SANTA CRUZ BIOTECHNOLOGY, INC.

Nurr1 siRNA (m2): sc-270257

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The Power to Question

BACKGROUND

Nurr1 (Nur-related factor 1) and Nur77 (also designated NGFI-B) encode orphan nuclear receptors which may comprise an additional subfamily within the nuclear receptor superfamily. The rat and human homologs of mouse Nurr1 are designated RNR1 and NOT, respectively. Both Nurr1 and Nur77 are growth factor inducible, immediate early response genes. Induction of both Nurr1 and Nur77 is seen after membrane depolarization while only Nur77 induction is seen with NGF stimulation. Jun D acts as a mediator for Nur77. An increase in Nur77 expression is seen in activated T cells during G_0 to G_1 transition and throughout the G_1 phase. In addition to its function as an immediate early gene, Nur77 may play a role in TCR-mediated apoptosis. Cyclosporin A, a potent immunosuppressant, has been shown to inhibit the ability of Nur77 to bind DNA. A dominant negative form of Nur77 can protect T cell hybridomas from activation-induced apoptosis. However, the absolute requirement of Nur77 for TCR-mediated apoptosis is still under debate.

REFERENCES

1. Law, S.W., et al. 1992. Identification of a new brain-specific transcription factor, Nurr1. Mol. Endocrinol. 6: 2129-2135.
2. Mages, H.W., et al. 1994. NOT, a human immediate-early response gene closely related to the steroid/thyroid hormone receptor NAK1/TR3. Mol. Endocrinol. 8: 1583-1591.
3. Davis, I.J., et al. 1994. Endocrine and neurogenic regulation of the orphan nuclear receptors Nur77 and Nurr1 in the adrenal glands. Mol. Cell. Biol. 14: 3469-3483.
4. Yoon, J.K., et al. 1994. Involvement of JunD in transcriptional activation of the orphan receptor gene Nur77 by nerve growth factor and membrane depolarization in PC12 cells. Mol. Cell. Biol. 14: 7731-7743.
5. Garcia, I., et al. 1994. Induction of NGFI-B gene expression during T cell activation. Role of protein phosphatases. J. Immunol. 153: 3417-3425.
6. Winoto, A. 1994. Molecular characterization of the Nur77 orphan steroid receptor in apoptosis. Int. Arch. Allergy Immunol. 105: 344-346.
7. Lee, S.L., et al. 1995. Unimpaired thymic and T cell death in mice lacking the nuclear receptor NGFI-B (Nur77). Science 269: 532-535.

CHROMOSOMAL LOCATION

Genetic locus: Nr4a2 (mouse) mapping to 2 C1.1.

PRODUCT

Nurr1 siRNA (m2) 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 Nurr1 shRNA Plasmid (m2): sc-270257-SH and Nurr1 shRNA (m2) Lentiviral Particles: sc-270257-V as alternate gene silencing products.

For independent verification of Nurr1 (m2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270257A, sc-270257B and sc-270257C.

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

Nurr1 siRNA (m2) is recommended for the inhibition of Nurr1 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

Nurr1 (F-5): sc-376984 is recommended as a control antibody for monitoring of 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 Nurr1 gene expression knockdown using RT-PCR Primer: Nurr1 (m2)-PR: sc-270257-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.