SANTA CRUZ BIOTECHNOLOGY, INC.

MRTF-B siRNA (m): sc-61075

BACKGROUND

Serum response factor (SRF) is a transcription factor that binds the serum response element (SRE), a sequence that mediates the transient response of many cellular genes to growth stimulation. SRF regulates the transient response of several muscle genes in response to growth factors and recruits accessory myogenic factors to activate these muscle genes. SRF is required for the formation of vertebrate mesoderm leading to the origin of the cardiovascular system. Myocardin, in association with SRF in cardiac muscle cells, activates cardiac muscle promoters. Myocardin-related transcription factors A and B (MRTF-A and MRTF-B) interact with SRF and act as stimulators for its transcriptional activity. MRTF-B is crucial for skeletal myogenic differentiation.

REFERENCES

1. Cen, B., et al. 2003. Megakaryoblastic leukemia 1, a potent transcriptional coactivator for serum response factor (SRF), is required for serum induction of SRF target genes. Mol. Cell. Biol. 23: 6597-6608.
2. Selvaraj, A. and Prywes, R. 2003. Megakaryoblastic leukemia-1/2, a transcriptional co-activator of serum response factor, is required for skeletal myogenic differentiation. J. Biol. Chem. 278: 41977-41987.
3. Cen, B., et al. 2004. Myocardin/MKL family of SRF coactivators: key regulators of immediate early and muscle specific gene expression. J. Cell. Biochem. 93: 74-82.
4. Kuwahara, K., et al. 2005. Muscle-specific signaling mechanism that links Actin dynamics to serum response factor. Mol. Cell. Biol. 25: 3173-3181.
5. Li, J., et al. 2005. Myocardin-related transcription factor B is required in cardiac neural crest for smooth muscle differentiation and cardiovascular development. Proc. Natl. Acad. Sci. USA 102: 8916-8921.
6. Oh, J., et al. 2005. Requirement of Myocardin-related transcription factor-B for remodeling of branchial arch arteries and smooth muscle differentiation. Proc. Natl. Acad. Sci. USA 102: 15122-15127.

CHROMOSOMAL LOCATION

Genetic locus: Mkl2 (mouse) mapping to 16 A1.

PRODUCT

MRTF-B siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MRTF-B shRNA Plasmid (m): sc-61075-SH and MRTF-B shRNA (m) Lentiviral Particles: sc-61075-V as alternate gene silencing products.

For independent verification of MRTF-B (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61075A, sc-61075B and sc-61075C.

PROTOCOLS

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

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MRTF-B siRNA (m) is recommended for the inhibition of MRTF-B expression in mouse 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 µM in 66 µl. 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 MRTF-B gene expression knockdown using RT-PCR Primer: MRTF-B (m)-PR: sc-61075-PR (20 µl). 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.