abcam

ab178352

Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free

Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352) is a rabbit recombinant monoclonal antibody provided in a PBS only buffer for easy conjugation. Suitable for **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF** in **Human, Mouse, Rat**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR11588(B)
Purification technique	Affinity purification Protein A
Concentration	1.017 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse, Rat
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse, Rat
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information AQP1

Function

Forms a water channel that facilitates the transport of water across cell membranes, playing a crucial role in water homeostasis in various tissues (PubMed:1373524, PubMed:23219802). Could also be permeable to small solutes including hydrogen peroxide, glycerol and gases such as amonnia (NH3), nitric oxide (NO) and carbon dioxide (CO2) (PubMed:16682607, PubMed:17012249, PubMed:19273840, PubMed:33028705, PubMed:8584435). Recruited to the ankyrin-1 complex, a multiprotein complex of the erythrocyte membrane, it could be part of a CO2 metabolon, linking facilitated diffusion of CO2 across the membrane, anion exchange of Cl(-)/HCO3(-) and interconversion of dissolved CO2 and carbonic acid in the cytosol (PubMed:17012249, PubMed:35835865). In vitro, it shows non-selective gated cation channel activity and may be permeable to cations like K(+) and Na(+) in vivo (PubMed:36949749, PubMed:8703053).

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

What is this antibody validated in?
Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Aquaporin 1?
Anti-Aquaporin 1 [EPR11588(B)] - BSA and Azide free (ab178352) specifically detects a band for Aquaporin 1 (UniProt: P29972) at a molecular weight of 28kDa.

Other related products
We have a range of other formats of antibody clone [EPR11588(B)] also available for your convenience: ab168387, Carrier free - ab178352, Alexa Fluor® 647 - ab225225, PE - ab303074, APC - ab303075, HRP - ab303076, Alkaline Phosphatase - ab308672, Alexa Fluor® 488 - ab309643, Alexa Fluor® 594 - ab310374, Alexa Fluor® 555 - ab314335

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.

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	Aquaporin 1 also known as Aquaporin-1 AQP-1 or AQP1 is a protein that functions as a water channel facilitating the transport of water across cell membranes. This protein plays an important role in maintaining water homeostasis within cells. Aquaporin 1 has a mass of approximately 28 kDa and is encoded by the AQP1 gene. It is expressed in various tissues and organs including the kidneys lungs and red blood cells indicating its importance in diverse physiological processes.

Biological function summary	Aquaporin 1 is not part of a complex but independently contributes to maintaining osmotic balance and fluid movement across epithelial and endothelial tissues. The protein's selective permeability for water without allowing ions or other solutes highlights its specificity in controlling water transport which is essential for maintaining cellular environment stability.
Pathways	The aquaporin protein is involved in key biological pathways such as the osmoregulatory pathway and the fluid secretion pathway. It maintains efficient water transport in processes like urine concentration in the kidneys and fluid regulation in the pulmonary system. Aquaporins in general are related to similar transport proteins like sodium channels which together play an important role in maintaining osmotic balance across various tissues.
Associated diseases and disorders	Aquaporin 1's dysfunction has been associated with conditions such as nephrogenic diabetes insipidus and pulmonary edema. These are linked to its role in water reabsorption in the kidneys and fluid balance in the lungs. The disorder's connection ties Aquaporin-1 with other regulatory proteins such as vasopressin receptors which work in conjunction to control renal water reabsorption and response to fluid imbalance.

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

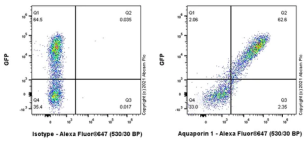
We do not recommend this combination. It is not covered by our product promise.

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.

