

# ATP5B (H-3): sc-166443

## 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,  $\beta$  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 (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 501-530 at the C-terminus of ATP5B of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166443 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

ATP5B (H-3) is recommended for detection of ATP5B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 (H-3) is also recommended for detection of ATP5B in additional species, including equine, canine, bovine, porcine and avian.

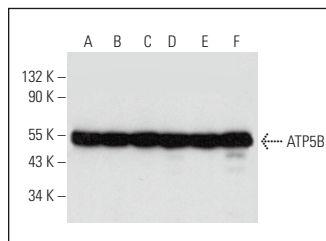
Suitable for use as control antibody for ATP5B siRNA (h): sc-40565, ATP5B siRNA (m): sc-40566, ATP5B shRNA Plasmid (h): sc-40565-SH, ATP5B shRNA Plasmid (m): sc-40566-SH, ATP5B shRNA (h) Lentiviral Particles: sc-40565-V and ATP5B shRNA (m) Lentiviral Particles: sc-40566-V.

Molecular Weight of ATP5B: 51 kDa.

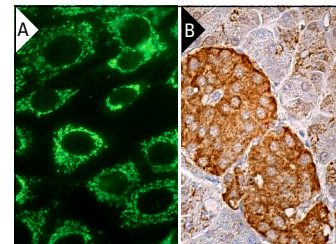
## STORAGE

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

## DATA



ATP5B (H-3): sc-166443. Western blot analysis of ATP5B expression in Jurkat (A), HeLa (B), NIH/3T3 (C), RAW 264.7 (D), NRK (E) and RIN-m5F (F) whole cell lysates.



ATP5B (H-3): sc-166443. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Bahk, Y.Y., et al. 2010. An analysis of an interactome for apoptosis factor, Ei24/PIG8, using the inducible expression system and shotgun proteomics. *J. Proteome Res.* 9: 5270-5283.
2. Fu, Z., et al. 2014. Integral proteomic analysis of blastocysts reveals key molecular machinery governing embryonic diapause and reactivation for implantation in mice. *Biol. Reprod.* 90: 52.
3. Zhang, X., et al. 2016. PGC-1 $\alpha$ /ERR $\alpha$ -Sirt3 pathway regulates DAergic neuronal death by directly deacetylating SOD2 and ATP synthase  $\beta$ . *Antioxid. Redox Signal.* 24: 312-328.
4. Ziegler, C.M., et al. 2018. A proteomic survey of Junin virus interactions with human proteins reveals host factors required for arenavirus replication. *J. Virol.* 92: e01565-17.
5. Bikas, A., et al. 2019. Mitotane induces mitochondrial membrane depolarization and apoptosis in thyroid cancer cells. *Int. J. Oncol.* 55: 7-20.
6. Ziegler, C.M., et al. 2019. NEDD4 family ubiquitin ligases associate with LCMV Z's PPXY domain and are required for virus budding, but not via direct ubiquitination of Z. *PLoS Pathog.* 15: e1008100.
7. Morciano, G., et al. 2021. A naturally occurring mutation in ATP synthase subunit c is associated with increased damage following hypoxia/reoxygenation in STEMI patients. *Cell Rep.* 35: 108983.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.