

NF-1 siRNA (h): sc-43561

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 HSP70 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.

PRODUCT

NF-1 siRNA (h) is a pool of 4 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-1 shRNA Plasmid (h): sc-43561-SH and NF-1 shRNA (h) Lentiviral Particles: sc-43561-V as alternate gene silencing products.

For independent verification of NF-1 (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-43561A, sc-43561B, sc-43561C and sc-43561D.

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-1 siRNA (h) is recommended for the inhibition of NF-1 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 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.

GENE EXPRESSION MONITORING

NF-1 (D-2): sc-74444 is recommended as a control antibody for monitoring of NF-1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Gopalan, S.M., et al. 2006. Nuclear factor-1-X regulates astrocyte-specific expression of the α 1-antichymotrypsin and glial fibrillary acidic protein genes. *J. Biol. Chem.* 281: 13126-13133.
2. Tapias, A., et al. 2008. Transcriptional regulation of the 5'-flanking region of the human transcription factor Sp3 gene by NF-1, c-Myb, B-Myb, AP-1 and E2F. *Biochim. Biophys. Acta* 1779: 318-329.
3. O'Donnell, A., et al. 2008. MAP kinase-mediated c-Fos regulation relies on a histone acetylation relay switch. *Mol. Cell* 29: 780-785.
4. Gaussin, A., et al. 2012. CTF/NF1 transcription factors act as potent genetic insulators for integrating gene transfer vectors. *Gene Ther.* 19: 15-24.
5. Kretova, M., et al. 2014. TGF- β /NF1/Smad4-mediated suppression of ANT2 contributes to oxidative stress in cellular senescence. *Cell. Signal.* 26: 2903-2911.
6. Yan, L., et al. 2021. Long noncoding RNA small nucleolar RNA host gene 12/microRNA-138-5p/nuclear factor I/B regulates neuronal apoptosis, inflammatory response, and oxidative stress in Parkinson's disease. *Bioengineered* 12: 12867-12879.

RESEARCH USE

For research use only, not for use in diagnostic procedures.