

# PRODUCT DATA SHEET

## ANTI-HUMAN CEACAM1, 5 MONOCLONAL ANTIBODY

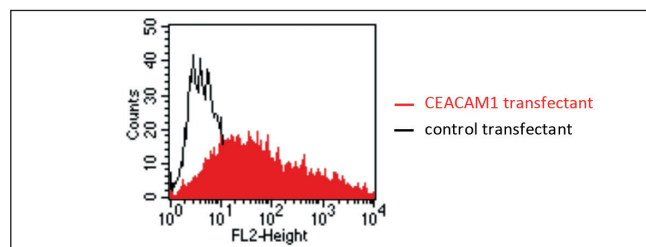
### PRODUCT INFORMATION

<b>Catalog Number:</b>	GM-0511	<b>Clone:</b>	4/3/17
<b>Description:</b>	purified monoclonal mouse antibody	<b>Specificity:</b>	anti-human CEACAM1, 5 (BGP, CEA, CD66a,e)
<b>Isotype:</b>	IgG1/kappa	<b>Purification:</b>	Protein G
<b>Storage:</b>	short term: 2°C – 8°C; long term: –20°C (avoid repeated freezing and thawing)	<b>Buffer:</b>	phosphate buffered saline, pH 7.2
<b>Immunogen:</b>	immunization with extracted protein of CEACAM5	<b>Selection:</b>	based on recognition of the complete native protein expressed on transfected mammalian cells

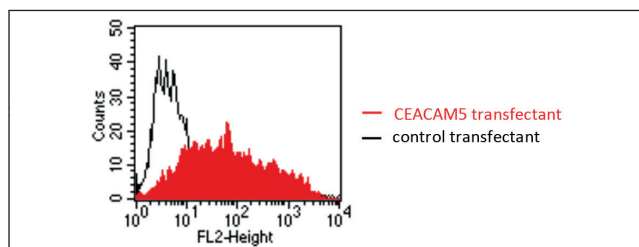
### WORKING DILUTIONS

<b>Flow cytometry:</b>	1.2 µg/10 <sup>6</sup> cells	<b>CELISA:</b>	1:200
<b>ELISA:</b>	1:200 – 1:400	<b>Immunohistology:</b>	1-2 µg/10 <sup>6</sup> cells (on cryosections)
<b>Western blot:</b>	4µg/ml	For each application a titration should be performed to determine the optimal concentration.	

### SPECIFICITY TESTING BY FLOW CYTOMETRY



**Fig.1:** FACS analysis of BOSC23 cells using 4/3/17 Cat.# GM-0511. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM1 (red curve) or an irrelevant protein (control transfectant). Binding of 4/3/17 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with CEACAM1 transfected cells.



**Fig.2:** FACS analysis of BOSC23 cells using 4/3/17 Cat.# GM-0511. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM5 (red curve) or an irrelevant protein (control transfectant). Binding of 4/3/17 was detected with a PE conjugated secondary antibody. A positive signal was obtained only with CEACAM5 transfected cells.

### CONFIDENTIAL

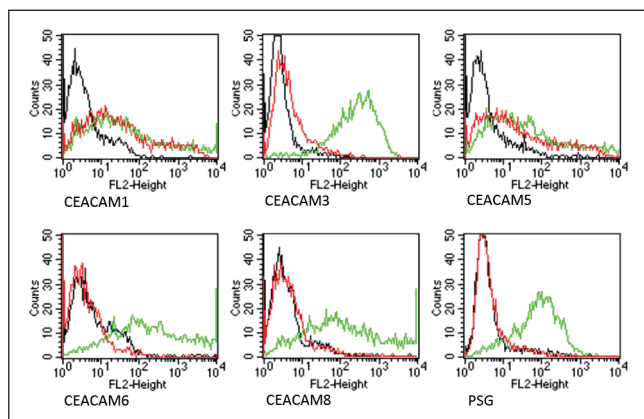
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## ANTIBODY CROSS-REACTIVITY WITH MEMBERS OF THE CEA FAMILY



**Fig. 3:** Specificity testing of 4/3/17. BOSC cells were transiently transfected with expression vectors containing either the cDNA of CEACAM1, 3, 5, 6, 8 or a recombinant transmembrane-anchored PSG1 fusion protein. Expression of the constructs was confirmed with monoclonal antibodies known to recognise the corresponding proteins (CEACAM1, 3, 5 and 6: D14HD11; CEACAM8: 80H3; PSG: BAP1; green curves). An irrelevant monoclonal antibody served as a negative control (black curves). For specificity testing, protein G purified 4/3/17 was tested on all CEACAM transfectants. A positive signal was obtained with CEACAM1 and CEACAM5 expressing cells (red curves).

## BACKGROUND

CEA-related cell adhesion molecules (CEACAM) belong to the carcinoembryonic antigen (CEA) family (1). It consists of seven CEACAM (CEACAM1, CEACAM3-CEACAM8) and 11 pregnancy-specific glycoprotein (PSG1-PSG11) members. The CEA family proteins belong to the immuno-globulin (Ig) superfamily and are composed of one Ig variable-like (IgV) and a varying number (0-6) of Ig constant-like (IgC) domains. CEACAM molecules are membrane-bound either via a transmembrane domain or a glycosyl phosphatidyl inositol (GPI) anchor. CEACAM molecules are differentially expressed in epithelial cells or in leucocytes. Over-expression of CEA/CEACAM5 in tumors of epithelial origin is the basis of its wide-spread use as a tumor marker (2). CEACAM1 expression is down-regulated in many tumors indicating a tumor-suppressive function. The anti-tumor effect may be due to inhibition of tumor angiogenesis, possibly by increased secretion of anti-angiogenic molecules from the cells (3). The function of CEA family members varies widely: they function as cell adhesion molecules, tumor suppressors, regulators of lymphocyte and dendritic cell activation, receptors of Neisseria species and other bacteria (1).

## 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. **Schölzel S, Zimmermann W, Schwarzkopf G, Grunert F, Rogaczewski B and Thompson J (2000).** Carcinoembryonic antigen family members CEACAM6 and CEACAM7 are differentially expressed in normal tissues and oppositely deregulated in hyperplastic colorectal polyps and early adenomas. *Am J Pathol* 156, 595-605.
3. **Kleinerman DI, Troncoso P, Lin SH, Pisters LL, Sherwood ER, Brooks T, von Eschenbach AC and Hsieh JT (1995).** Consistent expression of an epithelial cell adhesion molecule (C-CAM) during human prostate development and loss of expression in prostate cancer: implication as a tumor suppressor. *Cancer Res* 55:1215-1220.

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