SANTA CRUZ BIOTECHNOLOGY, INC.

HDAC10 siRNA (m): sc-72308

BACKGROUND

Histone deacetylases (HDACs) play an important role in the modification of chromatin structure and thus in the suppression and activation of transcription and cellular differentiation. There are 11 members in the HDAC family that are divided into four classes. Class I HDACs represent homologs of the yeast histone deacetylase Rpd3, class II HDACs share strong homology with the yeast histone deacetylase Hda1, class III HDACs are closely related to the yeast Sir2 protein and class IV HDACs comprise histone deacetylase 11 (HDAC11)-related enzymes. HDAC10, also known as HD10, is a member of the class II HDACs. It contains an N-terminal Hda1p-related catalytic domain and a unique C-terminal leucine-rich domain. HDAC10 is ubiquitously expressed and can shuttle between the cytoplasm and nucleus in response to celllular signals. It is able to repress transcription and, like other class II HDAC members, its enzymatic activity is inhibited by Trichostatin A (TSA).

REFERENCES

1. Tong, J.J., et al. 2002. Identification of HDAC10, a novel class II human histone deacetylase containing a leucine-rich domain. Nucleic Acids Res. 30: 1114-1123.
2. Guardiola, A.R., et al. 2002. Molecular cloning and characterization of a novel histone deacetylase HDAC10. J. Biol. Chem. 277: 3350-3356.
3. Fischer, D.D., et al. 2002. Isolation and characterization of a novel class II histone deacetylase, HDAC10. J. Biol. Chem. 277: 6656-6666.
4. Matsuyama, A., et al. 2002. *In vivo* destabilization of dynamic microtubules by HDAC6-mediated deacetylation. EMBO J. 21: 6820-6831.
5. Brush, M.H., et al. 2004. Deactylase inhibitors disrupt cellular complexes containing protein phosphatases and deacetylases. J. Biol. Chem. 279: 7685-7691.
6. Acharya, M.R., et al. 2005. Rational development of histone deacetylase inhibitors as anticancer agents: a review. Mol. Pharmacol. 68: 917-932.
7. Hess-Stumpp, H. 2005. Histone deacetylase inhibitors and cancer: from cell biology to the clinic. Eur. J. Cell Biol. 84: 109-121.

CHROMOSOMAL LOCATION

Genetic locus: Hdac10 (mouse) mapping to 15 E3.

PRODUCT

HDAC10 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 HDAC10 shRNA Plasmid (m): sc-72308-SH and HDAC10 shRNA (m) Lentiviral Particles: sc-72308-V as alternate gene silencing products.

For independent verification of HDAC10 (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-72308A, sc-72308B and sc-72308C.

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

HDAC10 siRNA (m) is recommended for the inhibition of HDAC10 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.

GENE EXPRESSION MONITORING

HDAC10 (E-2): sc-393417 is recommended as a control antibody for monitoring of HDAC10 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HDAC10 gene expression knockdown using RT-PCR Primer: HDAC10 (m)-PR: sc-72308-PR (20 µl, 546 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.