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Product Information

Anti-MRP1 antibody ,Mouse monoclonal
clone QCRL-4, purified from hybridoma cell culture

Product Number **M9192**

Product Description

Monoclonal Anti-MRP1 (mouse IgG1 isotype) is derived from the QCRL-4 hybridoma produced by the fusion of mouse myeloma cells (SP2/O) and splenocytes from mice immunized with non-denatured membrane preparations of human H69AR small cell lung cancer cell line, which highly expresses MRP1.[1-4] The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2). The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-MRP1 recognizes human MRP1 (approx. 190 kDa). The antibody does not cross-react with the human MDR1 and MDR3 proteins. The epitope resides within the second nucleotide-binding domain of human MRP1 between amino acids 1294-1531.[4] The antibody may be used in various techniques including immunoblotting (dot-blot), flow cytometry, immunoprecipitation, and transport inhibition. [2-4]

Many cancer cells treated with chemotherapy agents develop multidrug resistance (MDR). As a result, several different proteins are upregulated in the resistant cells. These proteins include P-glycoprotein (PgP/P-170/MDR1, an efflux pump), lung resistance related protein (LRP, a major vault protein), topoisomerase II, glutathione S-transferase, and the multidrug resistance associated protein (MRP, an efflux pump).[5]

The MRP protein belongs to the ABC (ATP-binding cassette) superfamily of transporter proteins that share a common molecular architecture. These transporters are able to transport a wide range of different drugs out of the cells.[6, 7] The MRP subfamily of ABC transporters consists of seven different members of which six are able to transport amphipathic anions. MRP1, 2, and 3 have a similar structure with the ability to transport glutathione and glucuronate conjugates. MRP4 and MRP5 share more structure similarity with each other than with MRP1, 2, and 3. MRP4 and MRP5 also have the ability to transport cyclic nucleotides.[8] Heredity deficiency of some of the MRP members may lead to severe disorders. For example, heredity deficiency of MRP2 results in Dubin-Johnson syndrome, while heredity deficiency of MRP6 results in pseudoxanthoma elasticum, a multisystem disorder affecting skin, eyes, and blood vessels.[8] Monoclonal antibodies to MRP1 may be used to study the role of MRP1 in the multidrug resistance process.

Reagent

Monoclonal Anti-MRP1 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody concentration: Approx. 2 mg/ml

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at −20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

For flow cytometry, a working antibody concentration of 0.5-2 μg/ml is recommended using H69AR cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilution by titration.

References

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