MUC5AC (MRQ-19)

For In Vitro Diagnostic Use (IVD)
English: Instructions For Use

Presentation
Anti-MUC5AC is a mouse monoclonal antibody from ascites diluted in tris buffered saline, pH 7.3-7.7, with protein base, and preserved with sodium azide.

Applications
Mucins are high molecular weight glycoproteins which constitute the major component of the mucus layer that protects the gastric epithelium from chemical and mechanical aggressions. In humans, at least 14 mucin genes have been identified that code for the mucin proteins. They are designated as MUC1, MUC2, MUC3, MUC4, MUC5AC, MUC5B , MUC6 , MUC7, MUC8, MUC9, MUC11, MUC12, MUC13 and MUC16.

Mucin genes are expressed in a regulated cell- and tissue-specific manner. The stomach provides a good example of such differential expression of mucin genes. MUC1 is detected in mucous cells of the surface epithelium and neck region of the gastric antrum, as well as in pyloric glands and oxynthic glands of the body region. MUC5AC is highly expressed in foveolar epithelium of both body and antrum, whereas MUC6 protein expression is limited to mucous neck cells of the body and pyloric glands of the antrum. The mucin expression pattern of gastric carcinoma is heterogeneous. It includes mucins normally expressed in gastric mucosa (MUC1, MUC5AC and MUC6) and de novo expression of the intestinal mucin MUC2.

The heterogeneous pattern of mucin expression, including the expression of the intestinal mucin MUC2, may provide new insights into the differentiation pathways of gastric carcinoma. Pinto-de-Sousa et al. have shown in a comprehensive study of gastric carcinomas evaluated for expression of several mucins (MUC1, MUC2, MUC5AC and MUC6) that: (1) mucin expression is associated with tumor type (MUC5AC with diffuse and infiltrative carcinomas and MUC2 with mucinous carcinomas) but not with the clinico-biological behavior of the tumors; and (2) mucin expression is associated with tumor location (MUC5AC with antrum carcinomas and MUC2 with cardia carcinomas), indirectly reflecting differences in tumor differentiation according to tumor location.

The following generalities apply to the patterns of Mucin expression:

MUC5AC expression:
preferentially expressed in the normal stomach and respiratory tract
- GI & pancreatobiliary ACAs
- Esophageal CAs (67%)
- Gastric CAs (58%)
- Colonic CAs (6-25%)
- Pancreatic ductal CAs (73%)
- Cholangiocarcinomas (45%)
- Endocervical ACAs (70%)
- Endometrial ACAs (22%)
- Lung ACAs (14%)

MUC1+/MUC2-/MUC5AC+ pattern:
- Endocervical adenoCAs (50%)
- Pancreatic ductal adenoCAs (64%)

MUC1+/MUC2-/MUC5AC- pattern:
- Ductal and lobular breast CAs (100%)
- Urothelial CAs (bladder) (93%)
- Renal CAs (75%)
- Ovarian ACAs of various types
- Most pulmonary adenocarcinomas (81%)
- Endometrial (78%) adenoCAs (small subset expresses MUC5AC)

MUC1-/MUC2-/MUC5AC- pattern:
- Hepatocellular CA
- Adrenocortical CA
- Prostate CA

Associated products: MUC1, MUC2, MUC6, TAG-72, MOC-31, CEA

Reactivity	Paraffin, Frozen
Control	Stomach, associated adenocarcinomas
Visualization	Cytoplasmic
Stability	Up to 36 months; store at 2-8°C
Isotype	IgG_1

Antibody color does not affect performance.

Description	Cat. No.	Dilution/Comments
0.1 ml, concentrate	292M-94	1:100 - 1:500*
0.5 ml, concentrate	292M-95	1:100 - 1:500*
1 ml, concentrate	292M-96	1:100 - 1:500*
1 ml, prediluted	292M-97	Ready to use
7 ml, prediluted	292M-98	Ready to use
Positive control slides	292S	5 slides per pack

P prediluted C concentrate

*The dilutions set forth above are estimates; actual results may differ because of variability in methods and protocols. Validation of antibody performance/protocol is the responsibility of the end user.

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Preparation and Pretreatment
1. Cut 3-4 µm section of formalin-fixed paraffin-embedded tissue and place on positively charged slides; dry overnight at 58°C.
2. Deparaffinize, rehydrate, and epitope retrieve; the preferred method is the use of Heat Induced Epitope Retrieval (HIER) techniques using Cell Marque's Trilogy™ in conjunction with a pressure cooker. The preferred method allows for simultaneous deparaffinization, rehydration, and epitope retrieval. Upon completion, rinse with 5 changes of distilled or deionized water.
3. If using HRP detection system, place slides in peroxide block for 10 minutes; rinse. If using AP detection system, omit this step.

Recommended Protocol for Staining at Room Temperature Using CytoScan™ BSA Detection System
1. Apply the antibody and incubate for 30 - 60 minutes; rinse.
2. Apply the link and incubate for 10 minutes; rinse.
3. Apply the label and incubate for 10 minutes; rinse.
4. Apply ample amount of chromogen and incubate for 1 - 10 minutes; rinse.
5. Dehydrate and coverslip.

Recommended Protocol for Staining at Room Temperature Using PolyScan™ Polymer Detection System
1. Apply the antibody and incubate for 30 - 60 minutes; rinse.
2. Apply the PolyScan™ Polymer Rabbit/Mouse Detection System for 30 minutes; rinse.
3. Apply ample amount of chromogen and incubate for 1 - 10 minutes; rinse.
4. Dehydrate and coverslip.

References
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