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# PTP $\delta$ siRNA (m): sc-155951

## BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTP $\alpha$ , PTP $\beta$ , PTP $\gamma$ , PTP $\delta$ , PTP $\epsilon$ , PTP $\zeta$ , PTP $\kappa$  and PTP $\mu$ . Transmembrane PTPs play diverse roles during development and in adult tissues. Immunodepletion studies have suggested LAR to be a regulator of Insulin receptor phosphorylation. PTP $\alpha$  activity is increased twofold in response to phorbol ester stimulation, resulting in serine phosphorylation either directly or indirectly by members of the PKC family. Overexpression of v-H-Ras and Neu, but not Myc or Int2, in mammary tumors has been shown to induce PTP $\epsilon$  expression. An alternative splicing event leads to a nervous tissue-specific chondroitin sulfate proteoglycan called phosphacan, which represents the amino-terminal portion of PTP $\zeta$ . PTP $\kappa$  and PTP $\mu$  share a conserved amino-terminal 160 amino acid MAM domain which facilitates homophilic binding. PTP $\mu$  localizes to points of cell contact and may be involved in regulating the assembly and disassembly of cadherin/catenin complexes *in vivo*.

## REFERENCES

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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. Serra-Pages, C., et al. 1995. The LAR transmembrane protein tyrosine phosphatase and a coiled-coil LAR-interacting protein co-localize at focal adhesions. *EMBO J.* 14: 2827-2838.
5. Pulido, R., et al. 1995. The LAR/PTP  $\delta$ /PTP $\alpha$  subfamily of transmembrane protein-tyrosine-phosphatases. *Proc. Natl. Acad. Sci. USA* 92: 11686-11690.
6. Pulido, R., et al. 1995. Molecular characterization of the human transmembrane protein-tyrosine phosphatase  $\delta$ . *J. Biol. Chem.* 270: 6722-6728.
7. Neel, B.G., et al. 1997. Protein tyrosine phosphatases in signal transduction. *Curr. Opin. Cell Biol.* 9: 193-204.
8. Wallace, M.J., et al. 1998. The second catalytic domain of protein tyrosine phosphatase  $\delta$  (PTP $\delta$ ) binds to and inhibits the first catalytic domain of PTP $\alpha$ . *Mol. Cell. Biol.* 18: 2608-2616.

## CHROMOSOMAL LOCATION

Genetic locus: Ptp $\delta$  (mouse) mapping to 4 C3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

PTP $\delta$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PTP $\delta$  shRNA Plasmid (m): sc-155951-SH and PTP $\delta$  shRNA (m) Lentiviral Particles: sc-155951-V as alternate gene silencing products.

For independent verification of PTP $\delta$  (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-155951A, sc-155951B and sc-155951C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

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

## APPLICATIONS

PTP $\delta$  siRNA (m) is recommended for the inhibition of PTP $\delta$  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  $\mu$ M in 66  $\mu$ 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 PTP $\delta$  gene expression knockdown using RT-PCR Primer: PTP $\delta$  (m)-PR: sc-155951-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.