SANTA CRUZ BIOTECHNOLOGY, INC.

SDHAF1 siRNA (m): sc-108109

BACKGROUND

SDHAF1 (succinate dehydrogenase complex assembly factor 1), also known as LYR motif-containing protein 8, is a 115 amino acid protein that belongs to the complex I LYR family and the SDHAF1 subfamily. Ubiquitously expressed, SDHAF1 localizes to mitochondria in transfected COS-7 and HeLa cells. It has also been suggested that SDHAF1 resides in the mitochondrial matrix and that the mitochondrial targeting signal is not removed following import into mitochondria. SDHAF1 has an N-terminal mitochondrial targeting sequence and an LYR motif characteristic of proteins involved in Fe-S metabolism. The SDHAF1 protein plays an essential role in succinate dehydrogenase complex (SDH) assembly, a complex involved in complex II of the mitochondrial electron transport chain. SDHAF1 probably acts by participating in mitochondrial biosynthesis of iron-sulfur centers for complex II. Mitochondrial complex II deficiency can be caused by a mutation in the SDHAF1 gene. Containing a single exon, the SDHAF1 gene is conserved in canine, bovine and mouse, and maps to human chromosome 19q13.12.

REFERENCES

1. Brockmann, K., et al. 2002. Succinate in dystrophic white matter: a proton magnetic resonance spectroscopy finding characteristic for complex II deficiency. Ann. Neurol. 52: 38-46.
2. Grimwood, J., et al. 2004. The DNA sequence and biology of human chromosome 19. Nature 428: 529-535.
3. Hao, H.X. and Rutter, J. 2009. Revealing human disease genes through analysis of the yeast mitochondrial proteome. Cell Cycle 8: 4007-4008.
4. Ghezzi, D., et al. 2009. SDHAF1, encoding a LYR complex-II specific assembly factor, is mutated in SDH-defective infantile leukoencephalopathy. Nat. Genet. 41: 654-656.
5. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 612848. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Feichtinger, R.G., et al. 2010. Low aerobic mitochondrial energy metabolism in poorly- or undifferentiated neuroblastoma. BMC Cancer 10: 149.

CHROMOSOMAL LOCATION

Genetic locus: Sdhaf1 (mouse) mapping to 7 B1.

PRODUCT

SDHAF1 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 SDHAF1 shRNA Plasmid (m): sc-108109-SH and SDHAF1 shRNA (m) Lentiviral Particles: sc-108109-V as alternate gene silencing products.

For independent verification of SDHAF1 (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-108109A, sc-108109B and sc-108109C.

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

SDHAF1 siRNA (m) is recommended for the inhibition of SDHAF1 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 SDHAF1 gene expression knockdown using RT-PCR Primer: SDHAF1 (m)-PR: sc-108109-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.