SANTA CRUZ BIOTECHNOLOGY, INC.

basonuclin siRNA (h): sc-37708

BACKGROUND

The zinc finger protein, basonuclin, is a putative rDNA transcription factor with highly restricted tissue distribution. Basonuclin is abundantly expressed in keratinocytes of the basal layer of the epidermis, the outer sheath of hair follicles and in the germ cells of the testis and ovary. Although basonuclin is associated with chromatin throughout the cell cycle, including mitosis, it disappears when cells become post-mitotic. In the epidermis, basonuclin, which is mainly localized to the cytoplasm, translocates to basal cell nuclei during different stages of keratinocyte growth. Basonuclin may enhance rRNA synthesis by elevating transcription from an rDNA promoter and inhibiting RNA polymerase I transcription through its zinc finger domain. Therefore, basonuclin may be a cell-type-specific transcription factor for rDNA transcription.

REFERENCES

1. Tseng, H., et al. 1998. Basonuclin, a zinc finger protein associated with epithelial expansion and proliferation. Front. Biosci. 3: 985-988.
2. Mahoney, M.G., et al. 1998. Translocation of the zinc finger protein basonuclin from the mouse germ cell nucleus to the midpiece of the spermatozoon during spermiogenesis. Biol. Reprod. 59: 388-394.
3. Iuchi, S., et al. 1999. Basonuclin, a zinc finger protein of keratinocytes and reproductive germ cells, binds to the rRNA gene promoter. 1999. Proc. Natl. Acad. Sci. USA 96: 9628-9632.
4. Tseng, H., et al. 1999. Basonuclin in murine corneal and lens epithelia correlates with cellular maturation and proliferative ability. Differentiation 65: 221-227.
5. Tseng, H., et al. 1999. Basonuclin is associated with the ribosomal RNA genes on human keratinocyte mitotic chromosomes. J. Cell Sci. 112: 3039-3047.
6. Iuchi, S., et al. 2000. Alternative subcellular locations of keratinocyte basonuclin. Exp. Dermatol. 9: 178-184.
7. Tian, Q., et al. 2001. Function of basonuclin in increasing transcription of the ribosomal RNA genes during mouse oogenesis. Development 128: 407-416.
8. Wang, J., et al. 2006. Search for basonuclin target genes. Biochem. Biophys. Res. Commun. 348: 1261-1271.

CHROMOSOMAL LOCATION

Genetic locus: BNC1 (human) mapping to 15q25.2.

PRODUCT

basonuclin 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 basonuclin shRNA Plasmid (h): sc-37708-SH and basonuclin shRNA (h) Lentiviral Particles: sc-37708-V as alternate gene silencing products.

For independent verification of basonuclin (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-37708A, sc-37708B and sc-37708C.

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

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

basonuclin (1F4): sc-517114 is recommended as a control antibody for monitoring of basonuclin 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 basonuclin gene expression knockdown using RT-PCR Primer: basonuclin (h)-PR: sc-37708-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.