

CRBP II siRNA (h): sc-78318

BACKGROUND

The cellular retinol-binding proteins (CRBP I, II, III and IV) belong to a superfamily of small cytoplasmic proteins that interact with hydrophobic ligands. Vitamin A, a molecule essential for cell growth and differentiation, embryonic development and vision, is transported into the cell by the CRBPs in its alcoholic form, called retinol. Both CRBP I and II are composed of ten antiparallel β -strands, which form a β -barrel that contains the retinol molecule, and two α -helices, which cover the open ends of the barrel. CRBP II, which is also known as RBP2 (retinol-binding protein 2), consists of 134 amino acids and is expressed solely in the small intestine where it mediates the absorption of retinoids and carotenoids to biosynthesize retinyl esters.

REFERENCES

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2. Cowan, S.W., et al. 1993. Crystallographic studies on a family of cellular lipophilic transport proteins. Refinement of P2 myelin protein and the structure determination and refinement of cellular retinol-binding protein in complex with all-*trans*-retinol. *J. Mol. Biol.* 230: 1225-1246.
3. Winter, N.S., et al. 1993. Crystal structures of holo- and apo-cellular retinol-binding protein II. *J. Mol. Biol.* 230: 1247-1259.
4. Okuno, M., et al. 1993. Cellular retinoid-binding proteins. *Nippon Rinsho* 51: 879-885.
5. Takase, S., et al. 2000. Regulation of vitamin A metabolism-related gene expression. *Br. J. Nutr.* 84: S217-S221.
6. Xu, G., et al. 2001. Regulation of α -smooth muscle Actin and CRBP-1 expression by retinoic acid and TGF β in cultured fibroblasts. *J. Cell. Physiol.* 187: 315-325.
7. Folli, C., et al. 2001. Identification, retinoid binding and x-ray analysis of a human retinol-binding protein. *Proc. Natl. Acad. Sci. USA* 98: 3710-3715.

CHROMOSOMAL LOCATION

Genetic locus: RBP2 (human) mapping to 3q23.

PRODUCT

CRBP II 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 CRBP II siRNA Plasmid (h): sc-78318-SH and CRBP II shRNA (h) Lentiviral Particles: sc-78318-V as alternate gene silencing products.

For independent verification of CRBP II (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-78318A, sc-78318B and sc-78318C.

PROTOCOLS

See our web site at 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 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

CRBP II siRNA (h) is recommended for the inhibition of CRBP II 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

CRBP II (8-1#): sc-517437 is recommended as a control antibody for monitoring of CRBP II 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 CRBP II gene expression knockdown using RT-PCR Primer: CRBP II (h)-PR: sc-78318-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.