SANTA CRUZ BIOTECHNOLOGY, INC.

Histone cluster 2 H2BE siRNA (m): sc-146027

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, 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 cluster 2 H2BE (Histone H2B type 2-E), also known as HIST2H2BE, H2B, H2BQ, H2BFQ, H2BGL105 or GL105, is a 126 amino acid nuclear protein belonging to the Histone H2B family. Functioning as a key component of the nucleosome, Histone cluster 2 H2BE is essential for chromosomal stability, transcriptional regulation and DNA repair and regulation. Histone cluster 2 H2BE has also been implicated in bactericidal activity of amniotic fluid and may assist in assembly of the colonic epithelium's antimicrobial barrier.

REFERENCES

1. Collart, D., et al. 1992. A human histone H2B.1 variant gene, located on chromosome 1, utilizes alternative 3' end processing. J. Cell. Biochem. 50: 374-385.
2. Nemergut, M.E., et al. 2001. Chromatin docking and exchange activity enhancement of RCC1 by Histones H2A and H2B. Science 292: 1540-1543.
3. Howell, S.J., et al. 2003. Antimicrobial polypeptides of the human colonic epithelium. Peptides 24: 1763-1770.
4. Tollin, M., et al. 2003. Antimicrobial peptides in the first line defence of human colon mucosa. Peptides 24: 523-530.
5. Maile, T., et al. 2004. TAF1 activates transcription by phosphorylation of serine 33 in histone H2B. Science 304: 1010-1014.
6. Dorigo, B., et al. 2004. Nucleosome arrays reveal the two-start organization of the chromatin fiber. Science 306: 1571-1573.
7. Barbera, A.J., et al. 2006. The nucleosomal surface as a docking station for Kaposi's sarcoma herpesvirus LANA. Science 311: 856-861.

CHROMOSOMAL LOCATION

Genetic locus: Hist2h2be (mouse) mapping to 3 F2.1.

PRODUCT

Histone cluster 2 H2BE siRNA (m) 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 Histone cluster 2 H2BE shRNA Plasmid (m): sc-146027-SH and Histone cluster 2 H2BE shRNA (m) Lentiviral Particles: sc-146027-V as alternate gene silencing products.

For independent verification of Histone cluster 2 H2BE (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146027A, sc-146027B and sc-146027C.

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 2 H2BE siRNA (m) is recommended for the inhibition of Histone cluster 2 H2BE expression in mouse 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 2 H2BE gene expression knockdown using RT-PCR Primer: Histone cluster 2 H2BE (m)-PR: sc-146027-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.