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BM4077 Monoclonal Antibody to Mucin-Like Carcinoma Antigen (MCA) - Aff - Purified

Alternate names: Marker for Mucin Producing Cells

Quantity: 50 µg

Concentration: 0.1 mg/ml

Host / Isotype: Mouse / IgG1

Clone: b-12

Immunogen: Breast carcinoma cell lines.

Format:
State: Lyophilized purified Ig fraction.
Purification: Affinity Chromatography.
Buffer System: PBS, buffer pH 7.2 with 0.05% Sodium Azide as preservative and 2 mg/ml BSA as stabilizer
Reconstitution: Restore with 0.5 ml distilled water.

Applications:
Immunohistochemistry on:
Frozen sections: 0.5 µg/ml (1/200).
Paraffin sections: 4 µg/ml (1/25); Proteinase K pretreatment for antigen retrieval recommended.
Suggested positive control: Human uterus.
Antigen Distribution: In contrast to MCA producing tumors, the b-12 related antigen is only located at the MCA producing sites such as glandular cell surfaces or glandular tubuli. In MCA producing tumors, where cells become disorganized, the b-12 antigen is secreted into stromal tissue and blood vessels. (See Table 1.)
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:
b-12 is useful for identifying mucin-like carcinoma antigen (MCA) produced by various tumors and certain healthy glandular cells. In combination with other BMA markers for inflammation staging or investigating neo-vascularization processes b-12 is a valuable tool for studying tumor growth or regression. MCA is a 350 kDa glycoprotein with the typical biochemical characteristics of mucin-like glycoproteins (sialomucins) which protect surfaces. Antibody b-12 binds to the protein backbone of MCA, not to the large number of carbohydrate side chains. This antibody reacts with MCA producing cells.
MCA consists of a polymorphic family of glycoproteins. The b-12 related antigenic epitope is located in the more constant region of MCA.
Specificity for Human MCA producing cells.
Species: Human: MCA producing Cells.
Other species not tested.

Storage:

Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Stähli C, Takacs B, Miggiano V, Staehelin T, Carmann H. Monoclonal antibodies against antigens on breast cancer cells. Experientia. 1985 Nov 15;41(11):1377-81. PubMed PMID: 2415385.
2. Zenklusen, H.R. et al.: The immunohistochemical reactivity of a new anti-epithelial antibody (mAb b-12) against breast carcinoma and other normal and neoplastic human tissues. Virchows Arch A Pathol Anat 413: 3. (1988)
3. Maurer, A. & Burckhardt, J.: Biochemistry and molecular biology of MCA. Int. J. Biol. Markers 8: 108-112. (1993)

Protocols:

Protocol with frozen, ice-cold acetone-fixed sections:
The whole procedure is performed at room temperature
1. Wash in PBS
2. Block endogenous peroxidase
3. Wash in PBS
4. Block with 10% normal goat serum in PBS for 30min. in a humid chamber
5. Incubate with primary antibody (dilution see datasheet) for 1h in a humid chamber
6. Wash in PBS
7. Incubate with secondary antibody (peroxidase-conjugated goat anti mouse IgG+IgM (H+L) minimal-cross reaction to human) for 1h in a humid chamber
8. Wash in PBS
9. Incubate with AEC substrate (3-amino-9-ethylcarbazol) for 12min.
10. Wash in PBS
11. Counterstain with Mayer's hemalum.

Protocol with formalin-fixed, paraffin-embedded sections:
The whole procedure is performed at room temperature
1. Deparaffinize and rehydrate tissue section
2. Incubate the tissue section with proteinase K for 7 min.
3. Wash in distilled water
4. Block endogenous peroxidase
5. Wash in PBS
6. Block with 10% normal goat serum in PBS for 30min. in a humid chamber
7. Incubate with primary antibody (dilution see datasheet) for 1h in a humid chamber
8. Wash in PBS
9. Incubate with secondary antibody (peroxidase-conjugated goat anti mouse IgG+IgM (H+L) minimal-cross reaction to human) for 1h in a humid chamber
10. Wash in PBS
11. Incubate with AEC substrate (3-amino-9-ethylcarbazol) for 12min.
12. Wash in PBS
13. Counterstain with Mayer's hemalum.

Pictures:

Table 1. b-12 Reaction Pattern on Human Tissues.

Healthy Tissues		Cancerous Tissues		
Transitional epithelium	3 / 3	Breast		122 / 122
Kidney	13 / 13	Uterus:	Endometrium	10 / 10
Fallopian tube	2 / 2		Cervix, squamous cells	2 / 2
Uterus	5 / 5	Ovary	Mucinous	4 / 4
Prostate	6 / 9		Serous	2 / 2
Epididymis	4 / 4	Testis	Malignant teratoma	7 / 7
Bronchus	13 / 13	Kidney	Clear cell	15 / 15
Sebaceous and sweat glands	6 / 6	Lung	Bronchiolo-alveolar	6 / 6
Salivary glands	3 / 4		Adenosquamous	2 / 2
Stomach	6 / 8	Stomach	Adenocarcinoma	8 / 9
Breast	23 / 23	Colon	Adenocarcinoma	24 / 36

(from Zenklusen et al. 1988)