SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC5 siRNA (h): sc-35542

BACKGROUND

In the intact cell, DNA closely associates with histones and other nuclear proteins to form chromatin. The remodeling of chromatin is believed to be a critical component of transcriptional regulation and a major source of this remodeling is brought about by the acetylation of nucleosomal histones. Acetylation of lysine residues in the amino terminal tail domain of histone results in an allosteric change in the nucleosomal conformation and an increased accessibility to transcription factors by DNA. Conversely, the deacetylation of histones is associated with transcriptional silencing. Several mammalian proteins have been identified as nuclear histone acetylases, including GCN5, PCAF (p300/CBPassociated factor), p300/CBP, HAT1, and the TFIID subunit TAF II p250. Mammalian HDAC1 (also designated HD1), HDAC2 (also designated RPD3) and HDAC3-6, have been identified as histone deacetylases.

CHROMOSOMAL LOCATION

Genetic locus: HDAC5 (human) mapping to 17q21.31.

PRODUCT

HDAC5 siRNA (h) 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 HDAC5 shRNA Plasmid (h): sc-35542-SH and HDAC5 shRNA (h) Lentiviral Particles: sc-35542-V as alternate gene silencing products.

For independent verification of HDAC5 (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-35542A, sc-35542B and sc-35542C.

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

HDAC5 siRNA (h) is recommended for the inhibition of HDAC5 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.

GENE EXPRESSION MONITORING

HDAC5 (C-11): sc-133225 is recommended as a control antibody for monitoring of HDAC5 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HDAC5 gene expression knockdown using RT-PCR Primer: HDAC5 (h)-PR: sc-35542-PR (20 µl, 528 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jeon, E.J. and Lee, K.Y. 2006. Bone morphogenetic protein-2 stimulates RUNX2 acetylation. J. Biol. Chem. 281: 16502-16511.
2. Venza, I., et al. 2014. Class I-specific histone deacetylase inhibitor MS-275 overrides TRAIL-resistance in melanoma cells by downregulating c-FLIP. Int. Immunopharmacol. 21: 439-446.
3. Liu, Q., et al. 2015. Formononetin sensitizes glioma cells to doxorubicin through preventing EMT via inhibition of histone deacetylase 5. Int. J. Clin. Exp. Pathol. 8: 6434-6441.
4. Tsou, P.S., et al. 2016. Histone deacetylase 5 is overexpressed in scleroderma endothelial cells and impairs angiogenesis via repression of proangiogenic factors. Arthritis Rheumatol. 68: 2975-2985.
5. Zhang, M., et al. 2016. AR-42 induces apoptosis in human hepatocellular carcinoma cells via HDAC5 inhibition. Oncotarget 7: 22285-22294.
6. Xu, Q., et al. 2018. Hyper-acetylation contributes to the sensitivity of chemo-resistant prostate cancer cells to histone deacetylase inhibitor trichostatin A. J. Cell. Mol. Med. 22: 1909-1922.
7. Zhang, E., et al. 2018. A novel long noncoding RNA HOXC-AS3 mediates tumorigenesis of gastric cancer by binding to YBX1. Genome Biol. 19: 154.
8. Dong, N., et al. 2018. EGF-mediated overexpression of Myc attenuates miR-26b by recruiting HDAC3 to induce epithelial-mesenchymal transition of lens epithelial cells. Biomed Res. Int. 2018: 7148023.
9. McGuire, J.J., et al. 2020. Histone deacetylase inhibition prevents the growth of primary and metastatic osteosarcoma. Int. J. Cancer 147: 2811-2823.

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.