abcam

ab249976

Anti-NDUFS3 antibody [EPR12782] - 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	EPR12782
Purification technique	Affinity purification
Concentration	1.041 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information NDUFS3

Function	Core subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I) which catalyzes electron transfer from NADH through the respiratory chain, using ubiquinone as an electron acceptor (PubMed:14729820, PubMed:30140060). Essential for the catalytic activity and assembly of complex I (PubMed:14729820, PubMed:24028823, PubMed:30140060).

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

ab249976 is the carrier-free version of ab177471.

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	NADH:ubiquinone oxidoreductase core subunit S3 (NDUFS3) is an important component of the mitochondrial respiratory chain complex I also known as NADH:ubiquinone oxidoreductase. With an approximate mass of 25 kDa NDUFS3 plays an integral role in the assembly and function of complex I. This protein is mostly expressed in the mitochondria across various tissues. It is better known as a core subunit important for the catalytic activity of complex I.

Biological function summary	NDUFS3 participates in cellular respiration by facilitating the electron transfer from NADH to ubiquinone. It is part of the complex I assembly that comprises 45 different subunits. This large assembly is the first enzyme of the mitochondrial electron transport chain and it ensures efficient energy production in the form of ATP. In its role NDUFS3 collaborates closely with other core subunits like NDUFS1 and NDUFS2 to maintain the proper function of cellular metabolism.
Pathways	NDUFS3 is essential in the oxidative phosphorylation pathway which plays an important part in ATP generation. By interacting with other complex I subunits NDUFS3 enables electron flow that drives ATP synthase activity. Additionally it is connected to the apoptosis pathway. Its dysfunction may result in disrupted energy metabolism which can trigger cell death. NDUFS3 also interacts with proteins like NDUFV1 and NDUFV2 highlighting its centrality in energy and signal transduction processes.
Associated diseases and disorders	NDUFS3 links to mitochondrial disorders and neurodegenerative diseases such as Leigh syndrome. Mutations in NDUFS3 can impair mitochondrial function leading to reduced ATP production and accumulation of defective mitochondria. These alterations contribute to the progressive deterioration seen in these disorders. In the context of neurodegenerative diseases NDUFS3 dysfunction may associate with proteins like cytochrome c emphasizing its role in mitochondria-dependent apoptotic pathways and neuronal health.

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

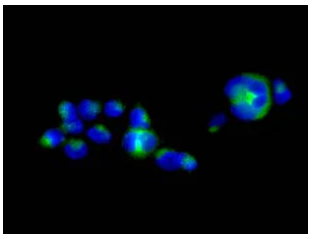
We do not recommend this combination. It is not covered by our product promise.

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.

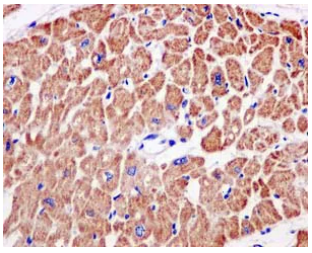
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NDUFS3 antibody

This data was developed using ab177471, the same antibody clone in a different buffer formulation.
Immunofluorescence analysis of 293 cells labeling NDUFS3 with ab177471 at 1/50 dilution (green). DAPI nuclear staining (blue).

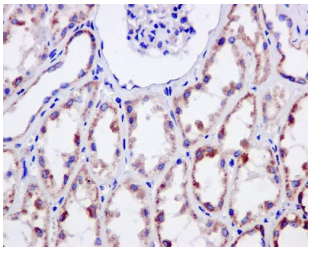


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NDUFS3 antibody

This data was developed using ab177471, the same antibody clone in a different buffer formulation.
Immunohistochemcal analysis of paraffin-embedded Human heart tissue labeling NDUFS3 with ab177471 at 1/50 dilution.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

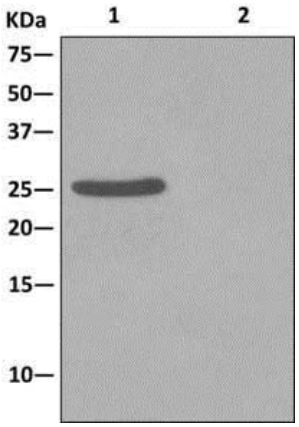


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NDUFS3 antibody

This data was developed using ab177471, the same antibody clone in a different buffer formulation.
Immunohistochemcal analysis of paraffin-embedded Human kidney tissue labeling NDUFS3 with ab177471 at 1/50 dilution.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

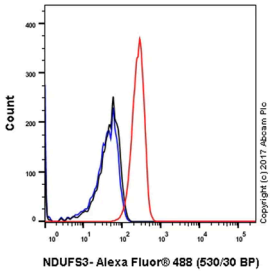
This data was developed using ab177471&44; the same antibody clone in a different buffer formulation.

