

NDRG4 siRNA (m): sc-149865

BACKGROUND

The N-Myc downstream regulated gene (NDRG) family is comprised of four members, namely NDRG1, NDRG2, NDRG3 and NDRG4, all of which share 57-65% homology. NDRG4 (NDRG family member 4), also known as SMAP-8 (Smooth muscle-associated protein 8) or BDM1 (brain development-related molecule 1), is a 352 amino acid cytoplasmic protein that belongs to the NDRG family. Expressed specifically in brain and heart, NDRG4 is thought to function as a regulator of mitogenic signaling in vascular smooth muscle cells. Additionally, NDRG4 may play a role in early postnatal development and may mediate the differentiation and subsequent function of neuronal cells. NDRG4 is expressed as six isoforms (the first three of which are designated NDRG4-BVar, NDRG4-B and NDRG4-H) due to alternative splicing events.

REFERENCES

1. 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.
2. Ohki, T., et al. 2002. Inhibition of neurite outgrowth by reduced level of NDRG4 protein in antisense transfected PC12 cells. *Brain Res. Dev. Brain Res.* 135: 55-63.
3. Qu, X., et al. 2002. Characterization and expression of three novel differentiation-related genes belong to the human NDRG gene family. *Mol. Cell. Biochem.* 229: 35-44.
4. Nishimoto, S., et al. 2003. A novel homocysteine-responsive gene, smap8, modulates mitogenesis in rat vascular smooth muscle cells. *Eur. J. Biochem.* 270: 2521-2531.

CHROMOSOMAL LOCATION

Genetic locus: NdrG4 (mouse) mapping to 8 D1.

PRODUCT

NDRG4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NDRG4 shRNA Plasmid (m): sc-149865-SH and NDRG4 shRNA (m) Lentiviral Particles: sc-149865-V as alternate gene silencing products.

For independent verification of NDRG4 (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-149865A, sc-149865B and sc-149865C.

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

NDRG4 siRNA (m) is recommended for the inhibition of NDRG4 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 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

NDRG4 (C-8): sc-514144 is recommended as a control antibody for monitoring of NDRG4 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 λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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 λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (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 NDRG4 gene expression knockdown using RT-PCR Primer: NDRG4 (m)-PR: sc-149865-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yang, Q., et al. 2016. Uterine expression of NDRG4 is induced by estrogen and up-regulated during embryo implantation process in mice. *PLoS ONE* 11: e0155491.

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.