SANTA CRUZ BIOTECHNOLOGY, INC.

ACMSD siRNA (m): sc-140809

BACKGROUND

α-amino-β-carboxymuconate-ε-semialdehyde (ACMS) can be non-enzymatically converted to quinolinate, a neuronal excitotoxin that is an intermediate in the synthesis pathway of NAD from tryptophan, has been suspected in the pathogenesis of several neurodegenerative disorders. ACMSD (2-amino-3-carboxymuconate-6-semialdehyde decarboxylase) is a 336 amino acid protein that converts ACMS to α-aminomuconate semialdehyde (AMS), a benign catabolite. The presence of ACMSD thus prevents accumulation of quinolinate from ACMS. ACMSD belongs to the ACMSD protein family and exists as two isoforms produced by alternative splicing events. ACMSD is localized to the cytoplasm and is expressed in the liver and kidney, with lower levels found in brain.

REFERENCES

1. Milstien, S., Sakai, N., Brew, B.J., Krieger, C., Vickers, J.H., Saito, K. and Heyes, M.P. 1994. Cerebrospinal fluid nitrite/nitrate levels in neurologic diseases. J. Neurochem. 63: 1178-1180.
2. Levivier, M., Holemans, S., Togasaki, D.M., Maloteaux, J.M., Brotchi, J. and Przedborski, S. 1994. Quantitative assessment of 9/8/2009quinolinic acid-induced striatal toxicity in rats using radioligand binding assays. Neurol. Res. 16: 194-200.
3. Bell, M.J., Kochanek, P.M., Heyes, M.P., Wisniewski, S.R., Sinz, E.H., Clark, R.S., Blight, A.R., Marion, D.W. and Adelson, P.D. 1999. Quinolinic acid in the cerebrospinal fluid of children after traumatic brain injury. Crit. Care Med. 27: 493-497.
4. Fukuoka, S., Ishiguro, K., Yanagihara, K., Tanabe, A., Egashira, Y., Sanada, H. and Shibata, K. 2002. Identification and expression of a cDNA encoding human α-amino-β-carboxymuconate-ε-semialdehyde decarboxylase (ACMSD). A key enzyme for the tryptophan-niacine pathway and "quinolinate hypothesis". J. Biol. Chem. 277: 35162-35167.

CHROMOSOMAL LOCATION

Genetic locus: Acmsd (mouse) mapping to 1 E3.

PRODUCT

ACMSD 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 ACMSD shRNA Plasmid (m): sc-140809-SH and ACMSD shRNA (m) Lentiviral Particles: sc-140809-V as alternate gene silencing products.

For independent verification of ACMSD (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-140809A, sc-140809B andsc-140809C.

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 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

ACMSD siRNA (m) is recommended for the inhibition of ACMSD 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 ACMSD gene expression knockdown using RT-PCR Primer: ACMSD (m)-PR: sc-140809-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.