SANTA CRUZ BIOTECHNOLOGY, INC.

SP siRNA (h): sc-91462

BACKGROUND

Trefoil peptides are protease resistant molecules secreted throughout the gut that play a role in mucosal healing and protection of the gastrointestinal epithelia. These peptides contain three intrachain disulfide bonds, forming the trefoil motif, or P-domain. SP, also designated trefoil factor 2 (TFF2) precursor, is a trefoil protein that functions to inhibit gastrointestinal motility and gastric acid secretion. SP may also act as a structural component of the gastric mucus, possibly by stabilizing glycoproteins in the mucus gel through interactions with carbohydrate side chains. A downregulation of SP expression is associated with primary gastric cancer, and a progressive loss of this protein is likely to be involved in the early stage of the multi-step gastric carcinogenesis pathway.

REFERENCES

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2. May, F.E., et al. 1997. Trefoil proteins: their role in normal and malignant cells. J. Pathol. 183: 4-7.
3. Poulsom, R., et al. 1997. Intestinal trefoil factor (TFF3) and pS2 (TFF1), but not spasmolytic polypeptide (TFF2) mRNAs are co-expressed in normal, hyperplastic, and neoplastic human breast epithelium. J. Pathol. 183: 30-38.
4. Murphy, M.S. 1998. Growth factors and the gastrointestinal tract. Nutrition 14: 771-774.
5. Ribieras, S., et al. 1998. The pS2/TFF1 trefoil factor, from basic research to clinical applications. Biochim. Biophys. Acta 19: F61-F77.
6. Kirikoshi, H., et al. 2002. Expression of TFF1, TFF2 and TFF3 in gastric cancer. Int. J. Oncol. 21: 655-659.
7. Leung, W.K., et al. 2002. Expression of trefoil peptides (TFF1, TFF2, and TFF3) in gastric carcinomas, intestinal metaplasia, and non-neoplastic gastric tissues. J. Pathol. 197: 582-588.
8. Rodrigues, S., et al. 2003. Selective abrogation of the proinvasive activity of the trefoil peptides pS2 and spasmolytic polypeptide by disruption of the EGF receptor signaling pathways in kidney and colonic cancer cells. Oncogene 22: 4488-4497.

CHROMOSOMAL LOCATION

Genetic locus: TFF2 (human) mapping to 21q22.3.

PRODUCT

SP siRNA (h) is a pool of 2 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 SP shRNA Plasmid (h): sc-91462-SH and SP shRNA (h) Lentiviral Particles: sc-91462-V as alternate gene silencing products.

For independent verification of SP (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-91462A and sc-91462B.

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

SP siRNA (h) is recommended for the inhibition of SP 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

SP (4G7C3): sc-517213 is recommended as a control antibody for monitoring of SP 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SP gene expression knockdown using RT-PCR Primer: SP (h)-PR: sc-91462-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.