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SANTA CRUZ BIOTECHNOLOGY, INC.

TXNDC13 siRNA (m): sc-154819

BACKGROUND

Thioredoxins comprise a family of small proteins that, by catalyzing the oxidation of disulfide bonds, participate in redox reactions throughout the cell. Proteins that contain thioredoxin domains do not necessarily convey the oxidative properties of thioredoxins, but generally function as disulfide isomerases that enzymatically rearrange disulfide bonds found in various proteins. TXNDC13 (thioredoxin domain-containing protein 13), also known as TMX4 (thioredoxin-related transmembrane protein 4) or PDIA14 (protein disulfide isomerase family A, member 14), is a 349 amino acid single-pass type I membrane protein that contains one thioredoxin domain. Strongly expressed in melanoma cells, TXNDC13 localizes to the endoplasmic reticulum. TXNDC13 is suggested to be involved in protein folding due to its interaction with Calnexin and ERp57.

REFERENCES

1. Holmgren, A. 1985. Thioredoxin. Annu. Rev. Biochem. 54 : 237-271.
2. Holmgren, A. 1989. Thioredoxin and glutaredoxin systems. J. Biol. Chem. 264: 13963-13966.
3. Eklund, H., et al. 1991. Structural and functional relations among thioredoxins of different species. Proteins 11: 13-28.
4. Freedman, R.B., et al. 1994. Protein disulphide isomerase: building bridges in protein folding. Trends Biochem. Sci. 19: 331-336.
5. Roth, D., et al. 2010. A di-arginine motif contributes to the ER localization of the type I transmembrane ER oxidoreductase TMX4. Biochem. J. 425: 195-205.
6. Sugiura, Y., et al. 2010. Novel thioredoxin-related transmembrane protein TMX4 has reductase activity. J. Biol. Chem. 285: 7135-7142.
7. Schulman, S., et al. 2010. Vitamin K epoxide reductase prefers ER membrane-anchored thioredoxin-like redox partners. Proc. Natl. Acad. Sci. USA 107: 15027-15032.

CHROMOSOMAL LOCATION

Genetic locus: Tmx4 (mouse) mapping to 2 F2.

PRODUCT

TXNDC13 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 TXNDC13 shRNA Plasmid (m): sc-154819-SH and TXNDC13 shRNA (m) Lentiviral Particles: sc-154819-V as alternate gene silencing products.

For independent verification of TXNDC13 (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-154819A, sc-154819B and sc-154819C.

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

TXNDC13 siRNA (m) is recommended for the inhibition of TXNDC13 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 TXNDC13 gene expression knockdown using RT-PCR Primer: TXNDC13 (m)-PR: sc-154819-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.