

ATMIN (B-1): sc-373834

BACKGROUND

ATMIN (ATM/ATR-substrate Chk2-interacting Zn²⁺-finger protein) is a DNA damage response protein. It functions as a scaffold protein in the lesion-specific Rad51 focus forming pathway. In response to DNA methylating agents and persistent single stranded DNA gaps, ATMIN forms Rad51-containing foci for DNA repair. The ATMIN foci are MLH1-dependent. ATMIN is similar in structure and function to Mdt1. It consists of an N-terminal nucleic acid binding domain, a nuclear localization signal and a C-terminal SQ/TQ cluster domain (SCD). ATMIN interacts with the Forkhead-associated (FHA) domain of Chk2 via its SCD and may be a substrate for ATM/ATR kinase. A lack in functional ATMIN results in impaired Rad51 focus formation and leads to increased DNA damage-induced apoptosis.

REFERENCES

1. Ishikawa, K., Nagase, T., Nakajima, D., Seki, N., Ohira, M., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1997. Prediction of the coding sequences of unidentified human genes. VIII. 78 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 4: 307-313.
2. Pike, B.L., Yongkiettrakul, S., Tsai, M.D. and Heierhorst, J. 2004. Mdt1, a novel Rad53 FHA1 domain-interacting protein, modulates DNA damage tolerance and G₂/M cell cycle progression in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 24: 2779-2788.
3. Traven, A. and Heierhorst, J. 2005. SQ/TQ cluster domains: concentrated ATM/ATR kinase phosphorylation site regions in DNA-damage-response proteins. Bioessays 27: 397-407.
4. McNees, C.J., Conlan, L.A., Tennis, N. and Heierhorst, J. 2005. ASCIZ regulates lesion-specific Rad51 focus formation and apoptosis after methylating DNA damage. EMBO J. 24: 2447-2457.

CHROMOSOMAL LOCATION

Genetic locus: ATMIN (human) mapping to 16q23.2; Atmin (mouse) mapping to 8 E1.

SOURCE

ATMIN (B-1) is a mouse monoclonal antibody raised against amino acids 581-823 mapping at the C-terminus of ATMIN 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

ATMIN (B-1) is recommended for detection of ATMIN of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ATMIN siRNA (h): sc-105098, ATMIN siRNA (m): sc-141330, ATMIN shRNA Plasmid (h): sc-105098-SH, ATMIN shRNA Plasmid (m): sc-141330-SH, ATMIN shRNA (h) Lentiviral Particles: sc-105098-V and ATMIN shRNA (m) Lentiviral Particles: sc-141330-V.

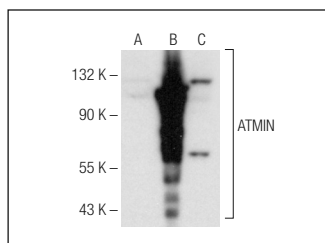
Molecular Weight of ATMIN: 115 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Neuro-2A whole cell lysate: sc-364185 or PC-3 nuclear extract: sc-2152.

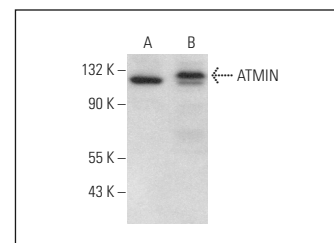
RECOMMENDED SUPPORT REAGENTS

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.

DATA



ATMIN (B-1): sc-373834. Western blot analysis of ATMIN expression in non transfected (A) and human ATMIN transfected (B) 293T whole cell lysates and PC-3 nuclear extract (C).



ATMIN (B-1): sc-373834. Western blot analysis of ATMIN expression in NIH/3T3 (A) and Neuro-2A (B) whole cell lysates.

RESEARCH USE

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