abcam

ab308529

Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - 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	EPR28177-30
Purification technique	Affinity purification Protein A
Concentration	1.031 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IHC-P

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-Fr

Tested

Species	Mouse, Rat
Dilution info	-
Notes	-

Expected

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

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SLC16A3

Function	Proton-dependent transporter of monocarboxylates such as L-lactate and pyruvate (PubMed:11101640, PubMed:23935841, PubMed:31719150). Plays a predominant role in L-lactate efflux from highly glycolytic cells (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

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.

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	SLC16A3 also known as MCT4 or MCT-4 is a member of the monocarboxylate transporter family. It is responsible for the transport of lactate and other monocarboxylates across cell membranes. Typically the molecular weight of MCT4 is approximately 45-50 kDa. This transporter is most abundant in tissues with high glycolytic activity including muscle and certain types of tumors where it facilitates the export of lactate produced during anaerobic metabolism to maintain intracellular pH balance and energy production efficiency.
Biological function summary	The transport function of SLC16A3/MCT4 is important for maintaining the energy equilibrium in cells that rely heavily on glycolysis. MCT4 does not function

	independently; it associates with ancillary proteins like CD147/Basigin which is essential for its correct localization to the plasma membrane. This association enhances the transport efficiency of lactate making MCT4 an important player in the lactate shuttle system a mechanism that allows for effective energy utilization in muscle fibers and tumor cells and significantly contributes to the regulation of the tissue microenvironment.
Pathways	SLC16A3/MCT4 plays a significant role in metabolic pathways particularly the glycolytic pathway by facilitating lactate efflux. The transporter is also implicated in the Cori cycle where lactate is shuttled from muscles to the liver for gluconeogenesis. Its functions overlap with those of other monocarboxylate transporters such as MCT1 which generally handles the import of lactate in oxidative tissues. Together these transporters maintain homeostasis of lactate levels in various tissues preventing lactate accumulation.
Associated diseases and disorders	Alterations in SLC16A3/MCT4 expression or function are associated with cancer and anaerobic exercise intolerance. In cancer overexpression of MCT4 correlates with aggressive tumor behavior due to its role in lactate export aiding in the acidic tumor microenvironment development which favors cancer cell survival and invasion. Additionally interactions with proteins like CD147 are thought to modulate tumor progression. In exercise intolerance impaired lactate transport leads to muscle fatigue and reduced exercise capacity highlighting the critical role MCT4 plays in normal metabolic responses during intense physical activity.

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

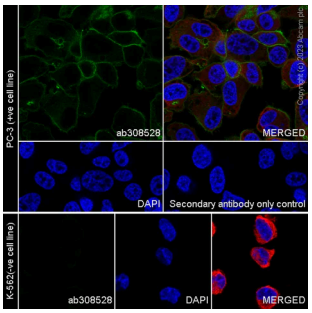
We do not recommend this combination. It is not covered by our product promise.

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.

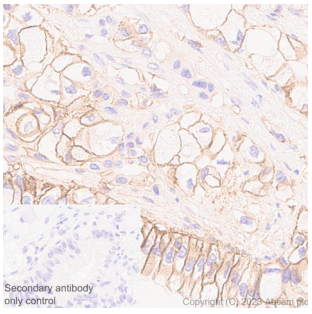
12 product images



Immunocytochemistry/ Immunofluorescence - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

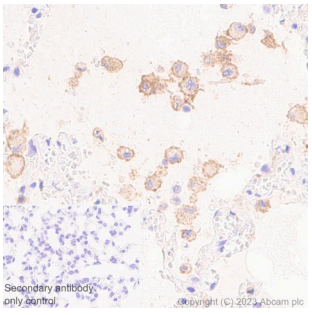
SLC16A3/MCT 4 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SLC16A3/MCT 4 antibody

This data was developed using ab308528, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Tween-20 permeabilized PC-3 (human prostate adenocarcinoma epithelial cell) cells labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 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 membranous staining in PC-3 cells.Negative control: K-562 (PMID: 25957999);Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin 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.



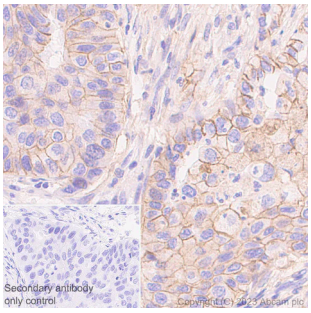
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

Immunohistochemical analysis of paraffin-embedded Human pancreatic can tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human pancreatic cancer (PMID: 29170050).The section was incubated with ab308528 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



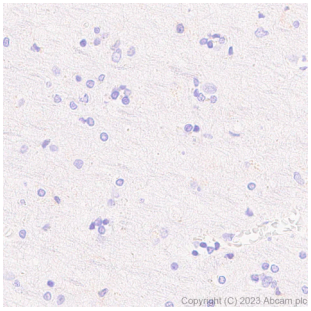
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

Immunohistochemical analysis of paraffin-embedded Human lung tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on macrophages of human lung.The section was incubated with ab308528 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



