



βA2-crystallin siRNA (h): sc-40436

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 β A1-, β A2-, β A3-, β A4-, β B1-, β B2- and β B3-crystallin. The β A1- and β A3-crystallin proteins are encoded by a single mRNA. They differ by only 17 amino acids, and β A1-crystallin is generated by use of an alternate translation initiation site.

REFERENCES

1. Hope, J.N., et al. 1994. β A3/A1-crystallin association: role of the N-terminal arm. *Protein Eng.* 7: 445-451.
2. Hejtmancik, J.F., et al. 1997. Association properties of β B2- and β A3-crystallin: ability to form dimers. *Protein Eng.* 10: 1347-1352.
3. Werten, P.J., et al. 1999. The short 5' untranslated region of the β A3/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.
6. Hejtmancik, J.F., et al. 2004. β -crystallin association. *Exp. Eye Res.* 79: 377-383.
7. Bhat, S.P. 2004. Transparency and non-refractive functions of crystallins—a proposal. *Exp. Eye Res.* 79: 809-816.
8. Paulin, D., et al. 2004. Desminopathies in muscle disease. *J. Pathol.* 204: 418-427.
9. LocusLink Report (LocusID: 1411). <http://www.ncbi.nlm.nih.gov/LocusLink>

CHROMOSOMAL LOCATION

Genetic locus: CRYBA2 (human) mapping to 2q35.

PRODUCT

β A2-crystallin siRNA (h) 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 β A2-crystallin shRNA Plasmid (h): sc-40436-SH and β A2-crystallin shRNA (h) Lentiviral Particles: sc-40436-V as alternate gene silencing products.

For independent verification of β A2-crystallin (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40436A, sc-40436B and sc-40436C.

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

β A2-crystallin siRNA (h) is recommended for the inhibition of β A2-crystallin expression in human 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 β A2-crystallin gene expression knockdown using RT-PCR Primer: β A2-crystallin (h)-PR: sc-40436-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.