abcam

ab263865

Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free

Recombinant | RabMAb | KO Validated

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	EPR22841-78
Purification technique	Affinity purification Protein A
Concentration	1.027 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse, Human
Dilution info	-

Notes	-

WB

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Target data

See full target information ABCC1

Function	Mediates export of organic anions and drugs from the cytoplasm (PubMed:10064732, PubMed:11114332, PubMed:16230346, PubMed:7961706, PubMed:9281595). Mediates ATP-dependent transport of glutathione and glutathione conjugates, leukotriene C4, estradiol-17-beta-o-glucuronide, methotrexate, antiviral drugs and other xenobiotics (PubMed:10064732, PubMed:11114332, PubMed:16230346, PubMed:7961706, PubMed:9281595). Confers resistance to anticancer drugs by decreasing accumulation of drug in cells, and by mediating ATP- and GSH-dependent drug export (PubMed:9281595). Hydrolyzes ATP with low efficiency (PubMed:16230346). Catalyzes the export of sphingosine 1-phosphate from mast cells independently of their degranulation (PubMed:17050692). Participates in inflammatory response by allowing export of leukotriene C4 from leukotriene C4-synthesizing cells (By similarity). Mediates ATP-dependent, GSH-independent cyclic GMP-AMP (cGAMP) export (PubMed:36070769). Thus, by limiting intracellular cGAMP concentrations negatively regulates the cGAS-STING pathway (PubMed:36070769). Exports S-geranylgeranyl-glutathione (GGG) in lymphoid cells and stromal compartments of lymphoid organs. ABCC1 (via extracellular transport) with GGT5 (via GGG catabolism) establish GGG gradients within lymphoid tissues to position P2RY8-positive lymphocytes at germinal centers in lymphoid follicles and restrict their chemotactic transmigration from blood vessels to the bone marrow parenchyma (By similarity). Mediates basolateral export of GSH-conjugated R- and S-prostaglandin A2 diastereomers in polarized epithelial cells (PubMed:9426231).

Storage

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

Notes

ab263865 is the carrier-free version of ab260038.

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	MRP1 also known as ABCC1 is a transporter protein with a mass of approximately 190 kDa. This protein belongs to the ATP-binding cassette (ABC) transporter family. MRP1 actively exports a variety of substrates from cells by hydrolyzing ATP to ADP and inorganic phosphate. You can find MRP1 expressed in many tissues including the lung testis and kidney. It helps in cellular detoxification by exporting organic anions and other conjugated metabolites.
Biological function summary	This protein functions as an important determinant of multidrug resistance in cancer treatment. MRP1 can form part of a larger protein complex that includes other transporters like MRP2. Through its activity MRP1 protects tissues from toxic substances by transporting them out of the cell. Its role in transporting glutathione-conjugated compounds highlights its importance in cellular defense mechanisms against oxidative stress and xenobiotics.
Pathways	MRP1 participates in the glutathione metabolism and the xenobiotic efflux pathways. Both pathways involve cellular detoxification and the accumulation of anomalies can cause harmful effects in the body. MRP1 works with proteins such as GSTP1 which conjugates toxic substances with glutathione preparing them for export by MRP1. This coordination ensures efficient detoxification and protection of cells from damage.
Associated diseases and disorders	MRP1 has associations with several conditions particularly drug resistance in various cancers and chronic obstructive pulmonary disease (COPD). In cancer MRP1 overexpression often results in reduced treatment efficacy due to chemotherapy drugs being expelled from the cell helping to resist their cytotoxic effects. Research indicates a connection between MRP1 and P-glycoprotein (ABCB1) in cancer drug resistance pointing to a broader resistive mechanism in which multiple transporters are involved.

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.

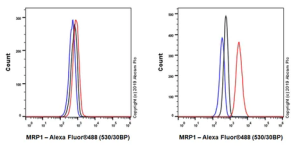
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

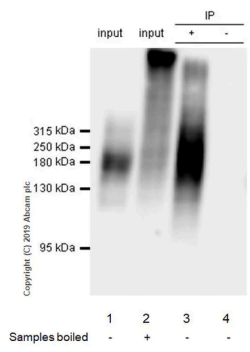


Flow Cytometry (Intracellular) - Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free (ab263865)

MRP1 Flow Cytometry (Intracellular) staining using rabbit Anti-MRP1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized HEK-293 (human embryonic kidney epithelial cell, Left) / A549 (human lung carcinoma epithelial cell, Right) cells labelling MRP1 with ab260038 at 1/600 (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, ab150077) at 1/2000 dilution was used as the secondary antibody.
Negative control: HEK-293 (PMID: 29615646, PMID:12235150).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab260038).



