SANTA CRUZ BIOTECHNOLOGY, INC.

ATPIF1 (M-78): sc-134962

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mitochondrial ATP synthases (ATPases) transduce the energy contained in membrane electrochemical proton gradients into the energy required for synthesis of high-energy phosphate bonds. ATPases contain two linked complexes: F_1, the hydrophilic catalytic core; and F_0, the membrane-embedded protein channel. F_1 consists of three α chains and three β chains, which are weakly homologous, as well as one γ chain, one δ chain and one ε chain. F_0 consists of three subunits: a, b and c. A mitochondrial F_1-ATPase inhibitor protein, ATPIF1 (ATPase inhibitory factor 1), also known as IP, IF1, ATPI or ATPIP (ATPase inhibitor protein), binds to the C-terminal region of a β subunit of the F_1-ATPase at low pH values and, via interference of the β and γ subunit interaction, ATPIF1 regulates the activity of the F_1F_0-ATPase. This reversible ATPIF1 binding to F_1F_0-ATPase also occurs on the surface of endothelial cells.

REFERENCES

1. Ichikawa, N., et al. 1999. Nucleotide sequence of cDNA coding the mitochondrial precursor protein of the ATPase inhibitor from humans. Biosci. Biotechnol. Biochem. 63: 2225-2227.
2. Cabezón, E., et al. 2001. The structure of bovine IF_1, the regulatory subunit of mitochondrial F-ATPase. EMBO J. 20: 6990-6996.

CHROMOSOMAL LOCATION

Genetic locus: ATPIF1 (human) mapping to 1p35.3; Atpif1 (mouse) mapping to 4 D2.3.

SOURCE

ATPIF1 (M-78) is a rabbit polyclonal antibody raised against amino acids 27-104 mapping within an internal region of ATPIF1 of mouse origin.

PRODUCT

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

APPLICATIONS

ATPIF1 (M-78) is recommended for detection of ATPIF1 of mouse, rat and 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 ATPIF1 siRNA (h): sc-78711, ATPIF1 siRNA (m): sc-141374, ATPIF1 shRNA Plasmid (h): sc-78711-SH, ATPIF1 shRNA Plasmid (m): sc-141374-SH, ATPIF1 shRNA (h) Lentiviral Particles: sc-78711-V and ATPIF1 shRNA (m) Lentiviral Particles: sc-141374-V.

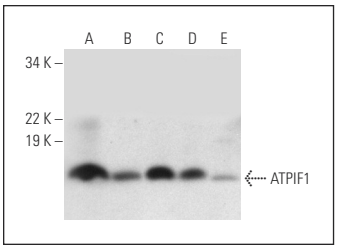
Molecular Weight of ATPIF1: 12 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, RAW 264.7 whole cell lysate: sc-2211 or 3T3-L1 cell lysate: sc-2243.

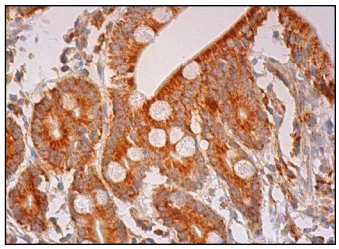
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



ATPIF1 (M-78): sc-134962. Western blot analysis of ATPIF1 expression in RAW 264.7 (**A**), 3T3-L1 (**B**), NIH/3T3 (**C**), C2C12 (**D**) and MCF7 (**E**) whole cell lysates.



ATPIF1 (M-78): sc-134962. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

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.

PROTOCOLS

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