Product Data Sheet

anti-human CEACAM1 monoclonal antibody

Product information

Catalog Number:	GM-0501
Clone:	GM-8G5
Description:	purified monoclonal mouse antibody
Specificity:	anti-human CEACAM1 (biliary glycoprotein I, BGP/CD66a)
Isotype:	IgG1
Purification:	Protein G
Storage:	short term: 2°C - 8°C; long term: -20°C (avoid repeated freezing and thawing)
Buffer :	phosphate buffered saline, pH 7.2
Immunogen:	genetic immunisation with cDNA encoding the extracellular region of human CEACAM1-A2
Selection:	based on recognition of the complete **native protein** expressed on transfected mammalian cells

Working dilutions

Flow cytometry:	1.2 µg/10^6 cells
CELISA:	1:200 - 1:400
ELISA:	1:200 - 1:400
Immunohistology:	10 µg/ml (on cryosections)

For each application a titration should be performed to determine the optimal concentration.

Specificity testing by flow cytometry and by immunohistochemical staining

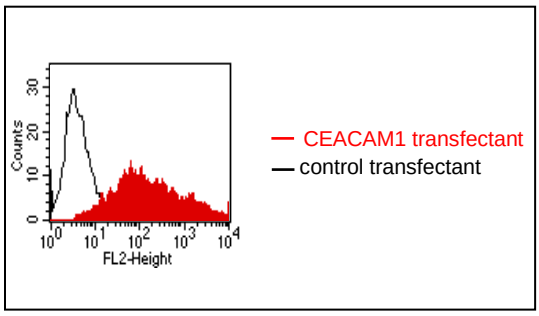

Fig.1: FACS analysis of BOSC23 cells using GM-8G5 Cat.# GM-0501. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM1 (red curve) or an irrelevant protein (control transfectant: black curve). Binding of GM-8G5 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with CEACAM1 transfected cells.

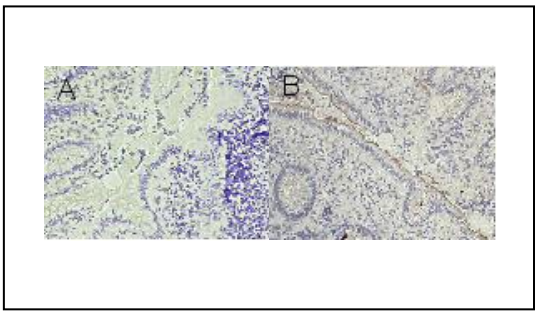

Fig.2: Immunohistochemical staining on cryosections of colon tissue using GM-8G5 Cat.# GM-0501. PBS containing 2.5% horse serum served as negative control (A). Detection of GM-8G5 occurred with a biotinylated anti-mouse-IgG secondary antibody and a streptavidin-peroxidase conjugate (B). Diaminobenzidine was used as substrate. Nuclei were stained with hematoxilin.

For research use only. Not for diagnostic or therapeutic use.

