SANTA CRUZ BIOTECHNOLOGY, INC.

AKR1B7 siRNA (m): sc-140984

BACKGROUND

Aldo-keto-reductase 1B7 (AKR1B7) detoxifies isocaproaldehyde generated by a side chain cleavage reaction in cholesterol metabolism. The transcriptional regulators SF-1 and NF1 associate with the AKR1B7 promotor, while Sp and C/EBP β also effect induction in a cAMP dependent manner. The AKR1B7 gene increases in expression in the embryonic stages and decreases after birth, yet protein levels follow an inverse pattern to this, implying important translational controls.

REFERENCES

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2. Aigueperse, C., et al. 2001. SF-1 (steroidogenic factor-1), C/EBP β (CCAAT/enhancer binding protein), and ubiquitous transcription factors NF1 (nuclear factor 1) and Sp1 (selective promoter factor 1) are required for regulation of the mouse aldose reductase-like gene (AKR1B7) expression in adrenocortical cells. Mol. Endocrinol. 15: 93-111.
3. Martinez, A., et al. 2001. Physiological functions and hormonal regulation of mouse vas deferens protein (AKR1B7) in steroidogenic tissues. Chem. Biol. Interact. 130-132: 903-917.
4. Baron, S., et al. 2003. Hormonal and developmental regulation of the mouse aldose reductase-like gene AKR1B7 expression in Leydig cells. J. Mol. Endocrinol. 31: 71-81.
5. Volle, D.H., et al. 2004. Regulation of the aldo-keto reductase gene AKR1B7 by the nuclear oxysterol receptor LXRα (liver X receptor-α) in the mouse intestine: putative role of LXRs in lipid detoxification processes. Mol. Endocrinol. 18: 888-898.
6. Jia, G., et al. 2006. Aldo-keto reductase 1 family B7 is the gene induced in response to oxidative stress in the livers of Long-Evans Cinnamon rats. Int. J. Oncol. 29: 829-838.
7. Baumann, C., et al. 2007. AKR1B7 (mouse vas deferens protein) is dispensable for mouse development and reproductive success. Reproduction 134: 97-109.
8. Tirard,J., et al. 2007. A novel inhibitory protein in adipose tissue, the aldo-keto reductase AKR1B7: its role in adipogenesis. Endocrinology 148: 1996-2005.

CHROMOSOMAL LOCATION

Genetic locus: Akr1b7 (mouse) mapping to 6 B1.

PRODUCT

AKR1B7 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 AKR1B7 shRNA Plasmid (m): sc-140984-SH and AKR1B7 shRNA (m) Lentiviral Particles: sc-140984-V as alternate gene silencing 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

AKR1B7 siRNA (m) is recommended for the inhibition of AKR1B7 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AKR1B7 gene expression knockdown using RT-PCR Primer: AKR1B7 (m)-PR: sc-140984-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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.