abcam

ab240228

Anti-DDAH1 antibody [EPR13922] - 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	EPR13922
Purification technique	Affinity purification Protein A
Concentration	1.013 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	Heat to 98 degrees C, allow to cool for 10-20 minutes.

Predicted

Species	Mouse, Rat, Cow
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Cow
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Cow
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Cow
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat, Cow
Dilution info	-
Notes	-

Target data

See full target information DDAH1

Function	Hydrolyzes N(G),N(G)-dimethyl-L-arginine (ADMA) and N(G)-monomethyl-L-arginine (MMA) which act as inhibitors of NOS. Has therefore a role in the regulation of nitric oxide generation.

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

ab240228 is the carrier-free version of ab180599.

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	The DDAH1 protein also known as dimethylarginine dimethylaminohydrolase 1 plays an important role in regulating nitric oxide (NO) production by metabolizing asymmetric dimethylarginine (ADMA) an inhibitor of nitric oxide synthase. This enzyme has a molecular mass of approximately 31 kDa and is widely expressed in various tissues including liver kidney and brain. It impacts the cardiovascular system by controlling ADMA levels which influence endothelial function and vascular tone.

Biological function summary	The actions of DDAH1 contribute significantly to cardiovascular homeostasis. Increased levels of ADMA resulting from impaired DDAH1 activity can lead to decreased NO production impacting cardiovascular health. DDAH1 does not form part of a complex but acts individually to affect NO synthesis through ADMA degradation. Understanding the biological roles of DDAH1 helps to appreciate how NO-mediated processes are tightly regulated within the body and its impact on vascular health.
Pathways	DDAH1 participates actively in the nitric oxide synthesis pathway. It modulates the levels of endothelial nitric oxide synthase (eNOS) by regulating ADMA which serves as an eNOS inhibitor. Through this pathway DDAH1 ensures a balance between NO production and regulation supporting vascular homeostasis and blood pressure control. DDAH1 shares functional connections with proteins like eNOS which are central to maintaining vascular health and preventing endothelial dysfunction.
Associated diseases and disorders	Dysfunction of DDAH1 links closely to cardiovascular diseases and conditions like atherosclerosis. Elevated ADMA levels resulting from compromised DDAH1 activity contribute to endothelial dysfunction a precursor to atherosclerosis. The interconnected role with eNOS highlights DDAH1's importance in managing ADMA concentrations as imbalances can exacerbate disease progression. Investigating the influence of DDAH1 on these diseases offers insights into potential therapeutic targets for cardiovascular pathologies.

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

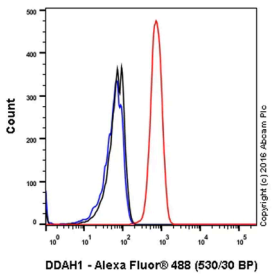
We do not recommend this combination. It is not covered by our product promise.

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



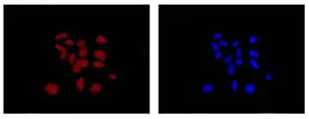
Flow Cytometry (Intracellular) - Anti-DDAH1 antibody [EPR13922] - BSA and Azide free (ab240228)

DDAH1 Flow Cytometry (Intracellular) staining using rabbit Anti-DDAH1 antibody

ab180599 staining DDAH1 in the human cell line 293 (human embryonic kidney) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permabilised with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/20. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

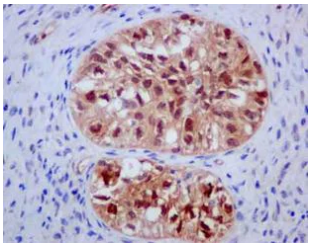
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180599).



Immunocytochemistry/ Immunofluorescence - Anti-DDAH1 antibody [EPR13922] - BSA and Azide free (ab240228)

DDAH1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DDAH1 antibody

Immunofluorescence analysis of 293 cells (fixative 4% paraformaldehyde) labeling DDAH1 with ab180599 at a 1/100 dilution (left image), and counterstained with Dapi (right image). Goat anti rabbit IgG (Dylight 555) secondary used at a 1/200 diution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180599).

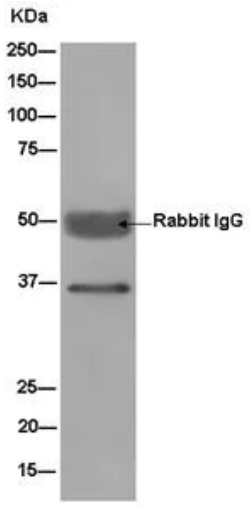


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DDAH1 antibody [EPR13922] - BSA and Azide free (ab240228)

DDAH1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-DDAH1 antibody

Immunohistochemical analysis of paraffin embedded Human ovarian carcinoma tissue labeling DDAH1 with ab180599 at a 1/50 dilution. Prediluted HRP Polymer for Rabbit IgG secondary used. Counterstained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180599).

Heat mediated antigen retrieval was performed before commencing with IHC staining protocol.

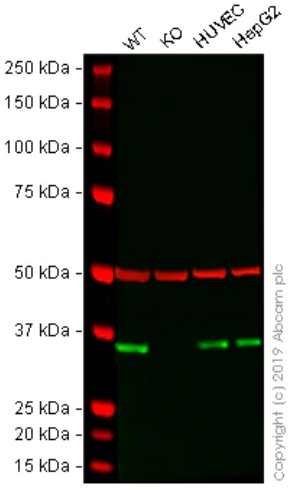


Immunoprecipitation - Anti-DDAH1 antibody [EPR13922] - BSA and Azide free (ab240228)

Immunoprecipitation analysis of Human fetal kidney lysate labeling DDAH1 with ab180599 at a 1/40 dilution. Goat Anti-Rabbit IgG (H+L) Peroxidase conjugated secondary used at a 1/1000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180599).

All lanes:
Immunoprecipitation - Anti-DDAH1 antibody [EPR13922] (ab180599)

Predicted band size: 31 kDa



Western blot - Anti-DDAH1 antibody [EPR13922] - BSA and Azide free (ab240228)

DDAH1 Western blot staining using rabbit Anti-DDAH1 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab180599).
Lanes 1 - 4: Merged signal (red and green). Green - ab180599 observed at 37 kDa. Red - loading control, ab7291 (Mouse anti-Alpha Tubulin [DM1A] observed at 55kDa.

ab180599 was shown to react with DDAH1 in A431 wild-type cells in Western blot. Loss of signal was observed when DDAH1 knockout sample was used. A431 wild-type and DDAH1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% Milk in TBS-T (0.1% Tween®) before incubation with ab180599 and ab7291 (Mouse anti-Alpha Tubulin [DM1A] overnight at 4°C at a 1 in 10000 dilution and a 1 in 20000 dilution respectively. Blots were developed 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-DDAH1 antibody [EPR13922] (ab180599) at 1/10000 dilution

Lane 1:
Wild-type A431 cell lysate at 40 µg

Lane 2:
Western blot - Human DDAH1 knockout A-431 cell lysate (ab261715) at 40 µg

Lane 3:
HUVEC (Human umbilical vein endothelial cell line) whole cell lysate at 40 µg

Lane 4:
HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 40 µg

Secondary

Lanes 1 - 4:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Lanes 1 - 4:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 31 kDa

Observed band size: 37 kDa, 55 kDa

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