SANTA CRUZ BIOTECHNOLOGY, INC.

LGI4 siRNA (m): sc-75423

BACKGROUND

LGI4 (leucine-rich repeat LGI family member 4), also known as leucine-rich glioma-inactivated protein 4, is a 537 amino acid secreted glycosylated protein that is widely expressed, with highest levels found within the nervous system. Interestingly, siRNA knockdown studies of LGI4 expression in Schwann cells have been shown to result in the inhibition of myelination, thus suggesting that LGI4 is an essential component of myelin formation and axon segregation. LGI4 shares significant homology with its other family members, LGI1, LGI2 and LGI3. Significantly, mutations in the gene encoding LGI1 have been linked to human temporal lobe epilepsy and, given the sequence similarity of LGI4, it is likely that it also may be implicated in the pathology of seizures. LGI4 is localized subcellularly to the Golgi, ER and vesicles. There are two isoforms of LGI4 that are produced as a result of alternative splicing events.

REFERENCES

1. Gu, W., et al. 2002. The LGI1 gene involved in lateral temporal lobe epilepsy belongs to a new subfamily of leucine-rich repeat proteins. FEBS Lett. 519: 71-76.
2. Scheel, H., et al. 2002. A common protein interaction domain links two recently identified epilepsy genes. Hum. Mol. Genet. 11: 1757-1762.
3. Staub, E., et al. 2002. The novel EPTP repeat defines a superfamily of proteins implicated in epileptic disorders. Trends Biochem. Sci. 27: 441-444.
4. Senechal, K.R., et al. 2005. ADPEAF mutations reduce levels of secreted LGI1, a putative tumor suppressor protein linked to epilepsy. Hum. Mol. Genet. 14: 1613-1620.
5. Gu, W., et al. 2005. Using gene-history and expression analyses to assess the involvement of LGI genes in human disorders. Mol. Biol. Evol. 22: 2209-2216.
6. Bermingham, J.R., et al. 2006. The claw paw mutation reveals a role for Lgi4 in peripheral nerve development. Nat. Neurosci. 9: 76-84.
7. Lucarini, N., et al. 2007. Genetic polymorphisms and idiopathic generalized epilepsies. Pediatr. Neurol. 37: 157-164.
8. Sagane, K., et al. 2008. LGI1 and LGI4 bind to ADAM22, ADAM23 and ADAM11. Int. J. Biol. Sci. 4: 387-396.

CHROMOSOMAL LOCATION

Genetic locus: Lgi4 (mouse) mapping to 7 B1.

PRODUCT

LGI4 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 LGI4 shRNA Plasmid (m): sc-75423-SH and LGI4 shRNA (m) Lentiviral Particles: sc-75423-V as alternate gene silencing products.

For independent verification of LGI4 (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-75423A, sc-75423B and sc-75423C.

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

LGI4 siRNA (m) is recommended for the inhibition of LGI4 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.

GENE EXPRESSION MONITORING

LGI4 (KT18): sc-101488 is recommended as a control antibody for monitoring of LGI4 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LGI4 gene expression knockdown using RT-PCR Primer: LGI4 (m)-PR: sc-75423-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.