abcam

ab232623

Anti-AKR1B10 antibody [EPR14421] - BSA and Azide free

Recombinant | RabMAb

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	EPR14421
Purification technique	Affinity purification Protein A
Concentration	1.061 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.

Notes	-

ICC/IF

Tested

Species	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.

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information AKR1B10

Function	Catalyzes the NADPH-dependent reduction of a wide variety of carbonyl-containing compounds to their corresponding alcohols (PubMed:12732097, PubMed:18087047, PubMed:19013440, PubMed:19563777, PubMed:9565553). Displays strong enzymatic activity toward all-trans-retinal, 9-cis-retinal, and 13-cis-retinal (PubMed:12732097, PubMed:18087047). Plays a critical role in detoxifying dietary and lipid-derived unsaturated carbonyls, such as crotonaldehyde, 4-hydroxynonenal, trans-2-hexenal, trans-2,4-hexadienal and their glutathione-conjugates carbonyls (GS-carbonyls) (PubMed:19013440, PubMed:19563777). Displays no reductase activity towards glucose (PubMed:12732097).

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

ab232623 is the carrier-free version of ab192865.

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	Aldo-keto reductase family 1 member B10 (AKR1B10) also known as ARL-1 (aldo-keto reductase-like-1) is an enzyme encoded by the AKR1B10 gene. The enzyme has a molecular weight of approximately 36 kDa. It is mainly expressed in the liver gastrointestinal tract and to a lesser extent in the lung and adrenal gland. As an

	enzyme AKR1B10 catalyzes the reduction of carbonyl groups to their corresponding alcohols using NADPH as a cofactor. This function plays a role in the detoxification of aldehydes and ketones.
Biological function summary	AKR1B10 protects cells from disorders caused by toxic aldehydes. It is important in lipid biosynthesis through the reduction of retinaldehyde to retinol which is part of the retinoic acid metabolism. AKR1B10 forms part of the aldo-keto reductase superfamily consisting of multiple related enzymes that regulate various cellular processes. This enzyme class is involved in stabilizing the oxidoreduction balance within cells.
Pathways	AKR1B10 engages in lipid metabolism and the protection against oxidative stress. It is an important player in the retinoid metabolism and signaling pathway where it collaborates with enzymes like retinaldehyde dehydrogenase. Additionally AKR1B10 is involved in the polyol pathway although its exact role here continues to be studied. The enzyme's relationship with NADPH suggests it could intersect with systems managing cellular responses to oxidative stress.
Associated diseases and disorders	AKR1B10 is associated with certain cancers and complications related to chronic alcohol consumption. Overexpression of AKR1B10 has been linked to hepatocellular carcinoma where it possibly collaborates with proteins like the carcinogenic beta-catenin pathway. Furthermore it plays a part in promoting resistance to chemotherapeutic drugs due to its detoxification role. In liver diseases caused by alcohol AKR1B10 helps protect hepatocytes from oxidative and aldehyde stress with aldehyde dehydrogenase being another involved enzyme in these processes.

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

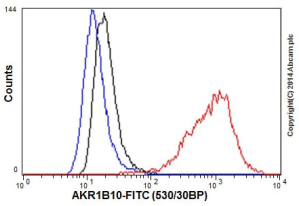
We do not recommend this combination. It is not covered by our product promise.

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.

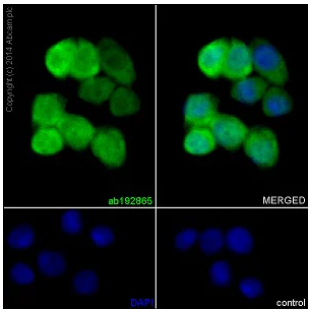
4 product images



Flow Cytometry (Intracellular) - Anti-AKR1B10 antibody [EPR14421] - BSA and Azide free (ab232623)

AKR1B10 Flow Cytometry (Intracellular) staining using rabbit Anti-AKR1B10 antibody

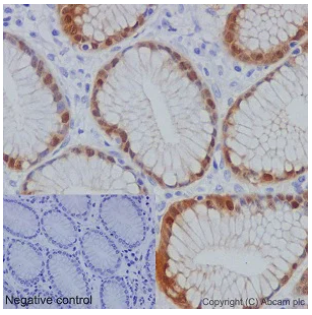
Intracellular flow cytometric analysis of A549 cells labeling AKR1B10 using ab192865 at a 1/50 dilution (red). Goat anti rabbit IgG (FITC) was used as the secondary antibody at a 1/150 dilution. Isotype control Rabbit monoclonal IgG (black). Unlabeled control cells without incubation with primary antibody and secondary antibody (blue). Cells were fixed in 2% paraformaldehyde.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab192865).



Immunocytochemistry/ Immunofluorescence - Anti-AKR1B10 antibody [EPR14421] - BSA and Azide free (ab232623)

AKR1B10 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-AKR1B10 antibody

Immunofluorescent analysis of 4% paraformaldehyde fixed SW480 cells labeling AKR1B10 with ab192865 at a 1/50 dilution. A Goat anti rabbit IgG (Alexa Fluor®488) (ab150077) was used as the secondary antibody at a 1/400 dilution. Counterstain DAPI. Cells were permeabilized using 0.1% Triton X-100.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab192865).

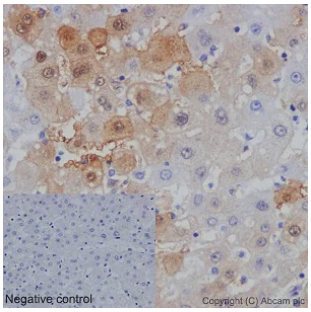


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AKR1B10 antibody [EPR14421] - BSA and Azide free (ab232623)

AKR1B10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-AKR1B10 antibody

Immunohistochemical analysis of paraffin embedded human stomach tissue sections labeling AKR1B10 using ab192865 at a 1/1,000 dilution. A prediluted HRP Polymer for Rabbit IgG was used as the secondary antibody. Hematoxylin counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab192865).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-AKR1B10 antibody [EPR14421] - BSA and Azide free (ab232623)

AKR1B10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-AKR1B10 antibody

Immunohistochemical analysis of paraffin embedded Human liver tissue labeling AKR1B10 with ab192865 at a 1/1000 dilution. A prediluted HRP Polymer for Rabbit IgG was used as the secondary antibody. Hematoxylin counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab192865).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

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