

ATAD3A Rabbit pAb

ATAD3A Rabbit pAb Catalog # AP59147

Product Information

Application WB **Primary Accession** Q9NVI7 Reactivity Pig, Mouse Rabbit Host Clonality Polyclonal Calculated MW 66218 **Physical State** Liquid

Immunogen KLH conjugated synthetic peptide derived from human ATAD3A

351-450/634 **Epitope Specificity**

Isotype IgG

affinity purified by Protein A **Purity**

Buffer

SUBCELLULAR LOCATION

0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. 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. 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.

SIMILARITY Belongs to the AAA ATPase family.

Can form homooligomers. Homodimer formation at the N-terminus may be **SUBUNIT**

regulated by ATP and is required for the interaction with the inner surface of the mitochondrial outer membrane and correct mitochondrial homeostasis. Interacts with components of the mitochondrial ribosome and with other proteins involved in mitochondrial RNA metabolism. May also interact with protein involved in lipid metabolism, including STARD9. May interact with FAM210A. Interacts with GADD45GIP1. Interacts with S100B in a Ca(+2)- and Zn(+2)-dependent manner; this interaction probably occurs in the cytosol prior to mitochondrial targeting. S100B could assist ATAD3A cytoplasmic processing, preventing aggregation and favoring mitochondrial localization. Interacts with HSP60/HSPD1. Forms heterooligomers with ATAD3B; this

interaction may affect ATAD3A activity.

This product as supplied is intended for research use only, not for use in

human, therapeutic or diagnostic applications.

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. The genes encoding

Important Note

Background Descriptions

ATAD3A/B/C maps to human chromosome 1, which houses over 3,000 genes and is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

Additional Information

Gene ID 55210

Other Names ATPase family AAA domain-containing protein 3A, 3.6.1.-, ATAD3A

{ECO:0000303|PubMed:37832546, ECO:0000312|HGNC:HGNC:25567}

Overexpressed in lung adenocarcinomas (at protein level). Target/Specificity

WB=1:500-2000 **Dilution**

Storage Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When

reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody

is stable for at least two weeks at 2-4 °C.

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

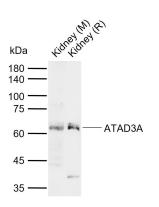
EIF2AK3/PERK (PubMed:39116259).

Tissue Location Overexpressed in lung adenocarcinomas (at protein level).

Background

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. The genes encoding ATAD3A/B/C maps to human chromosome 1, which houses over 3,000 genes and is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

Images



Sample:

Lane 1: Mouse Kidney tissue lysates Lane 2: Rat Kidney tissue lysates

Primary: Anti-ATAD3A (AP59147) at 1/1000 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000

dilution

Predicted band size: 71 kDa Observed band size: 62 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.