SANTA CRUZ BIOTECHNOLOGY, INC.

βA4-crystallin siRNA (m): sc-40441

BACKGROUND

Crystallins are the major proteins of the vertebrate eye lens, where they maintain the transparency and refractive index of the lens. Crystallins are divided into α, β and γ families, and the β- and γ-crystallins also comprise a superfamily. Crystallins usually contain seven distinctive protein regions, including four homologous motifs, a connecting peptide, and N- and C-terminal extensions. β-crystallins constitute the major lens structural proteins, and they associate into dimers, tetramers and higher order aggregates. The β-crystallin subfamily is composed of several gene products, including βA1-, βA2-, βA3-, βA4-, βB1-, βB2- and βB3-crystallin. The βA1- and βA3-crystallin proteins are encoded by a single mRNA. They differ by only 17 amino acids, and βA1-crystallin is generated by use of an alternate translation initiation site.

REFERENCES

1. Hope, J.N., et al. 1994. βA3/A1-crystallin association: role of the N-terminal arm. Protein Eng. 7: 445-451.
2. Hejtmancik, J.F., et al. 1997. Association properties of βB2- and βA3-crystallin: ability to form dimers. Protein Eng. 10: 1347-1352.
3. Werten, P.J., et al. 1999. The short 5' untranslated region of the βA3/A1-crystallin mRNA is responsible for leaky ribosomal scanning. Mol. Biol. Rep. 26: 201-205.
4. Kamradt, M.C., et al. 2005. The small heat shock protein αB-crystallin is a novel inhibitor of TRAIL-induced apoptosis that suppresses the activation of caspase-3. J. Biol. Chem. 280: 11059-11066.
5. Evans, P., et al. 2004. The P23T cataract mutation causes loss of solubility of folded γD-crystallin. J. Mol. Biol. 343: 435-444.
6. Yang, Y., et al. 2004. Transcriptional regulation of mouse αB- and γF-crystallin genes in lens: opposite promoter-specific interactions between Pax6 and large Maf transcription factors. J. Mol. Biol. 344: 351-368.
7. Gangalum, R.K., et al. 2004. Small heat shock protein αB-crystallin is part of cell cycle-dependent Golgi reorganization. J. Biol. Chem. 279: 43374-43377.
8. LocusLink Report (LocusID: 1411). http://www.ncbi.nlm.nih.gov/LocusLink

CHROMOSOMAL LOCATION

Genetic locus: Cryba4 (mouse) mapping to 5 F.

PRODUCT

βA4-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see βA4-crystallin shRNA Plasmid (m): sc-40441-SH and βA4-crystallin shRNA (m) Lentiviral Particles: sc-40441-V as alternate gene silencing products.

For independent verification of βA4-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-40441A, sc-40441B and sc-40441C.

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

βA4-crystallin siRNA (m) is recommended for the inhibition of βA4-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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor βA4-crystallin gene expression knockdown using RT-PCR Primer: βA4-crystallin (m)-PR: sc-40441-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.