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PDIA2 siRNA (m): sc-152136

BACKGROUND

Oxidoreductase-protein disulfide isomerase (PDI) is a homodimer that catalyzes thiol-disulfide exchange, mediates folding of newly synthesized proteins and functions as a molecular chaperone. PDIA2 (protein disulfide-isomerase A2), also known as PDIR (protein disulfide isomerase-related protein), PDI, PDA2 or PDIP (protein disulfide isomerase, pancreatic), is a 525 amino acid endoplasmic reticulum lumen protein that is highly expressed in the pancreas. Belonging to the protein disulfide isomerase family, PDIA2 contains two thioredoxin (CXXC) domains, which mediate substrate-specific isomerases and chaperone PDIA2's redox activity. PDIA2 is suggested to function as an enzyme that catalyzes the rearrangement of -S-S- bonds in proteins. PDIA2 is encoded by a gene located on human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

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2. Desilva, M.G., et al. 1996. Characterization and chromosomal localization of a new protein disulfide isomerase, PDIP, highly expressed in human pancreas. *DNA Cell Biol.* 15: 9-16.
3. Meunier, L., et al. 2002. A subset of chaperones and folding enzymes form multiprotein complexes in endoplasmic reticulum to bind nascent proteins. *Mol. Biol. Cell* 13: 4456-4469.
4. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608012. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Horibe, T., et al. 2004. Different contributions of the three CXXC motifs of human protein-disulfide isomerase-related protein to isomerase activity and oxidative refolding. *J. Biol. Chem.* 279: 4604-4611.
6. Jessop, C.E., et al. 2004. Oxidative protein folding in the mammalian endoplasmic reticulum. *Biochem. Soc. Trans.* 32: 655-658.

CHROMOSOMAL LOCATION

Genetic locus: Pdia2 (mouse) mapping to 17 A3.3.

PRODUCT

PDIA2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PDIA2 shRNA Plasmid (m): sc-152136-SH and PDIA2 shRNA (m) Lentiviral Particles: sc-152136-V as alternate gene silencing products.

For independent verification of PDIA2 (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-152136A, sc-152136B and sc-152136C.

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

PDIA2 siRNA (m) is recommended for the inhibition of PDIA2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PDIA2 gene expression knockdown using RT-PCR Primer: PDIA2 (m)-PR: sc-152136-PR (20 μ l). 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.