



NDUFB5 (P-12): sc-100060

BACKGROUND

Complex 1 (also known as NADH dehydrogenase) of the electron transport chain (respiratory chain) is an enzymatic complex that catalyzes the transfer of electrons from NADH to ubiquinone. Free energy from the reaction is conserved in the transfer of protons into the intermembrane space to create an electrochemical proton gradient, a driving force for ATP synthesis. Complex 1 is a complicated, multi-protein, L-shaped complex composed of at least 45 different subunits and located in the mitochondrial inner membrane. NDUFB5 (NADH dehydrogenase (ubiquinone) 1 β subcomplex, 5), also known as SGDH or CI-SGDH, is a single-pass membrane protein that localizes to the mitochondrial inner membrane and functions as an accessory subunit of complex 1.

REFERENCES

1. Ton, C., Hwang, D.M., Dempsey, A.A. and Liew, C.C. 1997. Identification and primary structure of five human NADH-ubiquinone oxidoreductase subunits. *Biochem. Biophys. Res. Commun.* 241: 589-594.
2. Hirst, J., Carroll, J., Fearnley, I.M., Shannon, R.J. and Walker, J.E. 2003. The nuclear encoded subunits of complex I from bovine heart mitochondria. *Biochim. Biophys. Acta* 1604: 135-150.
3. Sparks, L.M., Xie, H., Koza, R.A., Mynatt, R., Hulver, M.W., Bray, G.A. and Smith, S.R. 2005. A high-fat diet coordinately downregulates genes required for mitochondrial oxidative phosphorylation in skeletal muscle. *Diabetes* 54: 1926-1933.
4. Janssen, R.J., Nijtmans, L.G., van den Heuvel, L.P. and Smeitink, J.A. 2006. Mitochondrial complex I: structure, function and pathology. *J. Inher. Metab. Dis.* 29: 499-515.
5. Parikh, H., Nilsson, E., Ling, C., Poulsen, P., Almgren, P., Nittby, H., Eriksson, K.F., Vaag, A. and Groop, L.C. 2008. Molecular correlates for maximal oxygen uptake and type 1 fibers. *Am. J. Physiol. Endocrinol. Metab.* 294: E1152-E1159.
6. De Rasmio, D., Panelli, D., Sardanelli, A.M. and Papa, S. 2008. cAMP-dependent protein kinase regulates the mitochondrial import of the nuclear encoded NDUFS4 subunit of complex I. *Cell. Signal.* 20: 989-997.
7. Lund, K.C. and Wallace, K.B. 2008. Adenosine 3',5'-cyclic monophosphate (cAMP)-dependent phosphoregulation of mitochondrial complex I is inhibited by nucleoside reverse transcriptase inhibitors. *Toxicol. Appl. Pharmacol.* 226: 94-106.

CHROMOSOMAL LOCATION

Genetic locus: NDUFB5 (human) mapping to 3q26.33; Ndufb5 (mouse) mapping to 3 A3.

SOURCE

NDUFB5 (P-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NDUFB5 of human origin.

STORAGE

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

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-100060 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NDUFB5 (P-12) is recommended for detection of NDUFB5 of mouse, rat and 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).

Suitable for use as control antibody for NDUFB5 siRNA (h): sc-78552, NDUFB5 siRNA (m): sc-149882, NDUFB5 shRNA Plasmid (h): sc-78552-SH, NDUFB5 shRNA Plasmid (m): sc-149882-SH, NDUFB5 shRNA (h) Lentiviral Particles: sc-78552-V and NDUFB5 shRNA (m) Lentiviral Particles: sc-149882-V.

Molecular Weight of NDUFB5: 22 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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.

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.