SANTA CRUZ BIOTECHNOLOGY, INC.

Snurportin-1 siRNA (m): sc-63049

BACKGROUND

Snurportin-1, also known as SNUPN, KPNBL or RNUT1 (RNA U transporter 1), is a nuclear import adaptor protein belonging to the Snurportin family. Localizing to the cytoplasm and nucleus, Snurportin-1 contains an N-terminal IBB domain and a trimethylguanosine (m3G)-cap binding domain. It specifically binds the terminal 2,2,7-m3G-cap at the 5' end of U snRNPs and functions to transport U snRNPs into the nucleus via an association with Importin β. The nuclear import of U snRNPs is an important step in the maturation of the spliceosome. The complex formed between Snurportin-1, U snRNP and Importin β is essential for nuclear import. Depending on the U snRNP (U1 or U2), Snurportin-1 may localize to Cajal bodies after nuclear import. In the nucleus, CRM1 binds to Snurportin-1 and is responsible for the recycling of Snurportin-1 back to the cytoplasm for additional rounds of U snRNP import.

REFERENCES

1. Paraskeva, E., et al. 1999. CRM1-mediated recycling of snurportin 1 to the cytoplasm. J. Cell Biol. 145: 255-264.
2. Mouaikel, J., et al. 2003. Interaction between the small-nuclear-RNA cap hypermethylase and the spinal muscular atrophy protein, survival of motor neuron. EMBO Rep. 4: 616-622.
3. Julien, C., et al. 2003. Nuclear export of ERK3 by a CRM1-dependent mechanism regulates its inhibitory action on cell cycle progression. J. Biol. Chem. 278: 42615-42624.
4. Mans, B.J., et al. 2004. Comparative genomics, evolution and origins of the nuclear envelope and nuclear pore complex. Cell Cycle 3: 1612-1637.
5. Strasser, A., et al. 2004. Purification, crystallization and preliminary crystallographic data of the m3G cap-binding domain of human snRNP import factor snurportin 1. Acta Crystallogr. D Biol. Crystallogr. 60: 1628-1631.
6. Arnaoutov, A., et al. 2005. Crm1 is a mitotic effector of Ran-GTP in somatic cells. Nat. Cell Biol. 7: 626-632.
7. Ospina, J.K., et al. 2005. Cross-talk between snurportin1 subdomains. Mol. Biol. Cell 16: 4660-4671.
8. Strasser, A., et al. 2005. Structural basis for m3G-cap-mediated nuclear import of spliceosomal UsnRNPs by snurportin1. EMBO J. 24: 2235-2243.

CHROMOSOMAL LOCATION

Genetic locus: Snupn (mouse) mapping to 9 B.

PRODUCT

Snurportin-1 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 Snurportin-1 shRNA Plasmid (m): sc-63049-SH and Snurportin-1 shRNA (m) Lentiviral Particles: sc-63049-V as alternate gene silencing products.

For independent verification of Snurportin-1 (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-63049A, sc-63049B and sc-63049C.

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

Snurportin-1 siRNA (m) is recommended for the inhibition of Snurportin-1 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

Snurportin-1 (F-2): sc-166006 is recommended as a control antibody for monitoring of Snurportin-1 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 Snurportin-1 gene expression knockdown using RT-PCR Primer: Snurportin-1 (m)-PR: sc-63049-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.