abcam

ab232337

Anti-Ndufs4 antibody [EP7832] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP7832
Purification technique	Affinity purification Protein A
Concentration	0.996 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information NDUFS4

Function	Accessory subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I), that is believed not to be involved in catalysis. Complex I functions in the transfer of electrons from NADH to the respiratory chain. The immediate electron acceptor for the enzyme is believed to be ubiquinone.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab232337 is the carrier-free version of ab137064.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Ndufs4 also known as NADH:Ubiquinone Oxidoreductase Subunit S4 is an important component of mitochondrial complex I which is part of the electron transport chain. It has a molecular mass of approximately 18 kDa. The protein is mainly found in the inner mitochondrial membrane where it plays an essential role in cellular respiration by transferring electrons from NADH to ubiquinone. Ndufs4 is widely expressed in tissues with high energy demands such as the brain and heart.
Biological function summary	Ndufs4 functions as a part of mitochondrial complex I a large protein enzyme complex critical for oxidative phosphorylation. The complex comprises multiple subunits of which Ndufs4 is a small but essential part. By participating in electron transfer and proton pumping Ndufs4 supports ATP synthesis which is the main energy currency of the cell. Deficiency in Ndufs4 leads to dysfunctional energy production linked with metabolic disorders.
Pathways	The protein is an integral part of the respiratory chain pathway where it supports oxidative phosphorylation enabling effective ATP production. Within these pathways Ndufs4 interacts with other complex I subunits including Ndufs1 and Ndufa9 which stabilize electron transport. Disruptions in this chain can affect cellular energy metabolism and have downstream effects on various cellular processes.
Associated diseases and disorders	Mutations in the Ndufs4 gene are associated with Leigh syndrome and mitochondrial complex I deficiency. Leigh syndrome is a severe neurological disorder characterized by progressive loss of mental and movement abilities. Ndufs4 mutations also lead to complex I deficiency causing diverse symptoms

ranging from neurological impairments to muscle weakness. These disorders highlight the critical link between Ndufs4 and proper mitochondrial function. The protein's connection to other complex I subunits such as Ndufs1 emphasizes its importance in maintaining regular cellular functions and preventing mitochondrial diseases.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

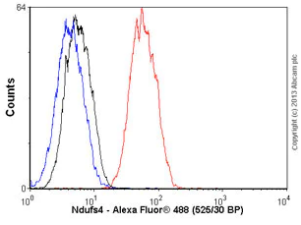
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images

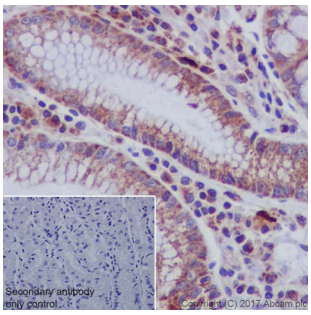


Flow Cytometry (Intracellular) - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Flow Cytometry (Intracellular) staining using rabbit Anti-Ndufs4 antibody

Overlay histogram showing HepG2 cells stained with unpurified ab137064 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab137064, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HepG2 cells fixed

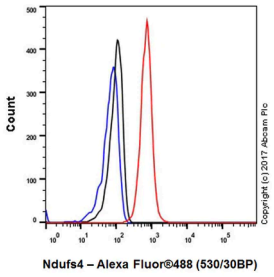
with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ndufs4 antibody

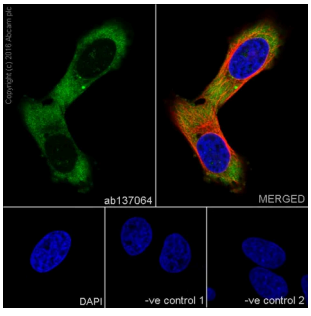
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human stomach tissue sections labeling Ndufs4 with Purified ab137064 at 1:50 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer, pH 9.0. Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



Flow Cytometry (Intracellular) - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Flow Cytometry (Intracellular) staining using rabbit Anti-Ndufs4 antibody

Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling Ndufs4 with purified ab137064 at 1/60 dilution (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



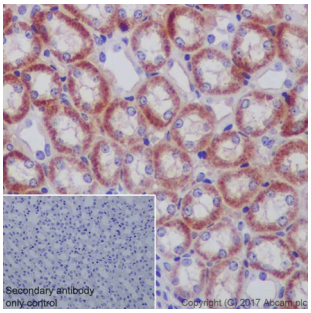
Immunocytochemistry/ Immunofluorescence - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Ndufs4 antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa cells (human cervix adenocarcinoma epithelial cells) labeling Ndusf4 with purified ab137064 at a 1/500 dilution. Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% tritonX-100.
Cells were counterstained with ab7291 Anti-alpha Tubulin antibody [DM1A] - Loading Control followed by ab150120 Alexa Fluor® 594 Goat anti-Mouse secondary at a 1/1000 dilution (2 µg/ml). ab150077 Goat anti-rabbit IgG (Alexa Fluor® 488) was used as the secondary antibody at 1/1000 dilution. DAPI nuclear counterstain.

A secondary antibody-only control was performed by omitting the primary antibody and using PBS instead.

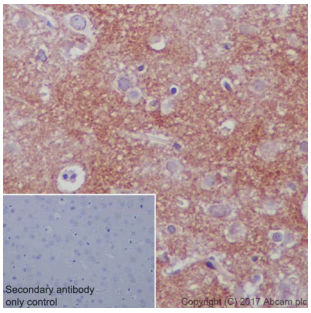
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ndufs4 antibody

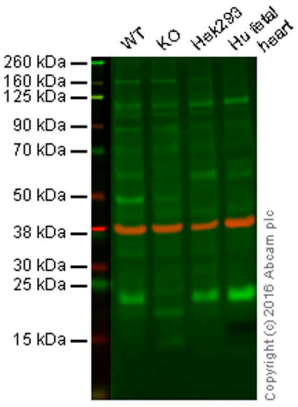
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue sections labeling Ndufs4 with Purified ab137064 at 1:50 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer, pH 9.0. Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Ndufs4 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat cerebrum tissue sections labeling Ndufs4 with Purified ab137064 at 1:50 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer, pH 9.0. Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).



Western blot - Anti-Ndufs4 antibody [EP7832] - BSA and Azide free (ab232337)

Ndufs4 Western blot staining using rabbit Anti-Ndufs4 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: Ndufs4 knockout HAP1 cell lysate (20 µg)
Lane 3: HEK293 cell lysate (20 µg)
Lane 4: Human fetal heart tissue lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab137064 observed at 23 kDa. Red - loading control, ab8245, observed at 37 kDa.

Unpurified ab137064 was shown to recognize Ndufs4 when Ndufs4 knockout samples were used, along with additional cross-reactive bands. Wild-type and Ndufs4 knockout samples were subjected to SDS-PAGE. ab137064 and ab8245 (loading control to GAPDH) were diluted at 1/500 and 1/10 000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10000 dilution for 1 h at room temperature before imaging.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab137064).

All lanes:
Western blot - Anti-Ndufs4 antibody [EP7832] (ab137064)

Predicted band size: 20 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.