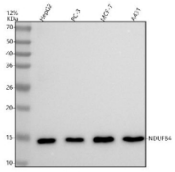
NDUFB4 Antibody / NADH dehydrogenase ubiquinone 1 beta subcomplex subunit 4 [clone 30N45] (FY13023)

Catalog No.	Formulation	Size
FY13023	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human, Mouse, Rat
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	30N45
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	O95168
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200 Immunocytochemistry/Immunofluorescence : 1:50-1:200
Limitations	This NDUFB4 antibody is available for research use only.



Western blot analysis of NDUFB4 using anti-NDUFB4 antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human PC-3 whole cell lysates, Lane 3: human MCF-7 whole cell lysates, Lane 4: human whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-NDUFB4 antibody at 1:500 overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:500 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for NDUFB4 at approximately 15 kDa. The expected molecular weight of NDUFB4 is ~15 kDa.

Description

NDUFB4 antibody detects NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4, encoded by the NDUFB4 gene. This protein is a non catalytic accessory subunit of mitochondrial Complex I, the first enzyme complex of the oxidative phosphorylation system. Complex I catalyzes the transfer of electrons from NADH to ubiquinone, coupled with proton translocation across the inner mitochondrial membrane. NDUFB4 antibody provides researchers with an essential reagent for studying mitochondrial respiratory function, bioenergetics, and disease mechanisms.

Although NDUFB4 does not directly participate in electron transfer, it contributes to the structural stability and assembly of Complex I. Research using NDUFB4 antibody has shown that accessory subunits help maintain the integrity of the complex, ensuring efficient electron flow and proton pumping. Loss or dysfunction of accessory proteins like NDUFB4 destabilizes Complex I, leading to reduced oxidative phosphorylation and ATP production. This highlights the importance of even non catalytic subunits in respiratory chain function.

Mutations and defects in Complex I subunits, including NDUFB4, are associated with mitochondrial diseases such as Leigh syndrome, encephalopathy, and mitochondrial myopathy. Research using NDUFB4 antibody has demonstrated that absence or reduction of NDUFB4 impairs assembly of Complex I, leading to decreased activity and energy deficiency. Such dysfunctions contribute to neuromuscular symptoms, developmental delays, and metabolic acidosis. Because mitochondrial disease mechanisms are complex, NDUFB4 antibody serves as an important tool for dissecting assembly defects and functional outcomes.

In cancer, altered expression of Complex I subunits including NDUFB4 has been observed. Tumor cells often exhibit metabolic reprogramming, favoring glycolysis over oxidative phosphorylation. However, subsets of tumors rely on intact mitochondrial respiration, making Complex I subunits potential biomarkers and therapeutic targets. Studies with NDUFB4 antibody have shown correlations between expression levels and tumor progression, underscoring its relevance in oncology. Beyond cancer, mitochondrial dysfunction involving NDUFB4 contributes to neurodegenerative diseases, metabolic disorders, and aging related decline.

NDUFB4 antibody is applied in western blotting, immunohistochemistry, and immunofluorescence. Western blotting confirms protein abundance in mitochondria rich tissues such as brain, heart, and muscle. Immunohistochemistry highlights tissue distribution, while immunofluorescence demonstrates mitochondrial localization using colocalization with markers such as COX IV. These approaches ensure that NDUFB4 antibody is useful in both clinical and basic mitochondrial research.

By supplying validated NDUFB4 antibody reagents, NSJ Bioreagents supports research into oxidative phosphorylation, mitochondrial disease, and cancer biology. Detection of NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4 enables researchers to explore how Complex I subunits maintain cellular energy production and contribute to disease when impaired.

Application Notes

Optimal dilution of the NDUFB4 antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human NDUFB4 was used as the immunogen for the NDUFB4 antibody.

Storage

Store the NDUFB4 antibody at -20oC.