

γ F-crystallin siRNA (m): sc-40461

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 F-crystallin, also known as CRYGF or Len-2, is a 174 amino acid member of the γ -crystallin family. Functioning as a monomer that has a two-domain β fold, γ F-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 F-crystallin are associated with the formation of cataracts which are characterized by a clouding of the crystalline lens of the eye.

REFERENCES

1. Brakenhoff, R.H., et al. 1990. Human γ -crystallin genes. A gene family on its way to extinction. *J. Mol. Biol.* 216: 519-532.
2. Hearne, C.M., et al. 1991. Trinucleotide repeat polymorphism at the CRYG1 locus. *Nucleic Acids Res.* 19: 5450.
3. Rogae, 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.
5. Stöger, T., et al. 1997. The Cryner element in the murine γ -crystallin promoters interacts with lens proteins. *Ophthalmic Res.* 29: 161-171.
6. Slingsby, C., et al. 1999. Structure of the crystallins. *Eye* 13: 395-402.
7. Santhiya, S.T., et al. 2002. Novel mutations in the γ -crystallin genes cause autosomal dominant congenital cataracts. *J. Med. Genet.* 39: 352-358.
8. Graw, J., et al. 2002. Crygf(Rop): the first mutation in the Crygf gene causing a unique radial lens opacity. *Invest. Ophthalmol. Vis. Sci.* 43: 2998-3002.
9. Salim, A., et al. 2003. Homology models of human γ -crystallins: structural study of the extensive charge network in γ -crystallins. *Biochem. Biophys. Res. Commun.* 300: 624-630.

CHROMOSOMAL LOCATION

Genetic locus: Crygf (mouse) mapping to 1 C3.

PRODUCT

γ F-crystallin 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see γ F-crystallin shRNA Plasmid (m): sc-40461-SH and γ F-crystallin shRNA (m) Lentiviral Particles: sc-40461-V as alternate gene silencing products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor γ F-crystallin gene expression knockdown using RT-PCR Primer: γ F-crystallin (m)-PR: sc-40461-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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