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Product Information

Anti-P-Glycoprotein (MDR) antibody, Mouse monoclonal
Clone F4, purified from hybridoma cell culture

Product Number **SAB4200775**

Product Description

Anti-P-Glycoprotein (MDR) antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the hybridoma F4 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a mixture of human and hamster drug-resistant whole cells and crude plasma membranes.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Product Number ISO2). The antibody is purified from culture supernatant of hybridoma cells.

Anti-P-Glycoprotein (MDR) antibody, Mouse monoclonal recognizes an epitope located at the N-terminal region of P-glycoprotein (Pgp), at the third extracellular loop of the molecule,[1] also known as ABCB1 protein. The antibody specifically detects MDR1 P-glycoprotein, but does not recognize MDR3.[1] Anti-P-Glycoprotein (MDR) cross reacts with MDR1 P-glycoprotein from human and hamster origin.[1-2] The antibody may be used in several immunochemical techniques, including immunoblotting,[1-3] immunoprecipitation,[1-2] immunocytochemistry,[1,3-4] immunohistochemistry,[1] cellular ELISA,[1] flow cytometry (FACS), and cell surface RIA.[1]

Multidrug resistance protein 1 (MDR1), also known as ATP-binding cassette sub-family B member 1 (ABCB1) or Phosphoglycoprotein (P-glycoprotein), is a member of the ATP-binding cassette (ABC) transporters, super family. MDR1 functions as an ATP-dependent efflux pump and was the first discovered membrane protein.[4] MDR1 is ubiquitously expressed in kidneys, intestines, placenta, liver, adrenal glands, and blood-brain barrier (BBB) cells, where it normally functions to extrude certain xenobiotics and protect cells from toxicants.[4-5] MDR1 has been found to be overexpressed in different cancer types including: leukemias, lymphomas, myelomas, breast cancer, ovarian cancer, gastrointestinal stromal tumor (GIST), non-small cell lung cancer (NSCLC), fallopian tube, colon, renal, and thyroid cancers.[4-5] Furthermore, extracellular fluids obtained from cancer patients, such as malignant ascites and serum, were found to contain soluble MDR1, whereas those from normal healthy individuals didn't express any detectable level of MDR1.[2]

Overexpression of MDR1 plays an important role in prompting multidrug resistance in cancer chemotherapy causing high resistance of cancerous cells to a wide variety of substrate anticancer drugs (such as anthracyclines [doxorubicin (DOX), daunorubicin], vinca alkaloids, taxanes, epipodophyllotoxins, imatinib mesylate, antibiotics, HMG coenzyme A, steroid hormones, antihistaminics, antiarrhythmics, calcium channel blockers, and HIV protease inhibitors.[3-6] Several studies aimed to inhibit the efflux function of the MDR1 transporter by using a multikinase inhibitor such as motesanib or gene therapy approach in order to reverse the MDR1-mediated multidrug resistance in cancer treatment.[6-8]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunohistochemistry: a working concentration of 10-20 μg/mL is recommended using formalin-fixed, paraffin-embedded human kidney sections.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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7. Binkhathlan Z. and Lavasanifar A., *Curr Cancer Drug Targets.*, **13**, 326-46 (2013).
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