

# ATXN7L2 siRNA (h): sc-78857

## BACKGROUND

SCA7 is an autosomal dominant neurodegenerative disorder characterized by ataxia and selective neuronal cell loss caused by the expansion of a translated CAG repeat encoding a polyglutamine tract in Ataxin-7, which is the SCA7 gene product. Ataxin-7 is a nuclear protein that is expressed within neurons both affected and unaffected in SCA7 pathology with subcellular localization being variable depending upon the neuronal subtype. Polyglutamine expanded in Ataxin-7 may carry out its pathogenic effects in the nucleus by altering the matrix-associated nuclear structure and/or by disrupting nucleolar function. ATXN7L2 (Ataxin-7-like protein 2) is a 722 amino acid protein that contains a SCA7 domain, which is highly conserved through all members of the ATXN7 gene family. The gene encoding ATXN7L2 maps to human chromosome 1, the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

## REFERENCES

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2. Chen, S., et al. 2004. Interference of Crx-dependent transcription by ataxin-7 involves interaction between the glutamine regions and requires the Ataxin-7 carboxy-terminal region for nuclear localization. *Hum. Mol. Genet.* 13: 53-67.
3. Gregory, S.G., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
4. Garden, G.A. and La Spada, A.R. 2008. Molecular pathogenesis and cellular pathology of spinocerebellar ataxia type 7 neurodegeneration. *Cerebellum* 7: 138-149.
5. Zhao, Y., et al. 2008. A TFIC/STAGA module mediates histone H2A and H2B deubiquitination, coactivates nuclear receptors, and counteracts heterochromatin silencing. *Mol. Cell* 29: 92-101.
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7. Hugosson, T., et al. 2009. Macular dysfunction and morphology in spinocerebellar ataxia type 7 (SCA 7). *Ophthalmic Genet.* 30: 1-6.
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## CHROMOSOMAL LOCATION

Genetic locus: ATXN7L2 (human) mapping to 1p13.3.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

ATXN7L2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ATXN7L2 shRNA Plasmid (h): sc-78857-SH and ATXN7L2 shRNA (h) Lentiviral Particles: sc-78857-V as alternate gene silencing products.

For independent verification of ATXN7L2 (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-78857A, sc-78857B and sc-78857C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ATXN7L2 siRNA (h) is recommended for the inhibition of ATXN7L2 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  $\mu$ M in 66  $\mu$ l. 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 ATXN7L2 gene expression knockdown using RT-PCR Primer: ATXN7L2 (h)-PR: sc-78857-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.