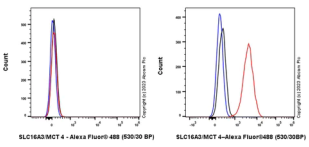
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

Immunohistochemical analysis of paraffin-embedded Human lung carcinoma tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human lung carcinoma.The section was incubated with ab308528 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



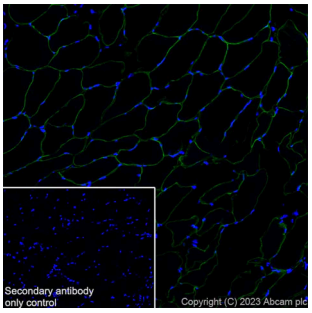
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Low expression: No staining on normal human cerebrum (PMID: 23258846).The section was incubated with ab308528 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



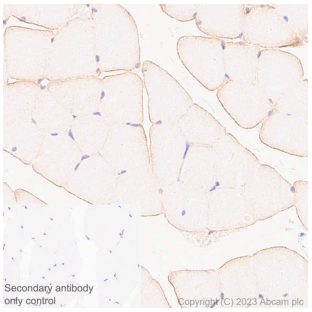
Flow Cytometry (Intracellular) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

This data was developed using ab308528, the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized K-562(human chronic myelogenous leukemia lymphoblast, Left) / PC-3 (human prostate adenocarcinoma epithelial cell, Right) cells labelling SLC16A3/MCT 4 with ab308528 at 1/500 dilution (0.1 ug)/Red (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). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody. Negative control: K-562(PMID:25957999).



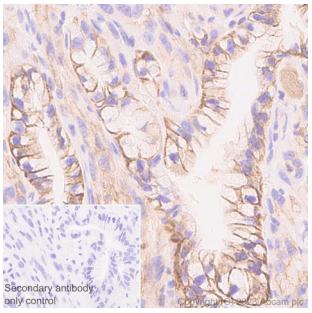
Immunohistochemistry (Frozen sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

This data was developed using ab308528, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat skeletal muscle (fresh) tissue labeling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Confocal image showing positive staining on rat skeletal muscle. The nuclear counterstain was DAPI (Blue). The section was incubated with ab308528 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



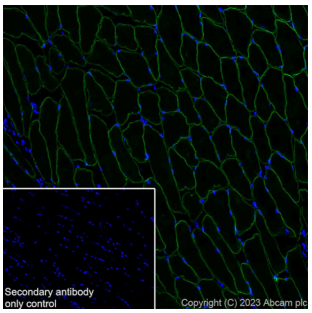
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

Immunohistochemical analysis of paraffin-embedded Mouse skeletal muscl tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse skeletal muscle (PMID: 18003750).The section was incubated with ab308528 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-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

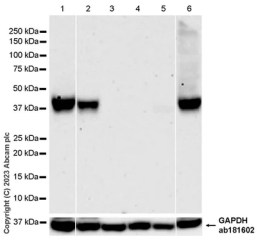
Immunohistochemical analysis of paraffin-embedded Mouse pancreatic tum tissue labelling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse pancreatic cancer.The section was incubated with ab308528 for 30 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 (Frozen sections) - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

This data was developed using ab308528, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse skeletal muscle (fresh) tissue labeling SLC16A3/MCT 4 with ab308528 at 1/100 (5.1 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Confocal image showing positive staining on mouse skeletal muscle. The nuclear counterstain was DAPI (Blue). The section was incubated with ab308528 for 60 mins at room temperature. The section was then mounted using Fluoromount®.The

immunostaining was performed on a Leica Biosystems BOND® RX instrument. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. The nuclear counterstain was DAPI (Blue). Secondary antibody control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



Western blot - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

This data was produced using ab308528, the same antibody clone but in a different formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST. Negative control: K-562 (PMID:25957999). Low expression: MCF7 and T-47D (PMID:35023320). Samples are non-boiled as boiling may cause protein aggregation. In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: 80 seconds.
All lanes:
Western blot - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] (ab308528) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate, at 20 µg

Lane 2:
PC-3 (human prostate adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate, at 20 µg

Lane 4:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 5:
T-47D (human ductal breast epithelial tumor epithelial cell), whole cell lysate at 20 µg

Lane 6:
HepG2 (human hepatocellular carcinoma epithelial cell), whole cell lysate at 20 µg

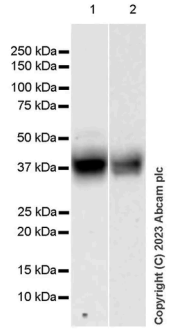
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 49 kDa

Observed band size: 43 kDa

Exposure time: 80s



Western blot - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] - BSA and Azide free (ab308529)

This data was produced using ab308528, the same antibody clone but in a different formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST. Samples are non-boiled as boiling may cause protein aggregation. Exposure times: Lane 1: 103 seconds, Lane 2: 180 seconds.
All lanes:
Western blot - Anti-SLC16A3/MCT 4 antibody [EPR28177-30] (ab308528) at 1/1000 dilution

Lane 1:
Mouse skeletal muscle tissue lysate at 20 µg

Lane 2:

Rat skeletal muscle tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 49 kDa

Observed band size: 43 kDa

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