SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5A (51): sc-136178

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 α chain of F_1 is a regulatory subunit that contains 509 amino acids. Mitochondrial ATPase α chain (ATP5A) 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. Kataoka, H., et al. 1991. Nucleotide sequence of a cDNA for the α subunit of human mitochondrial ATP synthase. Biochim. Biophys. Acta 1089: 393-395.

CHROMOSOMAL LOCATION

Genetic locus: ATP5A1 (human) mapping to 18q21.1; Atp5a1 (mouse) mapping to 18 E3.

SOURCE

ATP5A (51) is a mouse monoclonal antibody raised against amino acids 113-220 of ATP5A of human origin.

PRODUCT

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

APPLICATIONS

ATP5A (51) is recommended for detection of ATP5A of mouse, rat, human and *Arabidopsis thaliana* 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500). ATP5A (51) is also recommended for detection of ATP5A in additional species, including canine.

Suitable for use as control antibody for ATP5A siRNA (h): sc-60227, ATP5A siRNA (m): sc-60228, ATP5A shRNA Plasmid (h): sc-60227-SH, ATP5A shRNA Plasmid (m): sc-60228-SH, ATP5A shRNA (h) Lentiviral Particles: sc-60227-V and ATP5A shRNA (m) Lentiviral Particles: sc-60228-V.

Molecular Weight (predicted) of ATP5A: 60 kDa.

Molecular Weight (observed) of ATP5A: 51-71 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or ZR-75-1 cell lysate: sc-2241.

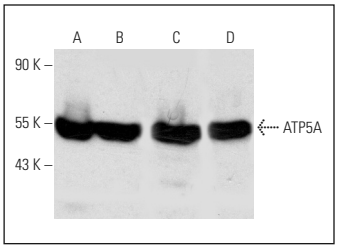
STORAGE

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. Not for resale.

DATA



ATP5A (51): sc-136178. Western blot analysis of ATP5A expression in HeLa (**A**), Jurkat (**B**) and ZR-75-1 (**C**) whole cell lysates and mouse embryonic heart tissue extract (**D**).

SELECT PRODUCT CITATIONS

1. Bertrand, J., et al. 2015. Glutamine enema regulates colonic ubiquitinated proteins but not proteasome activities during TNBS-induced colitis leading to increased mitochondrial activity. Proteomics 15: 2198-2210.
2. Guo, R., et al. 2017. Mitochondrial connexin40 regulates mitochondrial calcium uptake in coronary endothelial cells. Am. J. Physiol., Cell Physiol. 312: C398-C406.
3. Swart, P.C., et al. 2018. Early-ethanol exposure induced region-specific changes in metabolic proteins in the rat brain: a proteomics study. J. Mol. Neurosci. 65: 277-288.
4. Geng, J., et al. 2019. TIGAR regulates mitochondrial functions through SIRT1-PGC1α pathway and translocation of TIGAR into mitochondria in skeletal muscle. FASEB J. 33: 6082-6098.
5. Ait-Aissa, K., et al. 2019. Mitochondrial oxidative phosphorylation defect in the heart of subjects with coronary artery disease. Sci. Rep. 9: 7623.
6. Yao, C.H., et al. 2019. Mitochondrial fusion supports increased oxidative phosphorylation during cell proliferation. Elife 8: e41351.
7. Shah, S.S., et al. 2019. APOL1 kidney risk variants induce cell death via mitochondrial translocation and opening of the mitochondrial permeability transition pore. J. Am. Soc. Nephrol. 30: 2355-2368.
8. Geng, J., et al. 2019. TIGAR regulates mitochondrial functions through SIRT1-PGC1α pathway and translocation of TIGAR into mitochondria in skeletal muscle. FASEB J. 33: 6082-6098.
9. Kim, M., et al. 2020. Sestrins are evolutionarily conserved mediators of exercise benefits. Nat. Commun. 11: 190.
10. Kim, J.S., et al. 2020. *Toxoplasma gondii* GRA8-derived peptide immunotherapy improves tumor targeting of colorectal cancer. Oncotarget 11: 62-73.

PROTOCOLS

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