

γ B-crystallin siRNA (m): sc-40453

BACKGROUND

Crystallins, the major proteins of the vertebrate eye lens, are responsible for maintaining the transparency and the refractive index of the lens. Crystallins are divided into α , β , and γ families, all of which usually contain seven distinctive protein regions, including four homologous motifs, one connecting peptide and N- and C-terminal extensions. The γ -crystallin family is comprised of seven closely related proteins designated γ A-, γ B-, γ C-, γ D-, γ E-, γ F- and γ G-crystallin. γ B-crystallin, also known as CRYGB or CRYG2, is a 175 amino acid member of the γ -crystallin family. Functioning as a monomer that has a two-domain β fold, γ B-crystallin, like other members of its family, plays a key role in ensuring the proper structure of the vertebrate eye lens. Defects in the gene encoding γ B-crystallin are associated with the formation of cataracts which are characterized by a clouding of the crystalline lens of the eye.

REFERENCES

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3. Rogaev, E.I., et al. 1996. Linkage of polymorphic congenital cataract to the γ -crystallin gene locus on human chromosome 2q33-35. *Hum. Mol. Genet.* 5: 699-703.
4. Graw, J. 1997. The crystallins: genes, proteins and diseases. *Biol. Chem.* 378: 1331-1348.
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CHROMOSOMAL LOCATION

Genetic locus: Crygb (mouse) mapping to 1 C2.

PRODUCT

γ B-crystallin 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see γ B-crystallin shRNA Plasmid (m): sc-40453-SH and γ B-crystallin shRNA (m) Lentiviral Particles: sc-40453-V as alternate gene silencing products.

For independent verification of γ B-crystallin (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-40453A, sc-40453B and sc-40453C.

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

γ B-crystallin siRNA (m) is recommended for the inhibition of γ B-crystallin 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 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

γ B-crystallin (D-5): sc-377056 is recommended as a control antibody for monitoring of γ B-crystallin 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 γ B-crystallin gene expression knockdown using RT-PCR Primer: γ B-crystallin (m)-PR: sc-40453-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.

PROTOCOLS

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