SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5E (A-11): sc-393695

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., et al. 1985. Primary structure and subunit stoichiometry of F_1-ATPase from bovine mitochondria. J. Mol. Biol. 184: 677-701.
2. Shirakihara, Y., et al. 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., et al. 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., et al. 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-11) 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ATP5E (A-11) is available conjugated to agarose (sc-393695 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393695 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393695 PE), fluorescein (sc-393695 FITC), Alexa Fluor® 488 (sc-393695 AF488), Alexa Fluor® 546 (sc-393695 AF546), Alexa Fluor® 594 (sc-393695 AF594) or Alexa Fluor® 647 (sc-393695 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393695 AF680) or Alexa Fluor® 790 (sc-393695 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ATP5E (A-11) 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.

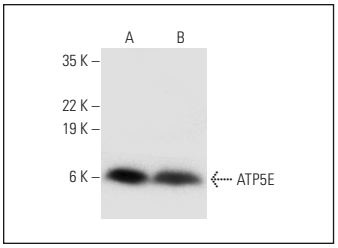
Molecular Weight of ATP5E: 7 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 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-11): sc-393695. Western blot analysis of ATP5E expression in HeLa (**A**) and SW-13 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Tan, J.L., et al. 2019. New high-throughput screening identifies compounds that reduce viability specifically in liver cancer cells that express high levels of SALL4 by inhibiting oxidative phosphorylation. Gastroenterology 157: 1615-1629.e17.
2. Rajasekaran, S., et al. 2021. Integrated multi-omics analysis of RB-loss identifies widespread cellular programming and synthetic weaknesses. Commun. Biol. 4: 977.

RESEARCH USE

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