

# Nucleoredoxin siRNA (m): sc-150094

## BACKGROUND

Nucleoredoxin, also known as NXN, NRX or TRG-4, is a 435 amino acid cytoplasmic and nuclear protein that is conserved between mammalian species and acts as a redox-dependent negative regulator of the Wnt signaling pathway. Widely expressed in adult tissues, Nucleoredoxin is also found in the nervous system and the limb buds of embryos at day 10.5-11.5. Containing a conserved thioredoxin (TRX) domain and a catalytic motif for oxidoreductase activity, Nucleoredoxin is implied to function as a transcriptional regulator and may directly stimulate or inhibit PP2A-C $\alpha$  (protein phosphatase 2A). Known to directly interact with Dvl (dishevelled 1) during oxidative stress via its PDZ domain, the gene encoding Nucleoredoxin maps to human chromosome 17p13.3 and mouse chromosome 11 B5.

## REFERENCES

1. Kurooka, H., et al. 1997. Cloning and characterization of the nucleoredoxin gene that encodes a novel nuclear protein related to thioredoxin. *Genomics* 39: 331-339.
2. Laughner, B.J., et al. 1998. A novel nuclear member of the thioredoxin superfamily. *Plant Physiol.* 118: 987-996.
3. Hirota, K., et al. 2000. Nucleoredoxin, glutaredoxin, and thioredoxin differentially regulate NF $\kappa$ B, AP-1, and CREB activation in HEK293 cells. *Biochem. Biophys. Res. Commun.* 274: 177-182.
4. Lechward, K., et al. 2006. Interaction of nucleoredoxin with protein phosphatase 2A. *FEBS Lett.* 580: 3631-3637.
5. Funato, Y. and Miki, H. 2007. Nucleoredoxin, a novel thioredoxin family member involved in cell growth and differentiation. *Antioxid. Redox Signal.* 9: 1035-1057.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612895. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: Nxn (mouse) mapping to 11 B5.

## PRODUCT

Nucleoredoxin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nucleoredoxin shRNA Plasmid (m): sc-150094-SH and Nucleoredoxin shRNA (m) Lentiviral Particles: sc-150094-V as alternate gene silencing products.

For independent verification of Nucleoredoxin (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-150094A, sc-150094B and sc-150094C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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

## APPLICATIONS

Nucleoredoxin siRNA (m) is recommended for the inhibition of Nucleoredoxin 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  $\mu$ M in 66  $\mu$ 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

Nucleoredoxin (E-12): sc-393748 is recommended as a control antibody for monitoring of Nucleoredoxin 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Nucleoredoxin gene expression knockdown using RT-PCR Primer: Nucleoredoxin (m)-PR: sc-150094-PR (20  $\mu$ l). 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.