SANTA CRUZ BIOTECHNOLOGY, INC.

AMT siRNA (m): sc-141055

BACKGROUND

AMT (aminomethyltransferase), also known as GCST (glycine cleavage system T), GCE or NKH, is a 403 amino acid mitochondrial protein that is one of four components of the glycine cleavage system. The glycine cleavage system is comprised of AMT (known as protein T), GCSH (known as protein H), DLD (known as protein L) and GLDC (known as protein P), all of which work together to catalyze the cleavage and degradation of glycine. Expressed ubiquitously, AMT plays a crucial role in glycine degradation pathway, specifically catalyzing the creation of 5,10-methylenetetrahydrofolate. Defects in the gene encoding AMT are a cause of non-ketotic hyperglycinemia (NKH), also known as glycine encephalopathy (GCE), which is an autosomal recessive error of glycine degradation that is characterized by severe mental retardation.

REFERENCES

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3. Nanao, K., et al. 1994. Structure and chromosomal localization of the aminomethyltransferase gene (AMT). Genomics 19: 27-30.
4. Toone, J.R., et al. 2001. Recurrent mutations in P- and T-proteins of the glycine cleavage complex and a novel T-protein mutation (N145I): a strategy for the molecular investigation of patients with nonketotic hyperglycinemia (NKH). Mol. Genet. Metab. 72: 322-325.
5. Backofen, B., et al. 2002. Genomic organization of the murine aminomethyltransferase gene (Amt). DNA Seq. 13: 179-183.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 238310. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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CHROMOSOMAL LOCATION

Genetic locus: Amt (mouse) mapping to 9 F2.

PRODUCT

AMT 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 AMT shRNA Plasmid (m): sc-141055-SH and AMT shRNA (m) Lentiviral Particles: sc-141055-V as alternate gene silencing products.

For independent verification of AMT (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-141055A, sc-141055B and sc-141055C.

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

AMT siRNA (m) is recommended for the inhibition of AMT 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 AMT gene expression knockdown using RT-PCR Primer: AMT (m)-PR: sc-141055-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.