SANTA CRUZ BIOTECHNOLOGY, INC.

SDHD siRNA (m): sc-61513

BACKGROUND

Succinate dehydrogenase is a membrane-bound enzyme complex that localizes to the inner mitochondrial membrane and functions in both the citric acid cycle and the electron transport chain. It is found in several aerobic and anaerobic organisms, including *Escherichia coli*. Succinate dehydrogenase is a heterotetramer divided into three domains: SDHA, the catalytic domain; SDHB, the electron transfer subunit; SDHC/SDHD, the dimeric membrane anchor that contains β-type heme. Mutations in the gene encoding for SDHD are associated with hereditary paraganglioma, possibly through a mechanism that causes a hypoxic response in the cell that leads to tumor formation. SDHD mutation related tumors, which originate in the head and neck, are usually benign.

REFERENCES

1. Velasco, A., et al. 2005. Mutation analysis of the SDHD gene in four kindreds with familial paraganglioma: description of one novel germline mutation. Diagn. Mol. Pathol. 14: 109-114.
2. Khatib, H., et al. 2005. The COPG2, DCN and SDHD genes are biallelically expressed in cattle. Mamm. Genome 16: 545-552.
3. Liapis, C.D., et al. 2005. Carotid body paraganglioma and SDHD mutation in a Greek family. Anticancer Res. 25: 2449-2452.
4. Braun, S., et al. 2005. Active succinate dehydrogenase (SDH) and lack of SDHD mutations in sporadic paragangliomas. Anticancer Res. 25: 2809-2814.
5. Zhu, Z.M., et al. 2005. Cloning, mapping and association study with carcass traits of the porcine SDHD gene. Anim. Genet. 36: 191-195.
6. Simi, L., et al. 2005. Phenotype variability of neural crest derived tumours in six Italian families segregating the same founder SDHD mutation Q109X. J. Med. Genet. 42: e52.

CHROMOSOMAL LOCATION

Genetic locus: Sdhd (mouse) mapping to 9 A5.3.

PRODUCT

SDHD 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 SDHD shRNA Plasmid (m): sc-61513-SH and SDHD shRNA (m) Lentiviral Particles: sc-61513-V as alternate gene silencing products.

For independent verification of SDHD (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-61513A, sc-61513B and sc-61513C.

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

SDHD siRNA (m) is recommended for the inhibition of SDHD 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 SDHD gene expression knockdown using RT-PCR Primer: SDHD (m)-PR: sc-61513-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.