

## Product Data Sheet

### anti-human CEACAM1,3,4,5,6 monoclonal antibody

#### Product information

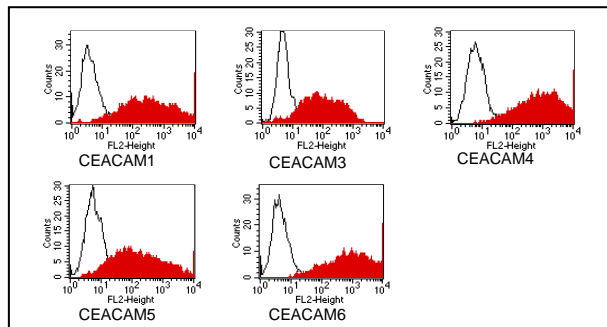
<b>Catalog Number:</b>	GM-0505
<b>Clone:</b>	D14HD11
<b>Description:</b>	purified monoclonal mouse antibody
<b>Specificity:</b>	anti-human CEACAM1,3,4,5,6 (CD66a,c,d,e,CGM7)
<b>Isotype:</b>	IgG1
<b>Purification:</b>	Protein G
<b>Storage:</b>	short term: 2°C - 8°C; long term: -20°C (avoid repeated freezing and thawing)
<b>Buffer :</b>	phosphate buffered saline, pH 7.2
<b>Immunogen:</b>	immunisation with extracted protein of CEACAM5
<b>Selection:</b>	based on recognition of the complete <b>native protein</b> expressed on transfected mammalian cells

#### Working dilutions

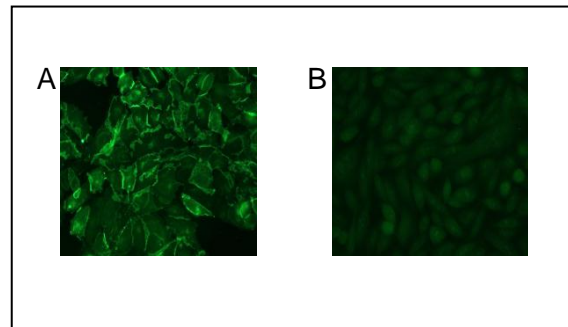
<b>Flow cytometry:</b>	1.2 µg/10 <sup>6</sup> cells
<b>ELISA:</b>	1:200 - 1:400
<b>CELISA:</b>	1:200 - 1:400
<b>Western Blot:</b>	4µg/ml
<b>Immunofluorescence:</b>	1µg/10 <sup>6</sup> cells

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

#### Specificity testing by flow cytometry and by Immunofluorescence Microscopy



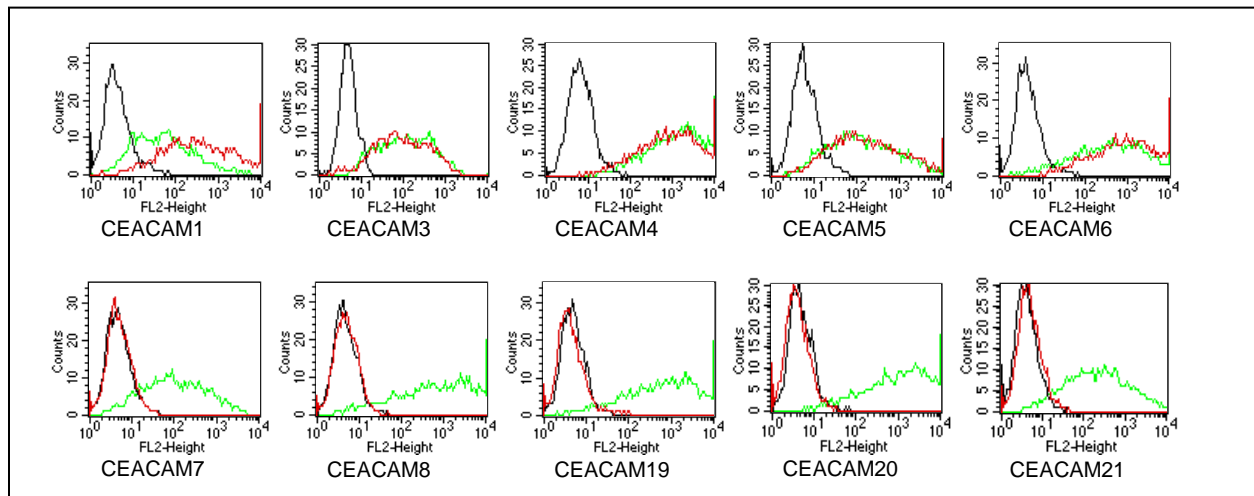
**Fig.1:** FACS analysis of BOSC23 cells using D14HD11 Cat.# GM-0505. BOSC23 cells were transiently transfected with an expression vector encoding either CEACAM1,3,4,5,6 (red curves) or an irrelevant protein (control transfectant: black curves). Binding of D14HD11 was detected with a PE-conjugated secondary antibody. A positive signal was obtained only with CEACAM1, CEACAM3, CEACAM4, CEACAM5 and CEACAM6 expressing cells.



**Fig. 2:** Immunofluorescence Microscopy of CHO cells using D14HD11 Cat.# GM-0505. CHO cells were transfected with an expression vector encoding CEACAM1 (A). Untransfected CHO parental cells served as negative control (B). Binding of D14HD11 was visualized with a FITC-conjugated secondary antibody.

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## Antibody cross-reactivity with members of the CEA family



**Fig. 1:** BOSC cells were transiently transfected with expression vectors containing either the cDNA of CEACAM1, CEACAM3-CEACAM8 or CEACAM19-21. 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: 4/3/17, CEACAM3,4: 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 D14HD11 was tested on all CEACAM transfectants. A positive signal was obtained with CEACAM1, CEACAM3, CEACAM4, 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 (1,2). CEACAM molecules are membrane-bound either via a transmembrane domain or a glycosylphosphatidylinositol (GPI) anchor. CEACAM molecules are differentially expressed in epithelial cells or in leucocytes. Over-expression of CEA/CEACAM5 in tumours of epithelial origin is the basis of its wide-spread use as a tumour marker (2). The function of CEACAM family members varies widely: they function as cell adhesion molecules, tumour 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. **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. **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.
4. **Grunert F, Stocks SC, Nagel G., Zimmermann W, Thompson JA, Jantscheff P and Kromer B. (1996).** CD66 family Workshop: Binding of myeloid blind panel antibodies and CD66 Subsection antibodies to HeLa transfectants expressing individual CD66 molecules. In *Leukocyte Typing VI: White cell Differentiation Antigens* (T. Kishimoto et al., eds.), Garland Publishing Inc., New York and London, pp. 1012-1025.

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