

RDHE2 siRNA (h): sc-77583

BACKGROUND

RDHE2 (epidermal retinal dehydrogenase 2), also known as EPHD-2 or retSDR2 (retinal short chain dehydrogenase reductase 2), is a member of the short-chain dehydrogenase/reductase (SDR) family of enzymes that catalyze the first step in the generation of retinaldehyde from retinol. Expressed ubiquitously at low levels with predominant expression in fetal and adult lung, fetal kidney and fetal skin, RDHE2 localizes to the membrane and is a multi-pass membrane protein. RDHE2 contains three motifs that are conserved in most of the SDR family members: a TGXXXGXG motif, a YXXXK motif (the active-site) and an LXNNAG motif. This implies that, similar to other SDR family members, RDHE2 may be involved in the retinol metabolism pathway. In addition, RDHE2 may play a role in the pathogenesis of psoriasis vulgaris, a chronic inflammatory skin disease. This is suggested by the significant upregulation of RDHE2 mRNA levels in the affected skin of psoriasis patients.

REFERENCES

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3. Chai, Z., Brereton, P., Suzuki, T., Sasano, H., Obeyesekere, V., Escher, G., Saffery, R., Fuller, P., Enriquez, C. and Krozowski, Z. 2003. 17 β -hydroxysteroid dehydrogenase type XI localizes to human steroidogenic cells. *Endocrinology* 144: 2084-2091.
4. Markova, N.G., Pinkas-Sarafova, A., Karaman-Jurukovska, N., Jurukovski, V. and Simon, M. 2003. Expression pattern and biochemical characteristics of a major epidermal retinol dehydrogenase. *Mol. Genet. Metab.* 78: 119-135.
5. Matsuzaka, Y., Okamoto, K., Yoshikawa, Y., Takaki, A., Oka, A., Mabuchi, T., Iizuka, M., Ozawa, A., Tamiya, G., Kulski, J.K. and Inoko, H. 2004. hRDH-E2 gene polymorphisms, variable transcriptional start sites, and psoriasis. *Mamm. Genome* 15: 668-675.

CHROMOSOMAL LOCATION

Genetic locus: SDR16C5 (human) mapping to 8q12.1.

PRODUCT

RDHE2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RDHE2 shRNA Plasmid (h): sc-77583-SH and RDHE2 shRNA (h) Lentiviral Particles: sc-77583-V as alternate gene silencing products.

For independent verification of RDHE2 (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-77583A, sc-77583B and sc-77583C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RDHE2 siRNA (h) is recommended for the inhibition of RDHE2 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 μ M in 66 μ l. 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

RDHE2 (36-N): sc-100591 is recommended as a control antibody for monitoring of RDHE2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 RDHE2 gene expression knockdown using RT-PCR Primer: RDHE2 (h)-PR: sc-77583-PR (20 μ l). 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.