

CPO siRNA (h): sc-94844

BACKGROUND

The peptidase M14 family of carboxypeptidases (CPs) are involved in various functions throughout the body, which include digestion of food and biosynthesis of peptides that function in intercellular signaling. CPO (carboxypeptidase O) is a 374 amino acid secreted protein that belongs to the peptidase M14 family. As a carboxypeptidase, CPO cleaves single amino acids from the C-terminus of peptides or proteins and binds one zinc ion per subunit. The gene encoding CPO maps to human chromosome 2, which consists of 237 million bases, encodes over 1,400 genes and makes up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2, including Harlequin ichthyosis, sitosterolemia and Alström syndrome.

REFERENCES

1. Patel, S.B., Salen, G., Hidaka, H., Kwiterovich, P.O., Stalenhoef, A.F., Miettinen, T.A., Grundy, S.M., Lee, M.H., Rubenstein, J.S., Polymeropoulos, M.H. and Brownstein, M.J. 1998. Mapping a gene involved in regulating dietary cholesterol absorption. The sitosterolemia locus is found at chromosome 2p21. *J. Clin. Invest.* 102: 1041-1044.
2. Reznik, S.E. and Fricker, L.D. 2001. Carboxypeptidases from A to Z: implications in embryonic development and Wnt binding. *Cell. Mol. Life Sci.* 58: 1790-1804.
3. Shulenin, S., Schriml, L.M., Remaley, A.T., Fojo, S., Brewer, B., Allikmets, R. and Dean, M. 2001. An ATP-binding cassette gene (ABCG5) from the ABCG (white) gene subfamily maps to human chromosome 2p21 in the region of the sitosterolemia locus. *Cytogenet. Cell Genet.* 92: 204-208.
4. Wei, S., Segura, S., Vendrell, J., Aviles, F.X., Lanoue, E., Day, R., Feng, Y. and Fricker, L.D. 2002. Identification and characterization of three members of the human metallocarboxypeptidase gene family. *J. Biol. Chem.* 277: 14954-14964.
5. Hearn, T., Renforth, G.L., Spalluto, C., Hanley, N.A., Piper, K., Brickwood, S., White, C., Connolly, V., Taylor, J.F., Russell-Eggitt, I., Bonneau, D., Walker, M. and Wilson, D.I. 2002. Mutation of ALMS1, a large gene with a tandem repeat encoding 47 amino acids, causes Alström syndrome. *Nat. Genet.* 31: 79-83.
6. Kelsell, D.P., Norgett, E.E., Unsworth, H., Teh, M.T., Cullup, T., Mein, C.A., Dopping-Hepenstal, P.J., Dale, B.A., Tadini, G., Fleckman, P., Stephens, K.G., Sybert, V.P., Mallory, S.B., North, B.V., Witt, D.R., Sprecher, E., et al. 2005. Mutations in ABCA12 underlie the severe congenital skin disease harlequin ichthyosis. *Am. J. Hum. Genet.* 76: 794-803.
7. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609563. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: CPO (human) mapping to 2q33.3.

PROTOCOLS

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

PRODUCT

CPO 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CPO shRNA Plasmid (h): sc-94844-SH and CPO shRNA (h) Lentiviral Particles: sc-94844-V as alternate gene silencing products.

For independent verification of CPO (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-94844A, sc-94844B and sc-94844C.

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

CPO siRNA (h) is recommended for the inhibition of CPO 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 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 CPO gene expression knockdown using RT-PCR Primer: CPO (h)-PR: sc-94844-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.