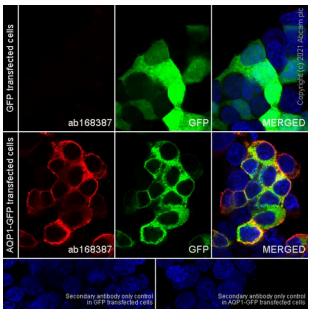
7 product images



Flow Cytometry (Intracellular) - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Aquaporin 1 antibody

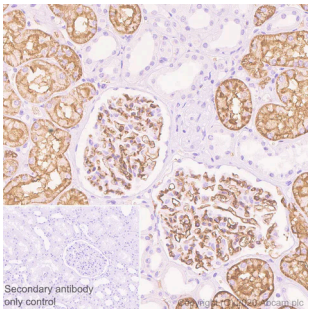
This data was developed using ab168387, the same antibody clone in a different buffer formulation.
Flow Cytometry (Intracellular) analysis of 293T (Human embryonic kidney epithelial cell) transfected with EGFP tagged AQP1 construct cells labelling Aquaporin 1 with purified ab168387 at 1/2000 dilution (0.1 µg/mL, Right) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 647, ab150079) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Left). Unlabelled control - /.



Immunocytochemistry/ Immunofluorescence - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Aquaporin 1 antibody

This data was developed using ab168387, the same antibody clone in a different buffer formulation.
Immunocytochemistry analysis of 293T (Human embryonic kidney epithelial cell) transfected with EGFP tagged AQP1 construct cells labeling Aquaporin 1 with purified ab168387 at 1/50 dilution (3.9 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with N/A. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

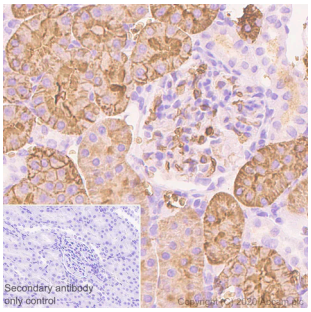


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aquaporin 1 antibody

This data was developed using ab168387, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human kidney tissue sections labeling Aquaporin 1 with purified ab168387 at 1/8000 dilution (0.02 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

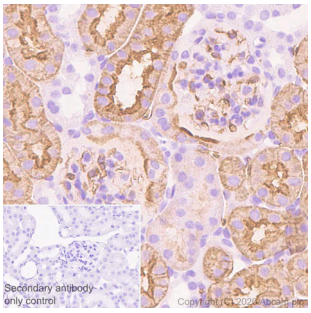


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aquaporin 1 antibody

This data was developed using ab168387, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat kidney tissue sections labeling Aquaporin 1 with purified ab168387 at 1/8000 dilution (0.02 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

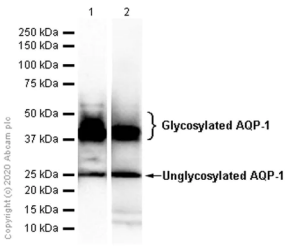


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Aquaporin 1 antibody

This data was developed using ab168387, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue sections labeling Aquaporin 1 with purified ab168387 at 1/8000 dilution (0.02 µg/mL). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Western blot - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Western blot staining using rabbit Anti-Aquaporin 1 antibody

Unglycosylated AQP-1: 28kDa; Glycosylated AQP-1: 35-50kDa.
This data was developed using ab168387, the same antibody clone in a different buffer formulation.

All lanes:
Western blot - Anti-Aquaporin 1 antibody [EPR11588(B)] (ab168387) at 1/10000 dilution

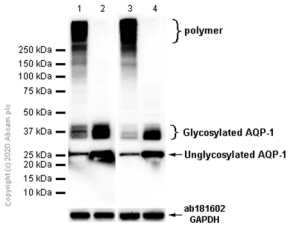
Lane 1:
Human heart lysate unboiled at 20 µg

Lane 2:
Human spleen lysate unboiled at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 28 kDa



Western blot - Anti-Aquaporin 1 antibody [EPR11588(B)] - BSA and Azide free (ab178352)

Aquaporin 1 Western blot staining using rabbit Anti-Aquaporin 1 antibody

Unglycosylated AQP-1: 28kDa; Glycosylated AQP-1: 35-50kDa. This data was developed using ab168387, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Aquaporin 1 antibody [EPR11588(B)] (ab168387) at 1/10000 dilution

Lane 1:
Mouse kidney lysate boiled at 20 µg

Lane 2:
Mouse kidney lysate unboiled at 20 µg

Lane 3:
Rat kidney lysate boiled at 20 µg

Lane 4:
Rat kidney lysate unboiled at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 28 kDa

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