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Product Information

Monoclonal Anti-MUC1, Clone 1D1
produced in mouse, purified immunoglobulin

Catalog Number **SAB4200017**

Product Description

Monoclonal Anti-MUC1 (mouse IgG1 isotype) is derived from the hybridoma 1D1 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with semi-purified MUC1 (Gene ID 4582) from pleural effusion of a breast cancer patient.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-MUC1 recognizes human MUC1. The antibody may be used in several immunochemical techniques including immunoblotting (~160-500 kDa, due to its high glycosylation it appears as protein ladder) ELISA, radioimmunoassay, immunoprecipitation and immunocytochemistry.[1]

Mucins are heavily glycosylated proteins found on both normal and malignantly transformed epithelial cells. They are preferentially expressed by a variety of adenocarcinomas, including breast, prostate, ovarian and pancreatic carcinomas as well as malignant plasma cells of multiple myelomas.[2] A member of this family, MUC1 encodes a membrane bound glycosylated phosphoprotein. In humans, the *MUC1* mucin gene present on chromosome 1q21-24 spans between 4-7 kb and contains seven exons that produce several different alternatively spliced variants. The major expressed form of MUC1 uses all seven exons and is a type I transmembrane glycoprotein with a unique extracellular domain consisting of a 20 amino acid variable number tandem repeat (VNTR) domain.[3] The protein is anchored to the apical surface of many epithelia by a transmembrane domain, with the degree of glycosylation varying with cell type. The protein serves a protective function by binding to pathogens and also functions in a cell signaling capacity. Overexpression, aberrant intracellular localization, and changes in glycosylation of this protein have been associated with carcinomas.[1,3] Considering the unique biochemical features and accessible location on the membrane, MUC1 appears to be a suitable candidate for single chain antibody mediated targeted therapy in MUC1 expressing cancers.

Reagent

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

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 Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, 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

Immunoblotting: a working antibody concentration of 0.5-1.0 µg/mL is recommended using T47D cell lysates.

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

References

1. Rubinstein, D.B., et al., *Int. J. Cancer,* **124**, 46-54 (2009).
2. Hollingsworth, M.A., et al., *Nat. Rev. Cancer*, **4**, 45-60 (2004).
3. Singh, R., and Bandyopadhyay, D., *Cancer Biol. Ther.,* **6**, 481-486 (2007).

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