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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.

TXNDC10 siRNA (m): sc-154818

BACKGROUND

Thioredoxins comprise a family of small proteins that, by catalyzing the oxidation of disulfide bonds, participate in redox reactions throughout the cell. TMX3 (thioredoxin-related transmembrane protein 3), also known as thioredoxin domain-containing protein 10, protein disulfide-isomerase TMX3, PDIA13 or TXNDC10, is a 454 amino acid single-pass endoplasmic reticulum membrane protein that belongs to the protein disulfide isomerase family. Existing as two alternatively spliced isoforms and containing one thioredoxin domain, TMX3 likely functions as a dithiol oxidase and disulfide isomerase, which plays a role in protein folding by catalyzing disulfide bond rearrangement. Widely expressed, TMX3 is found at highest levels in eye, placenta, muscle, brain, testis, lung, uterus, kidney, stomach, prostate, bone, liver and brain, and is encoded by a gene located on human chromosome 18.

REFERENCES

1. Holmgren, A. 1985. Thioredoxin. Annu. Rev. Biochem. 54: 237-271.
2. Eklund, H., Gleason, F.K. and Holmgren, A. 1991. Structural and functional relations among thioredoxins of different species. Proteins 11: 13-28.
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5. Stefanková, P., Kollárová, M. and Barák, I. 2005. Thioredoxin-structural and functional complexity. Gen. Physiol. Biophys. 24: 3-11.
6. Haugstetter, J., Blicher, T. and Ellgaard, L. 2005. Identification and characterization of a novel thioredoxin-related transmembrane protein of the endoplasmic reticulum. J. Biol. Chem. 280: 8371-8380.
7. Haugstetter, J., Maurer, M.A., Blicher, T., Pagac, M., Wider, G. and Ellgaard, L. 2007. Structure-function analysis of the endoplasmic reticulum oxidoreductase TMX3 reveals interdomain stabilization of the N-terminal redox-active domain. J. Biol. Chem. 282: 33859-33867.

CHROMOSOMAL LOCATION

Genetic locus: Tmx3 (mouse) mapping to 18 E4.

PRODUCT

TXNDC10 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 TXNDC10 shRNA Plasmid (m): sc-154818-SH and TXNDC10 shRNA (m) Lentiviral Particles: sc-154818-V as alternate gene silencing products.

For independent verification of TXNDC10 (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-154818A, sc-154818B and sc-154818C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

TXNDC10 siRNA (m) is recommended for the inhibition of TXNDC10 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

TMX3 (G-5): sc-515248 is recommended as a control antibody for monitoring of TXNDC10 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 TXNDC10 gene expression knockdown using RT-PCR Primer: TXNDC10 (m)-PR: sc-154818-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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