

ATP5B (R-20): sc-16689

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. 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 (R-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ATP5B of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-16689 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ATP5B (R-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 μ g per 100-500 μ g 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). ATP5B (R-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.

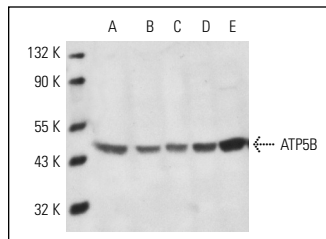
Molecular Weight of ATP5B: 51 kDa.

Positive Controls: 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 (R-20): sc-16689. Western blot analysis of ATP5B expression in HeLa (A), Caki-1 (B), DU 145 (C) and HepG2 (D) whole cell lysates, mouse (E) and rat (F) liver extracts.

SELECT PRODUCT CITATIONS

1. Wisloff, U., et al. 2005. Cardiovascular risk factors emerge after artificial selection for low aerobic capacity. *Science* 307: 418-420.
2. Rodrigue-Way, A., et al. 2007. A growth hormone-releasing peptide promotes mitochondrial biogenesis and a fat burning-like phenotype through scavenger receptor CD36 in white adipocytes. *Endocrinology* 148: 1009-1018.
3. Rose, A.J., et al. 2007. Effect of endurance exercise training on Ca^{2+} calmodulin-dependent protein kinase II expression and signalling in skeletal muscle of humans. *J. Physiol.* 583: 785-795.
4. Teodoro, J.S., et al. 2008. Differential alterations in mitochondrial function induced by a choline-deficient diet: understanding fatty liver disease progression. *Mitochondrion* 8: 367-376.
5. Lin, X., et al. 2009. Identification and properties of a receptor for the invertebrate cytokine astakine, involved in hematopoiesis. *Exp. Cell Res.* 315: 1171-1180.
6. Picard, C., et al. 2013. Nuclear accumulation of prohibitin 1 in osteoarthritic chondrocytes down-regulates PITX1 expression. *Arthritis Rheum.* 65: 993-1003.

RESEARCH USE

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

MONOS
Satisfaction
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Try **ATP5B (E-1): sc-55597** or **ATP5B (H-3): sc-166443**, our highly recommended monoclonal alternatives to ATP5B (R-20).