

# CEMP1 siRNA (h): sc-106733

## BACKGROUND

A mineralized connective tissue known as cementum covers the root surfaces of teeth and is required for maturation of periodontal tissue. CEMP1 (cementum protein 1), also designated CP23 or cementoblastoma-derived protein 1, is a 247 amino acid nuclear and cytoplasmic protein that is thought to regulate cementoblast behavior. Expressed specifically in periodontal ligament and cementum, CEMP1 may play a role in differentiation and mineralization of non-osteogenic cells. The gene encoding CEMP1 maps to human chromosome 16, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

## REFERENCES

1. Brunner, H.G., et al. 1994. A Stickler syndrome gene is linked to chromosome 6 near the COL11A2 gene. *Hum. Mol. Genet.* 3: 1561-1564.
2. Cesari, R., et al. 2003. Parkin, a gene implicated in autosomal recessive juvenile parkinsonism, is a candidate tumor suppressor gene on chromosome 6q25-q27. *Proc. Natl. Acad. Sci. USA* 100: 5956-5961.
3. Alvarez-Pérez, M.A., et al. 2006. Molecular cloning, expression and immunolocalization of a novel human cementum-derived protein (CP-23). *Bone* 38: 409-419.
4. Carmona-Rodríguez, B., et al. 2007. Human Cementum Protein 1 induces expression of bone and cementum proteins by human gingival fibroblasts. *Biochem. Biophys. Res. Commun.* 358: 763-769.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611113. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Bläker, H., et al. 2008. Recurrent deletions at 6q in early age of onset non-HNPCC- and non-FAP-associated intestinal carcinomas. Evidence for a novel cancer susceptibility locus at 6q14-q22. *Genes Chromosomes Cancer* 47: 159-164.

## CHROMOSOMAL LOCATION

Genetic locus: CEMP1 (human) mapping to 16p13.3.

## PRODUCT

CEMP1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CEMP1 shRNA Plasmid (h): sc-106733-SH and CEMP1 shRNA (h) Lentiviral Particles: sc-106733-V as alternate gene silencing products.

For independent verification of CEMP1 (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-106733A, sc-106733B and sc-106733C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

CEMP1 siRNA (h) is recommended for the inhibition of CEMP1 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  $\mu$ M in 66  $\mu$ l. 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CEMP1 gene expression knockdown using RT-PCR Primer: CEMP1 (h)-PR: sc-106733-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.