SANTA CRUZ BIOTECHNOLOGY, INC.

THTPA siRNA (h): sc-92211

BACKGROUND

Thiamine, known more commonly as vitamin B1, is a water soluble chemical compound that is essential for proper neural function and carbohydrate metabolism. THTPA (thiamine triphosphatase), also known as THTP or THTPASE, is a 230 amino acid member of the THTPase family. Localized to the cytoplasm and expressed at low levels in a variety of tissues, including testis, uterus, prostate, bladder, lung and kidney, THTPA is a hydrolase that catalyzes the H_2O-dependent hydrolysis of thiamine triphosphate (THTP) to thiamine diphosphate (THDP), the major form of thiamine within the cell. THTPA exists as a monomer and functions at an optimal pH of 8.5.

REFERENCES

1. Makarchikov, A.F., et al. 1998. Thiamine triphosphatase activity in bovine kidney. Biochem. Mol. Biol. Int. 46: 115-123.
2. Lakaye, B., et al. 2002. Molecular characterization of a specific thiamine triphosphatase widely expressed in mammalian tissues. J. Biol. Chem. 277: 13771-13777.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611612. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Lakaye, B., et al. 2004. Expression of 25 kDa thiamine triphosphatase in rodent tissues using quantitative PCR and characterization of its mRNA. Int. J. Biochem. Cell Biol. 36: 2032-2041.
5. Lakaye, B., et al. 2004. Human recombinant thiamine triphosphatase: purification, secondary structure and catalytic properties. Int. J. Biochem. Cell Biol. 36: 1348-1364.

CHROMOSOMAL LOCATION

Genetic locus: THTPA (human) mapping to 14q11.2.

PRODUCT

THTPA shRNA Plasmid (h) is a pool of 3 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see THTPA siRNA (h): sc-92211 and THTPA shRNA (h) Lentiviral Particles: sc-92211-V as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

STORAGE AND RESUSPENSION

Store lyophilized shRNA plasmid DNA at 4° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4° C for short term storage or -80° C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

APPLICATIONS

THTPA shRNA Plasmid (h) is recommended for the inhibition of THTPA expression in human cells.

SUPPORT REAGENTS

For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology's shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

GENE EXPRESSION MONITORING

THTPA (A-11): sc-514000 is recommended as a control antibody for monitoring of THTPA gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor THTPA gene expression knockdown using RT-PCR Primer: THTPA (h)-PR: sc-92211-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.