SANTA CRUZ BIOTECHNOLOGY, INC.

Histone cluster 1 H4I siRNA (h): sc-105502

BACKGROUND

Histones are a superfamily of basic nuclear proteins that, together, are responsible for maintaining eukaryotic chromosomal structure. There are four core Histones, designated Histone H2A, Histone H2B, Histone H3 and Histone H4, all of which contribute two protein molecules that, together, form an octamer around which DNA is wrapped in repeating units known as nucleosomes. The Histone H1 subfamily of proteins interact with linker DNA between nucleosomes and are responsible for condensing chromatin into higher ordered structures. Histone cluster 1 H4I, also known as HIST1H1A, H1F1 or HIST1, is a 215 amino acid protein that localizes to the nucleus. One of several members of the Histone H1/H5 family, Histone cluster 1 H4I plays a role in the condensation of nucleosomes into higher ordered structures, thereby playing a role in transcription and, ultimately, cell cycle progression. The Histone cluster 1 H4I gene maps within a cluster of Histone genes that are found on human chromosome 6p22.1.

REFERENCES

1. Eick, S., Nicolai, M., Mumberg, D. and Doenecke, D. 1989. Human H1 Histones: conserved and varied sequence elements in two H1 subtype genes. Eur. J. Cell Biol. 49: 110-115.
2. Albig, W., Drabent, B., Kunz, J., Kalff-Suske, M., Grzeschik, K.H. and Doenecke, D. 1993. All known human H1 Histone genes except the $H1^0$ gene are clustered on chromosome 6. Genomics 16: 649-654.
3. Lever, M.A., Th'ng, J.P., Sun, X. and Hendzel, M.J. 2000. Rapid exchange of Histone H1.1 on chromatin in living human cells. Nature 408: 873-876.
4. Misteli, T., Gunjan, A., Hock, R., Bustin, M. and Brown, D.T. 2000. Dynamic binding of Histone H1 to chromatin in living cells. Nature 408: 877-881.
5. Marzluff, W.F., Gongidi, P., Woods, K.R., Jin, J. and Maltais, L.J. 2002. The human and mouse replication-dependent histone genes. Genomics 80: 487-498.
6. Coleman, M.A., Miller, K.A., Beernink, P.T., Yoshikawa, D.M. and Albala, J.S. 2003. Identification of chromatin-related protein interactions using protein microarrays. Proteomics 3: 2101-2107.
7. Hendzel, M.J., Lever, M.A., Crawford, E. and Th'ng, J.P. 2004. The C-terminal domain is the primary determinant of Histone H1 binding to chromatin *in vivo*. J. Biol. Chem. 279: 20028-20034.
8. Lin, Q., Inselman, A., Han, X., Xu, H., Zhang, W., Handel, M.A. and Skoultchi, A.I. 2004. Reductions in linker histone levels are tolerated in developing spermatocytes but cause changes in specific gene expression. J. Biol. Chem. 279: 23525-23535.
9. Garcia, B.A., Busby, S.A., Barber, C.M., Shabanowitz, J., Allis, C.D. and Hunt, D.F. 2004. Characterization of phosphorylation sites on Histone H1 isoforms by tandem mass spectrometry. J. Proteome Res. 3: 1219-1227.

CHROMOSOMAL LOCATION

Genetic locus: HIST1H4I (human) mapping to 6p22.1.

RESEARCH USE

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

PRODUCT

Histone cluster 1 H4I 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 cluster 1 H4I shRNA Plasmid (h): sc-105502-SH and Histone cluster 1 H4I shRNA (h) Lentiviral Particles: sc-105502-V as alternate gene silencing 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

Histone cluster 1 H4I siRNA (h) is recommended for the inhibition of Histone cluster 1 H4I 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.

PROTOCOLS

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