abcam

ab249988

Anti-MAT2A+MAT1A antibody [EPR10496] - 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	EPR10496
Purification technique	Affinity purification Protein A
Concentration	1.042 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

Not recommended

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

WB

Tested

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

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

Target data

See full target information MAT1A

Function	Catalyzes the formation of S-adenosylmethionine from methionine and ATP. The reaction comprises two steps that are both catalyzed by the same enzyme: formation of S-adenosylmethionine (AdoMet) and triphosphate, and subsequent hydrolysis of the triphosphate.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

ab249988 is the carrier-free version of ab177484.

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	MAT2A (methionine adenosyltransferase 2A) and MAT1A (methionine adenosyltransferase 1A) are enzymes that catalyze the formation of S-adenosylmethionine (SAM) from methionine and ATP. MAT2A has a mass of approximately 43 kDa while MAT1A is around 45 kDa. MAT2A is expressed in all tissues except the liver where MAT1A is the more common form. The liver abundantly expresses MAT1A positioning it as a major contributor to hepatic SAM production while MAT2A forms are often seen in peripheral tissues and in proliferating cells.
Biological function summary	MAT2A and MAT1A play roles in one-carbon metabolism and are essential for the synthesis of SAM a universal methyl donor involved in methylation reactions. As part of a catalytic complex these enzymes contribute to the regulation of cellular methylation status and impact polyamine synthesis antioxidant defense and nucleotide synthesis. The activities of MAT2A and MAT1A influence cellular growth and differentiation reflecting their significance in metabolism and gene expression regulation.
Pathways	MAT2A and MAT1A participate in the methionine cycle which intersects with the folate cycle to regulate methylation processes and homocysteine levels. They form part of the trans-sulfuration and transmethylation pathways essential for converting methionine to cysteine and for methyl group transfers. Their activities align with pathways involving methionine synthase which similarly contributes to methyl group transfer and cycling of methionine and folates.
Associated diseases and disorders	Dysfunction in MAT2A and MAT1A associates with liver diseases and certain cancers. In liver disorders imbalance in SAM synthesis due to MAT1A deficiencies can lead to hepatic steatosis and fibrosis. In cancer upregulation of MAT2A supports tumor growth by providing SAM for enhanced methylation and proliferation of cancer cells. Related proteins like glycine N-methyltransferase also connect to these disorders through their roles in SAM metabolism and regulation.

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.

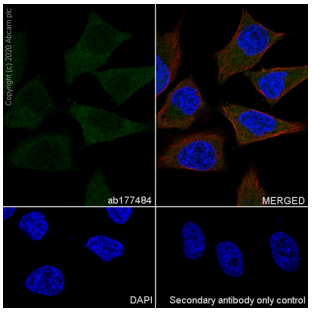
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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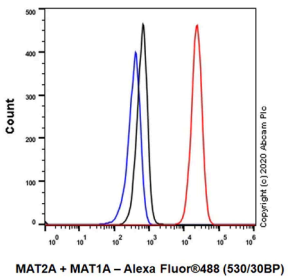
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-MAT2A+MAT1A antibody [EPR10496] - BSA and Azide free (ab249988)

MAT2A+MAT1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MAT2A+MAT1A antibody

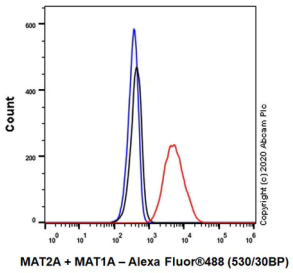
This data was developed using ab177484, the same antibody clone in a different buffer formulation.
Immunocytochemistry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling MAT2A+MAT1A with Purified ab249988 at 1:100 dilution (2.52 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). 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.



Flow Cytometry (Intracellular) - Anti-MAT2A+MAT1A antibody [EPR10496] - BSA and Azide free (ab249988)

MAT2A+MAT1A Flow Cytometry (Intracellular) staining using rabbit Anti-MAT2A+MAT1A antibody

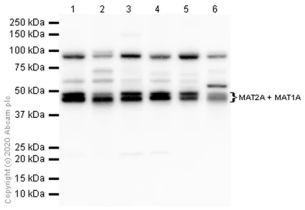
This data was developed using ab177484, the same antibody clone in a different buffer formulation.Intracellular Flow Cytometry analysis of Ramos (Human Burkitt's lymphoma B lymphocyte) cells labeling MAT2A+MAT1A with Purified ab249988 at 1/30 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Flow Cytometry (Intracellular) - Anti-MAT2A+MAT1A antibody [EPR10496] - BSA and Azide free (ab249988)

MAT2A+MAT1A Flow Cytometry (Intracellular) staining using rabbit Anti-MAT2A+MAT1A antibody

This data was developed using ab177484, the same antibody clone in a different buffer formulation.Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling MAT2A+MAT1A with Purified ab249988 at 1/30 dilution (10µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Western blot - Anti-MAT2A+MAT1A antibody [EPR10496] - BSA and Azide free (ab249988)

This data was developed using ab177484, the same antibody clone in a different buffer formulation.
MAT1A: 44kDa ; MAT2A: 46kDa

Blocking Buffer and concentration: 5% NFDM/TBST

All lanes:
Western blot - Anti-MAT2A + MAT1A antibody [EPR10496] (ab177484) at 1/1000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

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

Lane 3:
Ramos (Human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 4:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 5:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 20 µg

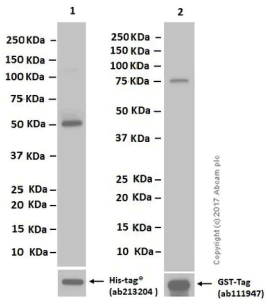
Lane 6:
C6 (Rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

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

Predicted band size: 44 kDa

Observed band size: 44 kDa, 46 kDa



Western blot - Anti-MAT2A+MAT1A antibody [EPR10496] - BSA and Azide free (ab249988)

This data was developed using ab177484, the same antibody clone in a different buffer formulation.
MAT1A: Full-length recombinant protein (aa1-395) with His-Tag was made in-house.

MAT2A: Full-length recombinant protein (aa1-364) with GST-Tag was from Abnova company.

Blocking and dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1: 1 second. Lane 2: 3 seconds.

All lanes:
Western blot - Anti-MAT2A + MAT1A antibody [EPR10496] (ab177484) at 1/10000 dilution

Lane 1:
Full-length Human MAT1A recombinant protein with His-Tag at 0.015 µg

Lane 2:
Full-length Human MAT2A recombinant protein with GST-Tag at 0.015 µg

Secondary

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

Predicted band size: 44 kDa

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