10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

ATAD3A Antibody

Catalog # ASC11340

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q9NVI7
Other Accession	Q9NVI7, 283436220
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	66218
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ATAD3A antibody can be used for detection of ATAD3A by Western blot at 1 g/mL. Antibody can also be used for immunocytochemistry starting at 20 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	55210
Other Names	ATPase family AAA domain-containing protein 3A, ATAD3A
Target/Specificity	ATAD3A; ATAD3A antibody is predicted to not cross-react with other ATAD protein family members. At least two isoforms are known to exist.
Reconstitution & Storage	ATAD3A antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	ATAD3A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATAD3A {ECO:0000303|PubMed:37832546, ECO:0000312|HGNC:HGNC:25567}
Function	Essential for mitochondrial network organization, mitochondrial metabolism and cell growth at organism and cellular level (PubMed:17210950, PubMed:20154147, PubMed:22453275, PubMed:31522117, PubMed:37832546, PubMed:39116259). May play an important role in mitochondrial protein synthesis (PubMed:22453275). May also participate in mitochondrial DNA replication (PubMed:17210950). May bind to mitochondrial DNA D-loops and contribute to nucleoid stability (PubMed:17210950). Required for enhanced channeling of cholesterol for

	hormone-dependent steroidogenesis (PubMed:22453275). Involved in mitochondrial-mediated antiviral innate immunity (PubMed:31522117). Required to protect mitochondria from the PERK-mediated unfolded protein response: specifically inhibits the activity of EIF2AK3/PERK at mitochondria-endoplasmic reticulum contact sites, thereby providing a safe haven for mitochondrial protein translation during endoplasmic reticulum stress (PubMed:39116259). Ability to inhibit EIF2AK3/PERK is independent of its ATPase activity (PubMed:39116259). Also involved in the mitochondrial DNA damage response by promoting signaling between damaged genomes and the mitochondrial membrane, leading to activation of the integrated stress response (ISR) (PubMed:37832546).
Cellular Location	Mitochondrion inner membrane; Single-pass membrane protein. Mitochondrion matrix, mitochondrion nucleoid Note=In the mitochondrial inner membrane, enriched in sites with the potential to form contacts with the outer membrane (PubMed:20154147, PubMed:20349121). The N-terminal domain interacts with the inner surface of the mitochondrial outer membrane and the C-terminal domain localizes in a specific matrix compartment, where it is associated with nucleoids (PubMed:18063578). Also present at mitochondria-endoplasmic reticulum contact sites; where it interacts with EIF2AK3/PERK (PubMed:39116259).
Tissue Location	Overexpressed in lung adenocarcinomas (at protein level).

Background

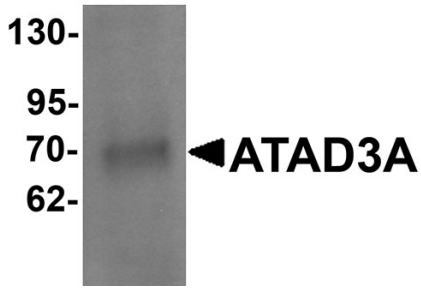
ATAD3A Antibody: ATAD3A is a member of the AAA ATPase family, a family of proteins that catalyze ATP into ADP and are involved in several cellular functions such as cell-cycle regulation, protein proteolysis and transport. The AAA ATPase family is characterized by a highly conserved AAA motif containing Walker homology sequences and imparting ATPase activity. Mitochondrial membrane proteins ATAD3A/B contribute to the stabilization of nucleoids and may participate in the transformation pathway and the chemosensitivity of oligodendrogliomas. The gene encoding ATAD3A/B/C maps to human chromosome 1 and has been suggested to be an anti-apoptotic marker.

References

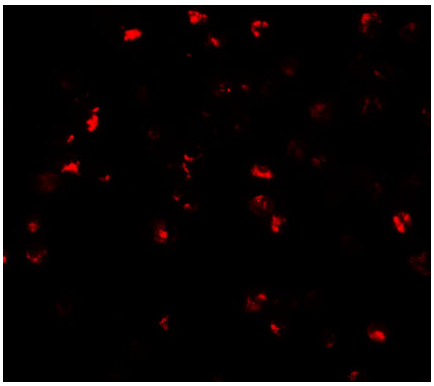
Patel S and Latterich M. The AAA team: related ATPases with diverse functions. Trends Cell Biol. 1998; 8:65-71.
Ogura T and Wilkinson AJ. AAA+ superfamily ATPases: common structure—diverse function. Genes Cells 2001; 6:575-97.
Hubstenberger A, Labourdette G, Baudier J, et al. ATAD3A and ATAD3B are distal 1p-located genes differentially expressed in human glioma cell lines and present in vitro anti-oncogenic and chemoresistant properties. Exp. Cell Res. 2008; 314:2870-83.
Fang HY, Chang CL, Hsu SH, et al. ATPase family AAA domain-containing 3A is a novel anti-apoptotic factor in lung adenocarcinoma cells. J. Cell Sci. 2010; 123:1171-80.

Images

Western blot analysis of ATAD3A in Daudi cell lysate with ATAD3A antibody at 1 µg/mL .



Immunocytochemistry of ATAD3A in Daudi cells with ATAD3A antibody at 20 µg/mL.



Immunofluorescence of ATAD3A in Daudi cells with ATAD3A antibody at 20 µg/mL.