

PHT1 (H-22): sc-102058

BACKGROUND

PHT1, also known as peptide transporter 4, PTR4, hPHT1 or solute carrier family 15 member 4, belongs to a family of peptide transporter proteins known as the proton-coupled oligopeptide transporter (POT) family or the peptide transporter (PTR) family. The POT family members are found in mammals, plants, fungi and yeast, and they utilize a proton-dependent mechanism to transport di- and tripeptide-based substrates across the cell membrane. Because peptides are generally hydrophilic and difficult to transport across membrane barriers, insights from the transport pathways of the POT proteins have been used in clinical applications for treatment of many disorders including cancer and hypertension. Localized to the cell membrane, POT proteins contain 12 predicted transmembrane α -helical spans, with a majority of the proteins having intracellular N- and C-termini. PHT1, a 577 amino acid protein, is highly expressed in skeletal muscle and is expressed in low levels throughout the gastrointestinal system, heart, colon and brain. Two isoforms of PHT1 have been identified.

REFERENCES

- Covitz, K.M., et al. 1996. Human dipeptide transporter, hPEPT1, stably transfected into Chinese hamster ovary cells. *Pharm. Res.* 13: 1631-1634.
- Han, H., et al. 1998. 5'-amino acid esters of antiviral nucleosides, acyclovir, and AZT are absorbed by the intestinal PEPT1 peptide transporter. *Pharm. Res.* 15: 1154-1159.
- Han, H.K., et al. 1998. Cellular uptake mechanism of amino acid ester prodrugs in Caco-2/hPEPT1 cells overexpressing a human peptide transporter. *Pharm. Res.* 15: 1382-1386.
- Botka, C.W., et al. 2000. Human proton/oligopeptide transporter (POT) genes: identification of putative human genes using bioinformatics. *AAPS PharmSci* 2: E16.
- Herrera-Ruiz, D., et al. 2001. Spatial expression patterns of peptide transporters in the human and rat gastrointestinal tracts, Caco-2 *in vitro* cell culture model, and multiple human tissues. *AAPS PharmSci* 3: E9.
- Herrera-Ruiz, D. and Knipp, G.T. 2003. Current perspectives on established and putative mammalian oligopeptide transporters. *J. Pharm. Sci.* 92: 691-714.
- Herrera-Ruiz, D., et al. 2004. A novel hPEPT1 stably transfected cell line: establishing a correlation between expression and function. *Mol. Pharm.* 1: 136-144.

CHROMOSOMAL LOCATION

Genetic locus: SLC15A4 (human) mapping to 12q24.32.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

SOURCE

PHT1 (H-22) is a purified rabbit polyclonal antibody raised against PHT1 of human origin.

PRODUCT

Each vial contains 50 μ g IgG in 500 μ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

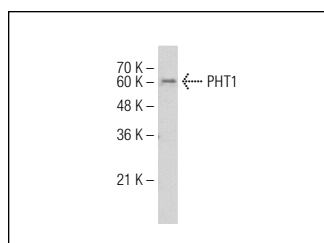
PHT1 (H-22) is recommended for detection of PHT1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PHT1 siRNA (h): sc-95914, PHT1 shRNA Plasmid (h): sc-95914-SH and PHT1 shRNA (h) Lentiviral Particles: sc-95914-V.

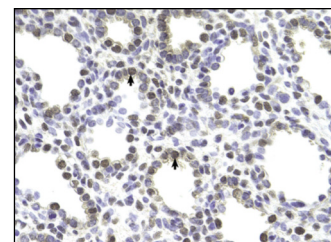
Molecular Weight of PHT1: 83 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

DATA



PHT1 (H-22): sc-102058. Western blot analysis of PHT1 expression in Hep G2 whole cell lysate.



PHT1 (H-22): sc-102058. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing nuclear and cytoplasmic staining.

SELECT PRODUCT CITATIONS

- Lee, J., et al. 2009. pH-dependent internalization of muramyl peptides from early endosomes enables Nod1 and Nod2 signaling. *J. Biol. Chem.* 284: 23818-23829.

RESEARCH USE

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