Immunoprecipitation - Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free (ab263865)

MRP1 was immunoprecipitated from 0.35 mg A549 (human lung carcinoma epithelial cell) whole cell lysate with ab260038 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab260038 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/1000 dilution.
Lane 1: A549 (human lung carcinoma epithelial cell) whole cell lysate 10ug

Lane 2: ab260038 IP in A549 (human lung carcinoma epithelial cell) whole cell lysate, boiled 10ug

Lane 3: A549 whole cell lysate

Lane 4: Rabbit monoclonal IgG (ab172730) instead of ab260038 in A549 whole cell lysate

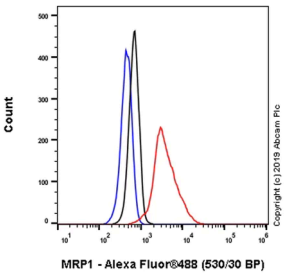
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab260038).
All lanes:
Immunoprecipitation - Anti-MRP1 antibody [EPR22841-78] (ab260038)

Predicted band size: 171 kDa

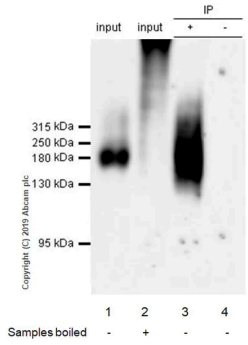
Observed band size: 190 kDa



Flow Cytometry (Intracellular) - Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free (ab263865)

MRP1 Flow Cytometry (Intracellular) staining using rabbit Anti-MRP1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling MRP1 with ab260038 at 1/600 (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, ab150077) at 1/2000 dilution was used as the secondary antibody. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab260038).



Immunoprecipitation - Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free (ab263865)

MRP1 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate with ab260038 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab260038 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/1000 dilution.
Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10ug

Lane 2: ab260038 IP in NIH/3T3 (mouse embryonic fibroblast) whole cell lysate, boiled 10ug

Lane 3: NIH/3T3 whole cell lysate

Lane 4: Rabbit monoclonal IgG (ab172730) instead of ab260038 in NIH/3T3 whole cell lysate.

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

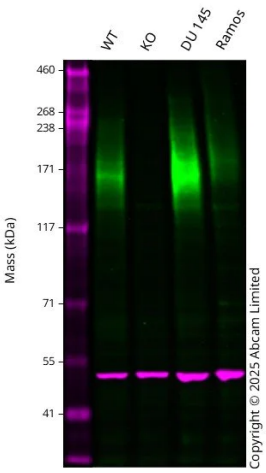
Exposure time: 75 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab260038).

All lanes:
Immunoprecipitation - Anti-MRP1 antibody [EPR22841-78] (ab260038)

Predicted band size: 171 kDa

Observed band size: 190 kDa



Western blot - Anti-MRP1 antibody [EPR22841-78] - BSA and Azide free (ab263865)

MRP1 Western blot staining using rabbit Anti-MRP1 antibody

This data was developed using ab260038, the same antibody clone in a different buffer formulation. Western blot: Rabbit Monoclonal [EPR22841-78] to MRP1 ab260038 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin (ab7291) loading control staining at 1/20,000 dilution, shown in magenta.
A band was observed at 172 kDa in Wild-type MCF7 cell lysates with no signal observed at this size in abCC1 knockout MCF7 cell line.

To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3pc Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.

Secondary antibodies used were Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - Anti-MRP1 antibody [EPR22841-78] (ab260038) at 1/1000 dilution

Lane 1:
Wild-type MCF7 at 20 µg

Lane 2:
ABCC1 knockout MCF7 at 20 µg

Lane 2:
Western blot - Human ABCC1 knockout MCF7 cell line (ab286378) at 20 µg

Lane 3:
DU 145 at 20 µg

Lane 4:
Ramos at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 172 kDa

Observed band size: 172 kDa

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