MUC-4

Concentrated Monoclonal Antibody
902-326-110817

BIOCARE MEDICAL

Catalog Number:	**ACR 326 C**
Description:	1.0 ml, concentrated
Dilution:	1:200
Diluent:	Van Gogh Yellow

Intended Use:
For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:
MUC-4 (also called sialomucin complex) is a membrane-bound mucin that has been suggested to be implicated in malignant progression in humans and rats. The MUC-4 gene is expressed in various normal epithelial tissues of endodermic origin and carcinomas. In the respiratory tract, over-expression of the membrane mucin has been observed during malignant progression of mammary tumors in both humans and rats, suggesting that deregulation of MUC-4 might facilitate development of these malignancies. Studies have indicated that over-expression of MUC-4 results in suppression of both cell adhesion and immune killing of tumor cells. MUC-4 transcripts have been detected in normal respiratory epithelium and lung. Other studies have shown that MUC-4 is a very specific (100%) and sensitive (91.4%) marker of lung adenocarcinomas and is negative for mesotheliomas. MUC-4 expression in invasive ductal carcinoma of the pancreas is an independent factor for poor prognosis and predicts outcome in the patient.

Principle of Procedure:
Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, an enzyme labeled polymer is added to bind to the primary antibody. The detection of the bound antibody is evidenced by a colorimetric reaction.

Source: Mouse monoclonal
Species Reactivity: Human
Clone: 8G-7
Isotype: IgG1/kappa
Total Protein Concentration: ~10 mg/ml. Call for lot specific Ig concentration.
Epitope/Antigen: MUC-4
Cellular Localization: Cell membrane/cytoplasm
Positive Tissue Control: Lung cancer
Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)
Supplied As: Buffer with protein carrier and preservative
Storage and Stability:
Store at 2ºC to 8ºC. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Staining Protocol Recommendations:
Peroxide Block: Block for 5 minutes with Biocare's Peroxidazed 1.
Pretreatment: Perform heat retrieval using Biocare's Diva Decloaker. Refer to the Diva Decloaker data sheet for specific instructions.
Protein Block (Optional): Incubate for 5-10 minutes at RT with Biocare's Background Punisher.
Primary Antibody: Incubate for 30 minutes at RT.
Probe: N/A
Polymer: Incubate for 30 minutes at RT with a secondary-conjugated polymer.
Chromogen: Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Biocare's Warp Red.
Counterstain:
Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:
This antibody has been standardized with Biocare's MACH 2 detection system. Use TBS buffer for washing steps.

Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:
1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN_3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (7)
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (8)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at http://biocare.net.

Technical Support:
Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Zhang S, *et al.* Selection of tumor antigens as targets for immune attack using immunohistochemistry: protein antigens. Clin Cancer Res. 1998 Nov;4(11):2669-76.
2. Llinares K, *et al.* Diagnostic value of MUC4 immunostaining in distinguishing epithelial mesothelioma and lung adenocarcinoma. Mod Pathol. 2004 Feb;17(2):150-7.
3. Saitou M, *et al.* MUC4 expression is a novel prognostic factor in patients with invasive ductal carcinoma of the pancreas. J Clin Pathol. 2005 Aug;58(8):845-52.
4. Price-Schiavi SA, *et al.* Rat Muc4 (sialomucin complex) reduces binding of anti-ErbB2 antibodies to tumor cell surfaces, a potential mechanism for Herceptin resistance. Int J Cancer. 2002 Jun 20;99(6):783-91.
5. Komatsu M, *et al.* Muc4/sialomucin complex, an intramembrane modulator of ErbB2/HER2/Neu, potentiates primary tumor growth and suppresses apoptosis in a xenotransfplanted tumor. Oncogene. 2001 Jan 25;20(4):461-70.
6. Idris N, Carraway KL. Sialomucin complex (Muc-4) expression in the rat female reproductive tract. Biol Reprod. 1999 Dec;61(6):1431-8.
7. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
8. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

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