SANTA CRUZ BIOTECHNOLOGY, INC.

Nrl siRNA (h): sc-38109

BACKGROUND

Nrl (neural retina leucine zipper) is a member of the Maf family of transcription factors, which characteristically contain a highly conserved basic leucine zipper (bZIP)-DNA binding motif. Both Nrl and c-Maf preferentially bind to T-MARE sites and are implicated in a wide variety of developmental and physiologic roles. The Maf-Nrl subfamily regulates the expression of cell type-specific genes in tissues of the hematopoietic system, cerebellum and developing hindbrain. Maf and Nrl proteins bind an extended AP-1-like sequence and can form heterodimers with Fos and Jun transcription factors. In retinal cells and photoreceptor cells, Nrl promotes the expression of rhodopsin through binding to the Nrl response element present in the rhodopsin promoter. Nrl is expressed throughout the developing central and peripheral nervous system during neuronal differentiation, and its expression is restricted to neocortex, brainstem and retinal neurons during adulthood.

REFERENCES

1. Swaroop, A., et al. 1992. A conserved retina-specific gene encodes a basic motif/leucine zipper domain. Proc. Natl. Acad. Sci. USA 89: 266-270.
2. Andrews, N.C., et al. 1993. The ubiquitous subunit of erythroid transcription factor NF-E2 is a small basic-leucine zipper protein related to the v-Maf oncogene. Proc. Natl. Acad. Sci. USA 90: 11488-11492.
3. Kerppola, T.K., et al. 1994. Maf and Nrl can bind to AP-1 sites and form heterodimers with Fos and Jun. Oncogene 9: 675-684.
4. Kerppola, T.K., et al. 1994. A conserved region adjacent to the basic domain is required for recognition of an extended DNA binding site by Maf/Nrl family proteins. Oncogene 9: 3149-3158.
5. Kurschner, C., et al. 1995. The Maf proto-oncogene stimulates transcription from multiple sites in a promoter that directs Purkinje neuron-specific gene expression. Mol. Cell. Biol. 15: 246-254.
6. Kumar, R., et al. 1996. The bZIP transcription factor Nrl stimulates rhodopsin promoter activity in primary retinal cell cultures. J. Biol. Chem. 271: 29612-29618.
7. Liu, Q., et al. 1996. Expression of the bZIP transcription factor gene Nrl in the developing nervous system. Oncogene 12: 207-211.

CHROMOSOMAL LOCATION

Genetic locus: NRL (human) mapping to 14q11.2.

PRODUCT

Nrl siRNA (h) 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 Nrl shRNA Plasmid (h): sc-38109-SH and Nrl shRNA (h) Lentiviral Particles: sc-38109-V as alternate gene silencing products.

For independent verification of Nrl (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-38109A, sc-38109B and sc-38109C.

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

Nrl siRNA (h) is recommended for the inhibition of Nrl 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 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

Nrl (F-2): sc-374277 is recommended as a control antibody for monitoring of Nrl 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 Nrl gene expression knockdown using RT-PCR Primer: Nrl (h)-PR: sc-38109-PR (20 µl, 512 bp). 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.