

OriGene Technologies, Inc.

9620 Medical Center Drive, Ste 200 Rockville, MD 20850 UNITED STATES Phone: +1-888-267-4436 Fax: +1-301-340-8606

techsupport@origene.com

OriGene Technologies GmbH

Schillerstr. 5 32052 Herford GERMANY Phone: +49-5221-34606-0 Fax: +49-5221-34606-11 info-de@origene.com

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.

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: <u>Immunohistochemistry on:</u>

Frozen sections: $0.5 \mu g/ml (1/200)$.

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.

Purified

Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for **Storage:**

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:

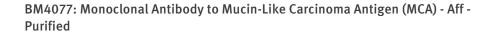
The whole procedure is performed at room temperature

- 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)