SANTA CRUZ BIOTECHNOLOGY, INC.

DHCR7 siRNA (h): sc-60533

BACKGROUND

Dehydrocholesterol reductase (DHCR) proteins are involved in cholesterol biosynthesis. DHCR7, also designated sterol δ-7-reductase or 7-DHC reductase, reduces the C7-C8 double bond of 7-dehydrocholesterol. It is a multi-pass membrane protein localizing to the endoplasmic reticulum (ER). Defects in the DHCR7 gene can cause Smith-Lemli-Opitz syndrome (SLOS), an autosomal recessive disorder of sterol metabolism. DHCR24 acts as a catalyst for the reduction of the δ-24 double bond of sterol intermediates. DHCR24, also designated 3-β-hydroxysterol δ-24-reductase or seladin-1, binds to FAD and is predominantly expressed in adrenal gland and brain. It is a single-pass membrane protein localizing to the ER or Golgi apparatus. Defects in the DHCR24 gene cause cause the autosomal recessive disorder desmosterolosis.

REFERENCES

1. Wu, C., et al. 2004. Regulation of cellular response to oncogenic and oxidative stress by seladin-1. Nature 432: 640-645.
2. Alkuraya, F.S., et al. 2005. Smith-Lemli-Opitz syndrome in trisomy 13: how does the mix work? Birth Defects Res. A, Clin. Mol. Teratol. 73: 569-571.
3. Cardoso, M.L., et al. 2005. Molecular studies in Portuguese patients with Smith-Lemli-Opitz syndrome and report of three new mutations in DHCR7. Mol. Genet. Metab. 85: 228-235.
4. Di Stasi, D., et al. 2005. DHCR24 gene expression is upregulated in melanoma metastases and associated to resistance to oxidative stress-induced apoptosis. Int. J. Cancer 115: 224-230.
5. Fuller, P.J., et al. 2005. Seladin-1/DHCR24 expression in normal ovary, ovar-ian epithelial and granulosa tumours. Clin. Endocrinol. 63: 111-115.
6. Matsumoto, Y., et al. 2005. R352Q mutation of the DHCR7 gene is common among Japanese Smith-Lemli-Opitz syndrome patients. J. Hum. Genet. 50: 353-356.
7. Peri, A., et al. 2005. Seladin-1 as a target of estrogen receptor activation in the brain: a new gene for a rather old story? J. Endocrinol. Invest. 28: 285-293.
8. Scalco, F.B., et al. 2005. DHCR7 mutations in Brazilian Smith-Lemli-Opitz syndrome patients. Am. J. Med. Genet. A 136: 278-281.
9. Waye, J.S., et al. 2005. Identification of nine novel DHCR7 missense mutations in patients with Smith-Lemli-Opitz syndrome (SLOS). Hum. Mutat. 26: 59.

CHROMOSOMAL LOCATION

Genetic locus: DHCR7 (human) mapping to 11q13.4.

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.

PRODUCT

DHCR7 siRNA (h) 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 DHCR7 shRNA Plasmid (h): sc-60533-SH and DHCR7 shRNA (h) Lentiviral Particles: sc-60533-V as alternate gene silencing products.

For independent verification of DHCR7 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60533A, sc-60533B and sc-60533C.

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

DHCR7 siRNA (h) is recommended for the inhibition of DHCR7 expression in human 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 DHCR7 gene expression knockdown using RT-PCR Primer: DHCR7 (h)-PR: sc-60533-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.