SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5B (C-20): sc-16690

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. ATP5B, also designated ATPMB, ATPSB or mitochondrial ATP synthetase, β subunit, is a 529 amino acid protein that localizes to the mitochondrial membrane and exists as a subunit of the F_0 complex. ATP5B is encoded by a nuclear gene and assembled with the other subunits encoded by both mitochondrial and nuclear genes. The ATP5B gene is activated by members of the Ets family of transcription factors, suggesting that Ets transcription factors are involved in the enhanced expression of the ATP5B gene in highly proliferating cells and in the coordinate transcription of nuclear genes for mitochondrial proteins. ATP5B mRNA levels vary among species through transcriptional control with high expression levels in heart, lower levels in skeletal muscle and the lowest levels in liver and kidney.

CHROMOSOMAL LOCATION

Genetic locus: ATP5B (human) mapping to 12q13.3; Atp5b (mouse) mapping to 10 D3.

SOURCE

ATP5B (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of ATP5B of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16690 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ATP5B (C-20) is recommended for detection of ATP5B of mouse, rat and human 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)], 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).

ATP5B (C-20) is also recommended for detection of ATP5B in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ATP5B siRNA (h): sc-40565, ATP5B siRNA (m): sc-40566, ATP5B shRNA Plasmid (h): sc-40565-SH, ATP5B shRNA Plasmid (m): sc-40566-SH, ATP5B shRNA (h) Lentiviral Particles: sc-40565-V and ATP5B shRNA (m) Lentiviral Particles: sc-40566-V.

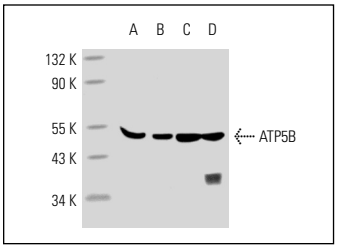
Molecular Weight of ATP5B: 51 kDa.

Positive Controls: Y79 cell lysate: sc-2240,rat liver extract: sc-2395 or HeLa whole cell lysate: sc-2200.

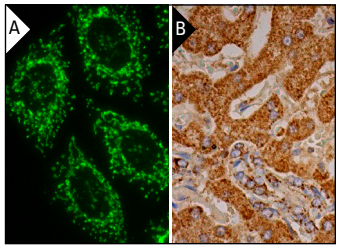
STORAGE

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

DATA



ATP5B (C-20): sc-16690. Western blot analysis of ATP5B expression in Y79 (**A**) and HeLa (**B**) whole cell lysates and rat liver (**C**) and mouse liver (**D**) tissue extracts.



ATP5B (C-20): sc-16690. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes and bile duct cells (**B**).

SELECT PRODUCT CITATIONS

1. Colom, B., et al. 2007. Caloric restriction and gender modulate cardiac muscle mitochondrial H_2O_2 production and oxidative damage. Cardiovasc. Res. 74: 456-465.
2. Colom, B., et al. 2007. Skeletal muscle of female rats exhibit higher mitochondrial mass and oxidative-phosphorylative capacities compared to males. Cell. Physiol. Biochem. 19: 205-212.
3. Alcolea, M.P., et al. 2007. Responses of mitochondrial biogenesis and function to maternal diabetes in rat embryo during the placentation period. Am. J. Physiol. Endocrinol. Metab. 293: E636-E644.
4. Alcolea, M.P., et al. 2007. Mitochondrial differentiation and oxidative phosphorylation system capacity in rat embryo during placentation period. Reproduction 134: 147-154.
5. Landriscina, M., et al. 2010. Mitochondrial chaperone Trap1 and the calcium binding protein Sorcin interact and protect cells against apoptosis induced by antiblastic agents. Cancer Res. 70: 6577-6586.
6. Sastre-Serra, J., et al. 2012. The effects of 17β-estradiol on mitochondrial biogenesis and function in breast cancer cell lines are dependent on the ERα/ERβ ratio. Cell. Physiol. Biochem. 29: 261-268.

RESEARCH USE

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