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# AKR1C18 siRNA (m): sc-41504

## BACKGROUND

AKR1C18 (aldo-keto reductase family 1 member C18), also known as 20 $\alpha$ -hydroxysteroid dehydrogenase, is a 323 amino acid cytoplasmic protein that is expressed in rodent tissue and belongs to the aldo/keto reductase family. Existing as a monomer, AKR1C18 functions to catalyze the NADP<sup>+</sup>-dependent conversion of progesterone into 20 $\alpha$ -dihydroprogesterone, a biologically inactive metabolite. This reaction is thought to be important for luteolysis (the degradation of the corpus luteum), as well as for overall reproductive health and newborn survival in mice. The gene encoding AKR1C18 is localized to a region on mouse chromosome 13 A1 that houses a cluster of eight hydroxysteroid dehydrogenases. Multiple isoforms of AKR1C18 exist as a result of alternative splicing events.

## REFERENCES

- Vergnes, L., et al. 2003. A cluster of eight hydroxy-steroid dehydrogenase genes belonging to the aldo-keto reductase supergene family on mouse chromosome 13. *J. Lipid Res.* 44: 503-511.
- Ishida, M., et al. 2003. Cloning and chromosomal localization of mouse 20 $\alpha$ -hydroxysteroid dehydrogenase gene. *J. Reprod. Dev.* 49: 79-85.
- Hirabayashi, K., et al. 2004. Characterization and functional analysis of the 5'-flanking region of the mouse 20 $\alpha$ -hydroxysteroid dehydrogenase gene. *Biochem. J.* 382: 975-980.
- Pelletier, G., et al. 2004. Localization of 20 $\alpha$ -hydroxysteroid dehydrogenase mRNA in mouse brain by *in situ* hybridization. *Brain Res. Mol. Brain Res.* 125: 143-146.
- Luu-The, V., et al. 2005. Quantitative appreciation of steroidogenic gene expression in mouse tissues: new roles for type 2 5 $\alpha$ -reductase, 20 $\alpha$ -hydroxysteroid dehydrogenase and estrogen sulfotransferase. *J. Steroid Biochem. Mol. Biol.* 93: 269-276.
- Piekorz, R.P., et al. 2005. Regulation of progesterone levels during pregnancy and parturition by signal transducer and activator of transcription 5 and 20 $\alpha$ -hydroxysteroid dehydrogenase. *Mol. Endocrinol.* 19: 431-440.
- Hershkovitz, L., et al. 2007. Adrenal 20 $\alpha$ -hydroxysteroid dehydrogenase in the mouse catabolizes progesterone and 11-deoxycorticosterone and is restricted to the X-zone. *Endocrinology* 148: 976-988.

## CHROMOSOMAL LOCATION

Genetic locus: *Akr1c18* (mouse) mapping to 13 A1.

## PRODUCT

AKR1C18 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 AKR1C18 shRNA Plasmid (m): sc-41504-SH and AKR1C18 shRNA (m) Lentiviral Particles: sc-41504-V as alternate gene silencing products.

For independent verification of AKR1C18 (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-41504A, sc-41504B and sc-41504C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$  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

AKR1C18 siRNA (m) is recommended for the inhibition of AKR1C18 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.

## GENE EXPRESSION MONITORING

DD (C-12): sc-166297 is recommended as a control antibody for monitoring of AKR1C18 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AKR1C18 gene expression knockdown using RT-PCR Primer: AKR1C18 (m)-PR: sc-41504-PR (20  $\mu$ l, 579 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## 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.