

PPT2 siRNA (h): sc-95460

BACKGROUND

PPT2 (palmitoyl-protein thioesterase 2), also known as G₁₄, is a 302 amino acid glycosylated protein that localizes to the lysosome and belongs to the palmitoyl-protein thioesterase family. Expressed throughout the body with highest levels in skeletal muscle, PPT2 functions to remove thioester-linked fatty acyl groups from a variety of substrates, including S-palmitoyl-CoA, thereby playing an important role in lipid metabolism. PPT2 operates at an optimal pH of 7 and exhibits the highest activity for the acyl groups on myristic and palmitic acids, with lower levels of activity toward other short- and long-chain acyl substrates. PPT2 exists as two isoforms, one of which is expressed at low levels and is catalytically inactive.

REFERENCES

1. Soyombo, A.A., et al. 1997. Molecular cloning and expression of palmitoyl-protein thioesterase 2 (PPT2), a homolog of lysosomal palmitoyl-protein thioesterase with a distinct substrate specificity. *J. Biol. Chem.* 272: 27456-27463.
2. Aguado, B., et al. 1999. Characterization of a human MHC class III region gene product with S-thioesterase activity. *Biochem. J.* 341: 679-689.
3. Soyombo, A.A., et al. 1999. Structure of the human palmitoyl-protein thioesterase-2 gene (PPT2) in the major histocompatibility complex on chromosome 6p21.3. *Genomics* 56: 208-216.
4. Gupta, P., et al. 2001. Disruption of PPT1 or PPT2 causes neuronal ceroid lipofuscinosis in knockout mice. *Proc. Natl. Acad. Sci. USA* 98: 13566-13571.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603298. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Calero, G., et al. 2003. The crystal structure of palmitoyl protein thioesterase-2 (PPT2) reveals the basis for divergent substrate specificities of the two lysosomal thioesterases, PPT1 and PPT2. *J. Biol. Chem.* 278: 37957-37964.
7. Gupta, P., et al. 2003. Disruption of PPT2 in mice causes an unusual lysosomal storage disorder with neurovisceral features. *Proc. Natl. Acad. Sci. USA* 100: 12325-12330.

CHROMOSOMAL LOCATION

Genetic locus: PPT2 (human) mapping to 6p21.32.

PRODUCT

PPT2 siRNA (h) is a pool of 2 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 PPT2 shRNA Plasmid (h): sc-95460-SH and PPT2 shRNA (h) Lentiviral Particles: sc-95460-V as alternate gene silencing products.

For independent verification of PPT2 (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-95460A and sc-95460B.

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

PPT2 siRNA (h) is recommended for the inhibition of PPT2 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 PPT2 gene expression knockdown using RT-PCR Primer: PPT2 (h)-PR: sc-95460-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.

PROTOCOLS

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