SANTA CRUZ BIOTECHNOLOGY, INC.

NDRG3 siRNA (h): sc-40759

BACKGROUND

The N-Myc downstream regulated gene (NDRG) family is comprised of four members, NDRG1 (also designated Drg1, RTP, rit42, Cap43 and Ndr1), NDRG2, NDRG3 and NDRG4, which share 57-65% homology. The NDRG1 gene, which maps to human chromosome 8q24.22, is evolutionarily conserved and is similarly regulated in humans, mice and rats. Like NDRG2 and NDRG3, NDRG1 is ubiquitously expressed, but it is expressed most prominently in placental membranes and prostate, kidney, small intestine and ovary tissue. NDRG1 gene expression is induced by several compounds, including nickel, and produces a protein involved in stress responses, hormone responses, cell growth and differentiation. The gene encoding NDRG3 maps to human chromosome 20q11.23 and is predominantly expressed in testis, prostate and ovary, which suggests it may play a role in spermatogenesis.

REFERENCES

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2. Zhou, D., et al. 1998. Cap43, a novel gene specifically induced by Ni^{2+} compounds. Cancer Res. 58: 2182-2189.
3. Kurdistani, S.K., et al. 1998. Inhibition of tumor cell growth by RTP/rit42 and its responsiveness to p53 and DNA damage. Cancer Res. 58: 4439-4444.
4. Agarwala, K.L., et al. 2000. Phosphorylation of RTP, an ER stress-responsive cytoplasmic protein. Biochem. Biophys. Res. Commun. 272: 641-647.
5. Park, H., et al. 2000. Hypoxia induces the expression of a 43 kDa protein (PROXY-1) in normal and malignant cells. Biochem. Biophys. Res. Commun. 276: 321-338.
6. Zhao, W., et al. 2001. Cloning and expression pattern of the human NDRG3 gene. Biochim. Biophys. Acta 1519: 134-138.
7. Zhou, R.H., et al. 2001. Characterization of the human NDRG gene family: a newly identified member, NDRG4, is specifically expressed in brain and heart. Genomics 73: 86-97.

CHROMOSOMAL LOCATION

Genetic locus: NDRG3 (human) mapping to 20q11.23.

PRODUCT

NDRG3 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 NDRG3 shRNA Plasmid (h): sc-40759-SH and NDRG3 shRNA (h) Lentiviral Particles: sc-40759-V as alternate gene silencing products.

For independent verification of NDRG3 (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-40759A, sc-40759B and sc-40759C.

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

NDRG3 siRNA (h) is recommended for the inhibition of NDRG3 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

NDRG3 (H-11): sc-514561 is recommended as a control antibody for monitoring of NDRG3 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 NDRG3 gene expression knockdown using RT-PCR Primer: NDRG3 (h)-PR: sc-40759-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.