abcam

ab243942

Anti-15-PGDH antibody [EPR14332] - 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	EPR14332
Purification technique	Affinity purification Protein A
Concentration	1.001 - 1.062 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

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 HPGD

Function	Catalyzes the NAD-dependent dehydrogenation (oxidation) of a broad array of hydroxylated polyunsaturated fatty acids (mainly eicosanoids and docosanoids, including prostaglandins, lipoxins and resolvins), yielding their corresponding keto (oxo) metabolites (PubMed:10837478, PubMed:16757471, PubMed:16828555, PubMed:21916491, PubMed:25586183, PubMed:8086429). Decreases the levels of the pro-proliferative prostaglandins such as prostaglandin E2 (whose activity is increased in cancer because of an increase in the expression of cyclooxygenase 2) and generates oxo-fatty acid products that can profoundly influence cell function by abrogating pro-inflammatory cytokine expression (PubMed:15574495, PubMed:25586183). Converts resolvins E1, D1 and D2 to their oxo products, which

represents a mode of resolvin inactivation. Resolvin E1 plays important roles during the resolution phase of acute inflammation, while resolvins D1 and D2 have a unique role in obesity-induced adipose inflammation (PubMed:16757471, PubMed:22844113).

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

ab243942 is the carrier-free version of ab187160.

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	15-PGDH also known as 15-hydroxyprostaglandin dehydrogenase PGDH or 15-PGDH protein is an enzyme with a molecular mass of approximately 29 kDa. This enzyme catalyzes the oxidation of the 15-hydroxyl group in prostaglandins specifically converting Prostaglandin E2 (PGE2) into its inactive form. Expression occurs in various tissues including the lung placenta and colonic epithelium. Its activity levels can vary depending on the tissue context and physiological conditions marking its importance in local regulation.
Biological function summary	15-PGDH regulates prostaglandin levels which are lipid compounds playing roles in inflammation and homeostasis. This enzyme does not associate with protein complexes but serves a standalone function in metabolic pathways. It maintains a balance between prostaglandin synthesis and degradation ensuring that inflammatory responses do not exceed what is necessary. The enzyme's activity directly reduces available prostaglandins which in turn dampens related signaling pathways.
Pathways	Prostaglandins and this enzyme are part of arachidonic acid metabolism and the Cyclooxygenase (COX) pathway. These pathways play key roles in inflammation and tissue homeostasis. 15-PGDH interacts with other enzymes like COX-2 as it acts downstream to mitigate PGE2 levels generated by COX enzymes. This diminishes the signaling of other elements such as the AMPA receptors involved in neuronal plasticity and pain perception showcasing the enzyme's regulatory scope within biological systems.
Associated diseases and disorders	15-PGDH plays a role in colon cancer and pulmonary inflammation. Low expression or activity of this enzyme is associated with increased PGE2 levels contributing to cancer progression and chronic inflammation. This dysregulation may involve proteins like COX-2 where the imbalance between synthesis and degradation leads to elevated prostaglandin signaling. Understanding 15-PGDH functions offers insights into therapeutic potentials making inhibitors and potentiators of interest for treatment of these conditions.

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

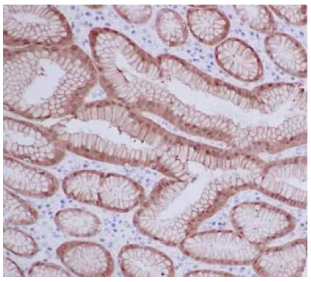
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images

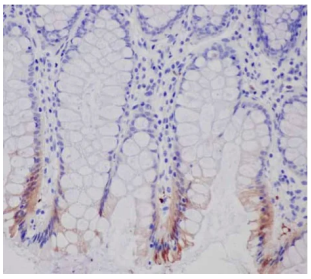


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

15-PGDH Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-15-PGDH antibody

Immunohistochemical analysis of paraffin embedded Human stomach tissue labeling 15-PGDH with ab187160 at 1/4000 with a prediluted HRP Polymer for Rabbit IgG as secondary antibody. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160)

