SANTA CRUZ BIOTECHNOLOGY, INC.

PHPT1 siRNA (h): sc-92729

BACKGROUND

PHPT1 (Phosphohistidine phosphatase 1), also known as 14 kDa phosphohistidine phosphatase, is a 125 amino acid enzyme belonging to the Janus protein family. Existing as a monomer in the cytoplasm, PHPT1 is an EDTA-insensitive phosphohistidine phosphatase. First identified in human adrenal gland, PHPT1 is highly expressed in skeletal muscle and heart, with lower expression in liver, pancreas and kidney. Overexpression of PHPT1 leads to specific phosphohistidine phosphatase activity towards phosphopeptide I, with no activity detected towards phosphotyrosine, phosphothreonine and phosphoserine peptides. PHPT1 is highly conserved among species, suggesting that it serves an essential functional role.

REFERENCES

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3. Ek, P., et al. 2002. Identification and characterization of a mammalian 14-kDa phosphohistidine phosphatase. Eur. J. Biochem. 269: 5016-5023.
4. Klumpp, S., et al. 2002. Protein histidine phosphatase: a novel enzyme with potency for neuronal signaling. J. Cereb. Blood Flow Metab. 22: 1420-1424.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610167. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Klumpp, S., et al. 2003. ATP-citrate lyase as a substrate of protein histidine phosphatase in vertebrates. Biochem. Biophys. Res. Commun. 306: 110-115.
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CHROMOSOMAL LOCATION

Genetic locus: PHPT1 (human) mapping to 9q34.3.

PRODUCT

PHPT1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PHPT1 shRNA Plasmid (h): sc-92729-SH and PHPT1 shRNA (h) Lentiviral Particles: sc-92729-V as alternate gene silencing products.

For independent verification of PHPT1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92729A, sc-92729B and sc-92729C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PHPT1 siRNA (h) is recommended for the inhibition of PHPT1 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 µM in 66 µl. 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

PHPT1 (C-6): sc-398659 is recommended as a control antibody for monitoring of PHPT1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 PHPT1 gene expression knockdown using RT-PCR Primer: PHPT1 (h)-PR: sc-92729-PR (20 µl). 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.