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SANTA CRUZ BIOTECHNOLOGY, INC.

PHT2 siRNA (m): sc-152237

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PHT2 (peptide/histidine transporter 2), also known as SLC15A3 (solute carrier family 15, member 3), OCTP (osteoclast transporter) or PTR3 (peptide transporter 3), belongs to the PTR2/POT (proton-coupled oligopeptide transporter) family. Existing in mammals, plants, fungi and yeast, POT family members utilize a proton-dependent mechanism to transport di- and tripeptide-based substrates across cell membranes. Because peptides are generally hydrophilic and difficult to transport across membrane barriers, information regarding the transport pathways of POT proteins is used in clinical applications for treatment of many disorders, including cancer and hypertension. Localizing to cell membranes, POT proteins contain 12 predicted transmembrane α-helical spans, with a majority of the proteins having intracellular N- and C-termini. PHT2, a 581 amino acid protein, is highly expressed in lung, spleen and thymus, and weakly expressed in brain, liver, adrenal gland and heart.

REFERENCES

1. Botka, C.W., et al. 2000. Human proton/oligopeptide transporter (POT) genes: identification of putative human genes using bioinformatics. AAPS PharmSci. 2: E16.
2. Sakata, K., et al. 2001. Cloning of a lymphatic peptide/histidine transporter. Biochem. J. 356 (Pt. 1): 53-60.
3. Rubio-Aliaga, I., et al. 2003. Targeted disruption of the peptide transporter Pept2 gene in mice defines its physiological role in the kidney. Mol. Cell. Biol. 23: 3247-3252.
4. Fujita, T., et al. 2004. Functional characterization of brain peptide transporter in rat cerebral cortex: identification of the high-affinity type H^+/peptide transporter PEPT2. Brain Res. 997: 52-61.
5. Daniel, H. and Kottra, G. 2004. The proton oligopeptide cotransporter family SLC15 in physiology and pharmacology. Pflugers Arch. 447: 610-618.
6. Bhardwaj, R.K., et al. 2006. The functional evaluation of human peptide/histidine transporter 1 (hPHT1) in transiently transfected COS-7 cells. Eur. J. Pharm. Sci. 27: 533-542.

CHROMOSOMAL LOCATION

Genetic locus: Slc15a3 (mouse) mapping to 19 A.

PRODUCT

PHT2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PHT2 shRNA Plasmid (m): sc-152237-SH and PHT2 shRNA (m) Lentiviral Particles: sc-152237-V as alternate gene silencing products.

For independent verification of PHT2 (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-152237A, sc-152237B and sc-152237C.

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

PHT2 siRNA (m) is recommended for the inhibition of PHT2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PHT2 gene expression knockdown using RT-PCR Primer: PHT2 (m)-PR: sc-152237-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.