SANTA CRUZ BIOTECHNOLOGY, INC.

Tuftelin siRNA (h): sc-61736

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dental enamel is a highly mineralized tissue in which most of the volume is occupied by large, highly organized, hydroxyapatite crystals. This structure is thought to be controlled through the interaction of many organic matrix molecules, including Amelogenin, Ameloblastin, Enamelin, and Tuftelin. All of these secreted proteins are involved in the mineralization and enamel matrix formation in developing tooth enamel. Tuftelin is also expressed in normal and cancerous non-mineralizing soft tissues, which suggests it has a universal function and/or a multifunctional role. The Tuftelin protein contains one N-glycosylation site, seven O-glycosylation sites and seven phosphorylation sites. It also contains a coiled-coil domain that is involved in self-assembly and the interaction of Tuftelin with the Tuftelin interacting protein TIP39.

REFERENCES

1. Paine, M.L., et al. 1997. Carboxyl-region of tuftelin mediates self-assembly. Connect. Tissue Res. 35: 157-161.
2. Deutsch, D., et al. 1997. Tuftelin: enamel mineralization and amelogenesis imperfecta. Ciba Found. Symp. 205: 135-147.
3. MacDougall, M., et al. 1998. Cloning, characterization, and tissue expression pattern of mouse tuftelin cDNA. J. Dent. Res. 77: 1970-1978.
4. Deutsch, D., et al. 1998. Tuftelin—aspects of protein and gene structure. Eur. J. Oral Sci. 106: 315-323.
5. Mao, Z., et al. 2001. The human tuftelin gene: cloning and characterization. Gene 279: 181-196.
6. Deutsch, D., et al. 2002. The human tuftelin gene and the expression of Tuftelin in mineralizing and nonmineralizing tissues. Connect. Tissue Res. 43: 425-434.
7. Luo, W., et al. 2004. *In vivo* overexpression of Tuftelin in the enamel organic matrix. Cells Tissues Organs 177: 212-220.

CHROMOSOMAL LOCATION

Genetic locus: TUFT1 (human) mapping to 1q21.3.

PRODUCT

Tuftelin 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 Tuftelin shRNA Plasmid (h): sc-61736-SH and Tuftelin shRNA (h) Lentiviral Particles: sc-61736-V as alternate gene silencing products.

For independent verification of Tuftelin (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-61736A, sc-61736B and sc-61736C.

PROTOCOLS

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

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

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

Tuftelin (G-11): sc-365632 is recommended as a control antibody for monitoring of Tuftelin 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 Tuftelin gene expression knockdown using RT-PCR Primer: Tuftelin (h)-PR: sc-61736-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.