

# CEACAM7 (BAC2): sc-59946

## BACKGROUND

Carcinoembryonic antigen (CEA) is one of the most commonly used tumor markers in serum immunoassay determinations of carcinoma. Members of the CEA family contain a single N domain, with structural homology to the immunoglobulin variable domains, followed by a variable number of immunoglobulin constant-like A and/or B domains. CEACAM7, also referred to as CEA gene-family member 2 (CGM2), is a member of the CEA family that is expressed in normal colorectal epithelia but is downregulated in colorectal cancers, suggesting that it may play a role in tumorigenesis. CEACAM7 is expressed on the apical surface of highly differentiated epithelial cells in the colorectal mucosa as well as on isolated ductal epithelial cells within the pancreas. CEACAM7 may play an important role in epithelial-microbial interactions. CD66a, a biliary glycoprotein, interacts with CEACAM7.

## REFERENCES

1. Thompson, J., et al. 1994. CGM2, a member of the carcinoembryonic antigen gene family is downregulated in colorectal carcinomas. *J. Biol. Chem.* 269: 32924-32931.
2. Nollau, P., et al. 1997. Dysregulation of carcinoembryonic antigen group members CGM2, CD66a (biliary glycoprotein) and nonspecific cross-reacting antigen in colorectal carcinomas. Comparative analysis by northern blot and *in situ* hybridization. *Am. J. Pathol.* 151: 521-530.
3. Kinugasa, T., et al. 1998. Expression of four CEA family antigens (CEA, NCA, BGP and CGM2) in normal and cancerous gastric epithelial cells: upregulation of BGP and CGM2 in carcinomas. *Int. J. Cancer* 76: 148-153.
4. Frångsmyr, L., et al. 1999. Four carcinoembryonic antigen subfamily members, CEA, NCA, BGP and CGM2, selectively expressed in the normal human colonic epithelium, are integral components of the fuzzy coat. *Tumour Biol.* 20: 277-292.
5. Beauchemin, N., et al. 1999. Redefined nomenclature for members of the carcinoembryonic antigen family. *Exp. Cell Res.* 252: 243-249.
6. Schölzel, S., et al. 2000. Carcinoembryonic antigen family members CEACAM6 and CEACAM7 expressed in normal tissues and oppositely deregulated in hyperplastic colorectal polyps and early adenomas. *Am. J. Pathol.* 156: 595-605.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 163980. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Douard, R., et al. 2006. Long-term prognostic value of detection of circulating colorectal cancer cells using CGM2 reverse transcriptase-polymerase chain reaction assay. *Surgery* 139: 556-562.

## CHROMOSOMAL LOCATION

Genetic locus: CEACAM7 (human) mapping to 19q13.2.

## SOURCE

CEACAM7 (BAC2) is a mouse monoclonal antibody raised against a CEACAM7 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CEACAM7 (BAC2) is available conjugated to agarose (sc-59946 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59946 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59946 PE), fluorescein (sc-59946 FITC), Alexa Fluor® 488 (sc-59946 AF488), Alexa Fluor® 546 (sc-59946 AF546), Alexa Fluor® 594 (sc-59946 AF594) or Alexa Fluor® 647 (sc-59946 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59946 AF680) or Alexa Fluor® 790 (sc-59946 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

CEACAM7 (BAC2) is recommended for detection of CEACAM7 of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells); non cross-reactive with CEACAM1 (BGP/CD66a), CEACAM3 (CGM1/CD66d), CEACAM4 (CGM7), CEACAM6 (NCA/CD66c), CEACAM7 (CGM2), CEACAM8 (CGM6/CD66b) and PSG1 (CD66f).

Suitable for use as control antibody for CEACAM7 siRNA (h): sc-72073, CEACAM7 shRNA Plasmid (h): sc-72073-SH and CEACAM7 shRNA (h) Lentiviral Particles: sc-72073-V.

Molecular Weight of CEACAM7: 29 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## SELECT PRODUCT CITATIONS

1. Klaike, E., et al. 2017. Binding of *Candida albicans* to human CEACAM1 and CEACAM6 modulates the inflammatory response of intestinal epithelial cells. *MBio* 8: e02142-16.
2. Raj, D., et al. 2021. CEACAM7 is an effective target for CAR T-cell therapy of pancreatic ductal adenocarcinoma. *Clin. Cancer Res.* 27: 1538-1552.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.