SANTA CRUZ BIOTECHNOLOGY, INC.

Atm (ATM 11G12): sc-53173

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 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 (ATM 11G12) is a mouse monoclonal antibody raised against amino acids 992-1144 of Atm of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Atm (ATM 11G12) is recommended for detection of Atm of 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 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, Raji whole cell lysate: sc-364236 or MCF7 whole cell lysate: sc-2206.

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, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

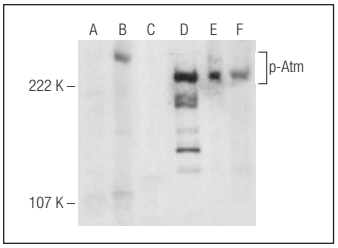
STORAGE

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

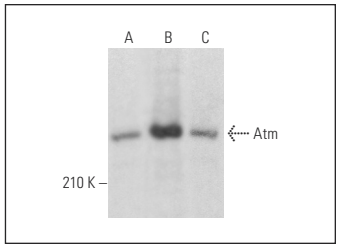
RESEARCH USE

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

DATA



Western blot analysis of Atm phosphorylation in untreated (**A**,**D**), UV treated (**B**,**E**) and UV and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa nuclear extracts. Antibodies tested include p-Atm (10H11.E12): sc-47739 (**A**,**B**,**C**) and Atm (ATM 11G12): sc-53173 (**D**,**E**,**F**).



Atm (ATM 11G12): sc-53173. Western blot analysis of Atm expression in A-431 (**A**), Raji (**B**) and MCF7 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Huang, Y., et al. 2013. Phospho-ΔNp63α/microRNA feedback regulation in squamous carcinoma cells upon cisplatin exposure. Cell Cycle 12: 684-697.
2. Tian, K., et al. 2013. Dynamics of DNA damage induced pathways to cancer. PLoS ONE 8: e72303.
3. Ahmed, K.M., et al. 2018. β1-Integrin impacts Rad51 stability and DNA double-strand break repair by homologous recombination. Mol. Cell. Biol. 38: e00672-17.
4. Yin, H., et al. 2020. UBE2T promotes radiation resistance in non-small cell lung cancer via inducing epithelial-mesenchymal transition and the ubiquitination-mediated FOXO1 degradation. Cancer Lett. 494: 121-131.
5. Islam, S., et al. 2021. β-TrCP1 facilitates cell cycle checkpoint activation, DNA repair and cell survival through ablation of β-TrCP2 in response to genotoxic stress. J. Biol. Chem. 296: 100511.
6. Hoffmann, M., et al. 2021. Camostat mesylate inhibits SARS-CoV-2 activation by TMPRSS2-related proteases and its metabolite GBPA exerts antiviral activity. EBioMedicine 65: 103255.
7. Feng, T., et al. 2021. IL13Rα1 prevents a castration resistant phenotype of prostate cancer by targeting hexokinase 2 for ubiquitin-mediated degradation. Cancer Biol. Med. 19: 1008-1028.
8. Walter, M., et al. 2023. NUDT22 promotes cancer growth through pyrimidine salvage. Oncogene 42:1282-1293.

CONJUGATES

See **Atm (G-12): sc-377293** for Atm antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.