

ERp5 siRNA (h): sc-94493

BACKGROUND

Endoplasmic reticulum proteins (ERPs) are widely expressed proteins that localize to the ER and may act as proteases, protein disulfide isomerases, thiol-disulfide oxidases or phospholipases. ERp5, also known as PDIA6 (protein disulfide isomerase family A, member 6) or TXNDC7 is a 440 amino acid protein that contains two thioredoxin domains and belongs to the protein disulfide isomerase family. Localized to the melanosome, as well as to the lumen of the endoplasmic reticulum, ERp5 functions to catalyze the rearrangement of disulfide bonds in a variety of different proteins. Via its catalytic activity, ERp5 is able to reduce the disulfide bond that binds MICA to tumor cells, thereby releasing MICA and reducing the rate of tumor expansion. Multiple isoforms of ERp5 exist due to alternative splicing events.

REFERENCES

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2. Hayano, T., et al. 1995. Cloning and sequencing of the cDNA encoding human P5. *Gene* 164: 377-378.
3. Hoshijima, K., et al. 2002. A protein disulfide isomerase expressed in the embryonic midline is required for left/right asymmetries. *Genes Dev.* 16: 2518-2529.
4. Kikuchi, M., et al. 2002. Functional analysis of human P5, a protein disulfide isomerase homologue. *J. Biochem.* 132: 451-455.
5. Jordan, P.A., et al. 2005. A role for the thiol isomerase protein ERP5 in platelet function. *Blood* 105: 1500-1507.
6. Kaiser, B.K., et al. 2007. Disulphide-isomerase-enabled shedding of tumour-associated NKG2D ligands. *Nature* 447: 482-486.
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CHROMOSOMAL LOCATION

Genetic locus: PDIA6 (human) mapping to 2p25.1.

PRODUCT

ERp5 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 ERp5 shRNA Plasmid (h): sc-94493-SH and ERp5 shRNA (h) Lentiviral Particles: sc-94493-V as alternate gene silencing products.

For independent verification of ERp5 (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-94493A, sc-94493B and sc-94493C.

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 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

ERp5 siRNA (h) is recommended for the inhibition of ERp5 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

ERp5 (G-5): sc-365260 is recommended as a control antibody for monitoring of ERp5 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 κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 ERp5 gene expression knockdown using RT-PCR Primer: ERp5 (h)-PR: sc-94493-PR (20 μ l, 599 bp). 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.