

CRP3 siRNA (m): sc-45933

BACKGROUND

Cysteine and glycine-rich protein 3 (CRP3), also known as cysteine-rich protein 3, CLP (cardiac LIM protein), MLP (muscle LIM protein), LMO4 or CMD1M, is an essential nuclear regulator of myogenic differentiation. CRP3 contains two LIM zinc-binding domains linked to short glycine-rich repeats and a potential nuclear localization signal. CRP3 is present in differentiated heart during early development and in a subset of other striated muscles during later stages. Defects in the gene encoding CRP3 (CSRP3) can cause dilated cardiomyopathy 1M (CMD1M), a disease characterized by reduced systolic function and cardiac dilation. Human CSRP3 maps to the gene locus 11p15.1.

REFERENCES

1. Fung, Y., et al. 1995. Mapping of a human LIM protein (CLP) to human chromosome 11p15.1 by fluorescence *in situ* hybridization. *Genomics* 28: 602-603.
2. Weiskirchen, R., et al. 1995. The cysteine-rich protein family of highly related LIM domain proteins. *J. Biol. Chem.* 270: 28946-28954.
3. Knöll, R., et al. 2002. The cardiac mechanical stretch sensor machinery involves a Z-disc complex that is defective in a subset of human dilated cardiomyopathy. *Cell* 111: 943-955.
4. Duan, L., et al. 2003. Expression of muscle LIM protein during early development in *Xenopus laevis*. *Int. J. Dev. Biol.* 4: 299-302.
5. Geier, C., et al. 2003. Mutations in the human muscle LIM protein gene in families with hypertrophic cardiomyopathy. *Circulation* 10: 1390-1395.

CHROMOSOMAL LOCATION

Genetic locus: *Csrp3* (mouse) mapping to 7 B4.

PRODUCT

CRP3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CRP3 shRNA Plasmid (m): sc-45933-SH and CRP3 shRNA (m) Lentiviral Particles: sc-45933-V as alternate gene silencing products.

For independent verification of CRP3 (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-45933A, sc-45933B and sc-45933C.

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

APPLICATIONS

CRP3 siRNA (m) is recommended for the inhibition of CRP3 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 μ M in 66 μ 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

CRP3 (A-5): sc-166930 is recommended as a control antibody for monitoring of CRP3 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 CRP3 gene expression knockdown using RT-PCR Primer: CRP3 (m)-PR: sc-45933-PR (20 μ l, 612 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Arvanitis, D.A., et al. 2017. Muscle LIM protein and myosin binding protein C form a complex regulating muscle differentiation. *Biochim. Biophys. Acta* 1864: 2308-2321.

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.