

# $\gamma$ S-crystallin siRNA (m): sc-40465

## BACKGROUND

Crystallins are water soluble structural proteins found in the vertebrate eye. Mammalian crystallins are classified in three forms, designated  $\alpha$ ,  $\beta$  and  $\gamma$ . Crystallins, as the principal components of the lens, function to increase the refractive index of the eye during accommodation by forming high-molecular weight aggregates which maintain transparency.  $\gamma$ S-crystallin ( $\gamma$ -crystallin S), also known as  $\beta$ -crystallin S, is a 178 amino acid protein that exists as a monomer which does not aggregate.  $\gamma$ S-crystallin contains a two-domain  $\beta$  structure and belongs to the  $\beta/\gamma$ -crystallin gene family mapping to human chromosome 3.  $\gamma$ S-crystallin has been linked to congenital cataract development, a disorder signified by increasing levels of lens opacity.

## REFERENCES

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- Sun, H., et al. 2005.  $\gamma$ -S crystallin gene (CRYGS) mutation causes dominant progressive cortical cataract in humans. *J. Med. Genet.* 42: 706-710.
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## CHROMOSOMAL LOCATION

Genetic locus: Crygs (mouse) mapping to 16 B1.

## PRODUCT

$\gamma$ S-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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see  $\gamma$ S-crystallin shRNA Plasmid (m): sc-40465-SH and  $\gamma$ S-crystallin shRNA (m) Lentiviral Particles: sc-40465-V as alternate gene silencing products.

For independent verification of  $\gamma$ S-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-40465A, sc-40465B and sc-40465C.

## 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  $\mu$ 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

$\gamma$ S-crystallin siRNA (m) is recommended for the inhibition of  $\gamma$ S-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  $\mu$ 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

$\gamma$ S-crystallin (A-3): sc-374265 is recommended as a control antibody for monitoring of  $\gamma$ S-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 $\kappa$  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  $\gamma$ S-crystallin gene expression knockdown using RT-PCR Primer:  $\gamma$ S-crystallin (m)-PR: sc-40465-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.