SANTA CRUZ BIOTECHNOLOGY, INC.

βA1-crystallin siRNA (m): sc-40435

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. The genes for βA4, βB1, βB2 and βB3-crystallin are clustered on human chromosome 22q11, while the genes for βA3/A1 and βA2-crystallin map to human chromosomes 17q11 and 2q34, respectively.

REFERENCES

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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. Slingsby, C., et al. 1999. Structure of the crystallins. Eye 13: 395-402.
5. Horwitz, J. 2003. α-crystallin. Exp. Eye Res. 76: 145-153.
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CHROMOSOMAL LOCATION

Genetic locus: Cryba1 (mouse) mapping to 11 B5.

PRODUCT

βA1-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 βA1-crystallin shRNA Plasmid (m): sc-40435-SH and βA1-crystallin shRNA (m) Lentiviral Particles: sc-40435-V as alternate gene silencing products.

For independent verification of βA1-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-40435A, sc-40435B and sc-40435C.

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

βA1-crystallin siRNA (m) is recommended for the inhibition of βA1-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 βA1-crystallin gene expression knockdown using RT-PCR Primer: βA1-crystallin (m)-PR: sc-40435-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.