Antibody cross-reactivity with members of the CEA family

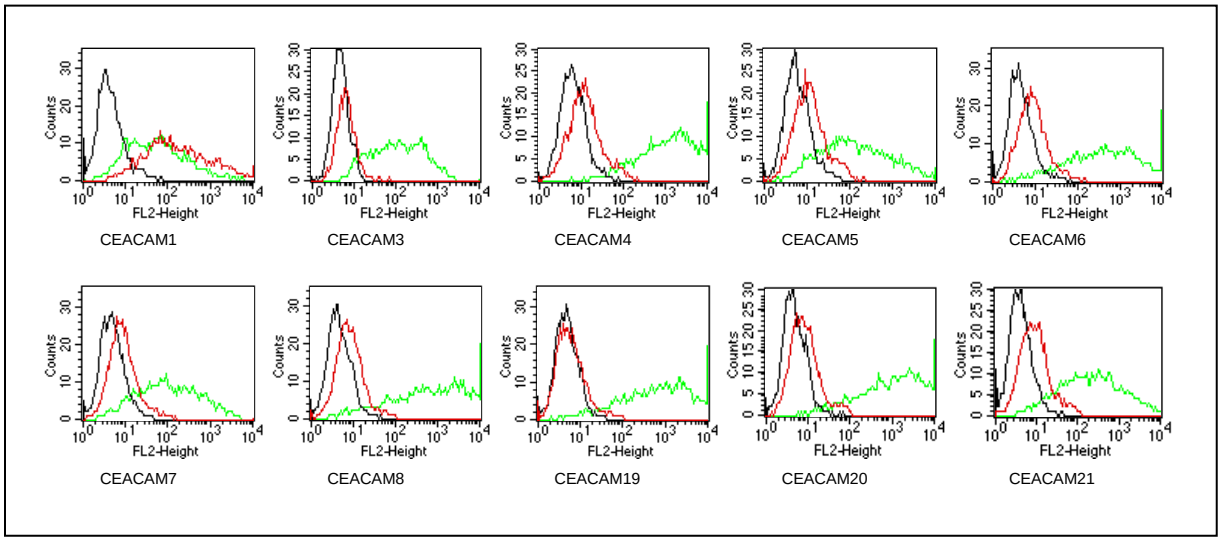

Fig3: Members of the CEA family were expressed on BOSC cells after transient transfection with expression vectors containing either the cDNA of CEACAM1,5,6,7,8,19,20 or 21. Recognition of CEACAM3 and 4 was tested on stably transfected HeLa (CEACAM3) and CHO cells (CEACAM4). Expression of the constructs was confirmed with monoclonal antibodies known to recognise the corresponding proteins (CEACAM1,3,4: D14HD11; CEACAM5: 26/3/13; CEACAM6: 9A6; CEACAM7: BAC2; CEACAM8: GM-2H6; CEACAM19-21: anti-myc; green curves). An irrelevant monoclonal antibody served as a negative control (black curves). For specificity testing, protein G-purified GM-8G5 was tested on all CEACAM transfectants. A positive signal was only obtained with CEACAM1-expressing cells (red curves).

Background

CEACAM1 (BGP/CD66a) is a transmembrane glycoprotein which belongs to the carcinoembryonic antigen (CEA) gene family (1,2). It is expressed on cells of epithelial and myeloid origin and mediates homophilic intercellular interactions that influence cellular growth, immune cell activation, and tissue morphogenesis. CEACAM1 is a putative tumour suppressor based on diminished expression in some aggressive types of cancer cells (3). The anti-tumour effect may be due to inhibition of tumour angiogenesis, possibly by increased secretion of anti-angiogenic molecules from the cells (4). Like all members of the CEACAM family, it consists of a single N domain, with structural homology to the immunoglobulin variable domains, followed by two immunoglobulin constant-like A (A1, A2) and one B domain. While the N, A1 and B domains can also be found in other CEA-family members, the A2 domain of CEACAM1 differs from those found in other CEACAM.

References

1. **Zimmermann W (2002).** Carcinoembryonic antigen. In *Wiley Encyclopedia of Molecular Medicine* (T. Creighton, ed.), John Wiley & Sons Inc., New York, USA, pp. 459-462.

2. **Hammarström S (1999).** The carcinoembryonic antigen (CEA) family: structures, suggested functions and expression in normal and malignant tissues. *Semin. Cancer Biol*. 9, 67-81.

3. **Luo W, Tapolsky M, Early K, Wood CG, Wilson DR, Logothetis CJ, Lin SH (1999).** Tumor-suppressive activity of CD66a in prostate cancer. *Cancer Gene Ther.* 6(4): 313-21.

4. **Tilki D, Irmak S, Oliveira-Ferrer L, Hauschild J, Miethe K, Atakaya H, Hammerer P, Friedrich MG, Schuch G, Galalae R, Stief CG, Kilic E, Huland H, Ergun S (2006).** CEA-related cell adhesion molecule-1 is involved in angiogenic switch in prostate cancer. *Oncogene* 25(36):4965-74