SANTA CRUZ BIOTECHNOLOGY, INC.

Myoferlin siRNA (m): sc-72294

BACKGROUND

Myoferlin, also known as Fer-1-like protein 3, is a member of the ferlin family of proteins and is structurally similar to dysferlin. It is a type II transmembrane protein with a single transmembrane domain very near the C-terminus, an SH3 domain and six C2 domains in the C-terminus (designated C2A-C2F). Myoferlin is predominantly expressed in cardiac and skeletal muscle and it localizes to the nuclear and plasma membranes. The C2 domains of Myoferlin may be involved in calcium-mediated membrane fusion events suggesting that Myoferlin may play a role in membrane regeneration and repair. Myoferlin is also responsible for regulating the stability and signaling of Flk-1, the VEGF receptor-2. The loss of Myoferlin prevents proliferation, migration and the release of nitric oxide (NO) in response to VEGF. In addition, Myoferlin may be implicated in various types of muscular dystrophy and cardiomyopathy.

REFERENCES

1. Davis, D.B., et al. 2000. Myoferlin, a candidate gene and potential modifier of muscular dystrophy. Hum. Mol. Genet. 9: 217-226.
2. Yasunaga, S., et al. 2000. OTOF encodes multiple long and short isoforms: genetic evidence that the long ones underlie recessive deafness DFNB9. Am. J. Hum. Genet. 67: 591-600.
3. Britton, S., et al. 2000. The third human FER-1-like protein is highly similar to dysferlin. Genomics 68: 313-321.
4. Davis, D.B., et al. 2002. Calcium-sensitive phospholipid binding properties of normal and mutant ferlin C2 domains. J. Biol. Chem. 277: 22883-22888.
5. Doherty, K.R., et al. 2005. Normal myoblast fusion requires myoferlin. Development 132: 5565-5575.
6. Inoue, M., et al. 2006. Expression of myoferlin in skeletal muscles of patients with dysferlinopathy. Tohoku J. Exp. Med. 209: 109-116.
7. Therrien,C., et al. 2006. Mutation impact on dysferlin inferred from database analysis and computer-based structural predictions. J. Neurol. Sci. 250: 71-78.

CHROMOSOMAL LOCATION

Genetic locus: Fer1l3 (mouse) mapping to 19 C2.

PRODUCT

Myoferlin 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 Myoferlin shRNA Plasmid (m): sc-72294-SH and Myoferlin shRNA (m) Lentiviral Particles: sc-72294-V as alternate gene silencing products.

For independent verification of Myoferlin (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-72294A, sc-72294B and sc-72294C.

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

Myoferlin siRNA (m) is recommended for the inhibition of Myoferlin 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

Myoferlin (D-11): sc-376879 is recommended as a control antibody for monitoring of Myoferlin 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 Myoferlin gene expression knockdown using RT-PCR Primer: Myoferlin (m)-PR: sc-72294-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.