SANTA CRUZ BIOTECHNOLOGY, INC.

IRBP siRNA (m): sc-40704

BACKGROUND

Interphotoreceptor retinoid-binding protein (IRBP) is a retinoid and fatty acid binding protein expressed exclusively in the photoreceptor cells of the retina and pinealocytes of the pineal gland. The gene encoding human IRBP maps to chromosome 10q11.2. A putative *trans*-acting complex binds a *cis*-element in the IRBP promoter and fully activates transcription of the IRBP gene. Hypomethylation of cysteine residues in the IRBP promoters of bovine and murine photoreceptor cells permits expression of the IRBP gene. IRBP may be involved in shuttling retinoids between photoreceptors and the retinal pigment epithelium. IRBP exists as a glycoprotein with a four-fold repeat structure. Each 300 amino acid repeat contains one A and one B domain corresponding to the first 80 amino acids (A) and the other 220 amino acids (B). Along with S-antigen and opsin, the antigenic properties of IRBP induce posterior uveitis, which is characterized by the inflammation of the choroid and photoreceptor cell death.

REFERENCES

1. Bunt-Milam, A.H., et al. 1983. Immunocytochemical localization of two retinoid-binding proteins in vertebrate retina. J. Cell Biol. 97: 703-712.
2. van Veen, T., et al. 1986. Retinal photoreceptor neurons and pinealocytes accumulate mRNA for interphotoreceptor retinoid-binding protein (IRBP). FEBS Lett. 208: 133-137.
3. Broekhuyse, R.M., et al. 1986. Induction of experimental autoimmune uveoretinitis and pinealitis by IRBP. Comparison to uveoretinitis induced by S-antigen and opsin. Curr. Eye Res. 5: 231-240.
4. Matsuo, T., et al. 1986. Immunological studies of uveitis. 3. Cell-mediated immunity to interphotoreceptor retinoid-binding protein. Jpn. J. Ophthalmol. 30: 487-494.
5. Liou, G.I., et al. 1987. Human interstitial retinol-binding protein (IRBP): cloning, partial sequence and chromosomal localization. Somat. Cell Mol. Genet. 13: 315-323.
6. Borst, D.E., et al. 1989. Interphoto-receptor retinoid-binding protein. Genecharacterization, protein repeat structure and its evolution. J. Biol. Chem. 242: 1115-1123.
7. Okajima, T.I., et al. 1989. Interphotoreceptor retinoid-binding protein: role in delivery of retinal to the pigment epithelium. Exp. Eye Res. 49: 629-644.

CHROMOSOMAL LOCATION

Genetic locus: Rbp3 (mouse) mapping to 14 B.

PRODUCT

IRBP 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IRBP shRNA Plasmid (m): sc-40704-SH and IRBP shRNA (m) Lentiviral Particles: sc-40704-V as alternate gene silencing products.

For independent verification of IRBP (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-40704A, sc-40704B and sc-40704C.

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

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

GENE EXPRESSION MONITORING

IRBP (H-6): sc-390218 is recommended as a control antibody for monitoring of IRBP 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 IRBP gene expression knockdown using RT-PCR Primer: IRBP (m)-PR: sc-40704-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.