SANTA CRUZ BIOTECHNOLOGY, INC.

# ATPAF1 (S-14): sc-161372

## 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 $\alpha$ subunits, three identical $\beta$ subunits and three additional subunits. Each ATPase contains three catalytic sites for synthesis, with one site located in each of the three $\beta$ 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 $F_1$-$\beta$ and $F_1$-$\alpha$ 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. and Ackerman, S.H. 2000. The assembly factor Atp11p binds to the $\beta$-subunit of the mitochondrial $F_1$-ATPase. J. Biol. Chem. 275: 5767-5772.
3. Wang, Z.G., White, P.S. and Ackerman, S.H. 2001. Atp11p and Atp12p are assembly factors for the $F_1$-ATPase in human mitochondria. J. Biol. Chem. 276: 30773-30778.
4. Sheluho, D. and Ackerman, S.H. 2001. An accessible hydrophobic surface is a key element of the molecular chaperone action of Atp11p. J. Biol. Chem. 276: 39945-39949.
5. Ackerman, S.H. 2002. Atp11p and Atp12p are chaperones for $F_1$-ATPase biogenesis in mitochondria. Biochim. Biophys. Acta 1555: 101-105.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608917. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Picková, A., Paul, J., Petruzzella, V. and Houstek, J. 2003. Differential expression of ATPAF1 and ATPAF2 genes encoding $F_1$-ATPase assembly proteins in mouse tissues. FEBS Lett. 551: 42-46.


## CHROMOSOMAL LOCATION

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

## SOURCE

ATPAF1 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ATPAF1 of human origin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

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

Blocking peptide available for competition studies, sc-161372 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ATPAF1 (S-14) is recommended for detection of ATPAF1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with ATPAF2.

ATPAF1 (S-14) is also recommended for detection of ATPAF1 in additional species, including equine, canine and bovine.

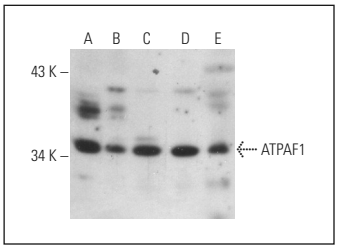
Suitable for use as control antibody for ATPAF1 siRNA (h): sc-78578, ATPAF1 siRNA (m): sc-141370, ATPAF1 shRNA Plasmid (h): sc-78578-SH, ATPAF1 shRNA Plasmid (m): sc-141370-SH, ATPAF1 shRNA (h) Lentiviral Particles: sc-78578-V and ATPAF1 shRNA (m) Lentiviral Particles: sc-141370-V.

Molecular Weight (predicted) of ATPAF1: 36 kDa.

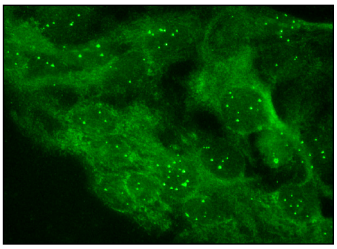
Molecular Weight (observed) of ATPAF1: 28-32 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, Sol8 cell lysate: sc-2249 or Hep G2 cell lysate: sc-2227.

## DATA




ATPAF1 (S-14): sc-161372. Western blot analysis of ATPAF1 expression in SJRH30 (**A**), Sol8 (**B**), Hep G2 (**C**) and C4 (**D**) whole cell lysates and rat skeletal muscle tissue extract (**E**).



ATPAF1 (S-14): sc-161372. Immunofluorescence staining of formalin-fixed Hep G2 cells showing mitochondrial and cytoplasmic localization.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.