SANTA CRUZ BIOTECHNOLOGY, INC.

ITPase siRNA (m): sc-146312

BACKGROUND

ITPase (inosine triphosphate pyrophosphatase) is also known as putative oncogene protein hlc14-06-p or ITPA (inosine triphosphatase (nucleoside triphosphate pyrophosphatase)) and is a 194 amino acid protein. ITPase is abundantly expressed in heart, liver, sex glands, thyroid and adrenal gland, and is localized to the cytoplasm in the cell. ITPase catalyzes the pyrophosphohydrolysis of both ITP (inosine triphosphate) and dITP (deoxyinosine triphosphate) to IMP (inosine monophosphate) and diphosphate. IMP can be used as a substrate for purine nucleotide pathways. IMP can be phosphorylated to ITP, and ITPase can regulate the concentration of ITP in the cell by converting ITP back to IMP. Defects in ITPase result in ITPase deficiency which is thought to be inherited and is characterized by an over-accumulation of ITP in erythocytes, leukocytes and fibroblasts.

REFERENCES

1. Verhoef, V.L., et al. 1980. Individual variation of nucleoside triphosphate pyrophosphohydrolase activity in human erythrocytes, granulocytes, lymphocytes, and platelets. Biochem. Genet. 18: 235-245.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 147520. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Breen, D.P., et al. 2005. Pharmacogenetic association with adverse drug reactions to azathioprine immunosuppressive therapy following liver transplantation. Liver Transpl. 11: 826-833.
4. Savchenko, A., et al. 2007. Molecular basis of the antimutagenic activity of the house-cleaning inosine triphosphate pyrophosphatase RdgB from Escherichia coli. J. Mol. Biol. 374: 1091-1103.
5. Bierau, J., et al. 2007. Pharmacogenetic significance of inosine triphosphatase. Pharmacogenomics 8: 1221-1228.
6. Tomkova, J., et al. 2008. ITPase activity in dry blood spots is comparable with that in fresh erythrocytes. Nucleosides Nucleotides Nucleic Acids. 27: 656-660.
7. von Ahsen, N., et al. 2008. Characterization of the inosine triphosphatase (ITPA) gene: haplotype structure, haplotype-phenotype correlation and promoter function. Ther. Drug Monit. 30: 16-22.

CHROMOSOMAL LOCATION

Genetic locus: Itpa (mouse) mapping to 2 F1.

PRODUCT

ITPase siRNA (m) is a target-specific 19-25 nt siRNA 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 ITPase shRNA Plasmid (m): sc-146312-SH and ITPase shRNA (m) Lentiviral Particles: sc-146312-V as alternate gene silencing products.

RESEARCH USE

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

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

ITPase siRNA (m) is recommended for the inhibition of ITPase expression in mouse 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 ITPase gene expression knockdown using RT-PCR Primer: ITPase (m)-PR: sc-146312-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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