SANTA CRUZ BIOTECHNOLOGY, INC.

# NDOR1 siRNA (h): sc-92596

## BACKGROUND

NDOR1 (NADPH dependent diflavin oxidoreductase 1), also known as NR1 (novel reductase 1), is a 597 amino acid cytoplasmic protein that contains one FAD-binding domain and one flavodoxin-like domain. Expressed at low levels in heart, brain, kidney, pancreas, prostate and skeletal muscle and at particularly high levels in placenta, NDOR1 functions as an oxidoreductase that uses FAD and FMN as cofactors to catalyze the NADP-dependent reduction of one-electron acceptors, such as cytochrome c, menadione and potassium ferricyanide. NDOR1 is present in a variety of cancer cell lines, including lung carcinoma, melanoma G361, promyelocytic leukemia, HeLa S3, chronic myelagenous leukemia, lymphoblastic leukemia, Burkitt's lymphoma and colorectal adenocarcinoma, suggesting a potent role in tumorigenesis. Two isoforms of NDOR1 are expressed due to alternative splicing events.

## REFERENCES


1. Paine, M.J., et al. 2000. Cloning and characterization of a novel human dual flavin reductase. J. Biol. Chem. 275: 1471-1478.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606073. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Olteanu, H. and Banerjee, R. 2003. Redundancy in the pathway for redox regulation of mammalian methionine synthase: reductive activation by the dual flavoprotein, novel reductase 1. J. Biol. Chem. 278: 38310-38314.
4. Kwasnicka, D.A., et al. 2003. Coordinate expression of NADPH-dependent flavin reductase, Fre-1, and Hint-related 7meGMP-directed hydrolase, DCS-1. J. Biol. Chem. 278: 39051-39058.
5. Kwasnicka-Crawford, D.A. and Vincent, S.R. 2005. Role of a novel dual flavin reductase (NR1) and an associated histidine triad protein (DCS-1) in menadione-induced cytotoxicity. Biochem. Biophys. Res. Commun. 336: 565-571.
6. Amada, N., et al. 2005. Reduction of NR1 and phosphorylated $Ca^{2+}$/calmodulin-dependent protein kinase II levels in Alzheimer's disease. Neuroreport 16: 1809-1813.


## CHROMOSOMAL LOCATION

Genetic locus: NDOR1 (human) mapping to 9q34.3.

## PRODUCT

NDOR1 siRNA (h) is a pool of 2 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 NDOR1 shRNA Plasmid (h): sc-92596-SH and NDOR1 shRNA (h) Lentiviral Particles: sc-92596-V as alternate gene silencing products.

For independent verification of NDOR1 (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-92596A and sc-92596B.

## 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 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

NDOR1 siRNA (h) is recommended for the inhibition of NDOR1 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

NDOR1 (XX-9): sc-100482 is recommended as a control antibody for monitoring of NDOR1 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 NDOR1 gene expression knockdown using RT-PCR Primer: NDOR1 (h)-PR: sc-92596-PR (20 µl). 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.