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MafA shRNA (h) Lentiviral Particles: sc-43905-V

BACKGROUND

Members of the bZIP containing Maf transcription factor family play important roles in cellular differentiation and regulation. MafA, originally identified in mammals as the pancreatic β -cell specific RIPE3b1 factor, is a transcriptional activator expressed specifically in Insulin-producing cells, where it functions by binding to the critical Insulin enhancer element RIPE3b. MafA is critical for generating and regulating glucose-responsive Insulin expression in β cells. The size of MafA in mammalian cell lines varies, due to posttranslational modification of the protein.

REFERENCES

1. Kerppola, T.K., et al. 1994. A conserved region adjacent to the basic domain is required for recognition of an extended DNA binding site by Maf/Nrl family proteins. *Oncogene* 11: 3149-3158.
2. Olbrot, M., et al. 2002. Identification of β cell-specific Insulin gene transcription factor RIPE3b1 as mammalian MafA. *Proc. Natl. Acad. Sci. USA* 10: 6737-6742.
3. Kataoka, K., et al. 2002. MafA is a glucose-regulated and pancreatic β cell-specific transcriptional activator for the Insulin gene. *J. Biol. Chem.* 51: 49903-49910.
4. Samaras, S.E., et al. 2003. The islet β cell-enriched RIPE3b1/Maf transcription factor regulates PDX-1 expression. *J. Biol. Chem.* 14: 12263-12270.
5. Nishizawa, M., et al. 2003. MafA has strong cell transforming ability but is a weak transactivator. *Oncogene* 22: 7882-7890.
6. Matsuoka, T.A., et al. 2004. The MafA transcription factor appears to be responsible for tissue-specific expression of Insulin. *Proc. Natl. Acad. Sci. USA* 101: 2930-2933.

CHROMOSOMAL LOCATION

Genetic locus: MAFA (human) mapping to 8q24.3.

PRODUCT

MafA shRNA (h) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 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 MafA siRNA (h): sc-43905 and MafA shRNA Plasmid (h): sc-43905-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 or our catalog for detailed protocols and support products.

APPLICATIONS

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

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 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

MafA (F-6): sc-390491 is recommended as a control antibody for monitoring of MafA 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 goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MafA gene expression knockdown using RT-PCR Primer: MafA (h)-PR: sc-43905-PR (20 μ l, 597 bp). Annealing temperature for the primers should be $55-60^\circ$ C and the extension temperature should be $68-72^\circ$ 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.