SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H3.3B siRNA (h): sc-105524

BACKGROUND

Eukaryotic histones are basic and water soluble nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fiber. Two molecules of each of the four core histones (H2A, H2B, H3 and H4) form the octamer; formed of two H2A-H2B dimers and two H3-H4 dimers, forming two nearly symmetrical halves by tertiary structure. Histones are subject to posttranslational modification by enzymes primarily on their N-terminal tails, but also in their globular domains. Such modifications include methylation, citrullination, acetylation, phosphorylation, sumoylation, ubiquitination and ADP-ribosylation. Histone H3.3 is a replacement histone subtype that is encoded by two genes, H3.3A and H3.3B, that are expressed independently from the cell cycle. The gene encoding H3.3B is localized to human chromosome 17, which is in contrast to the majority of the replication-dependent histone genes that are localized to clusters on human chromosome 6 and human chromosome 1.

REFERENCES

1. Albig, W., et al. 1995. The human replacement Histone H3.3B gene (H3F3B). Genomics 30: 264-272.
2. Bramlage, B., et al. 1997. Differential expression of the murine histone genes H3.3A and H3.3B. Differentiation 62: 13-20.
3. Witt, O., et al. 1997. Transcriptional regulation of the human replacement histone gene H3.3B. FEBS Lett. 408: 255-260.
4. Witt, O., et al. 1998. cAMP/phorbol ester response element is involved in transcriptional regulation of the human replacement histone gene H3.3B. Biochem. J. 329: 609-613.
5. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 601058. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Schurter, B.T., et al. 2001. Methylation of Histone H3 by co-activator-associated arginine methyltransferase 1. Biochemistry 40: 5747-5756.
7. Frank, D., et al. 2003. Differential expression of human replacement and cell cycle dependent H3 histone genes. Gene 312: 135-143.

CHROMOSOMAL LOCATION

Genetic locus: H3F3B (human) mapping to 17q25.1.

PRODUCT

Histone H3.3B siRNA (h) is a pool of 2 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 Histone H3.3B shRNA Plasmid (h): sc-105524-SH and Histone H3.3B shRNA (h) Lentiviral Particles: sc-105524-V as alternate gene silencing products.

For independent verification of Histone H3.3B (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-105524A and sc-105524B.

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

Histone H3.3B siRNA (h) is recommended for the inhibition of Histone H3.3B 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 Histone H3.3B gene expression knockdown using RT-PCR Primer: Histone H3.3B (h)-PR: sc-105524-PR (20 µl, 493 bp). 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.