abcam

ab316107

Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR27028-135
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for human ICC/IF.
Concentration	0.515 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000

Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/4000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Not recommended

Species	Human, Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Dot

Tested

Species	Synthetic peptide - Human

Dilution info	1/1000
Notes	-

Expected

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

Target data

See full target information Voltage-dependent anion-selective channel protein 2

Function	Non-selective voltage-gated ion channel that mediates the transport of anions and cations through the mitochondrion outer membrane and plasma membrane (PubMed:8420959). The channel adopts an open conformation at zero mV and a closed conformation at both positive and negative potentials (PubMed:8420959). There are two populations of channels; the main that functions in a lower open-state conductance with lower ion selectivity, that switch, in a voltage-dependent manner, from the open to a low-conducting 'closed' state and the other that has a normal ion selectivity in the typical high conductance, 'open' state (PubMed:8420959). Binds various lipids, including the sphingolipid ceramide, the phospholipid phosphatidylcholine, and the sterols cholesterol and oxysterol (PubMed:31015432). Binding of ceramide promotes the mitochondrial outer membrane permeabilization (MOMP) apoptotic pathway (PubMed:31015432). Associates with the translocase of the outer mitochondrial membrane (TOM) complex and PINK1 kinase at depolarized mitochondria, this interaction stabilizes PINK1 at the outer mitochondrial membrane and triggers downstream mitophagy by the recruitment of the E3 ubiquitin ligase PRKN (PubMed:40080546). Catalyzes the scrambling of phospholipids across the outer mitochondrial membrane; the mechanism is unrelated to channel activity and is capable of translocating both anionic and zwitterionic phospholipids.

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	Voltage-dependent anion channel 2 (VDAC2) also known as porin 31HL or P2 mechanically functions as a channel facilitating the transport of anions and metabolites across the outer mitochondrial membrane. This channel approximately 32 kDa in size is most prominent in the mitochondria but can also be observed in other cellular locations. It is involved in regulating both the entry and exit of small ions and molecules which is essential for mitochondrial function and energy production.
Biological function summary	VDAC2 plays significant roles beyond mere ion transport. It interacts with proteins involved in apoptosis such as Bcl-2 family proteins. Although not part of a larger complex its influence on the structure and permeability of the outer mitochondrial membrane impacts several cellular processes. The regulation of apoptosis by VDAC2 is key for cellular homeostasis and response to stress signals highlighting its role in maintaining normal cellular functions.
Pathways	Several cellular processes include VDAC2's role in apoptosis and energy metabolism. VDAC2 interacts with the intrinsic pathway of apoptosis in close association with proteins like Bax and Bak where it influences the release of cytochrome c from mitochondria. Additionally VDAC2 has a role in ATP transport and metabolic flux integral to the bioenergetics pathways by working with adenine nucleotide translocase (ANT) as part of the exchange of ATP and ADP.
Associated diseases and disorders	Mutations or dysregulation of VDAC2 connect to cancer and neurodegenerative diseases. Its interaction with the Bcl-2 family proteins implicates it in apoptosis resistance observed in various cancers. Likewise VDAC2 dysfunction has links to neurodegenerative diseases through its impact on mitochondrial health as these

conditions often display an imbalance in apoptotic pathways and energy metabolism.

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

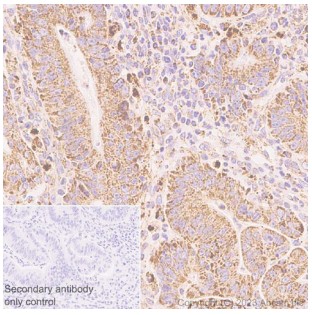
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human colon carcinoma using rabbit Anti-VDAC2 antibody

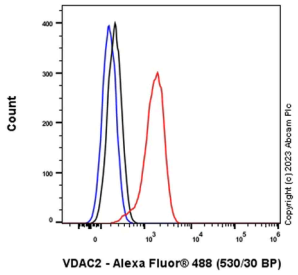
Immunohistochemical analysis of paraffin-embedded Human colon carcinoma tissue labeling VDAC2 with ab316107 at 1/4000 (0.128 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human colon carcinoma. The section was incubated with ab316107 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.

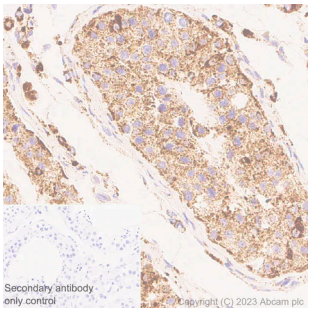


Flow Cytometry (Intracellular) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Flow Cytometry (Intracellular) staining of HeLa (human cervical adenocarcinoma epithelial cell) using rabbit Anti-VDAC2 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling VDAC2 with ab316107 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human testis using rabbit Anti-VDAC2 antibody

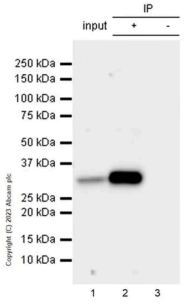
Immunohistochemical analysis of paraffin-embedded Human testis tissue labeling VDAC2 with ab316107 at 1/4000 (0.128 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human testis. The section was incubated with ab316107 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunoprecipitation - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 was immunoprecipitated from 0.35 mg HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate with ab316107 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab316107 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate

