

# NDUFV2 (F-5): sc-271620

## 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/>

## CHROMOSOMAL LOCATION

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

## SOURCE

NDUFV2 (F-5) is a mouse monoclonal antibody raised against amino acids 1-249 representing full length NDUFV2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NDUFV2 (F-5) is available conjugated to agarose (sc-271620 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271620 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271620 PE), fluorescein (sc-271620 FITC), Alexa Fluor® 488 (sc-271620 AF488), Alexa Fluor® 546 (sc-271620 AF546), Alexa Fluor® 594 (sc-271620 AF594) or Alexa Fluor® 647 (sc-271620 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271620 AF680) or Alexa Fluor® 790 (sc-271620 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

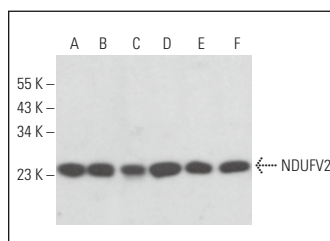
NDUFV2 (F-5) is recommended for detection of NDUFV2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 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.

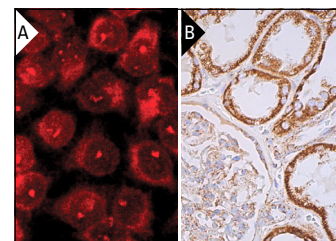
Molecular Weight of NDUFV2: 24 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213, Ramos cell lysate: sc-2216 or RAW 264.7 whole cell lysate: sc-2211.

## DATA



NDUFV2 (F-5): sc-271620. Western blot analysis of NDUFV2 expression in RAW 264.7 (A), WEHI-231 (B), Ramos (C), Raji (D), NAMALWA (E) and BJAB (F) whole cell lysates.



NDUFV2 (F-5): sc-271620. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

## SELECT PRODUCT CITATIONS

1. Elschami, M., et al. 2013. Reduction of Stat3 expression induces mitochondrial dysfunction and autophagy in cardiac HL-1 cells. *Eur. J. Cell Biol.* 92: 21-29.
2. Momcilovic, M., et al. 2020. *In vivo* imaging of mitochondrial membrane potential in non-small-cell lung cancer. *Nature* 575: 380-384.
3. Jain, S., et al. 2022. Metabolic targeting of cancer by a ubiquinone uncompetitive inhibitor of mitochondrial complex I. *Cell Chem. Biol.* 29: 436-450.e15.
4. Kleene, R., et al. 2023. The KDET motif in the intracellular domain of the cell adhesion molecule L1 interacts with several nuclear, cytoplasmic, and mitochondrial proteins essential for neuronal functions. *Int. J. Mol. Sci.* 24: 932.

## RESEARCH USE

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