SANTA CRUZ BIOTECHNOLOGY, INC.

DLST siRNA (m): sc-143057

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The Power to Question

BACKGROUND

The 2-oxoglutarate dehydrogenase complex catalyzes the overall conversion of 2-oxoglutarate to succinyl-CoA and CO_2. The complex contains multiple copies of three enzymatic components: 2-oxoglutarate dehydrogenase (E1), dihydrolipoamide succinyltransferase (E2) and lipoamide dehydrogenase (E3). DLST (dihydrolipoyllysine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex, mitochondrial), also known as DLTS or 2-oxoglutarate dehydrogenase complex component E2, is a 453 amino acid protein belonging to the 2-oxoacid dehydrogenase family. DLST covalently binds one lipoyl cofactor and participates in L-lysine degradation via the saccharopine pathway. Localized to the mitochondrion, DLST forms a 24-polypeptide structural core with octahedral symmetry. The gene encoding DLST maps to human chromosome 14q24.3 and mouse chromosome 12 D2.

REFERENCES

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2. McCartney, R.G., et al. 1998. Subunit interactions in the mammalian α-ketoglutarate dehydrogenase complex. Evidence for direct association of the α-ketoglutarate dehydrogenase and dihydrolipoamide dehydrogenase components. J. Biol. Chem. 273: 24158-24164.
3. Kanamori, T., et al. 2003. Truncated product of the bifunctional DLST gene involved in biogenesis of the respiratory chain. EMBO J. 22: 2913-2923.
4. Habelhah, H., et al. 2004. Regulation of 2-oxoglutarate (α-ketoglutarate) dehydrogenase stability by the RING finger ubiquitin ligase Siah. J. Biol. Chem. 279: 53782-53788.
5. Brown, A.M., et al. 2004. Substantial linkage disequilibrium across the dihydrolipoyl succinyltransferase gene region without Alzheimer's disease association. Neurochem. Res. 29: 629-635.
6. Yang, L., et al. 2009. Mice deficient in dihydrolipoyl succinyl transferase show increased vulnerability to mitochondrial toxins. Neurobiol. Dis. 36: 320-330.
7. Xu, G., et al. 2009. Global profiling of protease cleavage sites by chemoselective labeling of protein N-termini. Proc. Natl. Acad. Sci. USA 106: 19310-19315.
8. Choudhary, C., et al. 2009. Lysine acetylation targets protein complexes and co-regulates major cellular functions. Science 325: 834-840.
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CHROMOSOMAL LOCATION

Genetic locus: Dlst (mouse) mapping to 12 D2.

PROTOCOLS

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

PRODUCT

DLST siRNA (m) is a target-specific 19-25 nt siRNA 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 DLST shRNA Plasmid (m): sc-143057-SH and DLST shRNA (m) Lentiviral Particles: sc-143057-V as alternate gene silencing 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

DLST siRNA (m) is recommended for the inhibition of DLST expression in mouse cells.

SSUPPORT 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 DLST gene expression knockdown using RT-PCR Primer: DLST (m)-PR: sc-143057-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.