



# MZF-1 siRNA (h): sc-45714

## 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 C<sub>2</sub>H<sub>2</sub>-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- $\alpha$  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.

## CHROMOSOMAL LOCATION

Genetic locus: MZF1 (human) mapping to 19q13.43.

## PRODUCT

MZF-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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MZF-1 shRNA Plasmid (h): sc-45714-SH and MZF-1 shRNA (h) Lentiviral Particles: sc-45714-V as alternate gene silencing products.

For independent verification of MZF-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-45714A, sc-45714B and sc-45714C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

MZF-1 shRNA Plasmid (h) is recommended for the inhibition of MZF-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  $\mu$ M in 66  $\mu$ 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

MZF-1 (1F7): sc-293218 is recommended as a control antibody for monitoring of MZF-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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 MZF-1 gene expression knockdown using RT-PCR Primer: MZF-1 (h)-PR: sc-45714-PR (20  $\mu$ l, 420 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Luo, X., et al. 2009. Crucial roles of MZF-1 in the transcriptional regulation of apomorphine-induced modulation of FGF-2 expression in astrocytic cultures. *J. Neurochem.* 108: 952-961.
2. Li, Z., et al. 2015. Dorsal root ganglion myeloid zinc finger protein 1 contributes to neuropathic pain after peripheral nerve trauma. *Pain* 156: 711-721.
3. Lee, E.H., et al. 2017. Blockade of Axl signaling ameliorates HPV16E6-mediated tumorigenicity of cervical cancer. *Sci. Rep.* 7: 5759.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.