



## Carcinoembryonic Antigen (CEA {M})

Concentrated and Prediluted Monoclonal Antibody

Control Number: 901-058-070108

<b>Catalog Number:</b>	<b>CM 058 A, B, C</b>	<b>PM 058 AA</b>
<b>Description:</b>	0.1, 0.5, 1.0 ml, concentrated	6.0, prediluted
<b>Dilution:</b>	1:50 -1:100	Ready-to-use
<b>Diluent:</b>	Da Vinci Green	N/A

**Intended Use:**  
For In Vitro Diagnostic Use

**Summary and Explanation:**

The CEA gene family belongs to the immunoglobulin gene superfamily (IgSF) and comprises a large number of genes. The cell surface associated CEA proteins are heavily glycosylated, abundantly expressed and multifunctional. The human carcinoembryonic antigen (CEA) family can be divided into two subgroups according to the means of anchorage of member glycoproteins to the cell membrane: glyphosphatidyl inositol (GPI) linkage and transmembrane linkage. GPI-linked CEA family members include CEA (CD66e), non-specific cross-reacting antigen (NCA, CD66c), CEA gene-family members 6 (CGM6, CD66b) and 2 (CGM2). Transmembrane-linked members include biliary glycoprotein (BGP, Human C-CAM-L and C-CAM-S, CD66a), CGM1(CD66d) and CGM7. Recent evidence suggests the GPI-linked members tend to be up-regulated in human tumors, whereas the transmembrane-linked members tend to be down-regulated. The CEA (CD66e) COL-1 clone shows no detectable reactivity for other CEA family members such as NCA or BGP. COL-1 is useful in detecting early foci of gastric carcinoma and distinguishing pulmonary adenocarcinomas from mesothelioma. It stains many types of adenocarcinoma, but does not stain benign glands, stroma, or malignant prostatic cells. Normal colon, without colon disease, is unreactive, but a weak reactivity was in normal-appearing mucosa several centimeters remote from colon cancer. **Key Reference:** Shi ZR, Tacha D, Itzkowitz<sup>6</sup>.

**Principle of Procedure:**

Antigen detection, in tissues and cells, is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, a universal, affinity-purified, secondary antibody is added to bind to the primary antibody. An enzyme label is then added to bind to the secondary antibody; this detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Mouse monoclonal

**Species Reactivity:** Human; others not tested

**Clone:** COL-1

**Isotype:** IgG2a/ kappa

**Total Protein Concentration:** ~10 mg/ml. Call for lot specific Ig Concentration.

**Epitope/Antigen:** CEA

**Cellular Localization:** Cytoplasmic and luminal membrane

**Positive Control:** Colon carcinoma

**Normal Tissue:** Liver, Breast

**Abnormal Tissue:** Colon Cancer, Pancreas adenocarcinoma

**Known Applications:**

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative.

**Storage and Stability:**

Store at 2°C to 8°C. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

**Protocol Recommendations**

**Peroxide Block:**

If using an HRP system, block for 5 minutes with BIOCARE's PEROXIDAZED 1.

**Pretreatment Solution (recommended):** N/A

**Pretreatment Protocol:** N/A

**Avidin-Biotin Block is recommended:**

1. Apply Avidin solution for 10 minutes and wash with TBS wash buffer.
2. Apply Biotin solution for 10 minutes and wash with TBS wash buffer.

**Protein Block:**

Incubate for 10-15 minutes at RT with BIOCARE's Background Sniper.

**Primary Antibody:** Incubate for 30 minutes at RT.

**Link:** Incubate for 10 minutes at RT with a link.

**Label:** Incubate for 10 minutes at RT with a label.

**Chromogen:**

Incubate for 5 minutes at RT when using BIOCARE's DAB. - **OR** - Incubate for 10 minutes at RT when using BIOCARE's Vulcan Fast Red.

**Technical Note:**

This antibody has been standardized with BIOCARE's 4 plus detection system. It can also be used on an automated staining system and with other BIOCARE polymer detection kits. Use TBS buffer for washing steps.

**Performance Characteristics:**

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to: fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of BIOCARE products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. These products are tools that can be used for interpretation of morphological findings in conjunction with other diagnostic tests and pertinent clinical data by a qualified pathologist.

**Quality Control:**

Refer to NCCLS Quality Assurance for Immunocytochemistry approved guidelines, December 1999 MM4-A Vol.19 No.26 for more information about Tissue Controls.

**Precautions:**

This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC.

Sodium azide (NaN<sub>3</sub>) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for disease control, 1976, National Institute of Occupational Safety and Health, 1976)

Specimens, before and after fixation and all materials exposed to them, should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water.

Microbial contamination of reagents may result in an increase in nonspecific staining. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change. The MSDS is available upon request.

**Troubleshooting:**

Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact BIOCARE's Technical Support at 1-800-542-2002.

**Limitations and Warranty:**

There are no warranties, expressed or implied, which extend beyond this description. BIOCARE is not liable for property damage, personal injury, or economic loss caused by this product.





