SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5F1 (C-12): sc-514419

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mitochondrial ATP synthase is composed of two multi-subunit complexes that utilize an inner membrane electrochemical gradient to catalyze the synthesis of ATP during oxidative phosphorylation. The two multi-subunit complexes are designated F_1 and F_0, the former of which comprises the soluble catalytic core and the latter of which comprises the membrane-spanning proton channel of ATP synthase. F_1 consists of five distinct subunits, designated ATP5A, ATP5B, ATP5C1, ATP5D and ATP5E, while F_0 consists of ten subunits, designated ATP5H, ATP5G1, ATP5I, ATP5G2, ATP5J2, ATP5J, ATP5G3, ATP5S, ATP5F1 and ATP5L. ATP5F1 (ATP synthase, H^+ transporting, mitochondrial F_0 complex, subunit B_1), also known as PIG47, is a 256 amino acid protein that localizes to the mitochondrial membrane and exists as a subunit of the F_0 complex. ATP5F1 is encoded by a gene located on human chromosome 1, which spans about 260 million base pairs and comprises nearly 8% of the human genome.

CHROMOSOMAL LOCATION

Genetic locus: ATP5F1 (human) mapping to 1p13.2; Atp5f1 (mouse) mapping to 3 F2.2.

SOURCE

ATP5F1 (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 47-65 near the N-terminus of ATP5F1 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.

ATP5F1 (C-12) is available conjugated to agarose (sc-514419 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514419 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514419 PE), fluorescein (sc-514419 FITC), Alexa Fluor® 488 (sc-514419 AF488), Alexa Fluor® 546 (sc-514419 AF546), Alexa Fluor® 594 (sc-514419 AF594) or Alexa Fluor® 647 (sc-514419 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514419 AF680) or Alexa Fluor® 790 (sc-514419 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514419 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ATP5F1 (C-12) is recommended for detection of ATP5F1 of mouse, rat and 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 ATP5F1 siRNA (h): sc-88835, ATP5F1 siRNA (m): sc-141347, ATP5F1 shRNA Plasmid (h): sc-88835-SH, ATP5F1 shRNA Plasmid (m): sc-141347-SH, ATP5F1 shRNA (h) Lentiviral Particles: sc-88835-V and ATP5F1 shRNA (m) Lentiviral Particles: sc-141347-V.

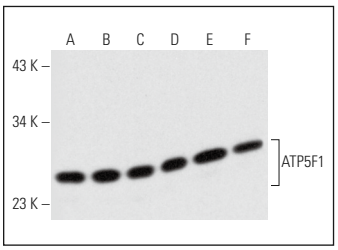
Molecular Weight of ATP5F1: 29 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

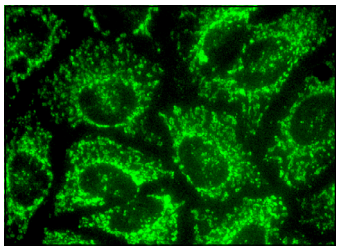
STORAGE

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

DATA



ATP5F1 (C-12): sc-514419. Western blot analysis of ATP5F1 expression in Jurkat (**A**), Ramos (**B**), K-562 (**C**), Hep G2 (**D**), MOLT-4 (**E**) and HL-60 (**F**) whole cell lysates.



ATP5F1 (C-12): sc-514419. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization.

SELECT PRODUCT CITATIONS

1. Amendola, C.R., et al. 2019. KRAS4A directly regulates hexokinase 1. Nature 576: 482-486.
2. Chung, I.C., et al. 2020. Mitochondrial oxidative phosphorylation complex regulates NLRP3 inflammasome activation and predicts patient survival in nasopharyngeal carcinoma. Mol. Cell. Proteomics 19: 142-154.
3. Kuramoto, K., et al. 2020. Verteporfin inhibits oxidative phosphorylation and induces cell death specifically in glioma stem cells. FEBS J. 287: 2023-2036.
4. Tiwari, S., et al. 2020. Gender-specific changes in energy metabolism and protein degradation as major pathways affected in livers of mice treated with ibuprofen. Sci. Rep. 10: 3386.
5. Protasoni, M., et al. 2020. Respiratory supercomplexes act as a platform for complex III-mediated maturation of human mitochondrial complexes I and IV. EMBO J. 39: e102817.
6. Ha, J. and Park, S.B. 2021. Callyspongiolide kills cells by inducing mitochondrial dysfunction via cellular iron depletion. Commun. Biol. 4: 1123.
7. Tsai, C.W., et al. 2022. Mechanisms and significance of tissue-specific MICU regulation of the mitochondrial calcium uniporter complex. Mol. Cell 82: 3661-3676.e8.
8. Dawicki-McKenna, J.M., et al. 2023. Mapping PTBP2 binding in human brain identifies SYNGAP1 as a target for therapeutic splice switching. Nat. Commun. 14: 2628.

RESEARCH USE

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

PROTOCOLS

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