SANTA CRUZ BIOTECHNOLOGY, INC.

AP5Z1 siRNA (h): sc-89435

BACKGROUND

AP5Z1 (adaptor-related protein complex 5, ζ 1 subunit), also known as SPG48 or KIAA0415, is an 807 amino acid protein that localizes to both the cytoplasm and nucleus. AP5Z1 may be a helicase that is necessary for homologous recombination DNA double-strand break repair. AP5Z1 is likely part of the adaptor protein complex five (AP-5) with AP5B1, AP5M1, and AP5S1. AP5Z1 also interacts with ZFVE26 and SPG11. Defects in AP5Z1 cause spastic paraplegia autosomal recessive type 48. Spastic paraplegia is a neurodegenerative disease that is characterized by progressive weakness and spasticity of the lower body. The progression and severity of symptoms are variable. Spastic paraplegia begins with difficulty of balance, stiffness and weakness in the legs, muscular spasms and dragging of the toes. Incontinence may appear as well as weakness or stiffness of other body parts. KIAA0415 exists as three alternatively spliced isoforms and maps to human chromosome 7.

REFERENCES

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2. Wistow, G., et al. 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.
3. Słabicki, M., et al. 2010. A genome-scale DNA repair RNAi screen identifies SPG48 as a novel gene associated with hereditary spastic paraplegia. PLoS Biol. 8: e1000408.
4. Hirst, J., et al. 2011. The fifth adaptor protein complex. PLoS Biol. 9: e1001170.
5. Finsterer, J., et al. 2012. Hereditary spastic paraplegias with autosomal dominant, recessive, X-linked, or maternal trait of inheritance. J. Neurol. Sci. 318: 1-18.
6. Fink, J.K. 2013. Hereditary spastic paraplegia: clinico-pathologic features and emerging molecular mechanisms. Acta Neuropathol. 126: 307-328.
7. Pensato, V., et al. 2014. Overlapping phenotypes in complex spastic paraplegias SPG11, SPG15, SPG35 and SPG48. Brain 137: 1907-1920.

CHROMOSOMAL LOCATION

Genetic locus: AP5Z1 (human) mapping to 7p22.1.

PRODUCT

AP5Z1 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 AP5Z1 shRNA Plasmid (h): sc-89435-SH and AP5Z1 shRNA (h) Lentiviral Particles: sc-89435-V as alternate gene silencing products.

For independent verification of AP5Z1 (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-89435A, sc-89435B and sc-89435C.

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

AP5Z1 siRNA (h) is recommended for the inhibition of AP5Z1 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 AP5Z1 gene expression knockdown using RT-PCR Primer: AP5Z1 (h)-PR: sc-89435-PR (20 µl, 574 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.

PROTOCOLS

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