SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFV2 (B-11): sc-515589

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 one of the subunits can lead to various myopathies and neuropathies. As a subunit of mitochondrial complex I, NDUFV2 (NADH dehydrogenase [ubiquinone] flavoprotein 2), also designated NADH-ubiquinone oxidoreductase 24 kDa subunit, is a 249 amino acid protein that is believed to be required for catalytic activity. Several studies suggest that polymorphisms of the gene encoding NDUFV2 may be a genetic risk factor for bipolar disorder and schizophrenia.

REFERENCES

1. Pilkington, S.J. and Walker, J.E. 1989. Mitochondrial NADH-ubiquinone reductase: complementary DNA sequences of import precursors of the bovine and human 24-kDa subunit. Biochemistry 28: 3257-3264.
2. Washizuka, S., et al. 2003. Association of mitochondrial complex I subunit gene NDUFV2 at 18p11 with bipolar disorder. Am. J. Med. Genet. B Neuropsychiatr. Genet. 120B: 72-78.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 600532. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Washizuka, S., et al. 2006. Association of mitochondrial complex I subunit gene NDUFV2 at 18p11 with schizophrenia in the Japanese population. Am. J. Med. Genet. B Neuropsychiatr. Genet. 141B: 301-304.

CHROMOSOMAL LOCATION

Genetic locus: NDUFV2 (human) mapping to 18p11.22; Ndufv2 (mouse) mapping to 17 E1.1.

SOURCE

NDUFV2 (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 40-64 near the N-terminus of NDUFV2 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.

Blocking peptide available for competition studies, sc-515589 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.

APPLICATIONS

NDUFV2 (B-11) is recommended for detection of NDUFV2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NDUFV2 siRNA (h): sc-106292, NDUFV2 siRNA (m): sc-149892, NDUFV2 shRNA Plasmid (h): sc-106292-SH, NDUFV2 shRNA Plasmid (m): sc-149892-SH, NDUFV2 shRNA (h) Lentiviral Particles: sc-106292-V and NDUFV2 shRNA (m) Lentiviral Particles: sc-149892-V.

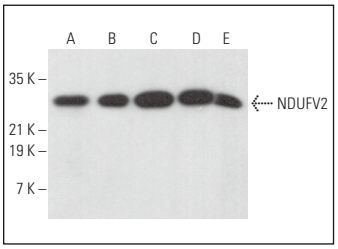
Molecular Weight of NDUFV2: 24 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Raji whole cell lysate: sc-364236 or C2C12 whole cell lysate: sc-364188.

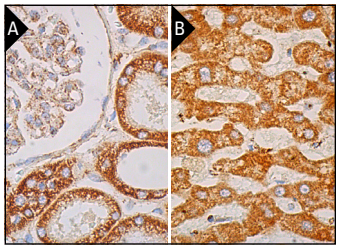
RECOMMENDED SUPPORT REAGENTS

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



NDUFV2 (B-11): sc-515589. Western blot analysis of NDUFV2 expression in Ramos (**A**), NAMALWA (**B**), Raji (**C**), C2C12 (**D**) and HEL 92.1.7 (**E**) whole cell lysates.



NDUFV2 (B-11): sc-515589. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules and cells in glomeruli (**A**) human liver tissue showing cytoplasmic staining of hepatocytes (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

1. Shakova, F.M., et al. 2021. Protective effects of PGC-1α activators on ischemic stroke in a rat model of photochemically induced thrombosis. Brain Sci. 11: 325.

RESEARCH USE

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