SANTA CRUZ BIOTECHNOLOGY, INC.

Histone H3.3A siRNA (h): sc-105523

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 fibers. Two molecules of each of the four core histones (H2A, H2B, H3 and H4) form the octamer, which is comprised 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. Histone H3.3A, also known as H3F3, is a 136 amino acid nuclear protein that is expressed throughout the cell cycle and is the predominant form of Histone H3 in non-dividing cells. Characteristic of most Histone proteins, Histone H3.3A can undergo a variety of post-translational modifications, including acetylation, phosphorylation, methylation and ubiquitination, all of which may modify the activity of Histone H3.3A.

REFERENCES

1. Schurter, B.T., et al. 2001. Methylation of histone H3 by coactivator-associated arginine methyltransferase 1. Biochemistry 40: 5747-5756.
2. Chicas, A., et al. 2005. Small interfering RNAs that trigger posttranscriptional gene silencing are not required for the histone H3 Lys9 methylation necessary for transgenic tandem repeat stabilization in *Neurospora crassa.* Mol. Cell. Biol. 25: 3793-3801.
3. Fischle, W., et al. 2005. Regulation of HP1-chromatin binding by histone H3 methylation and phosphorylation. Nature 438: 1116-1122.
4. Bode, A.M., et al. 2005. Inducible covalent posttranslational modification of histone H3. Sci. STKE 2005: re4.
5. Dialynas, G.K., et al. 2006. Methylation-independent binding to histone H3 and cell cycle-dependent incorporation of HP1β into heterochromatin. J. Biol. Chem. 281: 14350-14360.
6. Borde, V., et al. 2008. Histone H3 lysine 4 trimethylation marks meiotic recombination initiation sites. EMBO J. 28: 99-111.
7. Jin, Y., et al. 2008. Genetic and genomewide analysis of simultaneous mutations in acetylated and methylated lysine residues in histone H3 in *Saccharomyces cerevisiae.* Genetics 181: 461-472.

CHROMOSOMAL LOCATION

Genetic locus: H3F3A (human) mapping to 1q42.12.

PRODUCT

Histone H3.3A siRNA (h) is a target-specific 19-25 nt siRNA 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 H3.3A shRNA Plasmid (h): sc-105523-SH and Histone H3.3A shRNA (h) Lentiviral Particles: sc-105523-V as alternate gene silencing products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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 H3.3A siRNA (h) is recommended for the inhibition of Histone H3.3A 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 H3.3A gene expression knockdown using RT-PCR Primer: Histone H3.3A (h)-PR: sc-105523-PR (20 µl, 519 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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