SANTA CRUZ BIOTECHNOLOGY, INC.

ATPAF1 (E-12): sc-398684

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mitochondrial ATP synthases transduce the energy contained in the membrane's electrochemical proton gradients into the energy required for synthesis of high-energy phosphate bonds. F_1 is the hydrophilic domain of ATPase that has three identical α subunits, three identical β subunits and three additional subunits. Each ATPase contains three catalytic sites for synthesis, with one site located in each of the three β subunits. ATPAF1 (ATP synthase mitochondrial F_1 complex assembly factor 1), also known as its yeast homolog Atp11p, is a 328 amino acid mitochondrial protein that is required for the assembly of F_1-β and F_1-α subunits into the mitochondrial ATPase. Both ATPAF1 and ATPAF2 are broadly conserved in eukaryotes and are widely expressed, suggesting that they are essential housekeeping proteins. Due to their influence on enzyme assembly, it has been suggested that evaluation of ATPAF1 and ATPAF2 may be of interest in patients with ATP synthase deficiencies in which the underlying biochemical defect is unknown.

REFERENCES

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2. Wang, Z.G., et al. 2000. The assembly factor Atp11p binds to the β-subunit of the mitochondrial F_1-ATPase. J. Biol. Chem. 275: 5767-5772.
3. Wang, Z.G., et al. 2001. Atp11p and Atp12p are assembly factors for the F_1-ATPase in human mitochondria. J. Biol. Chem. 276: 30773-30778.
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5. Ackerman, S.H. 2002. Atp11p and Atp12p are chaperones for F_1-ATPase biogenesis in mitochondria. Biochim. Biophys. Acta 1555: 101-105.
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7. Picková, A., et al. 2003. Differential expression of ATPAF1 and ATPAF2 genes encoding F_1-ATPase assembly proteins in mouse tissues. FEBS Lett. 551: 42-46.
8. Pícková, A., et al. 2005. Assembly factors of F_1F_0-ATP synthase across genomes. Proteins 59: 393-402.
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CHROMOSOMAL LOCATION

Genetic locus: ATPAF1 (human) mapping to 1p33.

SOURCE

ATPAF1 (E-12) is a mouse monoclonal antibody raised against amino acids 74-230 mapping within an internal region of ATPAF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ATPAF1 (E-12) is recommended for detection of ATPAF1 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 ATPAF1 siRNA (h): sc-78578, ATPAF1 shRNA Plasmid (h): sc-78578-SH and ATPAF1 shRNA (h) Lentiviral Particles: sc-78578-V.

Molecular Weight (predicted) of ATPAF1: 36 kDa.

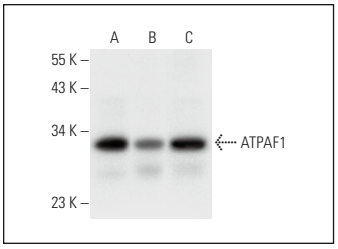
Molecular Weight (observed) of ATPAF1: 28-32 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, Hep G2 cell lysate: sc-2227 or human skeletal muscle extract: sc-363776.

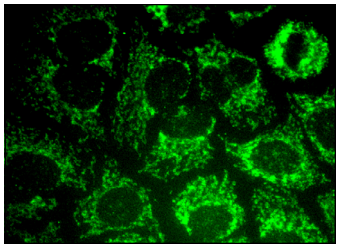
RECOMMENDED SUPPORT REAGENTS

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



ATPAF1 (E-12): sc-398684. Western blot analysis of ATPAF1 expression in SJRH30 (**A**) and Hep G2 (**B**) whole cell lysates and human skeletal muscle tissue extract (**C**).



ATPAF1 (E-12): sc-398684. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization.

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.