



Dio-1 siRNA (h): sc-35194

BACKGROUND

Dio-1 (death inducer-obliterator-1) is a putative transcription factor that contains two zinc-finger motifs. Dio-1 translocates to the nucleus, and activates apoptosis during limb development. Programmed cell death, a highly regulated form of apoptosis, plays an important role in determining the amount of tissue, the shape and the definition of each digit during limb development. Dio-1 expression is upregulated when an apoptotic signal is detected, and subsequently apoptosis is induced. This process is similar to the expression of NF κ B and NGF in response to external signals. Dio-1 expression is suppressed by caspase inhibitors and Bcl-2 expression. This supports the theory that Dio-1 functions in the onset of programmed cell death.

REFERENCES

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2. Jacobson, M.D., et al. 1997. Programmed cell death in animal development. *Cell* 88: 347-354.
3. Kanegae, Y., et al. 1998. Role of Rel/NF κ B transcription factors during the outgrowth of the vertebrate limb. *Nature* 392: 611-614.
4. Chen, Y., et al. 1998. Shaping limbs by apoptosis. *J. Exp. Zool.* 282: 691-702.
5. Garcia-Domingo, D., et al. 1999. Dio-1 is a gene involved in onset of apoptosis *in vitro*, whose misexpression disrupts limb development. *Proc. Natl. Acad. Sci. USA* 96: 7992-7997.
6. Hock, J.M., et al. 2001. Osteoblast apoptosis and bone turnover. *J. Bone Miner. Res.* 16: 975-984.
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8. Sanchez-Pulido, L., et al. 2004. SPOC: a widely distributed domain associated with cancer, apoptosis and transcription. *BMC Bioinformatics* 5: 91.
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CHROMOSOMAL LOCATION

Genetic locus: D1D01 (human) mapping to 20q13.33.

PRODUCT

Dio-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Dio-1 shRNA Plasmid (h): sc-35194-SH and Dio-1 shRNA (h) Lentiviral Particles: sc-35194-V as alternate gene silencing products.

For independent verification of Dio-1 (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-35194A, sc-35194B and sc-35194C.

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

Dio-1 siRNA (h) is recommended for the inhibition of Dio-1 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 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

Dio-1 (B-9): sc-25264 is recommended as a control antibody for monitoring of Dio-1 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 Dio-1 gene expression knockdown using RT-PCR Primer: Dio-1 (h)-PR: sc-35194-PR (20 μ 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.