SANTA CRUZ BIOTECHNOLOGY, INC.

Histone cluster 1 H1A siRNA (h): sc-105457

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 H1A, also known as H1F1, H1.1 or HIST1, is a 215 amino acid protein that localizes to the nucleus. One of several members of the Histone H1 family, the Histone cluster 1 H1A is thought to play a key role in the compaction of chromatin and may, thus, be necessary for proper cell cycle progression. The gene encoding Histone cluster 1 H1A is located within a large histone gene cluster on chromosome 6.

REFERENCES

1. Eick, S., et al. 1989. Human H1 Histones: conserved and varied sequence elements in two H1 subtype genes. Eur. J. Cell Biol. 49: 110-115.
2. Albig, W., et al. 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., et al. 2000. Rapid exchange of Histone H1.1 on chromatin in living human cells. Nature 408: 873-876.
4. Misteli, T., et al. 2000. Dynamic binding of Histone H1 to chromatin in living cells. Nature 408: 877-881.
5. Marzluff, W.F., et al. 2002. The human and mouse replication-dependent histone genes. Genomics 80: 487-498.
6. Coleman, M.A., et al. 2003. Identification of chromatin-related protein interactions using protein microarrays. Proteomics 3: 2101-2107.
7. Hendzel, M.J., et al. 2004. The C-terminal domain is the primary determinant of Histone H1 binding to chromatin *in vivo*. J. Biol. Chem. 279: 20028-20034.

CHROMOSOMAL LOCATION

Genetic locus: HIST1H1A (human) mapping to 6p22.2.

PRODUCT

Histone cluster 1 H1A 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 cluster 1 H1A shRNA Plasmid (h): sc-105457-SH and Histone cluster 1 H1A shRNA (h) Lentiviral Particles: sc-105457-V as alternate gene silencing products.

For independent verification of Histone cluster 1 H1A (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-105457A and sc-105457B.

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 H1A siRNA (h) is recommended for the inhibition of Histone cluster 1 H1A 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 cluster 1 H1A gene expression knockdown using RT-PCR Primer: Histone cluster 1 H1A (h)-PR: sc-105457-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. El Gazzar, M., et al. 2009. Chromatin-specific remodeling by HMGB1 and linker Histone H1 silences proinflammatory genes during endotoxin tolerance. Mol. Cell. Biol. 29: 1959-1971.

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.