

# Ataxin-10 siRNA (h): sc-60218

## BACKGROUND

Spinocerebellar ataxia (SCA) is an autosomal dominant neurodegenerative disorder characterized by ataxia and selective neuronal cell loss. SCA is caused by the expansion of a translated CAG repeat, encoding a polyglutamine tract in SCA gene products, known as Ataxins. The Ataxin proteins are ubiquitously expressed in nervous tissue, but are primarily detected in cerebellum, brain stem and spinal cord in the central nervous system. Ataxin-10 is a cytoplasmic protein that belongs to the family of armadillo repeat proteins. A loss of Ataxin-10 in primary neuronal cells causes increased apoptosis of cerebellar neurons. Ataxin-10 interacts with p110, an O-Linked  $\beta$ -N-acetylglucosamine transferase, and may be important in the regulation of intracellular glycosylation levels and homeostasis in the brain. Spinocerebellar ataxia type 10 (SCA10) is an autosomal dominant disorder that causes cerebellar ataxia and seizures. SCA10 is caused by an expansion of an ATTCT pentanucleotide repeat in intron 9 of the Ataxin-10 gene.

## REFERENCES

1. März, P., et al. 2004. Ataxin-10, the is essential for survival of cerebellar neurons. *J. Biol. Chem.* 279: 35542-35550.
2. Teive, H.A., et al. 2004. Clinical phenotype of Brazilian families with spinocerebellar ataxia 10. *Neurology* 63: 1509-1512.
3. Handa, V., et al. 2005. The AUUCU repeats responsible for spinocerebellar ataxia type 10 form unusual RNA hairpins. *J. Biol. Chem.* 280: 29340-29345.
4. Lin, X., et al. 2005. Recent progress in spinocerebellar ataxia type-10 (SCA10). *Cerebellum* 4: 37-42.

## CHROMOSOMAL LOCATION

Genetic locus: ATXN10 (human) mapping to 22q13.31.

## PRODUCT

Ataxin-10 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 Ataxin-10 shRNA Plasmid (h): sc-60218-SH and Ataxin-10 shRNA (h) Lentiviral Particles: sc-60218-V as alternate gene silencing products.

For independent verification of Ataxin-10 (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-60218A, sc-60218B and sc-60218C.

## 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

Ataxin-10 siRNA (h) is recommended for the inhibition of Ataxin-10 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.

## GENE EXPRESSION MONITORING

Ataxin-10 (C-3): sc-271233 is recommended as a control antibody for monitoring of Ataxin-10 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Ataxin-10 gene expression knockdown using RT-PCR Primer: Ataxin-10 (h)-PR: sc-60218-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2021. Ataxin-10 inhibits TNF- $\alpha$ -induced endothelial inflammation via suppressing interferon regulatory factor-1. *Mediators Inflamm.* 2021: 7042148.

## 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.