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

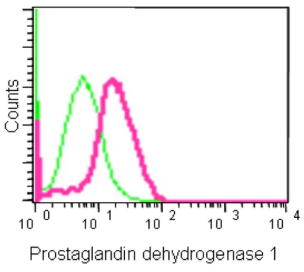


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

15-PGDH Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-15-PGDH antibody

Immunohistochemical analysis of paraffin embedded Human colon tissue labeling 15-PGDH with ab187160 at 1/4000 with a prediluted HRP Polymer for Rabbit IgG as secondary antibody. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160)

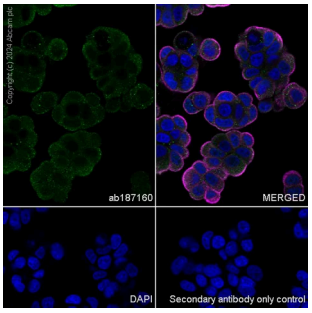
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

15-PGDH Flow Cytometry (Intracellular) staining using rabbit Anti-15-PGDH antibody

Intracellular flow cytometrical analysis of Caco-2 cells labeling 15-PGDH with ab187160 at 1/90 compared to a Isotype control. FITC-conjugated goat-anti-rabbit secondary antibody at 1/150 used for the analysis.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160)



Immunocytochemistry/ Immunofluorescence - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

15-PGDH Immunocytochemistry/ Immunofluorescence staining of MCF-7 (human breast adenocarcinoma epithelial cell) using rabbit Anti-15-PGDH antibody

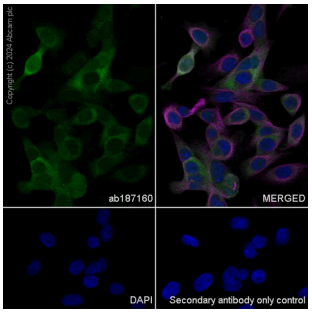
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized MCF-7 (human breast adenocarcinoma epithelial cell) labeling 15-PGDH with ab187160 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).

Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 was used as a counterstain (red).

The nuclear counterstain is DAPI (blue).

Confocal image showing mainly cytoplasmic staining in MCF-7 cell line.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160).



Immunocytochemistry/ Immunofluorescence - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

15-PGDH Immunocytochemistry/ Immunofluorescence staining of SW480 (Human colorectal adenocarcinoma epithelial cell) using rabbit Anti-15-PGDH antibody

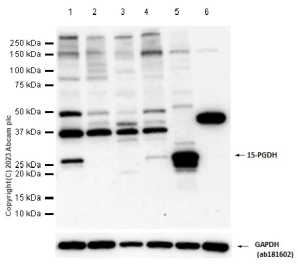
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized SW480 (Human colorectal adenocarcinoma epithelial cell) labeling 15-PGDH with ab187160 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).

Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 was used as a counterstain (red).

The nuclear counterstain is DAPI (blue).

Confocal image showing mainly cytoplasmic staining in SW480 cell line.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160).



Western blot - Anti-15-PGDH antibody [EPR14332] - BSA and Azide free (ab243942)

Blocking and Diluting Buffer: 5% NFDM/TBST The expression profile observed in HCT-116, PANC-1 and human heart are consistent with the literatures (PMID: 15542609, PMID: 30250298). Negative control: HCT-116, PANC-1 and human heart (PMID: 15542609, PMID: 30250298). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187160)
All lanes:
Western blot - Anti-15-PGDH antibody [EPR14332] (ab187160) at 1/1000 dilution

Lane 1:
HCT-15 (human colorectal carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HCT116 (human colorectal carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
PANC-1 (human pancreatic epithelioid carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 5:
Human colon tissue lysate at 20 µg

Lane 6:
Human heart tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 29 kDa

Observed band size: 29 kDa

Exposure time: 80s

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