SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFA10 (A-8): sc-376357

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NDUFA10 (NADH dehydrogenase (ubiquinone) 1α subcomplex, 10), also known as CI-42KD, is a 355 amino acid protein that localizes to the mitochondrial matrix and functions as an accessory subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase complex I. Complex I plays an important role in the transfer of electrons from NADH to the respiratory chain, a process that is essential for cellular respiration. NDUFA10 uses FAD as a cofactor and works in conjunction with other proteins to mediate complex I function and to ensure the proper transfer of electrons within the respiratory chain. The gene encoding NDUFA10 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

CHROMOSOMAL LOCATION

Genetic locus: NDUFA10 (human) mapping to 2q37.3; Ndufa10 (mouse) mapping to 1 D.

SOURCE

NDUFA10 (A-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 321-353 near the C-terminus of NDUFA10 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.

NDUFA10 (A-8) is available conjugated to agarose (sc-376357 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376357 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376357 PE), fluorescein (sc-376357 FITC), Alexa Fluor® 488 (sc-376357 AF488), Alexa Fluor® 546 (sc-376357 AF546), Alexa Fluor® 594 (sc-376357 AF594) or Alexa Fluor® 647 (sc-376357 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376357 AF680) or Alexa Fluor® 790 (sc-376357 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376357 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

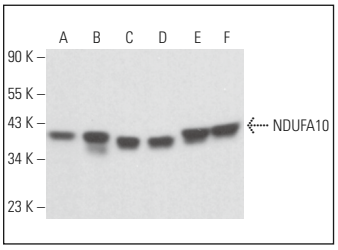
NDUFA10 (A-8) is recommended for detection of NDUFA10 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 NDUFA10 siRNA (h): sc-94344, NDUFA10 siRNA (m): sc-149867, NDUFA10 shRNA Plasmid (h): sc-94344-SH, NDUFA10 shRNA Plasmid (m): sc-149867-SH, NDUFA10 shRNA (h) Lentiviral Particles: sc-94344-V and NDUFA10 shRNA (m) Lentiviral Particles: sc-149867-V.

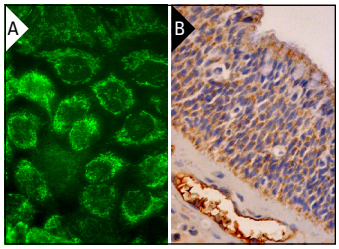
Molecular Weight of NDUFA10: 41 kDa.

Positive Controls: ALL-SIL whole cell lysate: sc-364356, SJRH30 cell lysate: sc-2287 or L6 whole cell lysate: sc-364196.

DATA



NDUFA10 (A-8): sc-376357. Western blot analysis of NDUFA10 expression in ALL-SIL (**A**), SJRH30 (**B**), L6 (**C**), A-10 (**D**), C2C12 (**E**) and BYDP (**F**) whole cell lysates.



NDUFA10 (A-8): sc-376357. Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing cytoplasmic staining of respiratory epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Kazak, L., et al. 2017. UCP1 deficiency causes brown fat respiratory chain depletion and sensitizes mitochondria to calcium overload-induced dysfunction. Proc. Natl. Acad. Sci. USA 114: 7981-7986.
2. Yao, X., et al. 2022. Myricetin Restores Aβ-induced mitochondrial impairments in N2a-SW cells. ACS Chem. Neurosci. 13: 454-463.
3. Lomas-Soria, C., et al. 2023. Maternal obesity programs the premature aging of rat offspring liver mitochondrial electron transport chain genes in a sex-dependent manner. Biology 12: 1166.
4. Szulik, M.W., et al. 2023. SMYD1a protects the heart from ischemic injury by regulating OPA1-mediated cristae remodeling and supercomplex formation. Basic Res. Cardiol. 118: 20.
5. Guo, P., et al. 2024. CAV3 alleviates diabetic cardiomyopathy via inhibiting NDUFA10-mediated mitochondrial dysfunction. J. Transl. Med. 22: 390.

RESEARCH USE

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