) and G-361 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hresko, R.C., et al. 2005. mTOR.RICTOR is the Ser 473 kinase for Akt/protein kinase B in 3T3-L1 adipocytes. *J. Biol. Chem.* 280: 40406-40416.
2. Batchelor, E., et al. 2008. Recurrent initiation: a mechanism for triggering p53 pulses in response to DNA damage. *Mol. Cell* 30: 277-289.
3. Katsura, M., et al. 2009. The ATR-Chk1 pathway plays a role in the generation of centrosome aberrations induced by Rad51C dysfunction. *Nucleic Acids Res.* 37: 3959-3968.
4. Lim, D., et al. 2009. Silencing the Metallothionein 2A gene inhibits cell cycle progression from G₁ to S-phase involving ATM and cdc25A signaling in breast cancer cells. *Cancer Lett.* 276: 109-117.
5. Li, X.L., et al. 2009. Adenovirus-mediated expression of UHRF1 reduces the radiosensitivity of cervical cancer HeLa cells to gamma-irradiation. *Acta Pharmacol. Sin.* 30: 458-466.
6. Jayachandran, G., et al. 2010. NPRL2 sensitizes human non-small cell lung cancer (NSCLC) cells to cisplatin treatment by regulating key components in the DNA repair pathway. *PLoS ONE* 5: e11994.
7. Sato, M., et al. 2010. Irradiation-induced p53 expression is attenuated in cells with NQO1 C465T polymorphism. *J. Med. Dent. Sci.* 57: 139-145.
8. Selimovic, D., et al. 2011. Apoptosis related protein-2 triggers melanoma cell death by a mechanism including both endoplasmic reticulum stress and mitochondrial dysregulation. *Carcinogenesis* 32: 1268-1278.
9. Ma, X., et al. 2011. Down-regulation of EBV-LMP1 radio-sensitizes nasal pharyngeal carcinoma cells via NFκB regulated ATM expression. *PLoS ONE* 6: e24647.
10. Hassan, M., et al. 2016. Elevated expression of hepatoma up-regulated protein inhibits gamma-irradiation-induced apoptosis of prostate cancer cells. *J. Cell. Biochem.* 117: 1308-1318.

CONJUGATES

See **Atm (G-12): sc-377293** for Atm antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647.