

pan CEA (COL-1): sc-47756

BACKGROUND

Carcinoembryonic antigen (CEA) is one of the most commonly used tumor markers in serum immunoassay determinations of carcinoma. Members of the CEACAM (carcinoembryonic antigen-related cell adhesion molecule) 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. CEACAMS, such as CEACAM1, CEACAM7, CD66C, CD66D and CD66E, have diverse roles within the cell, including roles in the differentiation and arrangement of tissue three-dimensional structure, angiogenesis, apoptosis, tumor suppression, metastasis, and the modulation of innate and adaptive immune responses. The human CEACAM proteins are encoded by genes which are located within a 1.2 Mb cluster on the long arm of chromosome 19.

REFERENCES

1. Muenzner, P., et al. 2008. The CEACAM1 transmembrane domain, but not the cytoplasmic domain, directs internalization of human pathogens via membrane microdomains. *Cell. Microbiol.* 10: 1074-1092.
2. Skubitz, K.M. and Skubitz, A.P. 2008. Interdependency of CEACAM-1, -3, -6, and -8 induced human neutrophil adhesion to endothelial cells. *J. Transl. Med.* 6: 18.
3. Lee, H.S., et al. 2008. CEACAM1 dynamics during neisseria gonorrhoeae suppression of CD4⁺ T lymphocyte activation. *J. Immunol.* 180: 6827-6835.
4. Gaur, S., et al. 2008. Altered splicing of CEACAM1 in breast cancer: identification of regulatory sequences that control splicing of CEACAM1 into long or short cytoplasmic domain isoforms. *Mol. Cancer* 7: 46.
5. Slevogt, H., et al. 2008. CEACAM1 inhibits Toll-like receptor 2-triggered antibacterial responses of human pulmonary epithelial cells. *Nat. Immunol.* 9: 1270-1278.
6. Nittka, S., et al. 2008. The CEACAM1-mediated apoptosis pathway is activated by CEA and triggers dual cleavage of CEACAM1. *Oncogene* 27: 3721-3728.
7. Zalali, H., et al. 2008. CEACAM1, a SOX9 direct transcriptional target identified in the colon epithelium. *Oncogene* 27: 7131-7138.
8. Callaghan, M.J., et al. 2008. Haplotypic diversity in human CEACAM genes: effects on susceptibility to meningococcal disease. *Genes Immun.* 9: 30-37.

SOURCE

pan CEA (COL-1) is a mouse monoclonal antibody raised against colon carcinoma cells of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

pan CEA (COL-1) is recommended for detection of pan CEA of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

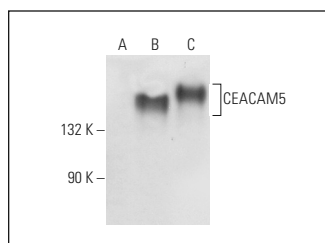
Molecular Weight of pan CEA: 80-200 kDa.

Positive Controls: T84 whole cell lysate: sc-364797, HT-29 whole cell lysate: sc-364232 or CEA (h2): 293T Lysate: sc-170027.

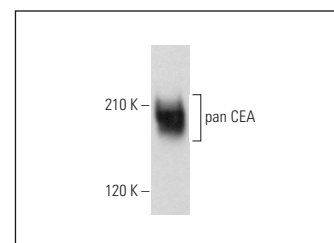
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



pan CEA (COL-1): sc-47756. Western blot analysis of CEACAM5 expression in non-transfected 293T: sc-117752 (A), human CEACAM5 transfected 293T: sc-170027 (B) and T84 (C) whole cell lysates.



pan CEA (COL-1): sc-47756. Western blot analysis of pan CEA expression in HT-29 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Volonte, A., et al. 2014. Cancer-initiating cells from colorectal cancer patients escape from T cell-mediated immunosurveillance *in vitro* through membrane-bound IL-4. *J. Immunol.* 192: 523-532.
2. Liu, L., et al. 2018. Injectable alendronate-functionalized GelMA hydrogels for mineralization and osteogenesis. *RSC Adv.* 8: 22764-22776.
3. Liu, X., et al. 2019. Molecular recognition-directed site-specific release of stem cell differentiation inducers for enhanced joint repair. *Biomaterials* 232: 119644.

RESEARCH USE

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