SANTA CRUZ BIOTECHNOLOGY, INC.

GCDH siRNA (m): sc-145359

BACKGROUNDBACKGROUND

GCDH (glutaryl-Coenzyme A dehydrogenase), also known as GCD or ACAD5, is a 438 amino acid protein that localizes to the mitochondrial matrix and belongs to the acyl-CoA dehydrogenase family. Existing as a homotetramer, GCDH uses FAD as a cofactor to catalyze the oxidative decarboxylation of glutaryl-CoA to crotonyl-CoA and CO_2 in the degradative pathway of L-lysine, L-hydroxylysine and L-tryptophan metabolism. While GCDH exists as both a long and short isoform, only the long isoform is a functionally active protein. Defects in the gene encoding GCDH are the cause of glutaric acidemia type I (GA-I), an autosomal recessive disorder that is characterized by the accumulation of glutaconic acid and is associated with such symptoms as progressive dystonia and athetosis due to gliosis and neuronal loss in the basal ganglia.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Gcdh (mouse) mapping to 8 C3.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

GCDH 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 GCDH shRNA Plasmid (m): sc-145359-SH and GCDH shRNA (m) Lentiviral Particles: sc-145359-V as alternate gene silencing products.

For independent verification of GCDH (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-145359A, sc-145359B and sc-145359C.

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

GCDH siRNA (m) is recommended for the inhibition of GCDH 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 GCDH gene expression knockdown using RT-PCR Primer: GCDH (m)-PR: sc-145359-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.