abcam

ab300510

Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - 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	EPR25443-54
Purification technique	Affinity purification Protein A
Concentration	1.008 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Rat, Mouse
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat, Mouse

Dilution info	-
Notes	-

Not recommended

Species	Human, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Dot

Tested

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Target data

See full target information ALDH1L1

Function	Cytosolic 10-formyltetrahydrofolate dehydrogenase that catalyzes the NADP(+)-dependent conversion of 10-formyltetrahydrofolate to tetrahydrofolate and carbon dioxide (PubMed:19933275, PubMed:21238436). May also have an NADP(+)-dependent aldehyde dehydrogenase activity towards formaldehyde, acetaldehyde, propionaldehyde, and benzaldehyde (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Do Not Freeze

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	ALDH1L1 and ALDH1L2 also known as 10-formyltetrahydrofolate dehydrogenase isoform 1 and 2 are enzymes involved in folate metabolism. ALDH1L1 has a molecular mass of approximately 100 kDa and is prominently expressed in the liver and brain. ALDH1L2 is found mainly in the mitochondria across various tissues. Both enzymes catalyze the conversion of 10-formyltetrahydrofolate to tetrahydrofolate and carbon dioxide playing an important role in cellular metabolism.
Biological function summary	The ALDH1L1 and ALDH1L2 participate in the regulation of one-carbon metabolism which is essential for nucleotide biosynthesis and amino acid interconversion. ALDH1L1 functions as part of a complex with other enzymes involved in folate metabolism facilitating the transfer of one-carbon units. These enzymes assist in maintaining proper cellular levels of folate derivatives fundamental for methylation processes and DNA synthesis.
Pathways	ALDH1L1 and ALDH1L2 contribute to the folate cycle and the related methionine cycle. They participate alongside proteins such as methylenetetrahydrofolate reductase (MTHFR) and methionine synthase both of which play roles in homocysteine regulation. Proper functioning of these pathways is necessary for efficient methyl group transfer important for numerous methylation reactions within cells.
Associated diseases and disorders	Impaired function of ALDH1L1 and ALDH1L2 is associated with metabolic disorders including hyperhomocysteinemia and certain types of cancer. Abnormal activity of these enzymes can cause disruptions in folate metabolism leading to elevated homocysteine levels which in turn are linked to cardiovascular diseases. Additionally studies suggest that alterations in folate pathway enzymes including MTHFR might influence cancer progression by affecting DNA methylation status and gene expression.

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.

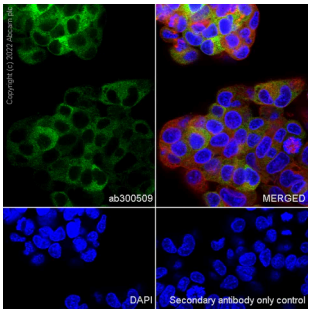
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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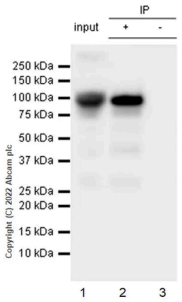
14 product images



Immunocytochemistry/ Immunofluorescence - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunocytochemistry/ Immunofluorescence staining of HepG2 (human hepatocellular carcinoma epithelial cell) using rabbit Anti-ALDH1L1+ALDH1L2 antibody

This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HepG2 (human hepatocellular carcinoma epithelial cell) cells labelling ALDH1L1+ALDH1L2 with ab300509 at 1/50 (10.72 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing cytoplasmic staining in HepG2 cell line 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 2ug/ml dilution.



Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

This data was developed using ab300510, the same antibody clone in a different buffer formulation. ALDH1L1+ALDH1L2 was immunoprecipitated from 0.35 mg Human liver tissue lysate 10 ug with ab300509 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab300509 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution. Lane 1: Human liver tissue lysate 10 ug Lane 2: ab300509 IP in Human liver tissue lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab300509 in human liver tissue lysate. Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds
Lane 1:
Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/30 dilution

Lane 2:

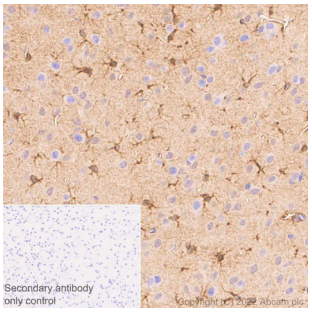
Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/1000 dilution

