

RPTP α siRNA (m): sc-153120

BACKGROUND

Receptor protein-tyrosine phosphatase α (RPTP α) dephosphorylates and activates Src family tyrosine kinases and influences the regulation of integrin signaling, cell adhesion and growth factor responsiveness. RPTP α contains an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and constitutively forms dimers in the membrane. The human RPTP α sequence encodes a 793 amino acid protein. Mouse RPTP α precipitated from NIH/3T3 cells is constitutively phosphorylated at Ser180/Ser204. RPTP α 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 α , 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 α (RPTP α) 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) α 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 α dimers. *J. Biol. Chem.* 278: 13968-13974.
5. von Wichert, G., et al. 2003. RPTP α acts as a transducer of mechanical force on $\alpha_v\beta_3$ -integrin-cytoskeleton linkages. *J. Cell Biol.* 161: 143-153.
6. Yahiro, K., et al. 2003. Protein-tyrosine phosphatase α , RPTP α , is a *Helicobacter pylori* VacA receptor. *J. Biol. Chem.* 278: 19183-19189.
7. LocusLink Report (LocusID: 5786). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Ptp α (mouse) mapping to 2 F1.

PRODUCT

RPTP α 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 RPTP α shRNA Plasmid (m): sc-153120-SH and RPTP α shRNA (m) Lentiviral Particles: sc-153120-V as alternate gene silencing products.

For independent verification of RPTP α (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-153120A, sc-153120B and sc-153120C.

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

RPTP α siRNA (m) is recommended for the inhibition of RPTP α 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.

GENE EXPRESSION MONITORING

RPTP α (H-4): sc-398203 is recommended as a control antibody for monitoring of RPTP α 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 RPTP α gene expression knockdown using RT-PCR Primer: RPTP α (m)-PR: sc-153120-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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