SANTA CRUZ BIOTECHNOLOGY, INC.

Tafazzin siRNA (h): sc-61637

BACKGROUND

Tafazzin protein is a single-pass membrane protein that is abundant in cardiac and skeletal muscle, where it influences mitochondrial structure. There are various isoforms associated with Tafazzin, most of which are ubiquitous. Isoforms with hydrophobic N-terminal domains are membrane anchored, whereas the short isoforms that lack a hydrophobic leader sequence may exist as cytoplasmic proteins. The isoforms that lack the N-terminal domain are not found in cardiac or skeletal muscle, rather they are located in fibroblasts and leukocytes. Mutations in the Tafazzin gene are associated with various diseases, including dilated cardiomyopathy (DCM), hypertrophic DCM, endocardial fibroelastosis, left ventricular noncompaction (LVNC) and Barth syndrome (BTHS), a severe inherited disorder marked by neutropenia, cardiac and skeletal myopathy and short stature.

REFERENCES

1. Gu, Z., et al. 2003. Aberrant cardiolipin metabolism in the yeast taz1 mutant: a model for Barth syndrome. Mol. Microbiol. 51: 149-158.
2. Schlame, M., et al. 2003. Phospho-lipid abnormalities in children with Barth syndrome. J. Am. Coll. Cardiol. 42: 1994-1999.
3. Lu, B., et al. 2004. Complex expression pattern of the Barth syndrome gene product Tafazzin in human cell lines and murine tissues. Biochem. Cell Biol. 82: 569-576.
4. Testet, E., et al. 2005. Ypr140wp, "the yeast Tafazzin", displays a mitochondrial lysophosphatidylcholine (lyso-PC) acyltransferase activity related to triacylglycerol and mitochon-drial lipid synthesis. Biochem. J. 387: 617-626.
5. Xu, Y., et al. 2005. Characterization of lymphoblast mitochondria from patients with Barth syndrome. Lab. Invest. 85: 823-830.
6. Brandner, K., et al. 2005. Taz1, an outer mitochondrial membrane protein, affects stability and assembly of inner membrane protein complexes: implications for Barth syndrome. Mol. Biol. Cell 16: 5202-5214.

CHROMOSOMAL LOCATION

Genetic locus: TAZ (human) mapping to Xq28.

PRODUCT

Tafazzin 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 Tafazzin shRNA Plasmid (h): sc-61637-SH and Tafazzin shRNA (h) Lentiviral Particles: sc-61637-V as alternate gene silencing products.

For independent verification of Tafazzin (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-61637A, sc-61637B and sc-61637C.

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

Tafazzin siRNA (h) is recommended for the inhibition of Tafazzin 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.

GENE EXPRESSION MONITORING

Tafazzin (F-7): sc-365810 is recommended as a control antibody for monitoring of Tafazzin 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 Tafazzin gene expression knockdown using RT-PCR Primer: Tafazzin (h)-PR: sc-61637-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.