All lanes:
Human liver tissue lysate at 10 µg

Secondary

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

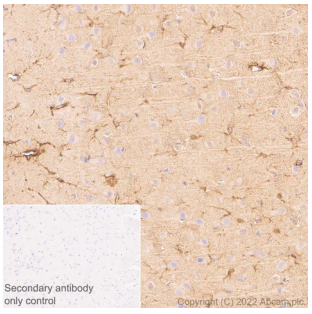
Exposure time: 3s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cerebrum using rabbit Anti-ALDH1L1+ALDH1L2 antibody

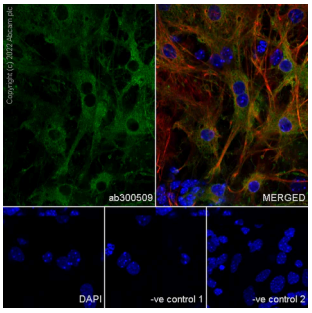
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling ALDH1L1+ALDH1L2 with ab300509 at 1/5000 (0.107 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on astrocytes of mouse cerebrum. The section was incubated with ab300509 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum using rabbit Anti-ALDH1L1+ALDH1L2 antibody

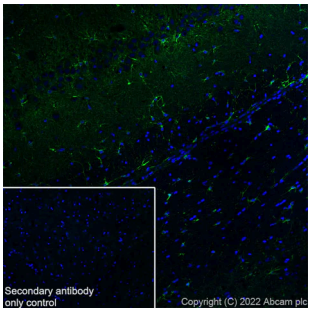
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labeling ALDH1L1+ALDH1L2 with ab300509 at 1/500 (1.072 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on astrocytes of rat cerebrum (PMID: 18171944). The section was incubated with ab300509 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunocytochemistry/ Immunofluorescence - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunocytochemistry/ Immunofluorescence staining of mouse primary neuron/glia cell using rabbit Anti-ALDH1L1+ALDH1L2 antibody

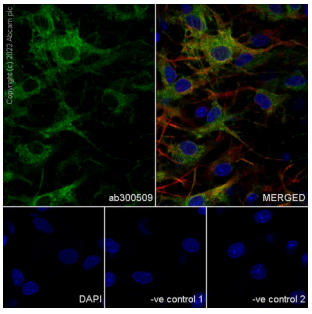
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized mouse primary neuron/glia cell cells labelling ALDH1L1+ALDH1L2 with ab300509 at 1/50 (10.72 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/mL dilution (Green). Confocal image showing cytoplasmic staining in mouse primary astrocyte.Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection. is observed. Anti-Glial Fibrillary Acidic Protein (GFAP) mouse monoclonal antibody was used to counterstain tubulin at 1/50 10ug/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 2ug/mL dilution.



Immunohistochemistry (Frozen sections) - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunohistochemistry (Frozen sections) staining of Rat cerebrum using rabbit Anti-ALDH1L1+ALDH1L2 antibody

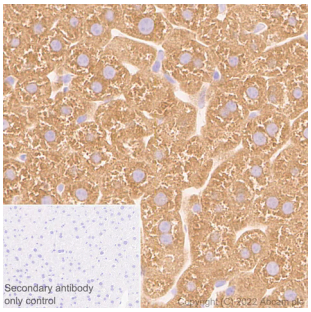
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Rat cerebrum tissue labeling ALDH1L1+ALDH1L2 with ab300509 at 1/100 (5.36 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Positive staining on rat cerebrum 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. Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).



Immunocytochemistry/ Immunofluorescence - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunocytochemistry/ Immunofluorescence staining of rat primary neuron/glia cell using rabbit Anti-ALDH1L1+ALDH1L2 antibody

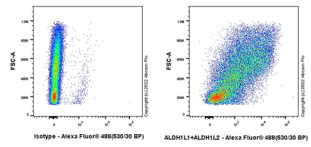
This data was developed using ab300509, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized rat primary neuron/glia cell cells labelling ALDH1L1+ALDH1L2 with ab300509 at 1/50 (10.72 µg/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2µg/mL dilution (Green). Confocal image showing cytoplasmic staining in rat primary astrocyte. Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection. is observed. Anti-Glial Fibrillary Acidic Protein (GFAP) mouse monoclonal antibody was used to counterstain tubulin at 1/50 10µg/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 2µg/mL dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse liver using rabbit Anti-ALDH1L1+ALDH1L2 antibody

