FabGennix Inc.
INTERNATIONAL

New Item

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Antibodies to deglycosylated Mucin protein

Anti-Mucin Antibodies (MUC-100P and MUC-101AP).

Mucin 1 (Muc1) is a large transmembrane glycoprotein that is overexpressed by a majority of carcinomas. High expression of MUC1 is associated with aggressive tumors, and MUC1 antigen is used as a marker to monitor disease progression in breast cancer patients. Mucin is a mucopolysaccharidic matrix, its expression is widely varied during cell differentitiaon and inflammation. The extent of Glycosylation determines essential biological functions of epithelial mucins in conditions of health and disease. The mucin MUC1 is a candidate for use in specific immunotherapy against breast cancer. Mucin also protects the covering of gut epithelium where it is protected from proteolytic digestion by extensive glycosylation on the mucin molecule (1). The quantity and quality of mucins are also affected in inflammatory bowel disease (IBD) both because of a reduction in the number of goblet cells and a decrease in the number of sugar residues per oligosaccharide side chain (2). There are several mucin phenotypes examined in the gut (mucin 1-mucin 6), the expression of these mucin in various type of minute well-differentiated type adenocarcinoma has been examined for diagnostic purposes (3). The mucin knockout mice showed significant decrease in cholesterol uptake with no effect on fatty acif absorption (4).
In breast cancer, overexpression of MUC1 suggest to contributes to cancer progression and metastasis. It has been shown that naturally occurring cancer preventative, indole-3-carbinol (I3C), inhibits the expression of MUC1 in breast cancer estrogen responsive and non-responsive cells (5). Unlike normal tissue where MUC exists as heavily glycosylated form, the disease- or tumor-associated MUC molecules are underglycosylated. Such underglycosylation of the core protein in cancer tissues exposes new epitopes on the cell surface that are unique to cancer tissues (6).

Mucins are large glycoproteins characterized by mucin domains that show little sequence conservation and that are rich in the amino acids Ser, Thr and Pro. The sequentially-repeating nature of the core protein 20 a.a. polypeptide chain on the surface of malignant cells makes it a potential target for immunotherapy. We have used the 20 a.a repeat sequence from the mucin protein to generate Mucin1 antibodies. This antibody was generated using a 60 mer peptide representing a repeat sequence of 20 mino acids. The antibody to this peptide recognize the mucin core protein, it is expected that this antibody eill recognize only the core protein when it is exposed due to under glyclosylation as seen in various carcinomas. FabGennix Inc. has generated epitope specific rabbit antibodies against many targets for cancer detection. These antibodies have been fully characterized for use in imminohistochemistry and western blotting applications. Limited quantities of the antigenic blocking peptide for BMP2 antibodies is also available.

Catalog #	Host	Description	Antigen/ control	Cross reactivity	Price
MUC-100P	Rabbit	Anti-mucin 1antibody	Peptide antibody	R, M, H	US $205
MUC-101AP	Rabbit	Affinity purified Anti-mucin1Antibody	Peptide antibody	R, M, H	US $235
P-MUC101	n/a	Antigenic blocking peptide for mucin	Antigenic blocking peptide	n/a	$ 95.00
PC-MUC1	n/a	Tissue section for positive staining	n/a	H, M, R	5 slides (inquire)

R = rat; M = mouse; H = humans; R = rabbit * Actual volume is 103-110 µl; WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d, not determine.

Immunogen: Synthetic peptide representing a 20 amino acid repeat sequence from mucin 1. The 60 amino aicd long peptide is conjugated to KLH and was used to immunize rabbits. The 20 amino acid repeat sequence used was (VTS APD TRP APG STA PPA HG).

Concentration: MUC-100P = neat serum; MUC-101AP = IgG connetration 0.5-0.75 mg/ml.

Applications: ELISA: Antibody dilution 1:10,000 for ELISA or DOT blot assy. W.B: n/a; IMM: n.d; IHC dilution at 1:200.

Reactivity The antibodies MUC-100P and MUC-101AP labels underglycosylated mucin. Further characterization of extent of underglycosylaiton is not done.

Protocols: Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody is provided with the product specification sheet, however, FabGennix Inc. recommends investigators to optimize conditions.

Form/Storage: The antiserum is supplied in antibody stabilization buffer with preservatives. For long-term storage of antibody, store at -20°C FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi-use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µ filter after every use for long-term storage.

References:

1. Montagne L, Piel C, Lalles JP. Nutr Rev. 2004 Mar;62(3):105-14.
2. Shaoul R, Okada Y, Cutz E, Marcon MA. J Pediatr Gastroenterol Nutr. 2004 May;38(5):488-493
3. Shiroshita H, Watanabe H, Ajioka Y, Watanabe G, Nishikura K, Kitano S. Pathol Int. 2004 May;54(5):311-21
4. Wang HH, Afdhal NH, Gendler SJ, Wang DQ. Am J Physiol Gastrointest Liver Physiol. 2004 Apr 8 [Epub ahead of print]
5. Lee IJ, Han F, Baek J, Hisatsune A, Kim KC. Int J Cancer. 2004 May 10;109(6):810-6.
6. Wittel UA, Goel A, Varshney GC, Batra SK. Front Biosci. 2001 Oct 1;6:D1296-310.

*Note: Before using, briefly centrifuge to collect liquid at the bottom of the tube. After thawing qlioquot antibody in smaller volumes to store at -20oC. Repeated freezing and thawing may result in appearance of higher molecular weight immunoreactive bands.

* For users who may require large amounts of MUC-100P and MUC-101AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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