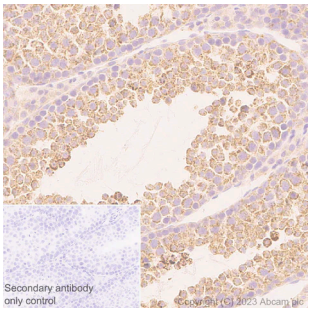
Lane 2:
ab316107 at 1/30 IP in HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab316107 in HeLa whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 24s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse testis using rabbit Anti-VDAC2 antibody

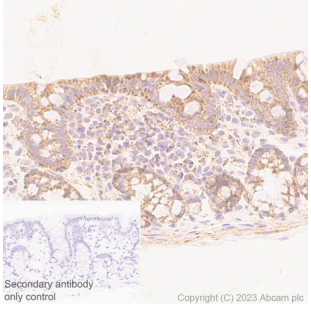
Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling VDAC2 with ab316107 at 1/4000 (0.128 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on mouse testis. The section was incubated with ab316107 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat colon using rabbit Anti-VDAC2 antibody

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling VDAC2 with ab316107 at 1/4000 (0.128 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

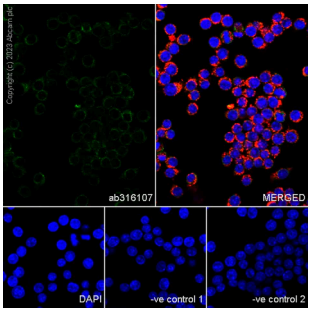
Positive staining on rat colon. The section was incubated with ab316107 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunocytochemistry/ Immunofluorescence - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

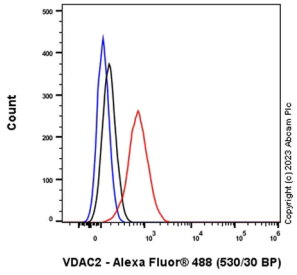
VDAC2 Immunocytochemistry/ Immunofluorescence staining of Raw 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) using rabbit Anti-VDAC2 antibody

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized Raw 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling VDAC2 with ab316107 at 1/50 (10.24 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/mL) dilution (Green).

Confocal image showing cytoplasmic staining in Raw264.7 cell line.
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).

anti-COX IV mouse monoclonal antibody - Mitochondrial Marker was used to counterstain at 1/200 (2.5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/mL) dilution.

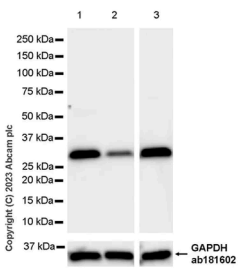


Flow Cytometry (Intracellular) - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Flow Cytometry (Intracellular) staining of RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) using rabbit Anti-VDAC2 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling VDAC2 with ab316107 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Western blot - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Western blot staining using rabbit Anti-VDAC2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
HeLa transfected with siRNA specifically targeting VDAC2 whole cell lysate at 20 µg

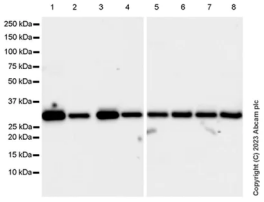
Lane 3:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Secondary

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

Observed band size: 30 kDa, 36 kDa

Exposure time: 26s



Western blot - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Western blot staining using rabbit Anti-VDAC2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Lanes 1-2 are applied with Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 and Lanes 3-8 are applied with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/20000.

Exposure time: Lanes 1-4: 15 seconds; Lanes 5-8: 3 seconds.

All lanes:
Western blot - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107) at 1/1000 dilution

Lane 1:
Human hippocampus tissue lysate at 20 µg

Lane 2:
Human prostate tissue lysate at 20 µg

Lane 3:
HepG2 (human hepatocellar carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
Jurkat (human t cell leukemia t lymphocyte from peripheral blood) whole cell lysate at 20 µg

Lane 5:
Mouse brain tissue lysate at 20 µg

Lane 6:
Mouse heart tissue lysate at 20 µg

Lane 7:
Rat brain tissue lysate at 20 µg

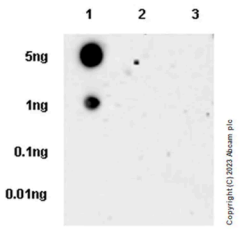
Lane 8:
Rat heart tissue lysate at 20 µg

Secondary

Lanes 1 - 2:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Lanes 3 - 8:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 30 kDa



Dot Blot - Anti-VDAC2 antibody [EPR27028-135] - Mitochondrial Loading Control (ab316107)

VDAC2 Dot Blot staining using rabbit Anti-VDAC2 antibody

Dot blot analysis of VDAC2 using ab316107 at 1:1000 (0.512 ug/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1:100,000 dilution.

Exposure time: 180 seconds.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

This antibody does not cross-react with human VDAC1 & VDAC3.

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