

NR2E1 siRNA (h): sc-75954

BACKGROUND

NR2 proteins are a large family of nuclear hormone receptor transcription factors. The proteins belonging to this family are characterized by discrete domains functioning in DNA and ligand binding. NR2E1 (nuclear receptor subfamily 2, group E, member 1), also known as TLX, is an essential component in the formation of synaptic plasticity and dendritic structure in retinal astrocytes. In addition, NR2E1 is an orphan receptor that binds DNA as part of the hormone response element (HRE), a transcription regulator for hormones. DNA-binding orphan receptors have the conserved sequence 5'-AAG-GTCA-3', a motif that determines substrate binding specificity. NR2E1 is expressed in brain tissue, with highest levels in astrocytes, and is localized to the nucleus. Mutations in the gene that encodes NR2E1 may lead to retinal dystrophy, a disorder characterized by a reduction in the thickness of the retina.

REFERENCES

1. Monaghan, A.P., et al. 1997. Defective limbic system in mice lacking the tailless gene. *Nature* 390: 515-517.
2. Jackson, A., et al. 1998. The human homologue of the *Drosophila* tailless gene (TLX): characterization and mapping to a region of common deletion in human lymphoid leukemia on chromosome 6q21. *Genomics* 50: 34-43.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603849. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Shi, Y., et al. 2004. Expression and function of orphan nuclear receptor TLX in adult neural stem cells. *Nature* 427: 78-83.
5. Christie, B.R., et al. 2006. Deletion of the nuclear receptor NR2E1 impairs synaptic plasticity and dendritic structure in the mouse dentate gyrus. *Neuroscience* 137: 1031-1037.
6. Sun, G., et al. 2007. Orphan nuclear receptor TLX recruits histone deacetylases to repress transcription and regulate neural stem cell proliferation. *Proc. Natl. Acad. Sci. USA* 104: 15282-15287.

CHROMOSOMAL LOCATION

Genetic locus: NR2E1 (human) mapping to 6q21.

PRODUCT

NR2E1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NR2E1 shRNA Plasmid (h): sc-75954-SH and NR2E1 shRNA (h) Lentiviral Particles: sc-75954-V as alternate gene silencing products.

For independent verification of NR2E1 (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-75954A, sc-75954B and sc-75954C.

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 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

NR2E1 siRNA (h) is recommended for the inhibition of NR2E1 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

NR2E1 (B-10): sc-377240 is recommended as a control antibody for monitoring of NR2E1 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 Marker[™] 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NR2E1 gene expression knockdown using RT-PCR Primer: NR2E1 (h)-PR: sc-75954-PR (20 μ l). 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.