SANTA CRUZ BIOTECHNOLOGY, INC.

ACAD-9 siRNA (m): sc-61934

BACKGROUND

The acyl-CoA dehydrogenase (ACAD) family of enzymes are involved in the catabolism of fatty acids and amino acids. They provide a major source of energy for the heart and skeletal muscle. ACAD-9 is highly homologous to the VLCAD (very long chain acyl-CoA dehydrogenase) protein and plays a key role in the β-oxidation of long-chain unsaturated fatty acids. ACAD-9 substrates include palmitoyl-CoA and stearoyl-CoA. ACAD-9 is ubquitously expressed but is most abundant in brain, kidney, heart, liver and skeletal muscle. Similar to VLCAD, ACAD-9 is a long-chain ACAD that localizes to the mitochondrial membrane and exists as a dimer. It may be an important contributor to maintaining membrane structure and integrity. Despite the high similarity between ACAD-9 and VLCAD, the two enzymes are not able to compensate in each others absence, suggesting that they play roles in different physiological functions.

REFERENCES

1. Zhang, J., et al. 2002. Cloning and functional characterization of ACAD-9, a novel member of human acyl-CoA dehydrogenase family. Biochem. Biophys. Res. Commun. 297: 1033-1042.
2. Bartlett, K. and Eaton, S. 2004. Mitochondrial β-oxidation. Eur. J. Biochem. 271: 462-469.
3. Ghisla, S. and Thorpe, C. 2004. Acyl-CoA dehydrogenases. A mechanistic overview. Eur. J. Biochem. 271: 494-508.
4. Ye, X., et al. 2004. Cloning and characterization of a human cDNA ACAD-10 mapped to chromosome 12q24.1. Mol. Biol. Rep. 31: 191-195.
5. Ensenauer, R., et al. 2005. Human acyl-CoA dehydrogenase-9 plays a novel role in the mitochondrial β-oxidation of unsaturated fatty acids. J. Biol. Chem. 280: 32309-32316.

CHROMOSOMAL LOCATION

Genetic locus: Acad9 (mouse) mapping to 3 B.

PRODUCT

ACAD-9 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 ACAD-9 shRNA Plasmid (m): sc-61934-SH and ACAD-9 shRNA (m) Lentiviral Particles: sc-61934-V as alternate gene silencing products.

For independent verification of ACAD-9 (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-61934A, sc-61934B and sc-61934C.

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.

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

ACAD-9 siRNA (m) is recommended for the inhibition of ACAD-9 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 ACAD-9 gene expression knockdown using RT-PCR Primer: ACAD-9 (m)-PR: sc-61934-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.