

Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)]

Recombinant

RabMAb

KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR15425(B)
Purification technique	Affinity purification Protein A
Concentration	0.902 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested	
Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/170
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

Function	Catalyzes the oxidation of medium and long chain aliphatic aldehydes to fatty acids. Active on a variety of saturated and unsaturated aliphatic aldehydes between 6 and 24 carbons in length (PubMed:18035827, PubMed:18182499, PubMed:22633490, PubMed:25047030, PubMed:9133646, PubMed:9662422). Responsible for conversion of the sphingosine 1-phosphate (S1P) degradation product hexadecenal to hexadecenoic acid (PubMed:22633490).
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Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	Aldehyde dehydrogenase 10 (ALDH10) functions mechanistically as an enzyme that catalyzes the NAD(P) ⁺ -dependent oxidation of aldehydes to carboxylic acids. It
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belongs to a larger family of aldehyde dehydrogenases. Frequently used alternate names include ALDH3A2 ensuring clarification across research contexts. The mass of ALDH10 can vary slightly depending on specific isoforms and protein modifications but typically his family is around 50-55 kDa. Expression of ALDH10 mainly occurs in the liver and also in tissues including kidney and lung reflecting its roles in aldehyde metabolism across different tissues.

Biological function summary

Aldehyde dehydrogenase 10 participates in the detoxification of aldehydes which are generated during metabolic processes. It plays an important role in protecting cells from oxidative stress by converting reactive aldehydes to less toxic carboxylic acids. ALDH10 does not seem to form part of a larger complex but acts independently to perform its function. Its enzymatic activity impacts cellular redox balance important for maintaining cellular health and function.

Pathways

Aldehyde dehydrogenase 10 plays a significant role in the metabolic pathway processes involving amino acid and fatty acid metabolism. It is important in metabolizing aldehydes generated through lipid peroxidation and amino acid degradation pathways contributing to maintaining metabolic homeostasis. ALDH10 connects functionally with other aldehyde dehydrogenase family members like ALDH2 and ALDH3A2 which collaborate in handling various aldehyde substrates critical to these pathways.

Associated diseases and disorders

Aldehyde dehydrogenase 10 holds relevance to conditions like Sjögren-Larsson syndrome and non-alcoholic fatty liver disease. ALDH3A2 a closely related protein links directly with Sjögren-Larsson syndrome due to its known genetic mutations causing reduced enzymatic function. The role of ALDH10 in modulating liver metabolism links it to non-alcoholic fatty liver disease as altered detoxification capability can lead to disease progression. Understanding these relationships helps in targeting therapies that might mitigate disease impacts by enhancing detoxification pathways.

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

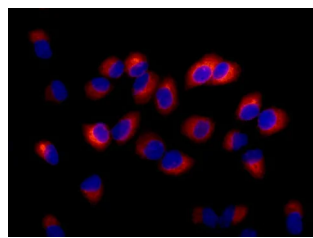
We do not recommend this combination. It is not covered by our product promise.

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.

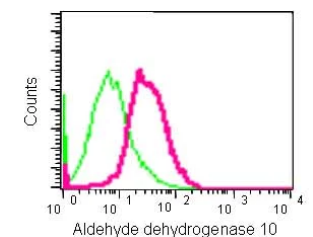
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171)

Aldehyde dehydrogenase 10 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Aldehyde dehydrogenase 10 antibody

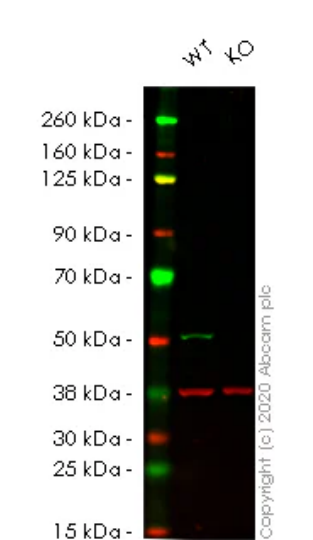
Immunofluorescence analysis of 4% paraformaldehyde fixed A549 cells labeling Aldehyde dehydrogenase 10 using ab184171 at 1/250 dilution (red). A Goat anti rabbit IgG (Alexa Fluor555) at 1/200 dilution was used as secondary antibody. Counterstain: DAPI (blue).



Flow Cytometry (Intracellular) - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171)

Aldehyde dehydrogenase 10 Flow Cytometry (Intracellular) staining using rabbit Anti-Aldehyde dehydrogenase 10 antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde fixed HepG2 cells labeling Aldehyde dehydrogenase 10 using ab184171 at 1/170 dilution (red). A Goat anti rabbit IgG (FITC) at 1/150 dilution was used as secondary antibody. Isotype control: Rabbit monoclonal IgG (green).



Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171)

Aldehyde dehydrogenase 10 Western blot staining using rabbit Anti-Aldehyde dehydrogenase 10 antibody

Lanes 1 - 2: Merged signal (red and green). Green - ab184171 observed at 50 kDa. Red - loading control [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa. ab184171 was shown to react with ALDH3A2 in wild-type HeLa cells in Western blot with loss of signal observed in ALDH3A2 knockout cell line [ab265427](#) (ALDH3A2 knockout cell lysate [ab257829](#)). Wild-type HeLa and ALDH3A2 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab184171 and [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) 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 h at room temperature before imaging.

All lanes:
Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171) at 1/1000 dilution

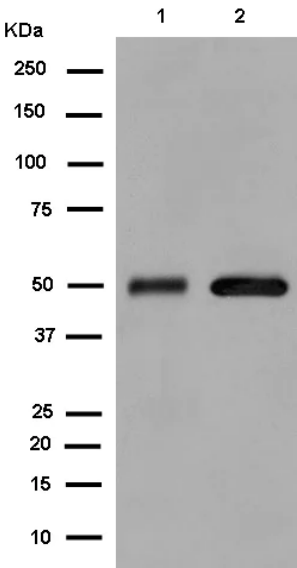
Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human ALDH3A2 (Aldehyde dehydrogenase 10) knockout HeLa cell lysate
([ab257829](#)) at 20 µg

Performed under reducing conditions.

Predicted band size: 55 kDa

Observed band size: 50 kDa



Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171)

Aldehyde dehydrogenase 10 Western blot staining using rabbit Anti-Aldehyde dehydrogenase 10 antibody

All lanes:
Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171) at 1/2000 dilution

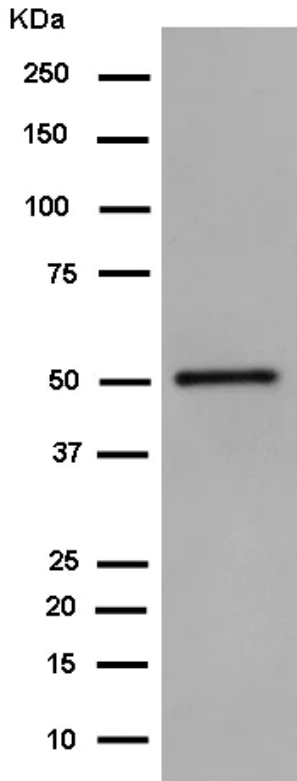
Lane 1:
A549 cell lysate at 20 µg

Lane 2:
293T cell lysate at 20 µg

Secondary

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

Predicted band size: 55 kDa



Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171)

All lanes:
Western blot - Anti-Aldehyde dehydrogenase 10 antibody [EPR15425(B)] (ab184171) at 1/10000 dilution

All lanes:
U87-MG cell lysate at 20 µg

Secondary

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

Predicted band size: 55 kDa

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