

# 17 $\beta$ -HSD12 siRNA (m): sc-108262

## BACKGROUND

17 $\beta$ -HSD12 (hydroxysteroid (17 $\beta$ ) dehydrogenase 12), also known as KAR or SDR12C1, is a 312 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and is a member of the short-chain dehydrogenases/reductases (SDR) family. Highly expressed in ovary and mammary glands, 17 $\beta$ -HSD12 catalyzes the transformation of estrone (E1) into estradiol (E2), suggesting a central role in estrogen formation. 17 $\beta$ -HSD12 may also play a role in long fatty acid elongation by reducing both long chain 3-ketoacyl-CoAs and long chain fatty acyl-CoAs. 17 $\beta$ -HSD12 is transcriptionally regulated by SREBP-1 (sterol regulatory element binding protein 1), and is encoded by a gene that maps to human chromosome 11p11.2.

## REFERENCES

1. Zhou, L.Y., et al. 2005. Cloning, expression and characterization of three types of 17 $\beta$ -hydroxysteroid dehydrogenases from the *Nile tilapia*, *Oreochromis niloticus*. J. Mol. Endocrinol. 35: 103-116.
2. Luu-The, V., et al. 2006. Characterization of type 12 17 $\beta$ -hydroxysteroid dehydrogenase, an isoform of type 3 17 $\beta$ -hydroxysteroid dehydrogenase responsible for estradiol formation in women. Mol. Endocrinol. 20: 437-443.
3. Liu, H., et al. 2007. Expression and localization of estrogenic type 12 17 $\beta$ -hydroxysteroid dehydrogenase in the cynomolgus monkey. BMC Biochem. 8: 2.
4. Blanchard, P.G. and Luu-The, V. 2007. Differential androgen and estrogen substrates specificity in the mouse and primates type 12 17 $\beta$ -hydroxysteroid dehydrogenase. J. Endocrinol. 194: 449-455.
5. Desnoyers, S., et al. 2007. *Caenorhabditis elegans* LET-767 is able to metabolize androgens and estrogens and likely shares common ancestor with human types 3 and 12 17 $\beta$ -hydroxysteroid dehydrogenases. J. Endocrinol. 195: 271-279.
6. Day, J.M., et al. 2008. 17 $\beta$ -hydroxysteroid dehydrogenase type 1, and not type 12, is a target for endocrine therapy of hormone-dependent breast cancer. Int. J. Cancer 122: 1931-1940.

## CHROMOSOMAL LOCATION

Genetic locus: Hsd17b12 (mouse) mapping to 2 E1.

## PRODUCT

17 $\beta$ -HSD12 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see 17 $\beta$ -HSD12 shRNA Plasmid (m): sc-108262-SH and 17 $\beta$ -HSD12 shRNA (m) Lentiviral Particles: sc-108262-V as alternate gene silencing products.

For independent verification of 17 $\beta$ -HSD12 (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-108262A, sc-108262B and sc-108262C.

## RESEARCH USE

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

## 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

17 $\beta$ -HSD12 siRNA (m) is recommended for the inhibition of 17 $\beta$ -HSD12 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 17 $\beta$ -HSD12 gene expression knockdown using RT-PCR Primer: 17 $\beta$ -HSD12 (m)-PR: sc-108262-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.