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NF-1B siRNA (m): sc-43566

BACKGROUND

NF-1, also designated CTF, consists of a family of CCAAT box binding proteins that stimulate DNA replication and activate transcription. Analysis of human NF-1 messenger RNA has revealed two forms of the NF-1 protein arising from an alternate splicing of a single NF-1 gene. NF-1 binds its consensus DNA element as a homodimer via an amino terminal DNA binding domain, and activates transcription through a putatively novel, proline-rich, carboxy terminal transactivation domain. The NF-1 protein has been shown to recognize and bind the adenovirus type 2 promoter and activate transcription of herpes simplex virus thymidine kinase genes. The NF-1 consensus element has been found in the upstream promoter region of myriad eukaryotic genes, including that of Ha-Ras, α -globin, HSP 70, GRP 78, Histone H1, myelin basic protein and in the *Xenopus laevis* vitellogenin gene promoter.

REFERENCES

1. Jones, K.A., et al. 1987. A cellular DNA-binding protein that activates eukaryotic transcription and DNA replication. *Cell* 48: 79-89.
2. Morgan, W.D., et al. 1987. Two transcriptional activators, CCAAT-box-binding transcription factor and heat shock transcription factor, interact with a human HSP 70 gene promoter. *Mol. Cell. Biol.* 7: 1129-1138.
3. Santoro, C., et al. 1988. A family of CCAAT-box-binding proteins active in transcription and DNA replication: cloning and expression of multiple cDNAs. *Nature* 334: 218-224.
4. Mermod, N., et al. 1989. The proline-rich transcriptional activator of CTF/NF-1 is distinct from the replication and DNA binding domain. *Cell* 58: 741-753.
5. Inoue, T., et al. 1990. Isolation of complementary DNAs encoding a cerebellum-enriched nuclear factor I family that activates transcription from the mouse myelin basic protein promoter. *J. Biol. Chem.* 265: 19065-19070.
6. Wooden, S.K., et al. 1991. Transactivation of the grp78 promoter by mal-folded proteins, glycosylation block, and calcium ionophore is mediated through a proximal region containing a CCAAT motif which interacts with CTF/NF-1. *Mol. Cell. Biol.* 11: 5612-5623.
7. Dusserre, Y. et al. 1992. Purified cofactors and Histone H1 mediate transcriptional regulation by CTF/NF-1. *Mol. Cell. Biol.* 12: 5228-5237.

CHROMOSOMAL LOCATION

Genetic locus: Nfib (mouse) mapping to 4 C3.

PRODUCT

NF-1B 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NF-1B shRNA Plasmid (m): sc-43566-SH and NF-1B shRNA (m) Lentiviral Particles: sc-43566-V as alternate gene silencing products.

For independent verification of NF-1B (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-43566A, sc-43566B and sc-43566C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NF-1B siRNA (m) is recommended for the inhibition of NF-1B 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 μ M in 66 μ l. 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 NF-1B gene expression knockdown using RT-PCR Primer: NF-1B (m)-PR: sc-43566-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Waki, H., et al. 2011. Global mapping of cell type-specific open chromatin by FAIRE-seq reveals the regulatory role of the NFI family in adipocyte differentiation. *PLoS Genet.* 7: e1002311.

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.