SANTA CRUZ BIOTECHNOLOGY, INC.

ATPAF1 (E-9): sc-393864

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. F1 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 F1 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 F1-β and F1-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

1. Wang, Z.G., et al. 1996. Identification of functional domains in Atp11p. Protein required for assembly of the mitochondrial F1-ATPase in yeast. J. Biol. Chem. 271: 4887-4894.
2. Wang, Z.G., et al. 2000. The assembly factor Atp11p binds to the β-subunit of the mitochondrial F1-ATPase. J. Biol. Chem. 275: 5767-5772.
3. Wang, Z.G., et al. 2001. Atp11p and Atp12p are assembly factors for the F1-ATPase in human mitochondria. J. Biol. Chem. 276: 30773-30778.

CHROMOSOMAL LOCATION

Genetic locus: ATPAF1 (human) mapping to 1p33; Atpaf1 (mouse) mapping to 4 D1.

SOURCE

ATPAF1 (E-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 98-119 within an internal region of ATPAF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ATPAF1 (E-9) is available conjugated to agarose (sc-393864 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393864 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393864 PE), fluorescein (sc-393864 FITC), Alexa Fluor® 488 (sc-393864 AF488), Alexa Fluor® 546 (sc-393864 AF546), Alexa Fluor® 594 (sc-393864 AF594) or Alexa Fluor® 647 (sc-393864 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393864 AF680) or Alexa Fluor® 790 (sc-393864 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393864 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ATPAF1 (E-9) is recommended for detection of ATPAF1 of mouse, rat and 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).

ATPAF1 (E-9) is also recommended for detection of ATPAF1 in additional species, including bovine.

Suitable for use as control antibody for ATPAF1 siRNA (h): sc-78578, ATPAF1 siRNA (m): sc-141370, ATPAF1 shRNA Plasmid (h): sc-78578-SH, ATPAF1 shRNA Plasmid (m): sc-141370-SH, ATPAF1 shRNA (h) Lentiviral Particles: sc-78578-V and ATPAF1 shRNA (m) Lentiviral Particles: sc-141370-V.

Molecular Weight (predicted) of ATPAF1: 36 kDa.

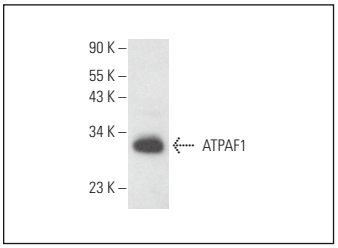
Molecular Weight (observed) of ATPAF1: 28-32 kDa.

Positive Controls: c4 whole cell lysate: sc-364186.

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-9): sc-393864. Western blot analysis of ATPAF1 expression in c4 whole cell lysate.

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.