

MZF-1 siRNA (r): sc-270573

BACKGROUND

Zinc finger genes that encode metal-binding proteins are transcriptional regulators of other genes. Myeloid zinc finger 1 (MZF-1), also designated zinc finger protein 42, and transcription factor ZBP-89, also designated zinc finger protein 148, belong to the Krüppel C₂H₂-type zinc-finger protein family. The gene encoding for the MZF-1 protein maps to chromosome 19q13.43 while the gene encoding for ZBP-89 is localized on chromosome 3q21.2. These proteins are nuclear proteins involved in the regulation of transcriptional events. MZF-1 regulates transcription during hemopoietic development and plays a role in myeloid cell differentiation. MZF-1 regulates the CD34 promoter in a tissue-specific manner. MZF-1 and FHL3 can form a complex of high molecular mass with other proteins in the nucleus. It is induced by retinoic acid and is primarily expressed in differentiating myeloid cells.

REFERENCES

1. Hromas, R., et al. 1991. A retinoic acid-responsive human zinc finger gene, MZF-1, preferentially expressed in myeloid cells. *J. Biol. Chem.* 266: 14183-14187.
2. Morris, J.F., et al. 1995. The myeloid zinc finger gene, MZF-1, regulates the CD34 promoter *in vitro*. *Blood* 86: 3640-3647.
3. Baseggio, L., et al. 2004. Allele-specific binding to the -308 single nucleotide polymorphism site in the tumour necrosis factor- α promoter. *Eur. J. Immunogenet.* 31: 15-19.
4. Rothem, L., et al. 2004. Reduced folate carrier gene silencing in multiple antifolate-resistant tumor cell lines is due to a simultaneous loss of function of multiple transcription factors but not promoter methylation. *J. Biol. Chem.* 279: 374-384.
5. Rossi, V., et al. 2004. TAIL1: an isthmin-like gene, containing type 1 thrombospondin-repeat and AMOP domain, mapped to ARVD1 critical region. *Gene* 335: 101-108.
6. Takahashi, K., et al. 2005. FHL3 negatively regulates human high-affinity IgE receptor β -chain gene expression by acting as a transcriptional co-repressor of MZF-1. *Biochem. J.* 386: 191-200.

CHROMOSOMAL LOCATION

Genetic locus: Mzf1 (rat) mapping to 1q12.

PRODUCT

MZF-1 siRNA (r) 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 MZF-1 shRNA Plasmid (r): sc-270573-SH and MZF-1 shRNA (r) Lentiviral Particles: sc-270573-V as alternate gene silencing products.

For independent verification of MZF-1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270573A, sc-270573B and sc-270573C.

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

MZF-1 siRNA (r) is recommended for the inhibition of MZF-1 expression in rat 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MZF-1 gene expression knockdown using RT-PCR Primer: MZF-1 (r)-PR: sc-270573-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. Davis, S.M., et al. 2019. Neuroprotective activity of leukemia inhibitory factor is relayed through myeloid zinc finger-1 in a rat model of stroke. *Metab. Brain Dis.* 34: 631-640.

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.