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- Trockeneiszuschlag
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- Expressversand

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# RPTP $\alpha$ siRNA (h): sc-44082

## BACKGROUND

Receptor protein-tyrosine phosphatase  $\alpha$  (RPTP $\alpha$ ) dephosphorylates and activates Src family tyrosine kinases and influences the regulation of integrin signaling, cell adhesion and growth factor responsiveness. RPTP $\alpha$  contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and constitutively forms dimers in the membrane. The human RPTP $\alpha$  sequence encodes a 793 amino acid protein. Mouse RPTP $\alpha$  precipitated from NIH/3T3 cells is constitutively phosphorylated at Ser 180/Ser 204. RPTP $\alpha$  also serves as a receptor for *Helicobacter pylori* vacuolating cytotoxin, VacA.

## REFERENCES

1. Tracy, S., et al. 1995. The receptor-like protein-tyrosine phosphatase, RPTP $\alpha$ , is phosphorylated by protein kinase C on two serines close to the inner face of the plasma membrane. *J. Biol. Chem.* 270: 10587-10594.
2. Ardini, E., et al. 2000. Expression of protein tyrosine phosphatase  $\alpha$  (RPTP $\alpha$ ) in human breast cancer correlates with low tumor grade, and inhibits tumor cell growth *in vitro* and *in vivo*. *Oncogene* 19: 4979-4987.
3. Blanchetot, C. and den Hertog, J. 2000. Multiple interactions between receptor protein-tyrosine phosphatase (RPTP)  $\alpha$  and membrane-distal protein-tyrosine phosphatase domains of various RPTPs. *J. Biol. Chem.* 275: 12446-12452.
4. van der Wijk, T., et al. 2003. Redox-regulated rotational coupling of receptor protein-tyrosine phosphatase  $\alpha$  dimers. *J. Biol. Chem.* 278: 13968-13974.
5. Yahiro, K., et al. 2003. Protein-tyrosine phosphatase  $\alpha$ , RPTP $\alpha$ , is a *Helicobacter pylori* VacA receptor. *J. Biol. Chem.* 278: 19183-19189.
6. von Wichert, G., et al. 2003. RPTP $\alpha$  acts as a transducer of mechanical force on  $\alpha_v\beta_3$ -integrin-cytoskeleton linkages. *J. Cell Biol.* 161: 143-153.
7. LocusLink Report (LocusID: 5786). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: PTPRA (human) mapping to 20p13.

## PRODUCT

RPTP $\alpha$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RPTP $\alpha$  shRNA Plasmid (h): sc-44082-SH and RPTP $\alpha$  shRNA (h) Lentiviral Particles: sc-44082-V as alternate gene silencing products.

For independent verification of RPTP $\alpha$  (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3 nmol of lyophilized siRNA. These include: sc-44082A, sc-44082B and sc-44082C.

## PROTOCOLS

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

## 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

RPTP $\alpha$  siRNA (h) is recommended for the inhibition of RPTP $\alpha$  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  $\mu$ 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.

## GENE EXPRESSION MONITORING

RPTP $\alpha$  (H-4): sc-398203 is recommended as a control antibody for monitoring of RPTP $\alpha$  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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RPTP $\alpha$  gene expression knockdown using RT-PCR Primer: RPTP $\alpha$  (h)-PR: sc-44082-PR (20  $\mu$ l, 488 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## RESEARCH USE

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