

AGXT2L2 siRNA (h): sc-91684

BACKGROUND

Members of the class-III pyridoxal-phosphate-dependent aminotransferase family, such as AGXT2, catalyze the conversion of glyoxylate to glycine using L-alanine as the amino donor. AGXT2 protects from asymmetric dimethylarginine (ADMA)-induced inhibition in nitric oxide (NO) production. Elevated blood concentrations of ADMA, a methyl derivative of the amino acid arginine and an endogenous inhibitor of nitric oxide (NO) synthase, is produced by the physiological degradation of methylated proteins and is found in association with diabetes, hypertension, congestive heart failure and atherosclerosis. AGXT2L2 (alanine-glyoxylate aminotransferase 2-like 2) is a 450 amino acid pyridoxal phosphate that exists as a homotetramer. Belonging to the class-III pyridoxal-phosphate-dependent aminotransferase family, AGXT2L2 localizes to the mitochondria and exists as three alternatively spliced isoforms. Encoded by a gene located on human chromosome 5q35.3, AGXT2L2 may have similar functions as AGXT2.

REFERENCES

1. Dixon, M.J., et al. 1991. The gene for Treacher Collins syndrome maps to the long arm of chromosome 5. *Am. J. Hum. Genet.* 49: 17-22.
2. Watts, R.W. 1992. Alanine glyoxylate aminotransferase deficiency: biochemical and molecular genetic lessons from the study of a human disease. *Adv. Enzyme Regul.* 32: 309-327.
3. Lee, I.S., et al. 1995. Molecular cloning and sequencing of a cDNA encoding alanine-glyoxylate aminotransferase 2 from rat kidney. *J. Biochem.* 117: 856-862.
4. Liepman, A.H., et al. 2001. Peroxisomal alanine: glyoxylate aminotransferase (AGT1) is a photorespiratory enzyme with multiple substrates in *Arabidopsis thaliana*. *Plant J.* 25: 487-498.
5. Liepman, A.H., et al. 2003. Alanine aminotransferase homologs catalyze the glutamate:glyoxylate aminotransferase reaction in peroxisomes of *Arabidopsis*. *Plant Physiol.* 131: 215-227.

CHROMOSOMAL LOCATION

Genetic locus: AGXT2L2 (human) mapping to 5q35.3.

PRODUCT

AGXT2L2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AGXT2L2 shRNA Plasmid (h): sc-91684-SH and AGXT2L2 shRNA (h) Lentiviral Particles: sc-91684-V as alternate gene silencing products.

For independent verification of AGXT2L2 (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-91684A, sc-91684B and sc-91684C.

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

APPLICATIONS

AGXT2L2 siRNA (h) is recommended for the inhibition of AGXT2L2 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

AGXT2L2 (C-11): sc-365670 is recommended as a control antibody for monitoring of AGXT2L2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 AGXT2L2 gene expression knockdown using RT-PCR Primer: AGXT2L2 (h)-PR: sc-91684-PR (20 μ l). 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.