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SANTA CRUZ BIOTECHNOLOGY, INC.

Myocardin siRNA (h): sc-43953

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-binding sites are also constitutive promoter elements in many muscle-specific promoters. Myocardin associates with SRF in cardiac muscle cells to activate cardiac muscle promoters. Myocardin is also expressed in smooth muscle cells and appears to play a role in cell differentiation. Specifically, myocardin is expressed in vascular smooth muscle within the aortic arteries and pulmonary outflow tract as well as in the genitourinary tract and gastrointestinal tract. Myocardin is absent in the coronary vasculature, dorsal aorta, skeletal muscle or other non-muscle tissue types. Myocardin belongs to the SAP (SAF-A/B, Acinus and PIAS) domain family of nuclear proteins which includes hnRNP U and PIAS. The SAP domain may play a role in targeting proteins to specific chromosomal locations.

REFERENCES

1. Norman, C., Runswick, M., Pollock, R. and Treisman, R. 1988. Isolation and properties of cDNA clones encoding SRF, a transcription factor that binds to the c-Fos serum response element. Cell 55: 989-1003.
2. Boxer, L.M., Prywes, R., Roeder, R.G. and Kedes, L. 1989. The sarcomeric Actin CArG-binding factor is indistinguishable from the c-Fos serum response factor. Mol. Cell. Biol. 9: 515-522.
3. Treisman, R. 1990. The SRE: a growth factor responsive transcriptional regulator. Sem. Cancer Biol. 1: 47-58.
4. Hill, C.S., Marais, R., John, S., Wynne, J., Dalton, S. and Treisman, R. 1993. Functional analysis of a growth factor-responsive transcription factor complex. Cell 73: 395-406.
5. Aravind, L. and Koonin, E.V. 2000. SAP—a putative DNA-binding motif involved in chromosomal organization. Trends Biochem. Sci. 25: 112-114.
6. Wang, D., Chang, P.S., Wang, Z., Sutherland, L., Richardson, J.A., Small, E., Krieg, P.A. and Olson, E.N. 2001. Activation of cardiac gene expression by myocardin, a transcriptional cofactor for serum response factor. Cell 105: 851-862.

CHROMOSOMAL LOCATION

Genetic locus: MYOCD (human) mapping to 17p12.

PRODUCT

Myocardin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Myocardin shRNA Plasmid (h): sc-43953-SH and Myocardin shRNA (h) Lentiviral Particles: sc-43953-V as alternate gene silencing products.

For independent verification of Myocardin (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-43953A, sc-43953B and sc-43953C.

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

Myocardin siRNA (h) is recommended for the inhibition of Myocardin 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 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 Myocardin gene expression knockdown using RT-PCR Primer: Myocardin (h)-PR: sc-43953-PR (20 µl, 425 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhou, W., Negash, S., Liu, J. and Raj, J.U. 2009. Modulation of pulmonary vascular smooth muscle cell phenotype in hypoxia: role of cGMP-dependent protein kinase and myocardin. Am. J. Physiol. Lung Cell. Mol. Physiol. 296: L780-L789.

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.