abcam

ab307369

Anti-OGDH antibody [EPR27181-78]

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	EPR27181-78
Purification technique	Affinity purification Protein A
Concentration	0.464 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Human, Rat, Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Rat, Transfected cell lysate - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/10
Notes	-

Species	Human
Dilution info	1/10
Notes	-

Not recommended

Species	Rat, Transfected cell lysate - Human
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Rat, Transfected cell lysate - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	1/2000
Notes	-

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Transfected cell lysate - Human
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Target data

See full target information 2-oxoglutarate dehydrogenase, mitochondrial

Function

2-oxoglutarate dehydrogenase (E1o) component of the 2-oxoglutarate dehydrogenase complex (OGDHC) (PubMed:24495017, PubMed:25210035, PubMed:28435050). Participates in the first step, rate limiting for the overall conversion of 2-oxoglutarate to succinyl-CoA and CO(2) catalyzed by the whole OGDHC (PubMed:24495017, PubMed:25210035, PubMed:28435050). Catalyzes the irreversible decarboxylation of 2-oxoglutarate (alpha-ketoglutarate) via the thiamine diphosphate (ThDP) cofactor and subsequent transfer of the decarboxylated acyl intermediate on an oxidized dihydrolipoyl group that is covalently amidated to the E2 enzyme (dihydrolipoyllysine-residue succinyltransferase or DLST) (PubMed:24495017, PubMed:25210035, PubMed:28435050, PubMed:35272141). Plays a key role in the Krebs (citric acid) cycle, which is a common pathway for oxidation of fuel molecules, including carbohydrates, fatty acids, and amino acids (PubMed:25210035). Can catalyze the

decarboxylation of 2-oxoadipate in vitro, but at a much lower rate than 2-oxoglutarate (PubMed:28435050). Can also convert 2-keto-4-hydroxyglutarate (KHG) and CoA into malyl-CoA (By similarity). Mainly active in the mitochondrion (PubMed:29211711). A fraction of the 2-oxoglutarate dehydrogenase complex also localizes in the nucleus and is required for lysine succinylation of histones: associates with KAT2A on chromatin and provides succinyl-CoA to histone succinyltransferase KAT2A (PubMed:29211711).

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	OGDH also known as alpha-ketoglutarate dehydrogenase or a-ketoglutarate dehydrogenase is an enzyme that plays a significant role in metabolism. It catalyzes the conversion of alpha-ketoglutarate into succinyl-CoA and CO2 in the

	tricarboxylic acid (TCA) cycle also known as the Krebs cycle. The enzyme functions as a part of a multi-enzyme complex and has a molecular mass of approximately 1 MDa. OGDH is expressed in various tissues with higher levels typically found in the mitochondria of cells reflecting its role in cellular respiration.
Biological function summary	OGDH is critical for energy production by enabling the TCA cycle to proceed. It is a component of the alpha-ketoglutarate dehydrogenase complex consisting of multiple subunits which include E1 (OGDH itself) E2 (dihydrolipoamide succinyltransferase) and E3 (dihydrolipoamide dehydrogenase). This complex functions to ensure the proper oxidation of metabolites important for maintaining cellular energy homeostasis. Proper regulation of OGDH activity impacts several metabolic pathways influencing cellular glucose and lipid metabolism.
Pathways	OGDH is integrally involved in the TCA cycle a central metabolic pathway that connects carbohydrate fat and protein metabolism. Alongside related enzymes like pyruvate dehydrogenase (PDH) and isocitrate dehydrogenase (IDH) OGDH contributes to the generation of NADH and FADH2 essential carriers in the electron transport chain. The interplay between these enzymes ensures the smooth functioning of aerobic respiration linking glycolysis and oxidative phosphorylation.
Associated diseases and disorders	OGDH has links to neurodegenerative diseases such as Alzheimer's and Parkinson's disease. Abnormal activity of OGDH can lead to mitochondrial dysfunction a common feature observed in these disorders. The protein connects to pathways involving PDH dysfunction contributing to altered metabolic states seen in these conditions. Research continues to explore the potential of targeting OGDH in therapeutic strategies aimed at improving mitochondrial health and energy metabolism in affected patients.

