SANTA CRUZ BIOTECHNOLOGY, INC.

translin siRNA (m): sc-38601

BACKGROUND

Translin, also designated testis brain RNA-binding protein (TB-RBP), is a single-stranded DNA- and RNA-binding protein that binds to the 3' UTR regions (Y and H elements) of stored mRNAs, which suppresses their *in vitro* translation. The human translin gene maps to chromosome 2q14.3 and encodes a protein that has been highly conserved throughout evolution. Translin forms a ring-shaped structure, which is responsible for DNA binding, and also contains a leucine zipper motif, which is thought to enable translin to form dimers. Translin exports specific mRNAs out of the nucleus, supported by its localization in both the nuclei and cytoplasm of neurons, and regulates their translation. Association with TRAX (translin-associated factor X), inhibits the binding of translin to RNA, but enhances its binding to single stranded DNA sequences. Breakpoints in the TLS/FUS and CHOP loci contain consensus recognition motifs of translin, which associates with chromosomal translocations in liposarcomas.

REFERENCES

1. Aoki, K., et al. 1997. Genomic structure and chromosomal localization of the gene encoding translin, a recombination hotspot binding protein. Genomics 43: 237-241.
2. Kobayashi, S., et al. 1998. The dendritic translocation of translin protein in the form of BC1 RNA protein particles in developing rat hippocampal neurons in primary culture. Biochem. Biophys. Res. Commun. 253: 448-453.
3. Wu, X.Q., et al. 1998. Dimerization of the testis brain RNA-binding protein (translin) is mediated through its C-terminus and is required for DNA- and RNA-binding. Nucleic Acids Res. 26: 1675-1680.
4. Gu, W., et al. 1998. The RNA- and DNA-binding protein TB-RBP is spatially and developmentally regulated during spermatogenesis. Mol. Reprod. Dev. 49: 219-228.
5. Wu, X.Q., et al. 1999. Protein-protein interactions between the testis brain RNA-binding protein and the transitional endoplasmic reticulum ATPase, a cytoskeletal γ Actin and TRAX in male germ cells and the brain. Biochemistry 38: 11261-11270.
6. Aoki, K., et al. 1999. The DNA binding activity of translin is mediated by a basic region in the ring-shaped structure conserved in evolution. FEBS Lett. 443: 363-366.

CHROMOSOMAL LOCATION

Genetic locus: Tsn (mouse) mapping to 1 E2.3.

PRODUCT

translin siRNA (m) 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 translin shRNA Plasmid (m): sc-38601-SH and translin shRNA (m) Lentiviral Particles: sc-38601-V as alternate gene silencing products.

For independent verification of translin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38601A, sc-38601B and sc-38601C.

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

translin siRNA (m) is recommended for the inhibition of translin expression in mouse 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.

GENE EXPRESSION MONITORING

translin (C-2): sc-390472 is recommended as a control antibody for monitoring of translin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor translin gene expression knockdown using RT-PCR Primer: translin (m)-PR: sc-38601-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.

PROTOCOLS

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