SANTA CRUZ BIOTECHNOLOGY, INC.

CTPS2 siRNA (h): sc-91001

BACKGROUND

CTPS2 (CTP synthase 2), also known as UTP-ammonia ligase 2, is a 586 amino acid protein that contains one glutamine amidotransferase type-1 domain and is involved in pyrimidine metabolism. CTPS2 catalyzes the ATP-dependent conversion of uridine triphosphate (UTP) to cytidine triphosphate (CTP), a rate-limiting reaction that requires either ammonia or L-glutamine as a nitrogen source. Via its catalytic activity, CTPS2 plays an important role in the synthesis of nucleic acids and is crucial for proper cell growth and development. The gene encoding CTPS2 maps to the human X chromosome, which contains nearly 153 million base pairs and houses over 1,000 genes.

REFERENCES

1. Ostrander, D.B., et al. 1998. Effect of CTP synthetase regulation by CTP on phospholipid synthesis in *Saccharomyces cerevisiae*. J. Biol. Chem. 273: 18992-19001.
2. van Kuilenburg, A.B., et al. 2000. Identification of a cDNA encoding an isoform of human CTP synthetase. Biochim. Biophys. Acta 1492: 548-552.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300380. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Park, T.S., et al. 2003. Phosphorylation of CTP synthetase on Ser 36, Ser 330, Ser 354, and Ser 454 regulates the levels of CTP and phosphatidylcholine synthesis in *Saccharomyces cerevisiae*. J. Biol. Chem. 278: 20785-20794.
5. Han, G.S., et al. 2005. Expression of Human CTP synthetase in *Saccharomyces cerevisiae* reveals phosphorylation by protein kinase A. J. Biol. Chem. 280: 38328-38336.
6. Ross, M.T., et al. 2005. The DNA sequence of the human X chromosome. Nature 434: 325-337.

CHROMOSOMAL LOCATION

Genetic locus: CTPS2 (human) mapping to Xp22.2.

PRODUCT

CTPS2 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 CTPS2 shRNA Plasmid (h): sc-91001-SH and CTPS2 shRNA (h) Lentiviral Particles: sc-91001-V as alternate gene silencing products.

For independent verification of CTPS2 (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-91001A, sc-91001B and sc-91001C.

PROTOCOLS

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

CTPS2 siRNA (h) is recommended for the inhibition of CTPS2 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 CTPS2 gene expression knockdown using RT-PCR Primer: CTPS2 (h)-PR: sc-91001-PR (20 µl). 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.