

TXNL1 siRNA (h): sc-63179

BACKGROUND

Thioredoxins are small redox active proteins that play a variety of roles throughout the cell. TXNL1 (thioredoxin-like protein 1), also known as TRP32, TXL or TXL-1, is a 289 amino acid cytoplasmic protein that is thought to participate in endocytotic signaling pathways and may act as a redox sensor. Expressed throughout the body, TXNL1 functions to couple oxidative stress to endocytosis, thereby regulating the GDI:Rad5-mediated endocytic response. Additionally, overexpression of TXNL1 inhibits cell proliferation by predisposing the cell to G₀/G₁ arrest, suggesting that TXNL1 also functions as a transcriptional repressor. TXNL1 shares 99% homology with its mouse homolog and contains one thioredoxin domain.

REFERENCES

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2. Lee, K.K., et al. 1998. Purification, molecular cloning, and characterization of TRP32, a novel thioredoxin-related mammalian protein of 32 kDa. *J. Biol. Chem.* 273: 19160-19166.
3. Jin, J., et al. 2002. Crystal structure of the catalytic domain of a human thioredoxin-like protein. *Eur. J. Biochem.* 269: 2060-2068.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603049. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Kim, K.Y., et al. 2006. Expression of a thioredoxin-related protein-1 is induced by prostaglandin E2. *Int. J. Cancer* 118: 1670-1679.
6. Jimenez, A., et al. 2006. Characterization of human thioredoxin-like-1: potential involvement in the cellular response against glucose deprivation. *FEBS Lett.* 580: 960-967.
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CHROMOSOMAL LOCATION

Genetic locus: TXNL1 (human) mapping to 18q21.31.

PRODUCT

TXNL1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TXNL1 shRNA Plasmid (h): sc-63179-SH and TXNL1 shRNA (h) Lentiviral Particles: sc-63179-V as alternate gene silencing products.

For independent verification of TXNL1 (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-63179A, sc-63179B and sc-63179C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TXNL1 siRNA (h) is recommended for the inhibition of TXNL1 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 μ M in 66 μ l. 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

TXNL1 (F-6): sc-515218 is recommended as a control antibody for monitoring of TXNL1 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-IgG λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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-IgG λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (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 TXNL1 gene expression knockdown using RT-PCR Primer: TXNL1 (h)-PR: sc-63179-PR (20 μ l). 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.

PROTOCOLS

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