Western blot analysis on immunoprecipitation pellet from (1) human fetal heart lysate or (2) 1XPBS (negative control) using ab177471 at 1/10 dilution, and HRP-conjugated anti-rabbit IgG preferentially detecting the non-reduced form of rabbit IgG.

All lanes:
Immunoprecipitation - Anti-NDUFS3 antibody [EPR12782] - C-terminal (ab177471)

Developed using the ECL technique.

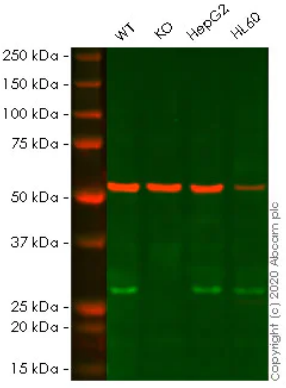
Predicted band size: 30 kDa



Flow Cytometry (Intracellular) - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Flow Cytometry (Intracellular) staining using rabbit Anti-NDUFS3 antibody

This data was developed using ab177471, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of HEK293 (Human embryonic kidney epithelial cell) cells labeling NDUFS3 (red) with purified ab177471 at a 1/200 dilution (10ug/mL). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti rabbit IgG (Alexa Fluor®488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (Black) (ab172730). Blue (unlabeled control) - Cell without incubation with primary antibody and secondary antibody (Blue).



Western blot - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

This data was developed using the same antibody clone in a different buffer formulation (ab177471).
Lanes 1- 4: Merged signal (red and green). Green - ab177471 observed at 30 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.

ab177471 was shown to react with NDUFS3 in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266419 (knockout cell lysate ab257556) was used. Wild-type HEK-293T and NDUFS3 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab177471 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. 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 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-NDUFS3 antibody [EPR12782] - C-terminal (ab177471) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
NDUFS3 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human NDUFS3 knockout HEK-293T cell line (ab266419)

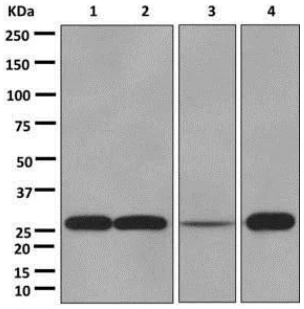
Lane 3:
HepG2 cell lysate at 20 µg

Lane 4:
HL60 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 30 kDa

Observed band size: 30 kDa



Western blot - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Western blot staining using rabbit Anti-NDUFS3 antibody

This data was developed using ab177471, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-NDUFS3 antibody [EPR12782] - C-terminal (ab177471) at 1/1000 dilution

Lane 1:
HepG2 lysate at 10 µg

Lane 2:
293T lysate at 10 µg

Lane 3:
HL60 lysate at 10 µg

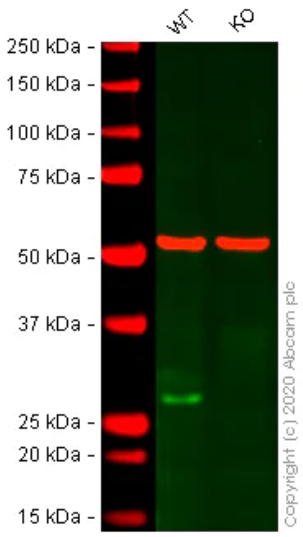
Lane 4:
Fetal heart lysate at 10 µg

Secondary

All lanes:
Goat-anti-rabbit HRP at 1/2000 dilution

Developed using the ECL technique.

Predicted band size: 30 kDa



Western blot - Anti-NDUFS3 antibody [EPR12782] - BSA and Azide free (ab249976)

NDUFS3 Western blot staining using rabbit Anti-NDUFS3 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab177471).
Lanes 1 - 2: Merged signal (red and green). Green - ab177471 observed at 27 kDa. Red - loading control ab7291 (Mouse anti-Alpha Tubulin [DM1A]) observed at 55kDa.

ab177471 was shown to react with NDUFS3 in HEK-293T wild-type cells in western blot with loss of signal observed in NDUFS3 knockout cell line ab266419 (NDUFS3 knockout cell lysate ab257556). Wild-type and NDUFS3 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab177471 and ab7291 (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-NDUFS3 antibody [EPR12782] - C-terminal (ab177471) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human NDUFS3 knockout HEK-293T cell lysate (ab257556) at 20 µg

Performed under reducing conditions.

Predicted band size: 30 kDa

Observed band size: 27 kDa

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