

Atm (G-12): sc-377293

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.

CHROMOSOMAL LOCATION

Genetic locus: ATM (human) mapping to 11q22.3.

SOURCE

Atm (G-12) is a mouse monoclonal antibody raised against amino acids 2581-2860 of Atm (ataxia telangiectasia protein) of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Atm (G-12) is available conjugated to agarose (sc-377293 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377293 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377293 PE), fluorescein (sc-377293 FITC), Alexa Fluor® 488 (sc-377293 AF488), Alexa Fluor® 546 (sc-377293 AF546), Alexa Fluor® 594 (sc-377293 AF594) or Alexa Fluor® 647 (sc-377293 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377293 AF680) or Alexa Fluor® 790 (sc-377293 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Atm (G-12) is recommended for detection of Atm of human origin by Western Blotting (starting dilution 1:100, 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 Atm siRNA (h): sc-29761, Atm shRNA Plasmid (h): sc-29761-SH and Atm shRNA (h) Lentiviral Particles: sc-29761-V.

Molecular Weight of Atm: 370 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, HEK293 whole cell lysate: sc-45136 or HeLa whole cell lysate: sc-2200.

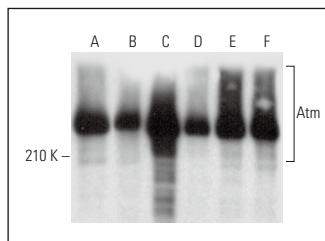
RESEARCH USE

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

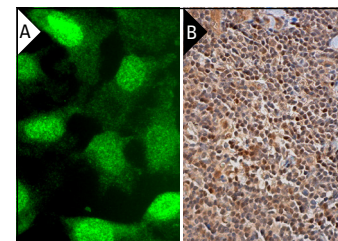
STORAGE

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

DATA



Atm (G-12): sc-377293. Western blot analysis of Atm expression in HeLa (A), Jurkat (B), SK-MEL-24 (C), A-431 (D), Raji (E) and HEK293 (F) whole cell lysates.



Atm (G-12): sc-377293. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear and cytoplasmic staining of cells in germinal center and cells in non-germinal center (B).

SELECT PRODUCT CITATIONS

- Lee, J.H., et al. 2016. Antioxidant effects of *Cirsium setidens* extract on oxidative stress in human mesenchymal stem cells. *Mol. Med. Rep.* 14: 3777-3784.
- Zhao, Y.Y., et al. 2018. Microwave hyperthermia promotes caspase-3-dependent apoptosis and induces G₂/M checkpoint arrest via the Atm pathway in non-small cell lung cancer cells. *Int. J. Oncol.* 53: 539-550.
- Ha Thi, H.T., et al. 2019. MicroRNA-130a modulates a radiosensitivity of rectal cancer by targeting SOX4. *Neoplasia* 21: 882-892.
- Zhu, S., et al. 2020. Kinesin Kif2C in regulation of DNA double strand break dynamics and repair. *Elife* 9: e53402.
- Lipner, M.B., et al. 2020. Irreversible JNK1-Jun inhibition by JNK-IN-8 sensitizes pancreatic cancer to 5-FU/FOLFOX chemotherapy. *JCI Insight* 5: e129905.
- Camero, S., et al. 2020. BET inhibition therapy counteracts cancer cell survival, clonogenic potential and radioresistance mechanisms in rhabdomyosarcoma cells. *Cancer Lett.* 479: 71-88.
- Guo, X., et al. 2020. RNA demethylase ALKBH5 prevents pancreatic cancer progression by posttranscriptional activation of PER1 in an m6A-YTHDF2-dependent manner. *Mol. Cancer* 19: 91.
- Zhu, C., et al. 2020. Phospho-Ser⁷⁸⁴-VCP is required for DNA damage response and is associated with poor prognosis of chemotherapy-treated breast cancer. *Cell Rep.* 31: 107745.
- Yue, J., et al. 2020. Targeted chemotherapy overcomes drug resistance in melanoma. *Genes Dev.* 34: 637-649.

PROTOCOLS

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