SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFA5 (E-5): sc-393798

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NDUFA5 (NADH-ubiquinone oxidoreductase a subunit 5), also designated complex I-13kD-B, is one of 45 subunits comprising complex I of the oxidative phosphorylation electron transport chain. The multi-subunit NADH:ubiquinone oxidoreductase (complex I) is the first enzyme complex in the electron transport chain of the mitochondria. Complex I deficiency is the most common respiratory chain defect, resulting in various combinations of cardiac, hepatic, and renal disorders. Through use of chaotropic agents, complex I can be separated into three different fractions: a flavoprotein fraction, a hydrophobic protein (HP) fraction and an iron-sulfur protein (IP) fraction. NDUFA5 is a 116 amino acid protein that is ubiquitously expressed with highest levels in heart, skeletal muscle and brain.

REFERENCES

1. Chow, W., et al. 1991. Determination of the cDNA sequence for the human mitochondrial 75-kDa Fe-S protein of NADH-coenzyme Q reductase. Eur. J. Biochem. 201: 547-550.
2. Duncan, A.M., et al. 1992. Localization of the human 75-kDal Fe-S protein of NADH-coenzyme Q reductase gene (NDUFS1) to 2q33→q34. Cytogenet. Cell Genet. 60: 212-213.
3. Tensing, K., et al. 1999. Genomic organization of the human complex I 13-kDa subunit gene NDUFA5. Cytogenet. Cell Genet. 84: 125-127.
4. Stojanovski, D., et al. 2004. Levels of human Fis1 at the mitochondrial outer membrane regulate mitochondrial morphology. J. Cell Sci. 117: 1201-1210.
5. Smeitink, J.A., et al. 2004. Cell biological consequences of mitochondrial NADH:ubiquinone oxidoreductase deficiency. Curr. Neurovasc. Res. 1: 29-40.
6. Karahan, O.I., et al. 2005. Ultrasound evaluation of peritoneal catheter tunnel in catheter related infections in CAPD. Int. Urol. Nephrol. 37: 363-366.
7. Martin, M.A., et al. 2005. Leigh syndrome associated with mitochondrial complex I deficiency due to a novel mutation in the NDUFS1 gene. Arch. Neurol. 62: 659-661.
8. Sparks, L.M., et al. 2005. A high-fat diet coordinately downregulates genes required for mitochondrial oxidative phosphorylation in skeletal muscle. Diabetes 54: 1926-1933.

CHROMOSOMAL LOCATION

Genetic locus: NDUFA5 (human) mapping to 7q31.32.

SOURCE

NDUFA5 (E-5) is a mouse monoclonal antibody raised against amino acids 1-116 representing full length NDUFA5 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.

APPLICATIONS

NDUFA5 (E-5) is recommended for detection of NDUFA5 of 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 NDUFA5 siRNA (h): sc-89625, NDUFA5 shRNA Plasmid (h): sc-89625-SH and NDUFA5 shRNA (h) Lentiviral Particles: sc-89625-V.

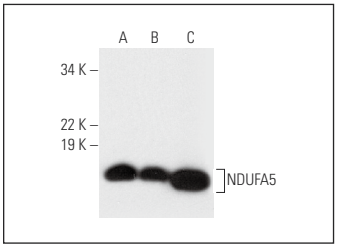
Molecular Weight of NDUFA5: 13 kDa.

Positive Controls: human kidney extract: sc-363764, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

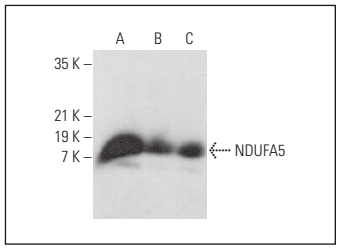
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NDUFA5 (E-5): sc-393798. Western blot analysis of NDUFA5 expression in Hep G2 (**A**) and HeLa (**B**) whole cell lysates and human kidney tissue extract (**C**).



NDUFA5 (E-5): sc-393798. Western blot analysis of NDUFA5 expression in HeLa (**A**), SJRH30 (**B**) and JAR (**C**) whole cell lysates.

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 for detailed protocols and support products.