SANTA CRUZ BIOTECHNOLOGY, INC.

CEACAM7 siRNA (h): sc-72073

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. CECAM7 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. CECAM7 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. Frängsmyr, 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.

CHROMOSOMAL LOCATION

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

PRODUCT

CEACAM7 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CEACAM7 shRNA Plasmid (h): sc-72073-SH and CEACAM7 shRNA (h) Lentiviral Particles: sc-72073-V as alternate gene silencing products.

For independent verification of CEACAM7 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72073A, sc-72073B and sc-72073C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CEACAM7 siRNA (h) is recommended for the inhibition of CEACAM7 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CEACAM7 (BAC2): sc-59946 is recommended as a control antibody for monitoring of CEACAM7 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CEACAM7 gene expression knockdown using RT-PCR Primer: CEACAM7 (h)-PR: sc-72073-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.