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PTPDC1 siRNA (m): sc-152581

BACKGROUND

Protein tyrosine phosphorylation influences cell responses including growth, proliferation, differentiation, migration, metabolism and survival. Tyrosine phosphorylation is a reversible process in balance by the activities of protein tyrosine kinases and protein tyrosine phosphatases (PTP). The PTP superfamily includes transmembrane receptor-like PTPs, cytosolic phosphotyrosine specific PTPs, Dual Specificity PTPs (DSP), and Multiple Specificity PTP (MSPs). PTPDC1 (protein tyrosine phosphatase domain containing 1), also known as PTP9Q22, is a 754 amino acid protein that belongs to the PTP family and non-receptor class PTPDC1 subfamily. Existing as two alternatively spliced isoforms, PTPDC1 is encoded by a gene that maps to human chromosome 9q22.32 and mouse chromosome 13 A5.

REFERENCES

1. Krueger, N.X., et al. 1990. Structural diversity and evolution of human receptor-like protein tyrosine phosphatases. *EMBO J.* 9: 3241-3252.
2. Fischer, E.H., et al. 1991. Protein tyrosine phosphatases: a diverse family of intracellular and transmembrane enzymes. *Science* 253: 401-406.
3. Pan, M.-G., et al. 1993. Cloning and expression of two structurally distinct receptor-linked protein-tyrosine phosphatases generated by RNA processing from a single gene. *J. Biol. Chem.* 268:19284-19291.
4. Wright, M.B. et al. 1998. Proliferating and migrating mesangial cells responding to injury express a novel receptor protein-tyrosine phosphatase in experimental mesangial J. *Biol. Chem.* 273: 23929-23937.
5. Veeramani, S., et al. 2009. Revisiting histidine-dependent acid phosphatases: a distinct group of tyrosine phosphatases. *Trends Biochem. Sci.* 34: 273-278.

CHROMOSOMAL LOCATION

Genetic locus: Ptpdc1 (mouse) mapping to 13 A5.

PRODUCT

PTPDC1 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 PTPDC1 shRNA Plasmid (m): sc-152581-SH and PTPDC1 shRNA (m) Lentiviral Particles: sc-152581-V as alternate gene silencing products.

For independent verification of PTPDC1 (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-152581A, sc-152581B and sc-152581C.

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.

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

PTPDC1 siRNA (m) is recommended for the inhibition of PTPDC1 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 PTPDC1 gene expression knockdown using RT-PCR Primer: PTPDC1 (m)-PR: sc-152581-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.