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ISO  
9001:2000  
CERTIFIED

### References:

1. Luo W, et. al. Association of an 80 kDa protein with C-CAM1 cytoplasmic domain correlates with C-CAM1-mediated growth inhibition. *Oncogene* 1998 Mar 5;16 (9):1141-1147.
2. Obrink B. CEA adhesion molecules: multifunctional proteins with signal-regulatory properties. *Curr Opin Cell Biol.* 1997 Oct; 9(5): 616-626. Review.
3. Sreaton RA, Penn LZ, Stanners CP. Carcinoembryonic antigen, a human tumor marker, cooperates with Myc and Bcl-2 in cellular transformation. *J Cell Biol* 1997 May 19;137(4):939-952.
4. Nollau P, et. al. Expression of CD66a (human C-CAM) and other members of the carcinoembryonic antigen gene family of adhesion molecules in human colorectal adenomas. *Cancer Res* 1997 Jun 15;57(12):2354-2357.
5. Rojas M, DeMarte L, Sreaton RA, Stanners CP. Radical differences in functions of closely related members of the human carcinoembryonic antigen gene family. *Cell Growth Differ* 1996 May;7(5):655-662.
6. Shi ZR, Tacha D, Itzkowitz SH. Monoclonal antibody COL-1, which reacts with restricted epitopes on carcinoembryonic antigen: an immunohistochemical study. *J Histochem Cytochem* 1994 Sept;42(9):1215-9.
7. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
8. National Committee for Clinical Laboratory Standards(NCCLS). Protection of laboratory workers from infectious diseases transmitted by blood and tissue; proposed guideline. Villanova, PA 1991;7(9). Order code M29-P.



## Carcinoembryonic Antigen (CEA {M})

Prediluted Mouse Monoclonal Antibody

Control Number: 901-058IP-071708

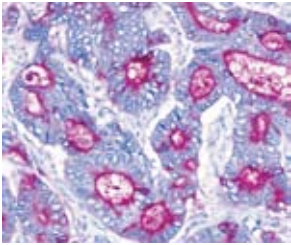
**Catalog Number:** IP 058 G10  
**Description:** 10 ml, predilute

### Intended Use:

For In Vitro Diagnostic Use

### Summary and Explanation:

The CEA gene family belongs to the immunoglobulin gene superfamily (IgSF) and comprises a large number of genes. The cell surface associated CEA proteins are heavily glycosylated, abundantly expressed and multifunctional. The CEA (CD66e) COL-1 clone shows no detectable reactivity for other CEA family members such as NCA or BGP. COL-1 is useful in detecting early foci of gastric carcinoma and distinguishing pulmonary adenocarcinomas from mesothelioma. It stains many types of adenocarcinoma, but does not stain benign glands, stroma, or malignant prostatic cells. Normal colon, without colon disease, is unreactive, but a weak reactivity was in normal-appearing mucosa several centimeters remote from colon cancer. Key Reference: Shi ZR, Tacha D, Itzkowitz.\*



Colon cancer stained with CEA antibody.

### Principle of Procedure:

Antigen detection, in tissues and cells, is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, an affinity-purified, secondary antibody is added to bind to the primary antibody. An enzyme label is then added to bind to the secondary antibody; this detection of the bound antibody is evidenced by a colorimetric reaction.

**Source:** Mouse monoclonal

**Species Reactivity:** Human; others not tested

**Clone:** COL-1

**Isotype:** IgG2a/ kappa

**Antibody Category:** Carcinoma

**Epitope/Antigen:** CEA

**Total Protein Concentration:** Call for lot specific Ig Concentration.

**Cellular Localization:** Cytoplasmic and luminal membrane

**Positive Control:** Colon carcinoma

**Normal Tissue:** Small intestine and stomach

**Abnormal Tissue:** Colon cancer, pancreatic adenocarcinoma

### Known Applications:

Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

**Supplied As:** Buffer with protein carrier and preservative.

### Storage and Stability:

Store at 2°C to 8°C. Do not use after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

### Protocol Recommendations

**Pretreatment Solution (recommended):** N/A

**Pretreatment Protocol:** N/A

### Peroxide Block:

Block for 5 minutes at RT.

**Primary Antibody:** Incubate for 30 minutes at RT.

**Secondary:** Incubate for 10 minutes at RT.

**Tertiary:** Incubate for 10 minutes at RT.

### Chromogen:

Incubate for 5 minutes with DAB at RT.

### Counterstain:

1. Rinse with deionized water. 2. Incubate for 5 minutes with automated Hematoxylin. 3. Rinse with TBS Buffer for 1 minute followed by a rinse with deionized water.

### Quality Statement:

BIOCARE protocols have been standardized using in-house antibodies, detection and accessory reagents for use on the *intelliPATH* FLX automated stainer. Recommended staining protocols are specified in the datasheet of the antibody of interest. Pre-optimized *intelliPATH* FLX protocols with preset parameters can be displayed, printed and edited according to the procedure in the operator's manual. Refer to the operator's manual for additional instruction to navigate *intelliPATH* FLX software and stainer. Use TBS for washing steps unless otherwise specified.

### Performance Characteristics:

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to: fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of BIOCARE products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. These products are tools that can be used for interpretation of morphological findings in conjunction with other diagnostic tests and pertinent clinical data by a qualified pathologist.

### Quality Control:

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### Precautions:

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