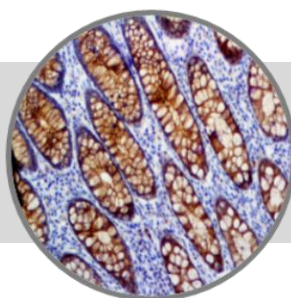


MUC4, RMaB

Clone: EP256**Rabbit Monoclonal**
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Inset: IHC of MUC4 on a FFPE Colon Tissue

Intended Use

For In Vitro Diagnostic Use.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE), frozen tissue sections and cell preparations. Interpretation of results should be performed by a qualified medical professional.

* The MUC-4 antibody, clone EP256, has been manufactured using Epitomics RabMaB® technology covered under Patent No.'s 5,675,063 and 7,402,409.

Immunogen

A synthetic peptide corresponding to residues of human MUC4 protein.

Summary and Explanation

Mucin 4 (MUC4) is a mucin protein that in humans is encoded by the MUC4 gene. Like other mucins, MUC4 is a high-molecular weight glycoprotein. MUC4 belongs to the human mucin family that is membrane-anchored and can range in molecular weight from 550 to 930 kDa for the actual protein. MUC4 antibody labels normal epithelial cells in the trachea, GI tract and prostate, but not in the pancreas.

MUC-4 has been found to play various roles in the progression of cancer, particularly due to its signaling and anti-adhesive properties which contribute to tumor development and metastasis. It is also found to play roles in other diseases such as endometriosis and inflammatory bowel disease. An abnormal expression of MUC4 has been reported in various carcinomas of the colon, pancreas, breast, and ovaries. Increased expression of MUC4 has been observed in pancreatic carcinoma and cervical squamous carcinoma. MUC4 is helpful in differentiating lung adenocarcinoma (positive) from malignant mesothelioma (negative). Additionally, MUC4 is useful in the identification of low-grade fibromyxoid sarcoma (LGFMS), and sclerosing epithelioid fibrosarcoma. MUC4 expression is also detected in the glandular component of biphasic synovial sarcomas.

Antibody Type	Rabbit Monoclonal	Clone	EP256
Isotype	IgG	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic	Control	Colon, Prostate, Liver, Kidney, Bladder TCC, Pancreatic Carcinoma and Cervical Squamous Carcinoma
Species Reactivity		Human	

Precautions

- 1 For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN₃) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as laboratory coat, goggles and gloves when handling reagents.
4. Dispose of unused solution with copious amount of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.

Precautions (Continued)

7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Presentation

MUC4 is a rabbit monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Catalog No.	Antibody Type	Dilution	Volume/Qty
BSB 2552	Tinto Prediluted	Ready-to-Use	3.0 mL
BSB 2553	Tinto Prediluted	Ready-to-Use	7.0 mL
BSB 2554	Tinto Prediluted	Ready-to-Use	15.0 mL
BSB 2555	Concentrated	1:25 - 1:100	0.1 mL
BSB 2556	Concentrated	1:25 - 1:100	0.5 mL
BSB 2557	Concentrated	1:25 - 1:100	1.0 mL

Control Slides Available

Catalog No.	Quantity
BSB 2558	5 slides

Storage

Store at 2-8°C

Stability

This product is stable up to the expiration date on the product label. Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

Specimen Preparation

Paraffin sections: The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033) or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

Frozen sections and cell preparations: The antibody can be used for labeling acetone-fixed frozen sections and acetone-fixed cell preparations.

Staining Procedure

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate and rehydrate tissues.
4. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).
5. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA, and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
7. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC staining protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate-Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

References

1. Srivastava SK, Bhardwaj A, Singh S, Arora S, Wang B, Grizzle WE, Singh AP. "MicroRNA-150 directly targets MUC-4 and suppresses growth and malignant behavior of pancreatic cancer cells". Carcinogenesis, 2011; 32, 2011;(12): 1832-9.
2. Chaturvedi P, Singh AP, Chakraborty S, Chauhan SC, Bafna S, Meza JL, Singh PK, Hollingsworth MA, Mehta PP, Batra SK. "MUC-4 mucin interacts with and stabilizes the HER2 oncoprotein in human pancreatic cancer cells.". Cancer Res. 2008; 68 (7): 2065-70.

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3. Chang CY, Chang HW, Chen CM, Lin CY, Chen CP, Lai CH, Lin WY, Liu HP, Sheu JJ, Tsai FJ. "MUC4 gene polymorphisms associate with endometriosis development and endometriosis-related infertility". BMC Med 2011; 9: 19.
4. Singh AP, Moniaux N, Chauhan SC, Meza JL, Batra SK. "Inhibition of MUC4 expression suppresses pancreatic tumor cell growth and metastasis". Cancer Res. 2004; 64 (2): 622-30.
5. Doyle LA, Möller E, Dal Cin P, Fletcher CD, Mertens F, Hornick JL (May 2011). "MUC-4 is a highly sensitive and specific marker for low-grade fibromyxoid sarcoma". Am. J. Surg. Pathol. 35 (5): 733-41.
6. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012.

Performance Characteristics

Normal Tissues	
Positive (+)	
Colon	10/10 (100%)
Lung	3/3 (100%)
Abnormal Tissues	
Positive (+)	
Colorectal Adenocarcinoma	13/19 (68%)
Pancreatic Ductal Adenocarcinoma	10/11 (90%)
Renal Cell Carcinoma	22/23 (95%)
Lung Adenocarcinoma	9/10 (90%)
Negative (-)	
Lymphoblastic Lymphoma	0/5 (0%)
Prostatic Adenocarcinoma	0/9 (0%)
Breast Ductal Carcinoma	0/23 (0%)





Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP	EMERGO EUROPE Prinsessegracht 20 2514 AP The Hague The Netherlands	 Storage Temperature Limites de température Zulässiger Temperaturbereich	 Manufacturer Fabricant Hersteller	REF	Catalog Number Référence du catalogue Bestellnummer
IVD	In Vitro Diagnostic Medical Device Dispositif médical de diagnostic in vitro In-Vitro-Diagnostikum	 Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten	 Expiration Date Utiliser jusque Verwendbar bis	LOT	Lot Number Code du lot Chargenbezeichnung

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