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# MZF-1 shRNA (h) Lentiviral Particles: sc-45714-V

## 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. 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: ZNF42 (human) mapping to 19q13.43.

## PRODUCT

MZF-1 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see MZF-1 siRNA (h): sc-45714 and MZF-1 shRNA Plasmid (h): sc-45714-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

MZF-1 shRNA (h) Lentiviral Particles is recommended for the inhibition of MZF-1 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

MZF-1 (N-13): sc-46178 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.