abcam

ab24107

Anti-MRP5 antibody [M5II-54]

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.3 Preservative: 0.1% Sodium azide Constituents: 0.7% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human ABCC5 aa 700-950. The exact immunogen used to generate this antibody is proprietary information. Database link O15440
Clone number	M5II-54
Purity	Tissue culture supernatant
Specificity	ab24107 does not cross-react with the human MDR1, MRP1, MRP2 or MRP3 gene products
Epitope	ab24107 reacts with an internal epitope of MRP5. ab24107 does not cross-react with the human MDR1, MRP1, MRP2 or MRP3 gene products
Purification notes	Antibody containing supernatant has been concentrated and filtered through a 0.22 micron filter and is serum free.

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	1 µg for 10^6 Cells
Notes	ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information ABCC5

Function

ATP-dependent transporter of the ATP-binding cassette (ABC) family that actively extrudes physiological compounds, and xenobiotics from cells. Mediates ATP-dependent transport of endogenous metabolites such as cAMP and cGMP, folic acid and N-lactoyl-amino acids (in vitro) (PubMed:10893247, PubMed:12637526, PubMed:12695538, PubMed:15899835, PubMed:17229149, PubMed:25964343). Also acts as a general glutamate conjugate and analog transporter that can limit the brain levels of endogenous metabolites, drugs, and toxins (PubMed:26515061). Confers resistance to the antiviral agent PMEA (PubMed:12695538). Able to transport several anticancer drugs including methotrexate, and nucleotide analogs in vitro, however it does with low affinity, thus the exact role of ABCC5 in mediating resistance still needs to be elucidated (PubMed:10840050, PubMed:12435799, PubMed:12695538, PubMed:15899835). Acts as a heme transporter required for the translocation of cytosolic heme to the secretory pathway (PubMed:24836561). May play a role in energy metabolism by regulating the glucagon-like peptide 1 (GLP-1) secretion from enteroendocrine cells (By similarity).

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

Notes

ab24107 has potential value for detection of MRP5-mediated drug-resistance in human tumor samples

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	MRP5 also known as ABCC5 is part of the ATP-binding cassette (ABC) transporter family. This protein is approximately 162 kDa in mass and is involved in the transport of various molecules across cellular membranes. MRP5 is expressed widely in human tissues with significant expression seen in the brain lung and cardiovascular tissues. It acts as an organic anion transporter and has roles in cellular detoxification and the efflux of cyclic nucleotides and drugs which makes it relevant to pharmacology and chemotherapy resistance.
Biological function summary	MRP5 functions by transporting cyclic nucleotides such as cGMP and cAMP out of cells regulating their intracellular levels. It plays a role in modulating signal transduction processes and is also involved in the regulation of nitric oxide and the maintenance of vascular homeostasis. MRP5 does not form a complex with other proteins for its primary transport function operating largely as an independent transporter in cellular detoxification.
Pathways	MRP5 contributes significantly to the cAMP and cGMP signaling pathways where it influences vascular tone and cardiac function. It associates with proteins such as cGMP-dependent protein kinase through these pathways. Its activity in cyclic nucleotide transport impacts various signal transduction mechanisms that are essential for cell growth and communication.
Associated diseases and disorders	MRP5 links to conditions like pulmonary hypertension and some forms of drug-resistant cancers. Its role in cyclic nucleotide efflux can affect vascular responses implicating it in pulmonary hypertension's pathogenesis. In the context of cancer increased MRP5 expression can lead to decreased effectiveness of chemotherapeutic agents. This resistance shares a connection with other ABC transporters involved in effluxing drugs out of cells such as P-glycoprotein. Understanding MRP5's role and regulation can offer insights into disease mechanisms and potential therapeutic targets.

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.

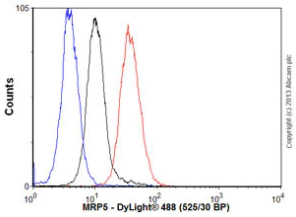
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1 product image



Flow Cytometry - Anti-MRP5 antibody [M5II-54] (ab24107)

MRP5 Flow Cytometry staining using rat Anti-MRP5 antibody

Overlay histogram showing Y79 cells stained with ab24107 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab24107, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rat IgG (H&L) (ab98386) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rat IgG2a [aRTK2758] (ab18450, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in Y79 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

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