SANTA CRUZ BIOTECHNOLOGY, INC.

LULL1 siRNA (h): sc-78981

BACKGROUND

LULL1 (lumenal domain like LAP1), also known as NET9, IFRG15 or TOR1AIP2 (torsinA interacting protein 2), is a 470 amino acid endoplasmic reticulum single-pass membrane protein belonging to the TOR1AIP family. LULL1 interacts with TorsinA, an essential AAA+ ATPase found in the endoplasmic reticulum (ER) and nuclear envelope (NE) of higher eukaryotes. LULL1 regulates the distribution and activity of TorsinA within the ER and NE lumen and reveals functional defects in mutant TorsinA, which is responsible for DYT1 dystonia, a neurodevelopmental disease caused by an in-frame deletion (Deltagag) in the gene encoding TorsinA. The gene encoding LULL1 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

1. Blackwood, et al. 2001. Schizophrenia and affective disorders—cosegregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. Am. J. Hum. Genet. 69: 428-433.
2. Gonzalez-Alegre, P. and Paulson, H.L. 2004. Aberrant cellular behavior of mutant TorsinA implicates nuclear envelope dysfunction in DYT1 dystonia. J. Neurosci. 24: 2593-2601.
3. Goodchild, R.E. and Dauer, W.T. 2005. The AAA+ protein TorsinA interacts with a conserved domain present in LAP1 and a novel ER protein. J. Cell Biol. 168: 855-862.
4. Misbahuddin, A., et al. 2005. Mutant TorsinA, which causes early-onset primary torsion dystonia, is redistributed to membranous structures enriched in vesicular monoamine transporter in cultured human SH-SY5Y cells. Mov. Disord. 20: 432-440.
5. Goodchild, R.E., et al. 2005. Loss of the dystonia-associated protein TorsinA selectively disrupts the neuronal nuclear envelope. Neuron 48: 923-932.
6. Marzin, Y., et al. 2006. Chromosome 1 abnormalities in multiple myeloma. Anticancer Res. 26: 953-959.

CHROMOSOMAL LOCATION

Genetic locus: TOR1AIP2 (human) mapping to 1q25.2.

PRODUCT

LULL1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LULL1 shRNA Plasmid (h): sc-78981-SH and LULL1 shRNA (h) Lentiviral Particles: sc-78981-V as alternate gene silencing products.

For independent verification of LULL1 (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-78981A, sc-78981B and sc-78981C.

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 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

LULL1 siRNA (h) is recommended for the inhibition of LULL1 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 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 LULL1 gene expression knockdown using RT-PCR Primer: LULL1 (h)-PR: sc-78981-PR (20 µl). 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.