SANTA CRUZ BIOTECHNOLOGY, INC.

TAT1 siRNA (m): sc-154083

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The Power to Question

BACKGROUND

TAT1 (T-type amino acid transporter 1), also known as SLC16A10 (solute carrier family 16, member 10), aromatic amino acid transporter 1, MCT10 (monocarboxylate transporter 10) or PRO0813, is a 515 amino acid protein that belongs to the monocarboxylate porter family and major facilitator superfamily. A multi-pass membrane protein, TAT1 functions as a sodium-independent transporter that mediates the transport of aromatic amino acids across the plasma membrane. TAT1 is highly expressed in skeletal muscle and kidney, and is found at low levels in heart, placenta, spleen, thymus and small intestine. The gene encoding TAT1 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome.

REFERENCES

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2. Toure, A., et al. 2001. Tat1, a novel sulfate transporter specifically expressed in human male germ cells and potentially linked to rhogtpase signaling. J. Biol. Chem. 276: 20309-20315.
3. Kim, D.K., et al. 2002. The human T-type amino acid transporter-1: characterization, gene organization, and chromosomal location. Genomics 79: 95-103.
4. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607550. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Halestrap, A.P. and Meredith, D. 2004. The SLC16 gene family-from monocarboxylate transporters (MCTs) to aromatic amino acid transporters and beyond. Pflugers Arch. 447: 619-628.
6. Park, S.Y., et al. 2005. Reabsorption of neutral amino acids mediated by amino acid transporter LAT2 and TAT1 in the basolateral membrane of proximal tubule. Arch. Pharm. Res. 28: 421-432.
7. Friesema, E.C., et al. 2008. Effective cellular uptake and efflux of thyroid hormone by human monocarboxylate transporter 10. Mol. Endocrinol. 22: 1357-1369.

CHROMOSOMAL LOCATION

Genetic locus: Slc16a10 (mouse) mapping to 10 B1.

PRODUCT

TAT1 siRNA (m) is a pool of 2 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 TAT1 shRNA Plasmid (m): sc-154083-SH and TAT1 shRNA (m) Lentiviral Particles: sc-154083-V as alternate gene silencing products.

For independent verification of TAT1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154083A and sc-154083B.

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

TAT1 siRNA (m) is recommended for the inhibition of TAT1 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 TAT1 gene expression knockdown using RT-PCR Primer: TAT1 (m)-PR: sc-154083-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.

PROTOCOLS

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