SANTA CRUZ BIOTECHNOLOGY, INC.

AGT1 siRNA (m): sc-140907

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

AGT1, also known as SLC7A13 (solute carrier family 7 member 13) or XAT2 (X-amino acid transporter 2), is a 470 amino acid multi-pass membrane protein that belongs to the amino acid-polyamine-organocation (APC) superfamily. Expressed specifically in kidney tissue, AGT1 functions to mediate the transport of L-aspartate and L-glutamate in a sodium-independent manner, thereby regulating transport dynamics within the kidneys. AGT1 is expressed as two alternatively spliced isoforms and is encoded by a gene that maps to chromosome 8. Consisting of nearly 146 million base pairs, chromosome 8 encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that maps to chromosome 8.

REFERENCES

1. Han, E.K., et al. 1995. Characterization of AGT1 encoding a general α-glucoside transporter from *Saccharomyces*. Mol. Microbiol. 17: 1093-1107.
2. Plourde-Owobi, L., et al. 1999. AGT1, encoding an α-glucoside transporter involved in uptake and intracellular accumulation of trehalose in *Saccharomyces cerevisiae*. J. Bacteriol. 181: 3830-3832.
3. Begum, L., et al. 2002. Expression of three mitochondrial solute carriers, citrin, aralar1 and ornithine transporter, in relation to urea cycle in mice. Biochim. Biophys. Acta 1574: 283-292.
4. Blondeau, J.P. 2002. Homologues of amino acid permeases: cloning and tissue expression of XAT1 and XAT2. Gene 286: 241-248.
5. Matsuo, H., et al. 2002. Identification of a novel Na^+-independent acidic amino acid transporter with structural similarity to the member of a heterodimeric amino acid transporter family associated with unknown heavy chains. J. Biol. Chem. 277: 21017-21026.

CHROMOSOMAL LOCATION

Genetic locus: Slc7a13 (mouse) mapping to 4 A3.

PRODUCT

AGT1 siRNA (m) 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 AGT1 shRNA Plasmid (m): sc-140907-SH and AGT1 shRNA (m) Lentiviral Particles: sc-140907-V as alternate gene silencing products.

For independent verification of AGT1 (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-140907A, sc-140907B and sc-140907C.

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

AGT1 siRNA (m) is recommended for the inhibition of AGT1 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 AGT1 gene expression knockdown using RT-PCR Primer: AGT1 (m)-PR: sc-140907-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.