PRODUCT DATA SHEET
ANTI-HUMAN CEACAM5,6 MONOCLONAL ANTIBODY

PRODUCT INFORMATION

Catalog Number:	GM-0506	**Clone:**	MUS
Description:	purified monoclonal mouse antibody	**Specificity:**	anti-human CEACAM5,6 (CEA; NCA, CD66c)
Isotype:	IgG1/kappa	**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:	immunization with extracted protein of CEACAM5	**Selection:**	based on recognition of the complete native protein expressed on transfected mammalian cells

WORKING DILUTIONS

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

SPECIFICITY TESTING BY FLOW CYTOMETRY

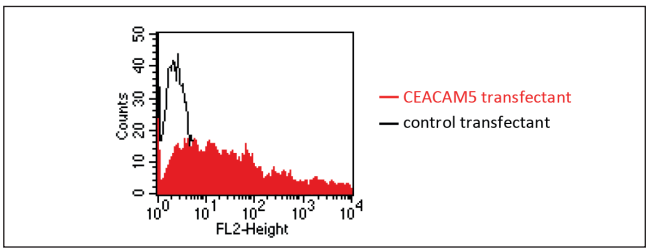

Fig. 1: FACS analysis of BOSC23 cells using MUS Cat.# GM-0506. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM5 (red curve) or an irrelevant protein (control transfectant). Binding of MUS was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with CEACAM5 transfected cells.

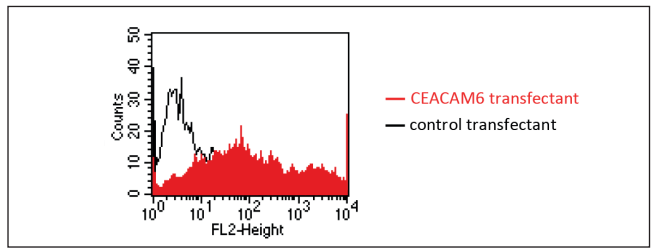

Fig. 2: FACS analysis of BOSC23 cells using MUS Cat.# GM-0506. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM6 (red curve) or an irrelevant protein (control transfectant). Binding of MUS was detected with a PE conjugated secondary antibody. A positive signal was obtained only with CEACAM6 transfected cells.

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ANTIBODY CROSS-REACTIVITY WITH MEMBERS OF THE CEA FAMILY

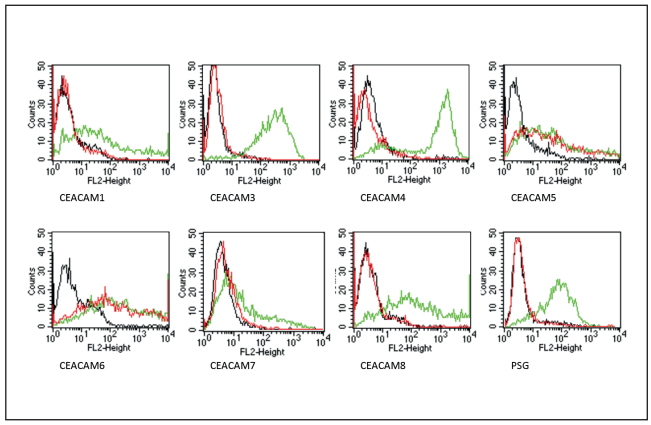

Fig. 3: Specificity testing of MUS. BOSC cells were transiently transfected with expression vectors containing either the cDNA of CEA-CAM1, 3, 5, 6, 7, 8 or a recombinant transmembrane-anchored PSG1 fusion protein. Recognition of CEACAM4 was tested on CHO cells stably transfected with a CEACAM4 expression vector. Expression of the constructs was confirmed with monoclonal antibodies known to recognise the corresponding proteins (CEACAM1, 3, 4, 5 and 6: D14HD11; CEACAM7: CAC2; CEACAM8: 80H3; PSG: BAP1; green curves). An irrelevant monoclonal antibody served as a negative control (black curves). For specificity testing, protein G purified MUS was tested on all CEACAM transfectants. A positive signal was obtained with CEACAM5 and CEACAM6 expressing cells (red curves).

BACKGROUND

CEA-related cell adhesion molecules (CEACAM) belong to the carcinoembryonic antigen (CEA) family (1). The CEA family proteins belong to the immunoglobulin (Ig) superfamily and are composed of one Ig variable-like (IgV) and a varying number (0-6) of Ig constant-like (IgC) domains. CEACAM mole-cules 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). CEACAM6 expression is strongly up-regulated already during early stages of adenocarcinoma formation (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.
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3. ***Schölzel S, Zimmermann W, Schwarzkopf G, Grunert F, Rogaczewski B, 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.
4. ***Grunert F, AbuHarfeil N, Schwarz K and von Kleist S (1985).*** Two CEA and three NCA species, although distinguishable by monoclonal antibodies, have nearly identical peptide patterns. Int J Cancer 36, 357-362.

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