SANTA CRUZ BIOTECHNOLOGY, INC.

LARGE siRNA (m): sc-44966

BACKGROUND

Glycosyltransferase-like protein LARGE, also designated acetylglucosaminyltransferase-like protein, belongs to the glycosyltransferase 8 family. This ubiquitously expressed protein is a type II membrane protein. Although it is widely expressed, highest levels of detection are in heart, brain and skeletal muscle. LARGE carries out the synthesis of glycosphingolipid and glycoprotein sugar chains and is part of the repeated disaccharide unit addition. It may also be important in the hyperglycosylation of α-dystroglycan. This interaction of LARGE with dystroglycan is crucial for the biosynthetic pathway to create functional dystroglycan. Loss of functional dystroglycan can result in muscle degeneration. The gene encoding for LARGE maps to chromosome 22q12.3, and defects in this gene can cause congenital muscular dystrophy, an autosomal recessive disorder. LARGE co-localizes with GM130, a Golgi marker.

REFERENCES

1. Grewal, P.K., et al. 2001. Mutant glycosyltransferase and altered glycosylation of α-dystroglycan in the myodystrophy mouse. Nat. Genet. 28: 151-154.
2. Holzfeind, P.J., et al. 2002. Skeletal, cardiac and tongue muscle pathology, defective retinal transmission, and neuronal migration defects in the LARGE (Myd) mouse defines a natural model for glycosylation-deficient muscle-eye-brain disorders. Hum. Mol. Genet. 11: 2673-2687.
3. Barresi, R., et al. 2004. LARGE can functionally bypass α-dystroglycan glycosylation defects in distinct congenital muscular dystrophies. Nat. Med. 10: 696-703.
4. Kanagawa, M., et al. 2004. Molecular recognition by LARGE is essential for expression of functional dystroglycan. Cell 117: 953-964.
5. Brockington, M., et al. 2005. Localization and functional analysis of the LARGE family of glycosyltransferases: significance for muscular dystrophy. Hum. Mol. Genet. 14: 657-665.

CHROMOSOMAL LOCATION

Genetic locus: Large (mouse) mapping to 8 B3.3.

PRODUCT

LARGE 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 LARGE shRNA Plasmid (m): sc-44966-SH and LARGE shRNA (m) Lentiviral Particles: sc-44966-V as alternate gene silencing products.

For independent verification of LARGE (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-44966A, sc-44966B and sc-44966C.

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

LARGE siRNA (m) is recommended for the inhibition of LARGE 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 LARGE gene expression knockdown using RT-PCR Primer: LARGE (m)-PR: sc-44966-PR (20 µl, 598 bp). 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.