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

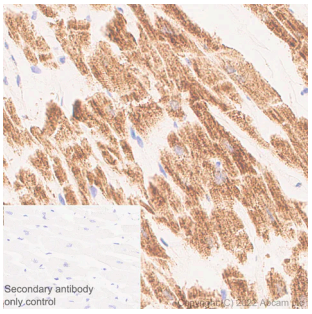
We do not recommend this combination. It is not covered by our product promise.

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.

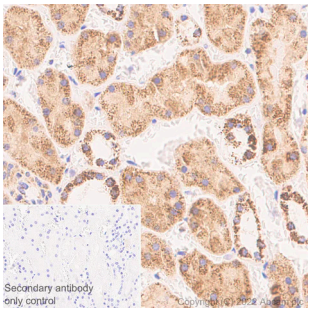
17 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cardiac muscle using rabbit Anti-OGDH antibody

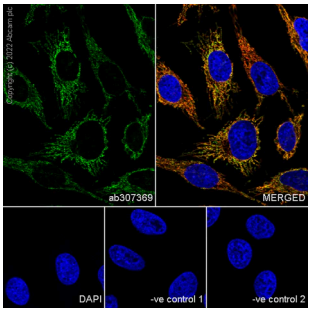
Immunohistochemical analysis of paraffin-embedded Human cardiac muscle tissue lABeling OGDH with ab307369 at 1/2000 (0.232 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Cytoplasmic staining on human cardiac muscle (PMID: 31682939). The section was incubated with ab307369 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) was used. 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-OGDH antibody [EPR27181-78] (ab307369)

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

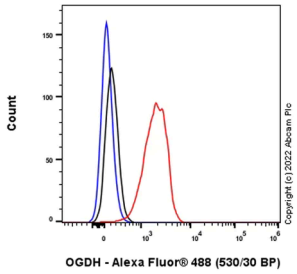
Immunohistochemical analysis of paraffin-embedded Human kidney tissue lABeling OGDH with ab307369 at 1/2000 (0.232 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Cytoplasmic staining on human kidney. The section was incubated with ab307369 for 30 mins at room 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) was used. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunocytochemistry/ Immunofluorescence - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunocytochemistry/ Immunofluorescence staining of HeLa (human cervical adenocarcinoma epithelial cell) using rabbit Anti-OGDH antibody

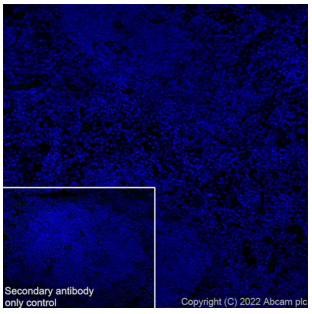
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeABilized HeLa (human cervical adenocarcinoma epithelial cell) cells lABelling OGDH with ab307369 at 1/100 (4.64 ug/ml) dilution, followed by ab150081 Goat Anti-RABbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing mitochondrial staining in HeLa cell line. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. ab33985 Anti-COX IV mouse monoclonal antibody - Mitochondrial Marker was used to counterstain tubulin at 1/1000 1ug/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-OGDH antibody [EPR27181-78] (ab307369)

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

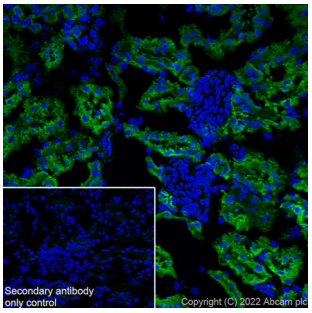
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling OGDH with ab307369 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Frozen sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunohistochemistry (Frozen sections) staining of Mouse spleen (fresh) using rabbit Anti-OGDH antibody

