SANTA CRUZ BIOTECHNOLOGY, INC.

PGP-I siRNA (h): sc-97500

BACKGROUND

PGP-I, also known as PGPEP1 (pyroglutamyl-peptidase I), PGP, PAP-I, Pcp, 5-oxoprolyl-peptidase, pyroglutamyl aminopeptidase I or pyrrolidone-carboxylate peptidase, is a 209 amino acid protein that localizes to cytoplasm and belongs to the peptidase C15 family. PGP-I catalyzes the hydrolysis of N-terminal pyroglutamyl residues from oligopeptides and proteins and removes 5-oxoproline from various penultimate amino acid residues, not including L-proline. PGP-I is inhibited by transition metal ions, including Ni^{2+}, Zn^{2+} and Cu^{2+}, and also by sulfhydryl-blocking agents. Reversible inhibition of PGP-I occurs with 2-pyrrolidone and N-ethylmaleimide. The gene that encodes PGP-I maps to human chromosome 19p13.11.

REFERENCES

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2. Charli, J.L., et al. 1987. Specific inhibitors of pyroglutamyl peptidase I and prolyl endopeptidase do not change the *in vitro* release of TRH or its content in rodent brain. Neuropeptides 9: 373-378.
3. Mendez, M., et al. 1990. Evaluation of the role of prolyl endopeptidase and pyroglutamyl peptidase I in the metabolism of LHRH and TRH in brain. Neuropeptides 17: 55-62.
4. Alba, F., et al. 1995. Comparison of soluble and membrane-bound pyroglutamyl peptidase I activities in rat brain tissues in the presence of detergents. Neuropeptides 29: 103-107.
5. Dando, P.M., et al. 2003. Pyroglutamyl-peptidase I: cloning, sequencing, and characterisation of the recombinant human enzyme. Protein Expr. Purif. 28: 111-119.
6. Monsuur, A.J., et al. 2006. Understanding the molecular basis of celiac disease: what genetic studies reveal. Ann. Med. 38: 578-591.
7. Monsuur, A.J., et al. 2006. Genetic and functional analysis of pyroglutamyl-peptidase I in coeliac disease. Eur. J. Gastroenterol. Hepatol. 18: 637-644.
8. Wolters, V.M., et al. 2008. Genetic background of celiac disease and its clinical implications. Am. J. Gastroenterol. 103: 190-195.

CHROMOSOMAL LOCATION

Genetic locus: PGPEP1 (human) mapping to 19p13.11.

PRODUCT

PGP-I 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 PGP-I shRNA Plasmid (h): sc-97500-SH and PGP-I shRNA (h) Lentiviral Particles: sc-97500-V as alternate gene silencing products.

For independent verification of PGP-I (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-97500A, sc-97500B and sc-97500C.

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

PGP-I siRNA (h) is recommended for the inhibition of PGP-I 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PGP-I gene expression knockdown using RT-PCR Primer: PGP-I (h)-PR: sc-97500-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kopecka, J., et al. 2011. Nitric oxide and P-glycoprotein modulate the phagocytosis of colon cancer cells. J. Cell. Mol. Med. 15: 1492-1504.

RESEARCH USE

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

PROTOCOLS

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