

# ATP5E (Z88): sc-81874

## 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  $\alpha$  chains and three  $\beta$  chains, which are weakly homologous, as well as one  $\gamma$  chain, one  $\delta$  chain and one  $\epsilon$  chain.  $F_0$  consists of three subunits: a, b and c. The  $\epsilon$  chain of  $F_1$  contains 50 amino acids and is the smallest of the five ATPase  $F_1$  chains. Mitochondrial ATPase  $\epsilon$  chain (ATP5E) localizes to the mitochondria and catalyzes ATP synthesis.

## REFERENCES

- Walker, J.E., Fearnley, I.M., Gay, N.J., Gibson, B.W., Northrop, F.D., Powell, S.J., Runswick, M.J., Saraste, M. and Tybulewicz, V.L. 1985. Primary structure and subunit stoichiometry of  $F_1$ -ATPase from bovine mitochondria. *J. Mol. Biol.* 184: 677-701.
- Shirakihara, Y., Leslie, A.G., Abrahams, J.P., Walker, J.E., Ueda, T., Sekimoto, Y., Kambara, M., Saika, K., Kagawa, Y. and Yoshida, M. 1997. The crystal structure of the nucleotide-free  $\alpha_3\beta_3$  subcomplex of  $F_1$ -ATPase from the thermophilic *Bacillus* PS3 is a symmetric trimer. *Structure* 5: 825-836.
- Tu, Q., Yu, L., Zhang, P., Zhang, M., Zhang, H., Jiang, J., Chen, C. and Zhao, S. 2000. Cloning, characterization and mapping of the human ATP5E gene, identification of pseudogene ATP5EP1 and definition of the ATP5E motif. *Biochem. J.* 347: 17-21.
- Gross, C., Kussmann, S., Hehr, A., Hansmann, I. and Schlote, D. 2000.  $\epsilon$  subunit gene of  $F_1/F_0$ -ATP synthase (ATP5E) on human chromosome 20q13.2→q13.3 localizes between D20S171 and GNAS1. *Cytogenet. Cell Genet.* 91: 105-106.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606153. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: ATP5E (human) mapping to 20q13.32.

## SOURCE

ATP5E (Z88) is a mouse monoclonal antibody raised against recombinant ATP5E of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

ATP5E (Z88) is recommended for detection of ATP5E of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 ATP5E siRNA (h): sc-60229, ATP5E shRNA Plasmid (h): sc-60229-SH and ATP5E shRNA (h) Lentiviral Particles: sc-60229-V.

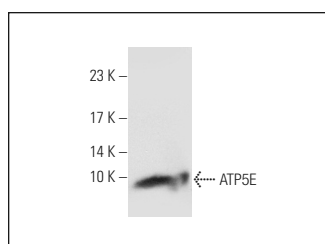
Molecular Weight of ATP5E: 7 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or SW-13 cell lysate: sc-24778.

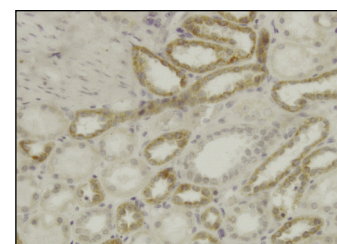
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ATP5E (Z88): sc-81874. Western blot analysis of ATP5E expression in HeLa whole cell lysate.



ATP5E (Z88): sc-81874. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Pandita, H., Mezey, E. and Ganapathy-Kanniappan, S. 2021. Augmented liver uptake of the membrane voltage sensor tetraphenylphosphonium distinguishes early fibrosis in a mouse model. *Front. Physiol.* 12: 676722.

## RESEARCH USE

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