

# ▶ DECR2 siRNA (m): sc-142952

## BACKGROUND

DECR2 (2,4-dienoyl-CoA reductase 2), also known as PDCR (peroxisomal 2,4-dienoyl-CoA reductase) or SDR17C1, is a 292 amino acid member of the short-chain dehydrogenases/reductases (SDR) protein family and the 2,4-dienoyl-CoA reductase protein subfamily. Localized to the peroxisome, DECR2 is an auxiliary enzyme of  $\beta$ -oxidation that catalyzes the NADP-dependent reduction of 2,4-dienoyl-CoA to yield *trans*-3-enoyl-CoA. DECR2 has also been shown to have catalytic activity towards 2,4,7,10,13,16,19-docosahptaenoyl-CoA and short and medium chain 2,4-dienoyl-CoAs, suggesting that DECR2 is not a rate limiting step in the degradation of docosahexaenoic acid in the peroxisome. DECR2 is expressed as three isoforms produced by alternative splicing events.

## REFERENCES

1. Maruyama, K. and Sugano, S. 1994. Oligo-capping: a simple method to replace the cap structure of eukaryotic mRNAs with oligoribonucleotides. *Gene* 138: 171-174.
2. Suzuki, Y., Yoshitomo-Nakagawa, K., Maruyama, K., Suyama, A. and Sugano, S. 1997. Construction and characterization of a full length-enriched and a 5'-end-enriched cDNA library. *Gene* 200: 149-156.
3. De Nys, K., Meyhi, E., Mannaerts, G.P., Franssen, M. and Van Veldhoven, P.P. 2001. Characterisation of human peroxisomal 2,4-dienoyl-CoA reductase. *Biochim. Biophys. Acta* 1533: 66-72.
4. Daniels, R.J., Peden, J.F., Lloyd, C., Horsley, S.W., Clark, K., Tufarelli, C., Kearney, L., Buckle, V.J., Doggett, N.A., Flint, J. and Higgs, D.R. 2001. Sequence, structure and pathology of the fully annotated terminal 2 Mb of the short arm of human chromosome 16. *Hum. Mol. Genet.* 10: 339-352.
5. Persson, B., Kallberg, Y., Bray, J.E., Bruford, E., Dellaporta, S.L., Favia, A.D., Duarte, R.G., Jörnvall, H., Kavanagh, K.L., Kedishvili, N., Kisiela, M., Maser, E., Mindnich, R., Orchard, S., Penning, T.M., et al. 2009. The SDR (short-chain dehydrogenase/reductase and related enzymes) nomenclature initiative. *Chem. Biol. Interact.* 178: 94-98.

## CHROMOSOMAL LOCATION

Genetic locus: *Decr2* (mouse) mapping to 17 A3.3.

## PRODUCT

DECR2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DECR2 shRNA Plasmid (m): sc-142952-SH and DECR2 shRNA (m) Lentiviral Particles: sc-142952-V as alternate gene silencing products.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

DECR2 siRNA (m) is recommended for the inhibition of DECR2 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DECR2 gene expression knockdown using RT-PCR Primer: DECR2 (m)-PR: sc-142952-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.