SANTA CRUZ BIOTECHNOLOGY, INC.

Filamin 2 siRNA (m): sc-60640

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The Power to Question

BACKGROUND

Filamins are Actin-binding proteins which contain an N-terminal Actin-binding domain, a membrane glycoprotein domain and a C-terminal self-association domain. Filamins help reshape the cytoskeleton by forming flexible cross-links between two Actin filaments, which maintain membrane integrity during force application. Filamins also participate in signal transduction pathways associated with cell motility, adhesion, differentiation and survival, and force transduction. The Filamin family is comprised of Filamin 1, Filamin 2 and Filamin 3. Filamin 2, also designated Filamin C, is a skeletal- and cardiac-muscle specific form of Filamin, which binds γ-sarcoglycan and δ-sarcoglycan, but not α-sarcoglycan or β-sarcoglycan. Muscular dystrophy, an inherited group of disorders resulting in progressive weakness of muscles in the body, is associated with irregular subcellular localization of Filamin 2 caused by a deficiency in KY, a protein that interacts with Filamin 2.

REFERENCES

1. Thompson, T.G., et al. 2000. Filamin 2 (FLN2): a muscle-specific sarcoglycan interacting protein. J. Cell Biol. 148: 115-126.
2. van der Ven, P.F., et al. 2000. Characterization of muscle Filamin isoforms suggests a possible role in sarcomeric Z-disc formation. Cell Motil. Cytoskeleton 45: 149-162.
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4. Beatham, J., et al. 2004. Filamin C interacts with the muscular dystrophy KY protein and is abnormally distributed in mouse KY deficient muscle fibres. Hum. Mol. Genet. 13: 2863-2874.
5. Murray, J.T., et al. 2004. Identification of Filamin C as a new physiological substrate of PKBα using KESTREL. Biochem. J. 384: 489-494.
6. Anastasi, G., et al. 2004. Evaluation of sarcoglycans, vinculin-talin-integrin system and Filamin 2 in α- and γ-sarcoglycanopathy: an immunohistochemical study. Int. J. Mol. Med. 14: 989-999.
7. Pudas, R., et al. 2005. Structural basis for vertebrate Filamin dimerization. Structure 13: 111-119.
8. Ohashi, K., et al. 2005. Chicken gizzard filamin, retina filamin and cgABP260 are respectively, smooth muscle-, non-muscle- and pan-muscle-type isoforms: distribution and localization in muscles. Cell Motil. Cytoskeleton 61: 214-225.

CHROMOSOMAL LOCATION

Genetic locus: Flnc (mouse) mapping to 6 A3.3.

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.

PRODUCT

Filamin 2 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 Filamin 2 shRNA Plasmid (m): sc-60640-SH and Filamin 2 shRNA (m) Lentiviral Particles: sc-60640-V as alternate gene silencing products.

For independent verification of Filamin 2 (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-60640A, sc-60640B and sc-60640C.

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

Filamin 2 siRNA (m) is recommended for the inhibition of Filamin 2 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 Filamin 2 gene expression knockdown using RT-PCR Primer: Filamin 2 (m)-PR: sc-60640-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.