SANTA CRUZ BIOTECHNOLOGY, INC.

ATXN1L siRNA (h): sc-93421

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The Power to Question

BACKGROUND

ATXN1L (ataxin-1-like) is a 689 amino acid protein that can suppress the cytotoxicity of ATXN1 in spinocerebellar ataxia type 1 (SCA1). Belonging to the ATXN1 family and localizing to nucleus, then to dendrite, ATXN1L contains one AXH domain. ATXN1L is distributed beyond the nucleus into cell bodies, dendrites in Purkinje cells and in inferior olive cells. Expressed in cerebellum and cerebral cortex, the ATXN1L protein forms nuclear foci. ATXN1L suppresses the cytotoxicity of ATXN1 in spinocerebellar ataxia type 1 (SCA1) and colocalizes with SMRTe and HDAC3. Considered a homodimer, ATXN1L interacts with Capicua. ATXN1L also interacts with SMRTe via AXH domain. The ATXN1L gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish and maps to human chromosome 16q22.2.

REFERENCES

1. Mizutani, A., et al. 2005. Boat, an AXH domain protein, suppresses the cytotoxicity of mutant ataxin-1. EMBO J. 24: 3339-3351.
2. Bowman, A.B., et al. 2007. Duplication of Atxn1l suppresses SCA1 neuropathology by decreasing incorporation of polyglutamine-expanded ataxin-1 into native complexes. Nat. Genet. 39: 373-379.
3. Zoghbi, H.Y., et al. 2009. Pathogenic mechanisms of a polyglutamine-mediated neurodegenerative disease, spinocerebellar ataxia type 1. J. Biol. Chem. 284: 7425-7429.
4. Carlson, K.M., et al. 2009. Characterization of the zebrafish atxn1/axh gene family. J. Neurogenet. 23: 313-323.
5. Crespo-Barreto, J., et al. 2010. Partial loss of ataxin-1 function contributes to transcriptional dysregulation in spinocerebellar ataxia type 1 pathogenesis. PLoS Genet. 6: e1001021.
6. Laget, S., et al. 2010. The human proteins MBD5 and MBD6 associate with heterochromatin but they do not bind methylated DNA. PLoS ONE 5: e11982.

CHROMOSOMAL LOCATION

Genetic locus: ATXN1L (human) mapping to 16q22.2.

PRODUCT

ATXN1L 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 ATXN1L shRNA Plasmid (h): sc-93421-SH and ATXN1L shRNA (h) Lentiviral Particles: sc-93421-V as alternate gene silencing products.

For independent verification of ATXN1L (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-93421A, sc-93421B and sc-93421C.

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

ATXN1L siRNA (h) is recommended for the inhibition of ATXN1L 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 ATXN1L gene expression knockdown using RT-PCR Primer: ATXN1L (h)-PR: sc-93421-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.