abcam

ab24102

Anti-MRP1 antibody [MRPm5]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: PBS, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human ABCC1 aa 950 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link P33527
Clone number	MRPm5
Purity	Tissue culture supernatant
Specificity	MRPm5 reacts with an internal epitope of MRP1, a 180-195 kD transmembrane transporter protein overexpressed in various human non-P-glycoprotein MDR tumor cell lines. MRPm5 does not cross-react with the human MDR1 and MDR3 gene products.
Epitope	MRP1 antibody reacts with an internal epitope of MRP1.

Reactivity data

Flow Cyt

Expected

Species	Human
Dilution info	-

Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

WB

Expected

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

IHC-P

Expected

Species	Human
Dilution info	-
Notes	Perform heat mediated antigen retrieval in citrate buffer (pH 6.0) for 10 minutes before commencing with IHC staining protocol.

ICC/IF

Expected

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

IHC-Fr

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
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 duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

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.

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