SANTA CRUZ BIOTECHNOLOGY, INC.

κ-casein siRNA (h): sc-40386

BACKGROUND

Milk proteins are crucial for the development of all newborn mammals, and caseins consititute the major proteins in mammalian milk. β- and κ-casein are the only caseins present in human milk. The β-casein/κ-casein ratio is higher in colostrum than in transitional and mature milk and is related to a better digestibility of colostrum casein micelles by the neonate during the first days of life. κ-casein stabilizes the micellar structure of casein in mammalian milk. κ-casein gene is hypermethylated at the HpaII-MspI sites in the mammary gland of virgin, 10-day pregnant and nonlactating females, but not in 10-day lactating females. κ-casein expression inversely correlates to the extent of methylation of the κ-casein gene, except in the prolactin-stimulated virgin gland. In the presence of the lactogenic hormones, Insulin, aldosterone, corticosterone and PRL, epidermal growth factor inhibits the induction of κ-casein mRNA in both mouse and rat mammary glands.

REFERENCES

1. Nakhasi, H.L., et al. 1984. Expression of κ-casein in normal and neoplastic rat mammary gland is under the control of prolactin. J. Biol. Chem. 259: 14894-14898.
2. Thompson, M.D. and Nakhasi, H.L. 1985. Methylation and expression of rat κ-casein gene in normal and neoplastic rat mammary gland. Cancer Res. 45: 1291-1295.
3. Vonderhaar, B.K. and Nakhasi, H.L. 1986. Bifunctional activity of epidermal growth factor on α- and κ-casein gene expression in rodent mammary glands *in vitro*. Endocrinology 119: 1178-1184.
4. Menon, R.S., et al. 1992. Regional localization of human β-casein gene (CSN2) to 4pter-q21. Genomics 13: 25-26.
5. Cuilliere, M.L., et al. 1999. Changes in the κ-casein and β-casein concentrations in human milk during lactation. J. Clin. Lab. Anal. 13: 213-218.
6. Iametti, B.S., et al. 2001. Primary structure of κ-casein isolated from mares' milk. J. Dairy Res. 68: 53-61.

CHROMOSOMAL LOCATION

Genetic locus: CSN3 (human) mapping to 4q13.3.

PRODUCT

κ-casein 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 κ-casein shRNA Plasmid (h): sc-40386-SH and κ-casein shRNA (h) Lentiviral Particles: sc-40386-V as alternate gene silencing products.

For independent verification of κ-casein (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-40386A, sc-40386B and sc-40386C.

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

κ-casein siRNA (h) is recommended for the inhibition of κ-casein 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor κ-casein gene expression knockdown using RT-PCR Primer: κ-casein (h)-PR: sc-40386-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.