SANTA CRUZ BIOTECHNOLOGY, INC.

DHRS6 siRNA (m): sc-143032

BACKGROUND

DHRS6 (dehydrogenase/reductase SDR family member 6), also known as EFA6R, SDR15C1, UCPA-OR,UNQ6308 or BDH2, is a 245 amino acid cytoplasmic protein belonging to the short-chain dehydrogenases/reductases (SDR) family, an evolutionarily conserved family of oxidoreductases found in all forms of life. DHRS6 is a novel, cytosolic type II R-β-hydroxybutyrate dehydrogenase that exists as two alternatively spliced isoforms and may have an essential role as a nutrient or building block in cellular survival. Human DHRS6 and its vertebrate orthologs show high levels of sequence identities to bacterial hydroxybutyrate dehydrogenases. DHRS6 may play an important role in the peripheral utilization of 3-hydroxybutyrate and its cytoplasmic localization with its high ratio of oxidized NAD^+, the NAD^+ dependence and the kinetic parameters of DHRS6 make it suitable to convert high levels of circulating 3-hydroxybutyrate into acetoacetate.

REFERENCES

1. Guo, K., et al. 2006. Characterization of human DHRS6, an orphan short chain dehydrogenase/reductase enzyme: a novel, cytosolic type 2 R-β-hydroxybutyrate dehydrogenase. J. Biol. Chem. 281: 10291-10297.
2. Ito, K., et al. 2006. D-3-hydroxybutyrate dehydrogenase from *Pseudomonas fragi:* molecular cloning of the enzyme gene and crystal structure of the enzyme. J. Mol. Biol. 355: 722-733.
3. Matsunaga, T., et al. 2008. Characterization of human DHRS4: an inducible short-chain dehydrogenase/reductase enzyme with 3β-hydroxysteroid dehydrogenase activity. Arch. Biochem. Biophys. 477: 339-347.
4. Parés, X., et al. 2008. Medium-and short-chain dehydrogenase/reductase gene and protein families: medium-chain and short-chain dehydrogenases/reductases in retinoid metabolism. Cell. Mol. Life Sci. 65: 3936-3949.
5. Endo, S., et al. 2009. Molecular determinants for the stereospecific reduction of 3-ketosteroids and reactivity towards all-*trans*-retinal of a short-chain dehydrogenase/reductase (DHRS4). Arch. Biochem. Biophys. 481: 183-190.
6. Zhang, Q., et al. 2009. Alternative transcription initiation and splicing variants of the DHRS4 gene cluster. Biosci. Rep. 29: 47-56.

CHROMOSOMAL LOCATION

Genetic locus: Bdh2 (mouse) mapping to 3 G3.

PRODUCT

DHRS6 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 DHRS6 shRNA Plasmid (m): sc-143032-SH and DHRS6 shRNA (m) Lentiviral Particles: sc-143032-V as alternate gene silencing products.

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

DHRS6 siRNA (m) is recommended for the inhibition of DHRS6 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.

GENE EXPRESSION MONITORING

DHRS6 (E-4): sc-393030 is recommended as a control antibody for monitoring of DHRS6 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DHRS6 gene expression knockdown using RT-PCR Primer: DHRS6 (m)-PR: sc-143032-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.