SANTA CRUZ BIOTECHNOLOGY, INC.

ATP5J2 (D-17): sc-241861

BACKGROUND

Mitochondrial ATP synthase catalyzes ATP synthesis, utilizing an electrochemical gradient of protons across the inner membrane during oxidative phosphorylation. It is composed of two linked multi-subunit complexes: the soluble catalytic core, F1, and the membrane-spanning component, Fo, which comprises the proton channel. ATP5J2, also know as ATP synthase subunit f, mitochondrial, is a 94 amino acid mitochondrion inner membrane that belongs to the ATPase F chain family. Mitochondrial dysfunction is prominent in Alzheimer's disease (AD). A failure of one or more of the mitochondrial electron transport chain enzymes, or of F(1)F(0)-ATPase (ATP synthase), could compromise brain energy stores, generate damaging reactive oxygen species (ROS), and lead to neuronal death. Existing as two alternatively spliced isoforms, the ATP5J2 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 7q22.1.

REFERENCES

1. Elston, T., et al. 1998. Energy transduction in ATP synthase. Nature 391: 510-513.
2. Wang, H., et al. 1998. Energy transduction in the F1 motor of ATP synthase. Nature 396: 279-282.
3. Kinosita, K., et al. 2000. F1-ATPase: a highly efficient rotary ATP machine. Essays Biochem. 35: 3-18.
4. Aggeler, R., et al. 2002. A functionally active human F1F0 ATPase can be purified by immunocapture from heart tissue and fibroblast cell lines. Subunit structure and activity studies. J. Biol. Chem. 277: 33906-33912.
5. Bosetti, F., et al. 2002. Cytochrome c oxidase and mitochondrial F1F0-ATPase (ATP synthase) activities in platelets and brain from patients with Alzheimer's disease. Neurobiol. Aging 23: 371-376.
6. Leyva, J.A., et al. 2003. Understanding ATP synthesis: structure and mechanism of the F1-ATPase (Review). Mol. Membr. Biol. 20: 27-33.
7. Scherer, S.W., et al. 2003. Human chromosome 7: DNA sequence and biology. Science 300: 767-772.
8. Cross, R.L. 2004. Molecular motors: turning the ATP motor. Nature 427: 407-408.

CHROMOSOMAL LOCATION

Genetic locus: ATP5J2 (human) mapping to 7q22.1.

SOURCE

ATP5J2 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ATP5J2 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-241861 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ATP5J2 (D-17) is recommended for detection of ATP5J2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with ATP5J.

ATP5J2 (D-17) is also recommended for detection of ATP5J2 in additional species, including bovine and porcine.

Suitable for use as control antibody for ATP5J2 siRNA (h): sc-89543, ATP5J2 shRNA Plasmid (h): sc-89543-SH and ATP5J2 shRNA (h) Lentiviral Particles: sc-89543-V.

Molecular Weight of ATP5J2 isoforms: 11/10 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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