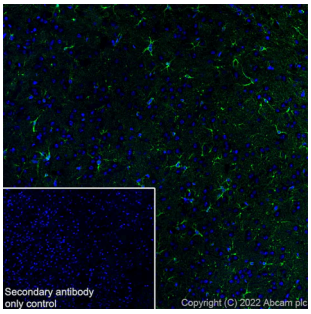
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling ALDH1L1+ALDH1L2 with ab300509 at 1/5000 (0.107 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on mouse liver. The section was incubated with ab300509 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Flow Cytometry (Intracellular) staining of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cell using rabbit Anti-ALDH1L1+ALDH1L2 antibody

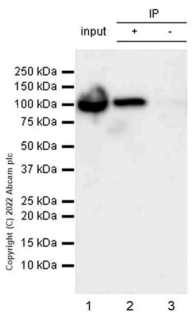
This data was developed using ab300509, the same antibody clone in a different buffer formulation.Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cell cells labelling ALDH1L1+ALDH1L2 with ab300509 at 1/50 dilution (1ug)/ Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left 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-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Immunohistochemistry (Frozen sections) staining of Mouse cerebrum using rabbit Anti-ALDH1L1+ALDH1L2 antibody

This data was developed using ab300509, the same antibody clone in a different buffer formulation.Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse cerebrum tissue labeling ALDH1L1+ALDH1L2 with ab300509 at 1/100 (5.36 ug/ml) dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution (Green). Positive staining on mouse cerebrum 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. Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).



Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

This data was developed using ab300510, the same antibody clone in a different buffer formulation. ALDH1L1+ALDH1L2 was immunoprecipitated from 0.35 mg Mouse brain tissue lysate 10 ug with ab300509 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab300509 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution. Lane 1: Mouse brain tissue lysate 10 ug Lane 2: ab300509 IP in Mouse brain tissue lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab300509 in mouse brain tissue lysate. Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 32 seconds
Lane 1:
Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/30 dilution

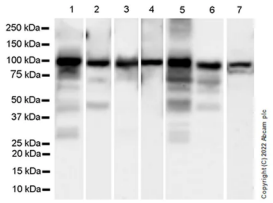
Lane 2:
Immunoprecipitation - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/1000 dilution

All lanes:
Mouse brain tissue lysate at 10 µg

Secondary

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

Exposure time: 32s



Western blot - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Western blot staining using rabbit Anti-ALDH1L1+ALDH1L2 antibody

This data was developed using ab300509, the same antibody clone in a different buffer formulation. Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: Lane 1: 6 seconds; lane 2: 37 seconds; lane 3: 15 seconds; Lane 4: 37 seconds; lanes 5-6: 8 seconds; lane 7: 59 seconds. Bands below 100 kDa may due to degradation (PMID: 29979702).
All lanes:
Western blot - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/1000 dilution

Lane 1:
Human liver tissue lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Rat brain tissue lysate at 20 µg

Lane 5:
Rat liver tissue lysate at 20 µg

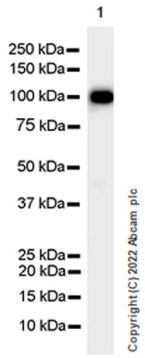
Lane 6:
C8-D1A (mouse cerebellum astrocyte) whole cell lysate at 20 µg

Lane 7:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

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

Observed band size: 100 kDa



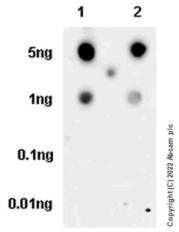
Western blot - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Western blot staining of Human brain tissue lysate using rabbit Anti-ALDH1L1+ALDH1L2 antibody

Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 3 seconds.
All lanes:
Western blot - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - Astrocyte Marker (ab300509) at 1/5000 dilution

Observed band size: 100 kDa

Exposure time: 3s



Dot Blot - Anti-ALDH1L1+ALDH1L2 antibody [EPR25443-54] - BSA and Azide free (ab300510)

ALDH1L1+ALDH1L2 Dot Blot staining using rabbit Anti-ALDH1L1+ALDH1L2 antibody

This data was developed using ab300509, the same antibody clone in a different buffer formulation. Dot blot analysis of ALDH1L1 and ALDH1L2 using ab300509 at 1/1000 dilution followed by Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100,000 dilution. Lane1: His-tagged recombinant mouse ALDH1L1 protein Lane 2: His-tagged recombinant mouse ALDH1L2 protein Blocking and diluting buffer and concentration: 5% NFDM/TBST. Exposure time: 48 seconds.

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