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- Trockeneiszuschlag
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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

Fukutin siRNA (h): sc-43773

BACKGROUND

Fukutin, a secreted protein, is expressed in various tissues in normal individuals. Fukutin colocalizes with a Golgi marker and a granular cytoplasmic distribution, suggesting that fukutin passes through the Golgi before being packaged into secretory vesicles. Fukutin may be located in the extracellular matrix, where it interacts with and reinforces a large complex encompassing the outside and inside of muscle membranes; alternatively, as a secreted protein, fukutin may cause muscular dystrophy by an unknown mechanism. The fukutin gene is expressed at similar levels in control fetal and adult brain, but is much reduced in Fukuyama congenital muscular dystrophy (FCMD) brains. Fukutin deficiency affects the modification of glycosylation of DAG1 (α-dystroglycan), which then cannot localize or function properly and may be degraded or eluted from the extracellular surface membrane of the muscle fiber. FCMD is the first human disease known to be caused by an ancient retrotransposal integration. The gene which encodes fukutin maps to human chromosome 9q31.2.

REFERENCES

1. Toda, T., et al. 1996. Linkage-disequilibrium mapping narrows the Fukuyama-type congenital muscular dystrophy (FCMD) candidate region to less than 100 kb. Am. J. Hum. Genet. 59: 1313-1320.
2. Kobayashi, K., et al. 1998. An ancient retrotransposal insertion causes Fukuyama-type congenital muscular dystrophy. Nature 394: 388-392.
3. Sasaki, J., et al. 2000. Neuronal expression of the fukutin gene. Hum. Molec. Genet. 9: 3083-3090.
4. Hayashi, Y.K., et al. 2001. Selective deficiency of α-dystroglycan in Fukuyama-type congenital muscular dystrophy. Neurology 57: 115-121.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607440. World Wide Web URL: http://www.ncbi.nlm. nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: FCMD (human) mapping to 9q31.2.

PRODUCT

Fukutin 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 Fukutin shRNA Plasmid (h): sc-43773-SH and Fukutin shRNA (h) Lentiviral Particles: sc-43773-V as alternate gene silencing products.

For independent verification of Fukutin (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-43773A, sc-43773B and sc-43773C.

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

Fukutin siRNA (h) is recommended for the inhibition of Fukutin 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 Fukutin gene expression knockdown using RT-PCR Primer: Fukutin (h)-PR: sc-43773-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.