SANTA CRUZ BIOTECHNOLOGY, INC.

GLULD1 siRNA (m): sc-145447

BACKGROUND

GLULD1 (glutamate-ammonia ligase domain-containing protein 1), also known as lengsin or lens glutamine synthase-like (LGSN), is a 509 amino acid member of the glutamine synthetase family. Expressed at high levels in lens of the eye, GLULD1 is thought to be a chaperone for the reorganization of intermediate filament proteins during terminal differentiation in the lens or a component of the cytoskeleton. GLULD1 may be associated with the development of cataract disease. GLULD1 forms a dodecamer and interacts with the cytoskeletal proteins Phakinin and Vimentin. GLULD1 is expressed as three isoforms produced by alternative splicing events. The gene that encodes GLULD1 maps to human chromosome 6q12.

REFERENCES

1. Wistow, G., Bernstein, S.L., Ray, S., Wyatt, M.K., Behal, A., Touchman, J.W., Bouffard, G., Smith, D. and Peterson, K. 2002. Expressed sequence tag analysis of adult human iris for the NEIBank project: steroid-response factors and similarities with retinal pigment epithelium. Mol. Vis. 8: 185-195.
2. Barragan, I., Marcos, I., Borrego, S. and Antiñolo, G. 2005. Mutation screening of three candidate genes, ELOVL5, SMAP1 and GLULD1 in autosomal recessive retinitis pigmentosa. Int. J. Mol. Med. 16: 1163-1167.
3. Grassi, F., Moretto, N., Rivetti, C., Cellai, S., Betti, M., Márquez, A.J., Maraini, G. and Ottonello, S. 2006. Structural and functional properties of lengsin, a pseudo-glutamine synthetase in the transparent human lens. Biochem. Biophys. Res. Commun. 350: 424-429.
4. Wistow, G. 2006. The NEIBank project for ocular genomics: data-mining gene expression in human and rodent eye tissues. Prog. Retin Eye Res. 25: 43-77.
5. Wyatt, K., White, H.E., Wang, L., Bateman, O.A., Slingsby, C., Orlova, E.V. and Wistow, G. 2006. Lengsin is a survivor of an ancient family of class I glutamine synthetases re-engineered by evolution for a role in the vertebrate lens. Structure 14: 1823-1834.

CHROMOSOMAL LOCATION

Genetic locus: Lgsn (mouse) mapping to 1 B.

PRODUCT

GLULD1 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 GLULD1 shRNA Plasmid (m): sc-145447-SH and GLULD1 shRNA (m) Lentiviral Particles: sc-145447-V as alternate gene silencing products.

For independent verification of GLULD1 (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-145447A, sc-145447B and sc-145447C.

PROTOCOLS

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

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

GLULD1 siRNA (m) is recommended for the inhibition of GLULD1 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 GLULD1 gene expression knockdown using RT-PCR Primer: GLULD1 (m)-PR: sc-145447-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.