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- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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SANTA CRUZ BIOTECHNOLOGY, INC.

NSD1 siRNA (m): sc-45613

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The nuclear receptor-binding SET domain-containing protein 1 (NSD1) belongs to a family of proteins which have all been implicated in human malignancy. The protein family includes NSD2 and NSD3, both of which show 70-75% sequence identity with NSD1 but contribute substantially less to overgrowth phenotypes. Defects and microdeletions of the NSD1 gene are involved in Sotos syndrome, childhood acute myeloid leukemia (AML), Weaver syndrome and Beckwith-Wiedemann syndrome (BWS). The protein functions as a transcriptional intermediary factor capable of influencing transcription, either negatively or positively, depending on the cellular context. NSD1 is a nuclear protein expressed in brain, muscle, spleen, thymus, kidney and, to a lesser extent, lung.

REFERENCES

1. Kurotaki, N., et al. 2001. Molecular characterization of NSD1, a human homologue of the mouse NSD1 gene. Gene 279: 197-204.
2. Rayasam, G.V., et al. 2003. NSD1 is essential for early post-implantation development and has a catalytically active SET domain. EMBO J. 22: 3153-3163.
3. Rio, M., et al. 2003. Spectrum of NSD1 mutations in Sotos and Weaver syndromes. J. Med. Genet. 40: 436-440.
4. Al-Mulla, N., et al. 2004. Cancer in Sotos syndrome: report of a patient with acute myelocytic leukemia and review of the literature. J. Pediatr. Hematol. Oncol. 26: 204-208.
5. Baujat, G., et al. 2004. Paradoxical NSD1 mutations in Beckwith-Wiedemann syndrome and 11p15 anomalies in Sotos syndrome. Am. J. Hum. Genet. 74: 715-720.
6. Cecconi, M., et al. 2005. Mutation analysis of the NSD1 gene in a group of 59 patients with congenital overgrowth. Am. J. Med. Genet. A 134A: 247-253.
7. Douglas, J., et al. 2005. Evaluation of NSD2 and NSD3 in overgrowth syndromes. Eur. J. Hum. Genet. 13: 150-153.

CHROMOSOMAL LOCATION

Genetic locus: Nsd1 (mouse) mapping to 13 B1.

PRODUCT

NSD1 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 NSD1 shRNA Plasmid (m): sc-45613-SH and NSD1 shRNA (m) Lentiviral Particles: sc-45613-V as alternate gene silencing products.

For independent verification of NSD1 (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-45613A, sc-45613B and sc-45613C.

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

NSD1 siRNA (m) is recommended for the inhibition of NSD1 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 NSD1 gene expression knockdown using RT-PCR Primer: NSD1 (m)-PR: sc-45613-PR (20 µl). 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.