SANTA CRUZ BIOTECHNOLOGY, INC.

Agmatinase siRNA (m): sc-60061

BACKGROUND

Agmatinase (also known as agmatine ureohydrolase) results from the decarboxylation of L-arginine by arginine decarboxylase to form a metabolic intermediate in the biosynthesis of putresine and higher polyamines (spermidine and spermine). Agmatinase has been shown to play a role in several important biochemical processes in humans, ranging from effects on the central nervous system to cell proliferation in cancer and viral replication. Agmatinase catalyzes the hydrolysis of agmatine to putresine and urea and is a major target for drug therapy. Human Agmatinase retains about 30% identity to bacterial agmatinases and less than 20% identity to mammalian arginases. Residues required for binding of Mn^{2+} at the active site in bacterial Agmatinase and other members of the arginase superfamily are fully conserved in human Agmatinase. Agmatinase mRNA is most abundant in human liver and kidney, but is also expressed in several other tissues, including skeletal muscle and brain. Expression of Agmatinase mRNA in human liver is induced during hepatitis B virus infection, suggesting that Agmatinase may contribute to the pathophysiology of this disease.

REFERENCES

1. Iyer, R.K., et al. 2002. Cloning and characterization of human agmatinase. Mol. Genet. Metab. 75: 209-218.
2. Mistry, S.K., et al. 2002. Cloning of human agmatinase. An alternate path for polyamine synthesis induced in liver by hepatitis B virus. Am. J. Physiol. Gastrointest. Liver Physiol. 282: G375-G381.
3. Wang, J.F., et al. 2005. Inhibitory effect of agmatine on proliferation of tumor cells by modulation of polyamine metabolism. Acta Pharmacol. Sin. 26: 616-622.
4. Santos, A.R., et al. 2005. Mechanisms involved in the antinociception caused by agmatine in mice. Neuropharmacology 48: 1021-1034.
5. Moinard, C., et al. 2005. Polyamines: metabolism and implications in human diseases. Clin. Nutr. 24: 184-197.
6. Kim, K.H., et al. 2006. Expression, crystallization and preliminary X-ray crystallographic analysis of human agmatinase. Acta Crystallogr. Sect. F, Struct. Biol. Cryst. Commun. 61: 889-891.

CHROMOSOMAL LOCATION

Genetic locus: Agmat (mouse) mapping to 4 E1.

PRODUCT

Agmatinase 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 Agmatinase shRNA Plasmid (m): sc-60061-SH and Agmatinase shRNA (m) Lentiviral Particles: sc-60061-V as alternate gene silencing products.

For independent verification of Agmatinase (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-60061A, sc-60061B and sc-60061C.

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

Agmatinase siRNA (m) is recommended for the inhibition of Agmatinase 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.

GENE EXPRESSION MONITORING

Agmatinase (G-12): sc-166414 is recommended as a control antibody for monitoring of Agmatinase 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 Agmatinase gene expression knockdown using RT-PCR Primer: Agmatinase (m)-PR: sc-60061-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.