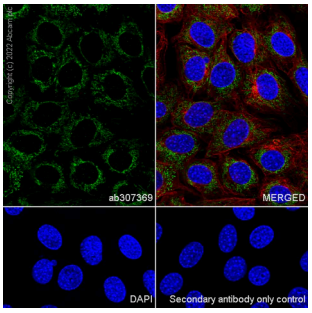
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse spleen (fresh) tissue labeling OGDH with ab307369 at 1/50 (9.28 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Low expression: confocal image showing no staining on mouse spleen (PMID: 35540547). The nuclear counterstain was DAPI (Blue). The section was incubated with ab307369 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). 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 (Frozen sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunohistochemistry (Frozen sections) staining of Mouse kidney (fresh) using rabbit Anti-OGDH antibody

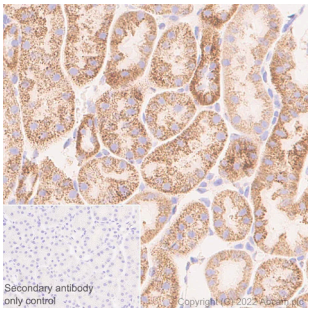
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse kidney (fresh) tissue labeling OGDH with ab307369 at 1/50 (9.28 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Confocal image showing positive staining on mouse kidney. The nuclear counterstain was DAPI (Blue). The section was incubated with ab307369 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). 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.



Immunocytochemistry/ Immunofluorescence - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunocytochemistry/ Immunofluorescence staining of NIH/3T3 (mouse embryonic fibroblast) using rabbit Anti-OGDH antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeABilized NIH/3T3 (mouse embryonic fibroblast) cells lABelling OGDH with ab307369 at 1/100 (4.64 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 mitochondrial staining in NIH/3T3 cell line. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. 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.

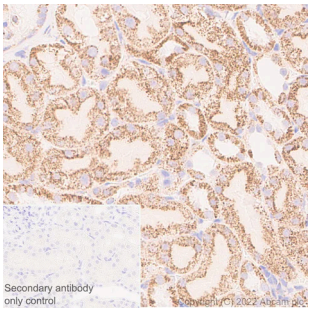


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

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

Immunohistochemical analysis of paraffin-embedded mouse kidney tissue labeling OGDH with ab307369 at 1/2000 dilution (0.232 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).
Cytoplasmic staining on mouse kidney.
The section was incubated with ab307369 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 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.

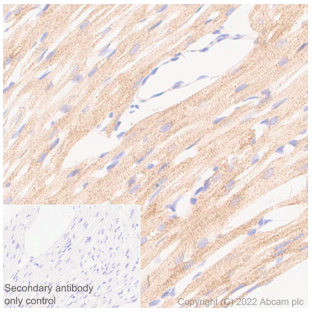


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

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

Immunohistochemical analysis of paraffin-embedded rat kidney tissue labeling OGDH with ab307369 at 1/2000 dilution (0.232 µg/ml) followed by ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).
Cytoplasmic staining on rat kidney.
The section was incubated with ab307369 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 ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

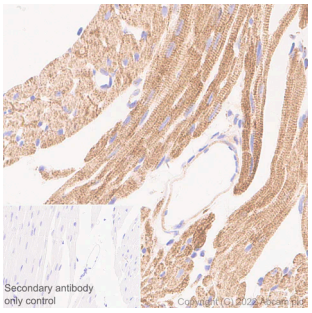
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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cardiac muscle using rabbit Anti-OGDH antibody

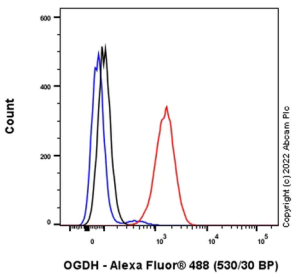
Immunohistochemical analysis of paraffin-embedded Rat cardiac muscle tissue labeling OGDH with ab307369 at 1/2000 (0.232 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Cytoplasmic staining on rat cardiac muscle (PMID: 31682939). The section was incubated with ab307369 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) was used. 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-OGDH antibody [EPR27181-78] (ab307369)

