SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5E (A-12): sc-393696

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. The ε chain of F_1 contains 50 amino acids and is the smallest of the five ATPase F_1 chains. Mitochondrial ATPase ε chain (ATP5E) localizes to the mitochondria and catalyzes ATP synthesis.

REFERENCES

1. 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.
2. 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.
3. 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.
4. Gross, C., Kussmann, S., Hehr, A., Hansmann, I. and Schlote, D. 2000. ε 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.
5. Online Mendelian Inheritance in Man, OMIM™. 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 (A-12) is a mouse monoclonal antibody raised against amino acids 1-51 representing full length ATP5E 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.

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.

APPLICATIONS

ATP5E (A-12) is recommended for detection of ATP5E 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 ATP5E siRNA (h): sc-60229, ATP5E shRNA Plasmid (h): sc-60229-SH and ATP5E shRNA (h) Lentiviral Particles: sc-60229-V.

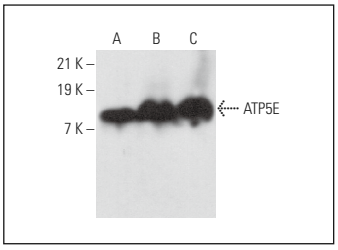
Molecular Weight of ATP5E: 7 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or SW-13 cell lysate: sc-24778.

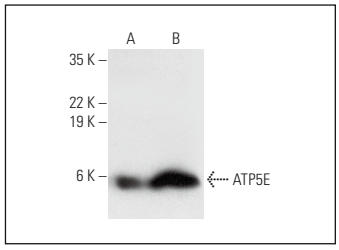
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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



ATP5E (A-12): sc-393696. Western blot analysis of ATP5E expression in Jurkat (**A**), HL-60 (**B**) and Caki-1 (**C**) whole cell lysates.



ATP5E (A-12): sc-393696. Western blot analysis of ATP5E expression in HeLa (**A**) and SW-13 (**B**) whole cell lysates.

PROTOCOLS

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