SANTA CRUZ BIOTECHNOLOGY, INC.

LMCD1 siRNA (m): sc-146765

BACKGROUND

LIM domain proteins are thought to be important regulators which function in cell differentiation and growth and are capable of interacting with structural proteins, kinases and transcriptional regulators. LIM domain proteins are also able to move between the nucleus and the cytoplasm. Structurally, LIM domains commonly contain cysteine-rich structures which possess two zinc fingers that are thought to be important for protein-protein interactions. LMCD1 (LIM and cysteine-rich domains 1), a 365 amino acid protein that is highly expressed in skeletal muscle, is a member of the family of LIM domain proteins and is also known as dyxin. LMCD1 has an N-terminal region that contains a cysteine-rich domain and a C-terminal region that contains two LIM domains. Via its LIM domains, LMCD1 is involved in interactions between DNA and proteins as well as between proteins which could be important for muscle development. In the nucleus, LMCD1 is thought to repress the ability of GATA-6 to bind to DNA by formation of a heterodimeric complex that is not functional. Upon translocation of LMCD1 to the cytoplasm, the LMCD1-GATA-6 complex dissociates, an event that enables GATA-6-dependent transcription of various genes expressed in heart and lung tissue to occur. The gene encoding LIMCD1 maps to a locus on human chromosome 3 that is associated with Marfan-like connective tissue disorder and Moyamoya disease, suggesting that LIMDC1 may be involved in the pathogenesis of these genetic disorders.

REFERENCES

1. Kiss, H., et al. 1999. A novel gene containing LIM domains (LIMD1) is located within the common eliminated region 1 (C3CER1) in 3p21.3. Hum. Genet. 105: 552-559.
2. Bespalova, I.N. and Burmeister, M. 2000. Identification of a novel LIM domain gene, LMCD1, and chromosomal localization in human and mouse. Genomics 63: 69-74.
3. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604859. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Wang, J., et al. 2005. cDNA cloning, sequence analysis of the porcine LIM and cysteine-rich domain 1 gene. Acta Biochim. Biophys. Sin. 37: 843-850.

CHROMOSOMAL LOCATION

Genetic locus: Lmcd1 (mouse) mapping to 6 E3.

PRODUCT

LMCD1 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 LMCD1 shRNA Plasmid (m): sc-146765-SH and LMCD1 shRNA (m) Lentiviral Particles: sc-146765-V as alternate gene silencing products.

For independent verification of LMCD1 (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-146765A, sc-146765B and sc-146765C.

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

LMCD1 siRNA (m) is recommended for the inhibition of LMCD1 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.

GENE EXPRESSION MONITORING

LMCD1 (F-11): sc-515171 is recommended as a control antibody for monitoring of LMCD1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 LMCD1 gene expression knockdown using RT-PCR Primer: LMCD1 (m)-PR: sc-146765-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.

PROTOCOLS

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