OGDH Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cardiac muscle using rabbit Anti-OGDH antibody

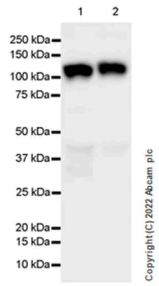
Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labeling OGDH with ab307369 at 1/2000 (0.232 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used. Cytoplasmic staining on mouse cardiac muscle (PMID: 31682939). The section was incubated with ab307369 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) was used. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Flow Cytometry (Intracellular) staining of NIH/3T3 (mouse embryonic fibroblast) using rabbit Anti-OGDH antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling OGDH with ab307369 at 1/500 dilution (0.1ug) (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 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 3 seconds
All lanes:
Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369) at 1/1000 dilution

Lane 1:
Human heart tissue lysate 20 µg

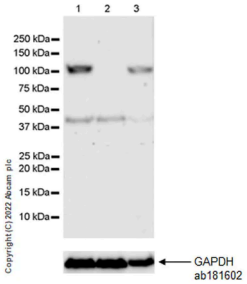
Lane 2:
Human kidney tissue lysate 20 µg

Secondary

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

Observed band size: 116 kDa

Exposure time: 3s



Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369)

Blocking and diluting buffer and concentration: 5% NFDM/TBSTThe identity of the lower MW band at approximately 40 kDa is unknown. Exposure time: 180 seconds
All lanes:
Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369) at 1/1000 dilution

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

Lane 2:
HeLa transfected with siRNA specifically targeti OGDH whole cell lysate 20 µg

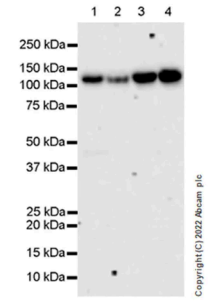
Lane 3:
293T (human embryonic kidney epithelial cell) whole cell lysate 20 µg

Secondary

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

Observed band size: 116 kDa

Exposure time: 180s



Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Exposure time: 180 seconds
All lanes:
Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate 20 µg

Lane 2:
RAW 264.7 (mouse elson murine leukemia virus-induced tumor macrophage) whole cell lysate 20 µg

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate 20 µg

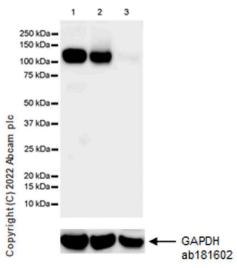
Lane 4:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 20 µg

Secondary

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

Observed band size: 116 kDa

Exposure time: 180s



Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369)

Blocking and diluting buffer and concentration: 5% NFDM/TBSTLow expression tissue: spleen (PMID: 35540547). Exposure time: 15 seconds
All lanes:
Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369) at 1/1000 dilution

Lane 1:
Mouse heart tissue lysate 20 µg

Lane 2:
Mouse kidney tissue lysate 20 µg

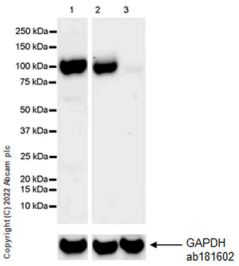
Lane 3:
Mouse spleen tissue lysate 20 µg

Secondary

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

Observed band size: 116 kDa

Exposure time: 15s



Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369)

OGDH Western blot staining using rabbit Anti-OGDH antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBSTLow expression tissue: spleen (PMID: 35540547). Exposure time: 10 seconds
All lanes:
Western blot - Anti-OGDH antibody [EPR27181-78] (ab307369) at 1/1000 dilution

Lane 1:
Rat heart tissue lysate 20 µg

Lane 2:
Rat kidney tissue lysate 20 µg

Lane 3:
Rat spleen tissue lysate 20 µg

Secondary

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

Observed band size: 116 kDa

Exposure time: 10s

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