SANTA CRUZ BIOTECHNOLOGY, INC.

ZFYVE27 siRNA (h): sc-90825

BACKGROUND

Zinc finger FYVE domain-containing protein 27 (ZFYVE27), also known as SPG33, is a 411 amino acid member of the FYVE-finger family of proteins. The FYVE domain is a cysteine-rich domain of about 70 amino acids that plays a role in the endosomal localization of the FYVE-finger proteins, and a majority of these proteins serve as regulators of endocytic membrane trafficking. ZFYVE27, a multi-pass membrane protein, is an endosomal protein that binds to Spastin, a protein that is primarily involved in microtubule dynamics and severing, vesicular trafficking and endosomal trafficking. Mutations in the gene encoding ZFTVE27 affect neuronal intracellular trafficking in the corticospinal tract and are thought to lead to hereditary spastic paraplegia (HSP), a neurodegenerative disorder, characterized by progressive paralysis of the legs, which is caused by impaired axonal transport. Five isoforms of ZFYVE27 exist as a result of alternative splicing events.

REFERENCES

1. Fink, J.K. 1997. Advances in hereditary spastic paraplegia. Curr. Opin. Neurol. 10: 313-318.
2. Mannan, A.U., et al. 2006. ZFYVE27 (SPG33), a novel spastin-binding protein, is mutated in hereditary spastic paraplegia. Am. J. Hum. Genet. 79: 351-357.
3. Shirane, M. and Nakayama, K.I. 2006. Protrudin induces neurite formation by directional membrane trafficking. Science 314: 818-821.
4. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610243. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ivanova, N., et al. 2007. Hereditary spastic paraplegia 3A associated with axonal neuropathy. Arch. Neurol. 64: 706-713.
6. Martignoni, M., et al. 2008. The role of ZFYVE27/protrudin in hereditary spastic paraplegia. Am. J. Hum. Genet. 83: 127-128.

CHROMOSOMAL LOCATION

Genetic locus: ZFYVE27 (human) mapping to 10q24.2.

PRODUCT

ZFYVE27 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 ZFYVE27 shRNA Plasmid (h): sc-90825-SH and ZFYVE27 shRNA (h) Lentiviral Particles: sc-90825-V as alternate gene silencing products.

For independent verification of ZFYVE27 (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-90825A, sc-90825B and sc-90825C.

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

ZFYVE27 siRNA (h) is recommended for the inhibition of ZFYVE27 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 ZFYVE27 gene expression knockdown using RT-PCR Primer: ZFYVE27 (h)-PR: sc-90825-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.