

Atm (2C1): sc-23921

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-PKCS 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

- 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.
- 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 (2C1) is a mouse monoclonal antibody raised against amino acids 2577-3056 of Atm of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Atm (2C1) 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, RAW 264.7 whole cell lysate: sc-2211 or HeLa whole cell lysate: sc-2200.

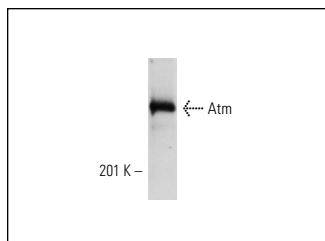
STORAGE

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

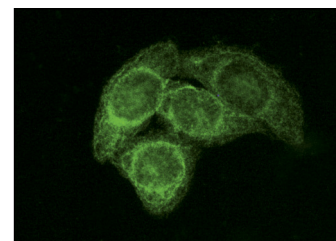
RESEARCH USE

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

DATA



Atm (2C1): sc-23921. Western blot analysis of Atm expression in RAW 264.7 whole cell lysate.



Atm (2C1): sc-23921. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Niida, H., et al. 2005. Depletion of Chk1 leads to premature activation of Cdc2-cyclin B and mitotic catastrophe. *J. Biol. Chem.* 280: 39246-39252.
- Deng, X., et al. 2005. Defective ATM-p53-mediated apoptotic pathway in multiple sclerosis. *Ann. Neurol.* 58: 577-84.
- Mak, J.P., et al. 2015. Pharmacological inactivation of CHK1 and WEE1 induces mitotic catastrophe in nasopharyngeal carcinoma cells. *Oncotarget* 6: 21074-21084.
- Aliwaini, S., et al. 2015. The palladacycle, AJ-5, exhibits anti-tumour and anti-cancer stem cell activity in breast cancer cells. *Cancer Lett.* 357: 206-218.
- Nagel, R., et al. 2015. Genome-wide siRNA screen identifies the radiosensitizing effect of downregulation of MASTL and FOXM1 in NSCLC. *Mol. Cancer Ther.* 14: 1434-1444.
- Zhang, J., et al. 2015. ATM functions at the peroxisome to induce pexophagy in response to Ros. *Nat. Cell Biol.* 17: 1259-1269.
- Reddy, V., et al. 2015. ATM inhibition potentiates death of androgen receptor-inactivated prostate cancer cells with telomere dysfunction. *J. Biol. Chem.* 290: 25522-25533.
- Kanu, N., et al. 2015. RAD18, WRNIP1 and ATMIN promote ATM signalling in response to replication stress. *Oncogene* 35: 4020.
- Ortega-Atienza, S., et al. 2016. ATM and KAT5 safeguard replicating chromatin against formaldehyde damage. *Nucleic Acids Res.* 44: 198-209.
- Cristini, A., et al. 2016. DNA-PK triggers histone ubiquitination and signaling in response to DNA double-strand breaks produced during the repair of transcription-blocking topoisomerase I lesions. *Nucleic Acids Res.* 44: 1161-1178.



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