SANTA CRUZ BIOTECHNOLOGY, INC.

α-S1-casein siRNA (m): sc-72411

BACKGROUND

α-S1-casein, also known as CSN1S1, CSN1 or CASA, is a 185 amino acid secreted protein that is mammary gland-specific and belongs to the α-casein family. Existing as a disulfide-linked heterodimer with κ-casein, α-S1-casein plays an important role in the ability of milk to transport calcium phosphate, a family of minerals that are key components of bone and teeth. α-S1-casein exists as multiple alternatively spliced isoforms and is encoded by a gene which maps to a region on human chromosome 4 that encodes other casein family members. Chromosome 4 houses nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Cavaletto, M., et al. 1994. Human α-S1-casein like protein: purification and N-terminal sequence determination. Biol. Chem. Hoppe-Seyler 375: 149-151.
2. Johnsen, L.B., et al. 1995. Characterization of three types of human α-S1-casein mRNA transcripts. Biochem. J. 309: 237-242.
3. Chen, C.S., et al. 1995. A mapping study of 13 genes on human chromosome bands 4q11→q25. Cytogenet. Cell Genet. 69: 260-265.
4. Fujiwara, Y., et al. 1997. Genomic organization and chromosomal localization of the human casein gene family. Hum. Genet. 99: 368-373.
5. Rijnkels, M., et al. 1997. Physical map and localization of the human casein gene locus. Mamm. Genome 8: 285-286.
6. Murakami, K., et al. 1998. Identification of minor proteins of human colostrum and mature milk by two-dimensional electrophoresis. Electrophoresis 19: 2521-2527.

CHROMOSOMAL LOCATION

Genetic locus: Csn1s1 (mouse) mapping to 5 E1.

PRODUCT

α-S1-casein siRNA (m) 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 α-S1-casein shRNA Plasmid (m): sc-72411-SH and α-S1-casein shRNA (m) Lentiviral Particles: sc-72411-V as alternate gene silencing products.

For independent verification of α-S1-casein (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72411A, sc-72411B and sc-72411C.

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

α-S1-casein siRNA (m) is recommended for the inhibition of α-S1-casein expression in mouse 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

α-S1-casein (D-12): sc-365929 is recommended as a control antibody for monitoring of α-S1-casein 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 α-S1-casein gene expression knockdown using RT-PCR Primer: α-S1-casein (m)-PR: sc-72411-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.