

DPEP1 siRNA (m): sc-143152

BACKGROUND

DPEP1 (dipeptidase 1), also known as MDP, RDP or MBD1, is a 411 amino acid renal protein that localizes to the apical cell membrane and belongs to the peptidase M19 family. Existing as a disulfide-linked homodimer, DPEP1 uses zinc as a cofactor to catalyze the hydrolysis of various dipeptides and, via its catalytic activity, plays a role in glutathione and leukotriene metabolism. DPEP1 is functionally inhibited by L-penicillamine and is subject to post-translational N-glycosylation. The gene encoding DPEP1 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Campbell, B.J., Forrester, L.J., Zahler, W.L. and Burks, M. 1984. β -lactamase activity of purified and partially characterized human renal dipeptidase. *J. Biol. Chem.* 259: 14586-14590.
2. Adachi, H., Kubota, I., Okamura, N., Iwata, H., Tsujimoto, M., Nakazato, H., Nishihara, T. and Noguchi, T. 1989. Purification and characterization of human microsomal dipeptidase. *J. Biochem.* 105: 957-961.
3. Hooper, N.M., Keen, J.N. and Turner, A.J. 1990. Characterization of the glycosyl-phosphatidylinositol-anchored human renal dipeptidase reveals that it is more extensively glycosylated than the pig enzyme. *Biochem. J.* 265: 429-433.
4. Adachi, H., Tawaragi, Y., Inuzuka, C., Kubota, I., Tsujimoto, M., Nishihara, T. and Nakazato, H. 1990. Primary structure of human microsomal dipeptidase deduced from molecular cloning. *J. Biol. Chem.* 265: 3992-3995.
5. Adachi, H., Katayama, T., Inuzuka, C., Oikawa, S., Tsujimoto, M. and Nakazato, H. 1990. Identification of membrane anchoring site of human renal dipeptidase and construction and expression of a cDNA for its secretory form. *J. Biol. Chem.* 265: 15341-15345.
6. Austruy, E., Jeanpierre, C., Antignac, C., Whitmore, S.A., Van Cong, N., Bernheim, A., Callen, D.F. and Junien, C. 1993. Physical and genetic mapping of the dipeptidase gene DPEP1 to 16q24.3. *Genomics* 15: 684-687.
7. Nitani, Y., Satow, Y., Adachi, H. and Tsujimoto, M. 2002. Crystal structure of human renal dipeptidase involved in β -lactam hydrolysis. *J. Mol. Biol.* 321: 177-184.
8. McIver, C.M., Lloyd, J.M., Hewett, P.J. and Hardingham, J.E. 2004. Dipeptidase 1: a candidate tumor-specific molecular marker in colorectal carcinoma. *Cancer Lett.* 209: 67-74.
9. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 179780. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Dpep1 (mouse) mapping to 8 E1.

PRODUCT

DPEP1 siRNA (m) is a target-specific 19-25 nt siRNA 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 DPEP1 shRNA Plasmid (m): sc-143152-SH and DPEP1 shRNA (m) Lentiviral Particles: sc-143152-V as alternate gene silencing 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

DPEP1 siRNA (m) is recommended for the inhibition of DPEP1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DPEP1 gene expression knockdown using RT-PCR Primer: DPEP1 (m)-PR: sc-143152-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.