SANTA CRUZ BIOTECHNOLOGY, INC.

UPase 2 siRNA (h): sc-106674

BACKGROUND

Uridine, a pyrimidine nucleoside essential for the synthesis of RNA and biomembranes, is a crucial element in the regulation of normal physiological processes as well as pathological states. Uridine phosphorylase (UP, UDPase) catalyses the reversible phosphorolysis of uridine to uracil. The reaction products are then utilized as carbon and energy sources, or in the rescue of pyrimidine bases for nucleotide synthesis. In most mammalian cells, two different pyrimidine nucleoside phosphorylases exist, uridine phosphorylase and thymidine phosphorylase (TP), which, in the presence of orthophosphate, catalyze the reversible conversion of pyrimidine (deoxy) riboside to pyrimidine base and (deoxy) ribose-1-phosphate. The expression levels and the enzymatic activity of UPase are higher in human solid tumors than in adjacent normal tissues. In addition, UPase controls the homeostatic regulation of uridine concentration in plasma and tissues and plays a role in the intracellular activation of 5-fluorouracil.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 1996 Johns Hopkins University, Baltimore, MD. MIM Number: 191730. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Zhang, D., Cao, D., Russell, R. and Pizzorno, G. 2001. p53-dependent suppression of uridine phosphorylase gene expression through direct promoter interaction. Cancer Res. 61: 6899-6905.
3. Pizzorno, G., Cao, D., Leffert, J.J., Russell, R.L., Zhang, D. and Handschumacher, R.E. 2002. Homeostatic control of uridine and the role of uridine phosphorylase: a biological and clinical update. Biochim. Biophys. Acta 1587: 133-144.
4. Haraguchi, M., Tsujimoto, H., Fukushima, M., Higuchi, I., Kuribayashi, H., Utsumi, H., Nakayama, A., Hashizume, Y., Hirato, J., Yoshida, H., Hara, H., Hamano, S., Kawaguchi, H., Furukawa, T., Miyazono, K., Ishikawa, F., et al. 2002. Targeted deletion of both thymidine phosphorylase and uridine phosphorylase and consequent disorders in mice. Mol. Cell. Biol. 22: 5212-5221.
5. Miyashita, H., Takebayashi, Y., Eliason, J.F., Fujimori, F., Nitta, Y., Sato, A., Morikawa, H., Ohashi, A., Motegi, K., Fukumoto, M., Mori, S. and Uchida, T. 2002. Uridine phosphorylase is a potential prognostic factor in patients with oral squamous cell carcinoma. Cancer 94: 2959-2966.
6. SWISS-PROT/TrEMBL (Q16831). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: UPP2 (human) mapping to 2q24.1.

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.

PRODUCT

UPase 2 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 UPase 2 shRNA Plasmid (h): sc-106674-SH and UPase 2 shRNA (h) Lentiviral Particles: sc-106674-V as alternate gene silencing products.

For independent verification of UPase 2 (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-106674A, sc-106674B and sc-106674C.

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

UPase 2 siRNA (h) is recommended for the inhibition of UPase 2 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 UPase 2 gene expression knockdown using RT-PCR Primer: UPase 2 (h)-PR: sc-106674-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.