SANTA CRUZ BIOTECHNOLOGY, INC.

SQRDL siRNA (m): sc-153812

BACKGROUND

SQRDL (sulfide quinone reductase-like), also known as sulfide:quinone oxidoreductase, mitochondrial, is a 450 amino acid mitochondrial protein that belongs to the SQRD family. SQRDL binds one FAD per subunit and catalyzes the oxidation of hydrogen sulfide with the help of a quinone. The gene that encodes SQRDL contains 56,492 bases and maps to human chromosome 15q15. Encoding more than 700 genes, chromosome 15 is made up of approximately 106 million base pairs and comprises about 3% of the human genome. Angelman and Prader-Willi syndromes are associated with loss of function or deletion of genes in the 15q11-q13 region. In the case of Angelman syndrome, this loss is due to inactivity of the maternal 15q11-q13 encoded UBE3A gene in the brain by either chromosomal deletion or mutation. In the case of Prader-Willi syndrome, there is a partial or complete deletion of this region from the paternal copy of chromosome 15. Additional disorders such as Tay-Sachs disease and Marfan syndrome are also associated with defects in chromosome 15-localized genes.

REFERENCES

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2. Vande Weghe, J.G., et al. 1999. A fission yeast gene for mitochondrial sulfide oxidation. J. Biol. Chem. 274: 13250-13257.
3. Midla, G.S. 2008. Diagnosis and management of patients with Marfan syndrome. JAAPA 21: 21-25.
4. Dan, B. 2009. Angelman syndrome: current understanding and research prospects. Epilepsia 50: 2331-2339.
5. Ferrer-Bolufer, I., et al. 2009. Tyrosinemia type 1 and Angelman syndrome due to paternal uniparental isodisomy 15. J. Inherit. Metab. Dis. 32: S349-S353.
6. Wawrzik, M., et al. 2010. The C15orf2 gene in the Prader-Willi syndrome region is subject to genomic imprinting and positive selection. Neurogenetics 11: 153-161.
7. Marcia, M., et al. 2010. A new structure-based classification of sulfide: quinone oxidoreductases. Proteins 78: 1073-1083.

CHROMOSOMAL LOCATION

Genetic locus: Sqrdl (mouse) mapping to 2 E5.

PRODUCT

SQRDL siRNA (m) is a pool of 2 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 SQRDL shRNA Plasmid (m): sc-153812-SH and SQRDL shRNA (m) Lentiviral Particles: sc-153812-V as alternate gene silencing products.

For independent verification of SQRDL (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-153812A and sc-153812B.

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

SQRDL siRNA (m) is recommended for the inhibition of SQRDL 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 SQRDL gene expression knockdown using RT-PCR Primer: SQRDL (m)-PR: sc-153812-PR (20 µl, 575 bp). 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.