



# AGXT siRNA (m): sc-140910

## BACKGROUND

AGXT (alanine-glyoxylate aminotransferase), also known as AGT, AGT1, AGXT1, PH1, SPAT (serine—pyruvate aminotransferase) or TLH6, is a 392 amino acid protein belonging to the class-V pyridoxal-phosphate-dependent aminotransferase family. Encoded by a gene that maps to human chromosome 2q37.3, AGXT consists of a homodimer subunit structure and uses pyridoxal phosphate as a cofactor. Localized mainly in peroxisome, AGXT is expressed in liver. AGXT participates in alanine-glyoxylate transaminase activity, amino acid and protein binding, protein homodimerization, pyridoxal phosphate binding, serine-pyruvate transaminase activity and transferase roles. AGXT is linked to hyperoxaluria primary type 1 (HP1), a rare autosomal recessive disease characterized by heightened excretion of oxalate and glycolate, and build up of insoluble calcium oxalate in urinary tract and kidney.

## REFERENCES

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2. Danpure, C.J., et al. 1986. Peroxisomal alanine:glyoxylate aminotransferase deficiency in primary hyperoxaluria type I. *FEBS Lett.* 201: 20-24.
3. Cooper, P.J., et al. 1988. Immunocytochemical localization of human hepatic alanine: glyoxylate aminotransferase in control subjects and patients with primary hyperoxaluria type 1. *J. Histochem. Cytochem.* 36: 1285-1294.
4. Purdue, P.E., et al. 1991. Characterization and chromosomal mapping of a genomic clone encoding human alanine:glyoxylate aminotransferase. *Genomics* 10: 34-42.
5. Danpure, C.J., et al. 1993. Enzymological and mutational analysis of a complex primary hyperoxaluria type 1 phenotype involving alanine:glyoxylate aminotransferase peroxisome-to-mitochondrion mistargeting and intraperoxisomal aggregation. *Am. J. Hum. Genet.* 53: 417-432.
6. Danpure, C.J. 1993. Primary hyperoxaluria type 1 and peroxisome-to-mitochondrion mistargeting of alanine:glyoxylate aminotransferase. *Biochimie* 75: 309-315.
7. Danpure, C.J. 1997. Variable peroxisomal and mitochondrial targeting of alanine: glyoxylate aminotransferase in mammalian evolution and disease. *Bioessays* 19: 317-326.
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9. Caldwell, E.F., et al. 2004. Diet and the frequency of the alanine:glyoxylate aminotransferase Pro11Leu polymorphism in different human populations. *Hum. Genet.* 115: 504-509.

## CHROMOSOMAL LOCATION

Genetic locus: Agxt (mouse) mapping to 1 D.

## RESEARCH USE

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

## PRODUCT

AGXT 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AGXT shRNA Plasmid (m): sc-140910-SH and AGXT shRNA (m) Lentiviral Particles: sc-140910-V as alternate gene silencing products.

For independent verification of AGXT (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-140910A, sc-140910B and sc-140910C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

AGXT siRNA (m) is recommended for the inhibition of AGXT 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  $\mu$ M in 66  $\mu$ l. 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 AGXT gene expression knockdown using RT-PCR Primer: AGXT (m)-PR: sc-140910-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.