

ROD1 siRNA (m): sc-153058

BACKGROUND

Differentiation is a fundamental attribute of multicellular organisms that is required for their body formation. Commitment to differentiation is regulated by a variety of signals and cellular conditions, including availability of differentiation factors, cell-cell contacts and physical and chemical stresses. In the fission yeast *Schizosaccharomyces pombe*, the *nrd1* gene encoding an RNA binding protein negatively regulates the onset of differentiation. The mammalian homologue of *nrd1* is ROD1, which encodes a protein with four repeats of typical RNA binding domains. When expressed in fission yeast, the ROD1 protein functions similar to *nrd1*. ROD1 is highly expressed in adult and embryo hematopoietic cells or organs. Overexpression of ROD1 effectively blocks the differentiation of human leukemia cells without affecting their proliferative ability, suggesting that ROD1 plays a critical role in controlling differentiation in mammalian cells.

REFERENCES

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2. Leupold, U. 1987. Sex appeal in fission yeast. Curr. Genet. 12: 543-545.
3. Horvitz, H.R. and Herskowitz, I. 1992. Mechanisms of asymmetric cell division: two Bs or not Bs, that is the question. Cell 68: 237-255.
4. Wu, A.L., Hallstrom, T.C. and Moye-Rowley, W.S. 1996. ROD1, a novel gene conferring multiple resistance phenotypes in *Saccharomyces cerevisiae*. J. Biol. Chem. 271: 2914-2920.
5. Yamamoto, H., Tsukahara, K., Kanaoka, Y., Jinno, S. and Okayama, H. 1999. Isolation of a mammalian homologue of a fission yeast differentiation regulator. Mol. Cell. Biol. 19: 3829-3841.

CHROMOSOMAL LOCATION

Genetic locus: Rod1 (mouse) mapping to 4 B3.

PRODUCT

ROD1 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 ROD1 shRNA Plasmid (m): sc-153058-SH and ROD1 shRNA (m) Lentiviral Particles: sc-153058-V as alternate gene silencing products.

For independent verification of ROD1 (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-153058A, sc-153058B and sc-153058C.

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.

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

ROD1 siRNA (m) is recommended for the inhibition of ROD1 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

ROD1 (C-1): sc-398105 is recommended as a control antibody for monitoring of ROD1 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 ROD1 gene expression knockdown using RT-PCR Primer: ROD1 (m)-PR: sc-153058-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.