abcam

ab250528

Anti-MDH2 antibody [EPR14883(B)] - 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	EPR14883(B)
Purification technique	Affinity purification
Concentration	0.991 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

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	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information MDH2

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

ab250528 is the carrier-free version of ab181857.

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	MDH2 also known as malate dehydrogenase 2 or mitochondrial malate dehydrogenase is an enzyme with a molecular mass of approximately 35 kDa. This enzyme catalyzes the conversion of malate to oxaloacetate using NAD+ as a cofactor. It is predominantly expressed in the mitochondria where it plays an important role in cellular respiration. The enzyme enables the malate dehydrogenase reaction which is key for the functioning of the tricarboxylic acid cycle.
Biological function summary	MDH2 participates in the critical process of energy production within the cell. While it does not form a complex itself its activity is intimately connected with other enzymes in mitochondrial energy metabolism. The malate dehydrogenase assay often measures the activity of MDH2 to understand the metabolic status of cells. By facilitating the oxidation of malate MDH2 aids in maintaining the efficiency of the mitochondrial electron transport chain by regenerating NADH.
Pathways	The enzyme is essential in the tricarboxylic acid (TCA) cycle and the malate-aspartate shuttle. In the TCA cycle MDH2 collaborates with enzymes like citrate synthase and isocitrate dehydrogenase to assist in the conversion of acetyl-CoA into energy-rich molecules. The malate-aspartate shuttle on the other hand involves MDH2 working closely with aspartate transaminase to transfer reducing equivalents into the mitochondria. These pathways highlight MDH2's importance in cellular energy homeostasis.
Associated diseases and disorders	Mutations or dysregulation in MDH2 have connections to certain metabolic conditions and cancers. For example alterations in MDH2 activity might contribute to conditions like mitochondrial myopathy altering energy metabolism. Moreover MDH2 is associated with NADH-producing enzymes whose dysregulation can support oncogenic pathways in cancer. Understanding these associations helps researchers pursue therapeutic targets that modulate MDH2 activity.

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

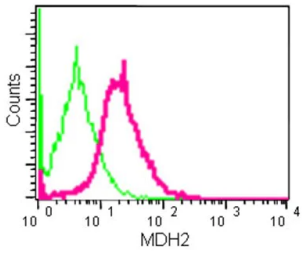
We do not recommend this combination. It is not covered by our product promise.

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.

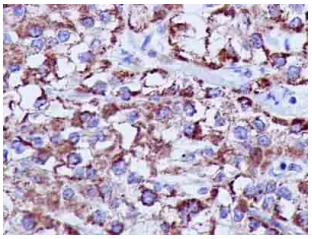
4 product images



Flow Cytometry (Intracellular) - Anti-MDH2 antibody [EPR14883(B)] - BSA and Azide free (ab250528)

MDH2 Flow Cytometry (Intracellular) staining using rabbit Anti-MDH2 antibody

This data was developed using ab181857, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HeLa cells labeling MDH2 with ab181857 at 1/10 dilution (red) compared to a Rabbit IgG monoclonal isotype control (green), followed by Goat anti rabbit IgG (FITC) secondary antibody at 1/150 dilution.

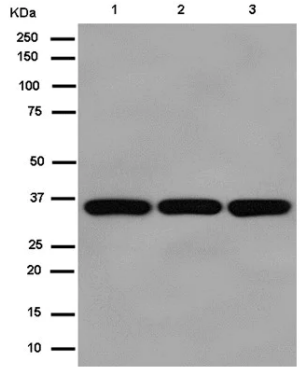


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MDH2 antibody [EPR14883(B)] - BSA and Azide free (ab250528)

MDH2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MDH2 antibody

This data was developed using ab181857, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human hepatocellular carcinoma tissue labeling MDH2 with ab181857 at 1/50 dilution, followed by prediluted HRP Polymer for Rabbit IgG. Counter stained with Hematoxylin.

Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Western blot - Anti-MDH2 antibody [EPR14883(B)] - BSA and Azide free (ab250528)

MDH2 Western blot staining using rabbit Anti-MDH2 antibody

This data was developed using ab181857, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-MDH2 antibody [EPR14883(B)] (ab181857) at 1/50000 dilution

Lane 1:
K562 cell lysate at 20 µg

Lane 2:
HepG2 cell lysate at 20 µg

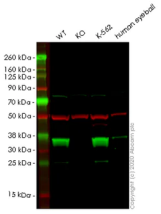
Lane 3:
HeLa cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 36 kDa

Observed band size: 36 kDa



Western blot - Anti-MDH2 antibody [EPR14883(B)] - BSA and Azide free (ab250528)

MDH2 Western blot staining using rabbit Anti-MDH2 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab181857).
Lanes 1-4: Merged signal (red and green). Green - ab181857 observed at 36 kDa. Red - loading control ab7291 observed at 50 kDa.

ab181857 Anti-MDH2 antibody [EPR14883(B)] was shown to specifically react with MDH2 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266449 (knockout cell lysate ab257533) was used. Wild-type and MDH2 knockout samples were subjected to SDS-PAGE. ab181857 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at 1 in 1000 dilution and 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-MDH2 antibody [EPR14883(B)] (ab181857) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
MDH2 knockout HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human MDH2 knockout HEK-293T cell line (ab266449)

Lane 3:
K-562 cell lysate at 20 µg

Lane 4:
Human eyeball tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 36 kDa

Observed band size: 36 kDa

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