

ATAD3B (A-8): sc-514615

BACKGROUND

The AAA ATPase family of molecular chaperones are characterized by a highly conserved AAA motif. Composed of 200-250 residues, the AAA domain contains Walker homology sequences and imparts ATPase activity. Members of the AAA ATPase family act as DNA helicases, as well as transcription factors, and are thought to be involved in several cellular functions, such as cell-cycle regulation, protein proteolysis, organelle biogenesis and vesicle-mediated protein transport. Mitochondrial membrane proteins ATAD3A and ATAD3B contribute to the stabilization of nucleoids, which are large mitochondrial DNA (mtDNA)-protein complexes. ATAD3A/B may participate in the transformation pathway and the chemosensitivity of oligodendrogliomas. Three isoforms of ATAD3B exist as a result of alternative splicing events.

REFERENCES

- Patel, S. and Latterich, M. 1998. The AAA team: related ATPases with diverse functions. *Trends Cell Biol.* 8: 65-71.
- Neuwald, A.F., et al. 1999. AAA+: A class of chaperone-like ATPases associated with the assembly, operation, and disassembly of protein complexes. *Genome Res.* 9: 27-43.
- Ogura, T. and Wilkinson, A.J. 2001. AAA+ superfamily ATPases: common structure—diverse function. *Genes Cells* 6: 575-597.
- Ye, Y., et al. 2001. The AAA ATPase Cdc48/p97 and its partners transport proteins from the ER into the cytosol. *Nature* 414: 652-656.
- Iyer, L.M., et al. 2004. Evolutionary history and higher order classification of AAA+ ATPases. *J. Struct. Biol.* 146: 11-31.
- Weise, A., et al. 2005. New insights into the evolution of chromosome 1. *Cytogenet. Genome Res.* 108: 217-222.
- Kedzierska, S. 2006. Structure, function and mechanisms of action of ATPases from the AAA superfamily of proteins. *Postepy Biochem.* 52: 330-338.
- He, J., et al. 2007. The AAA+ protein ATAD3 has displacement loop binding properties and is involved in mitochondrial nucleoid organization. *J. Cell Biol.* 176: 141-146.

CHROMOSOMAL LOCATION

Genetic locus: ATAD3B (human) mapping to 1p36.33.

SOURCE

ATAD3B (A-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 598-615 near the C-terminus of ATAD3B of human origin.

PRODUCT

Each vial contains 200 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

ATAD3B (A-8) is recommended for detection of ATAD3B isoforms 1 and 3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ATAD3B siRNA (h): sc-88670, ATAD3B shRNA Plasmid (h): sc-88670-SH and ATAD3B shRNA (h) Lentiviral Particles: sc-88670-V.

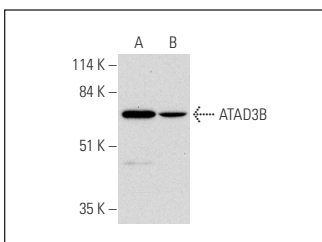
Molecular Weight of ATAD3B: 73 kDa.

Positive Controls: A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L PLUS-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ATAD3B (A-8): sc-514615. Western blot analysis of ATAD3B expression in A549 (A) and HeLa (B) whole cell lysates.

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 or our catalog for detailed protocols and support products.