SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFS2 (B-3): sc-390596

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Located in the mitochondrial inner membrane, mitochondrial complex I is the first and largest enzyme in the electron transport chain of oxidative phosphorylation. By oxidizing NADH that is produced in the Krebs cycle, this complex utilizes the two electrons to reduce ubiquinone to ubiquinol, thereby initiating the passage of electrons to successive complexes and ultimately leading to the reduction of oxygen to water. Mitochondrial complex I consists of over 40 subunits and is of considerable clinical interest since defects in any of the subunits can lead to various myopathies and neuropathies. As a subunit of mitochondrial complex I, NDUFS2 (NADH dehydrogenase [ubiquinone] iron-sulfur protein 2), also designated NADH-ubiquinone oxidoreductase 49 kDa subunit, is a 463 amino acid protein that is suggested to be required for catalytic activity. Defects in the gene encoding NDUFS2 are the cause of complex I mitochondrial respiratory chain deficiency, which is characterized by a variety of symptoms including liver failure, cardiomyopathy and neurodegeneration.

REFERENCES

1. Procaccio, V., et al. 1998. Mapping to 1q23 of the human gene (NDUFS2) encoding the 49-kDa subunit of the mitochondrial respiratory complex I and immunodetection of the mature protein in mitochondria. Mamm. Genome 9: 482-484.
2. Smeitink, J. and van den Heuvel, L. 1999. Human mitochondrial complex I in health and disease. Am. J. Hum. Genet. 64: 1505-1510.

CHROMOSOMAL LOCATION

Genetic locus: NDUFS2 (human) mapping to 1q23.3; Ndufs2 (mouse) mapping to 1 H3.

SOURCE

NDUFS2 (B-3) is a mouse monoclonal antibody raised against amino acids 101-344 mapping within an internal region of NDUFS2 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.

NDUFS2 (B-3) is available conjugated to agarose (sc-390596 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390596 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390596 PE), fluorescein (sc-390596 FITC), Alexa Fluor® 488 (sc-390596 AF488), Alexa Fluor® 546 (sc-390596 AF546), Alexa Fluor® 594 (sc-390596 AF594) or Alexa Fluor® 647 (sc-390596 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390596 AF680) or Alexa Fluor® 790 (sc-390596 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

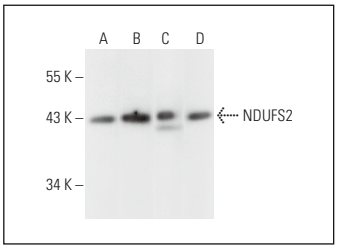
NDUFS2 (B-3) is recommended for detection of NDUFS2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for NDUFS2 siRNA (h): sc-78903, NDUFS2 siRNA (m): sc-106290, NDUFS2 shRNA Plasmid (h): sc-78903-SH, NDUFS2 shRNA Plasmid (m): sc-106290-SH, NDUFS2 shRNA (h) Lentiviral Particles: sc-78903-V and NDUFS2 shRNA (m) Lentiviral Particles: sc-106290-V.

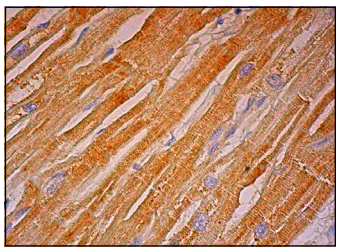
Molecular Weight of NDUFS2: 49 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, CCRF-CEM cell lysate: sc-2225 or HeLa whole cell lysate: sc-2200.

DATA



NDUFS2 (B-3): sc-390596. Western blot analysis of NDUFS2 expression in Jurkat (**A**), CCRF-CEM (**B**), A431 (**C**) and HeLa (**D**) whole cell lysates.



NDUFS2 (B-3): sc-390596. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Doll, D.N., et al. 2015. Mitochondrial crisis in cerebrovascular endothelial cells opens the blood-brain barrier. Stroke 46: 1681-1689.
2. Bajpai, R., et al. 2020. Electron transport chain activity is a predictor and target for venetoclax sensitivity in multiple myeloma. Nat. Commun. 11: 1228.
3. Herrmann, A.L., et al. 2021. Delineating the switch between senescence and apoptosis in cervical cancer cells under ciclopirox treatment. Cancers 13: 4995.
4. Wang, J., et al. 2022. Lycopene attenuates D-galactose-induced Insulin signaling impairment by enhancing mitochondrial function and suppressing the oxidative stress/inflammatory response in mouse kidneys and livers. Food Funct. 13: 7720-7729.
5. Heber, N., et al. 2023. The impact of cycling hypoxia on the phenotype of HPV-positive cervical cancer cells. J. Med. Virol. 95: e29280.

RESEARCH USE

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