SANTA CRUZ BIOTECHNOLOGY, INC.

TAT siRNA (h): sc-93382

BACKGROUND

TAT (tyrosine aminotransferase) is a 454 amino acid protein that localizes to mitochondria and belongs to the class-I pyridoxal-phosphate-dependent aminotransferase family. Existing as a homodimer, TAT uses pyridoxal phosphate as a cofactor to catalyze the conversion of L-tyrosine into p-hydroxyphenylpyruvate, a reaction that is important in amino acid degradation. Defects in the gene encoding TAT are the cause of tyrosinemia type 2 (TYRO2), an inborn error of metabolism that is associated with elevated levels of tyrosine in blood and urine and is characterized by palmoplantar keratosis, painful corneal ulcers and mental retardation. The gene encoding TAT maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Andersson, S.M. 1982. Induction of cytosolic tyrosine aminotransferase by dexamethasone in organ culture of fetal human liver. Early Hum. Dev. 6: 165-169.
2. Rettenmeier, R., et al. 1990. Isolation and characterization of the human tyrosine aminotransferase gene. Nucleic Acids Res. 18: 3853-3861.
3. Natt, E., et al. 1992. Point mutations in the tyrosine aminotransferase gene in tyrosinemia type II. Proc. Natl. Acad. Sci. USA 89: 9297-9301.
4. Hühn, R., et al. 1998. Novel and recurrent tyrosine aminotransferase gene mutations in tyrosinemia type II. Hum. Genet. 102: 305-313.
5. Rehman, K.K., et al. 2004. Tyrosine aminotransferase and γ-glutamyl transferase activity in human fetal hepatocyte primary cultures under proliferative conditions. Cell Biochem. Funct. 22: 89-96.
6. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 276600. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: TAT (human) mapping to 16q22.2.

PRODUCT

TAT 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 TAT shRNA Plasmid (h): sc-93382-SH and TAT shRNA (h) Lentiviral Particles: sc-93382-V as alternate gene silencing products.

For independent verification of TAT (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-93382A, sc-93382B and sc-93382C.

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

TAT siRNA (h) is recommended for the inhibition of TAT 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.

GENE EXPRESSION MONITORING

TAT (H-9): sc-376292 is recommended as a control antibody for monitoring of TAT 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 TAT gene expression knockdown using RT-PCR Primer: TAT (h)-PR: sc-93382-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.