



# Snurportin-1 (M-15): sc-55300

## 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  $\beta$ . 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  $\beta$  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., Izaurralde, E., Bischoff, F.R., Huber, J., Kutay, U., Hartmann, E., Lührmann, R. and Görlich, D. 1999. CRM1-mediated recycling of Snurportin-1 to the cytoplasm. *J. Cell Biol.* 145: 255-264.
2. Mouaikel, J., Narayanan, U., Verheggen, C., Matera, A.G., Bertrand, E., Tazi, J. and Bordonné R. 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., Coulombe, P. and Meloche, S. 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., Anantharaman, V., Aravind, L. and Koonin, E.V. 2004. Comparative genomics, evolution and origins of the nuclear envelope and nuclear pore complex. *Cell Cycle* 3: 1612-1637.
5. Strasser, A., Dickmanns, A., Schmidt, U., Penka, E., Urlaub, H., Sekine, M., Lührmann, R. and Ficner, R. 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., Azuma, Y., Ribbeck, K., Joseph, J., Boyarchuk, Y., Karpova, T., McNally, J. and Dasso, M. 2005. CRM1 is a mitotic effector of Ran-GTP in somatic cells. *Nat. Cell Biol.* 7: 626-632.
7. Ospina, J.K., Gonsalvez, G.B., Bednenko, J., Darzynkiewicz, E., Gerace, L. and Matera, A.G. 2005. Cross-talk between Snurportin-1 subdomains. *Mol. Biol. Cell.* 16: 4660-4671.
8. Strasser, A., Dickmanns, A., Lührmann, R. and Ficner, R. 2005. Structural basis for m3G-cap-mediated nuclear import of spliceosomal UsnRNPs by Snurportin-1. *EMBO J.* 24: 2235-2243.
9. Bahia, D., Aviñó, A., Darzynkiewicz, E., Eritja, R. and Bach-Elias, M. 2006. Trimethylguanosine nucleoside inhibits cross-linking between Snurportin-1 and m3G-CAPPED U1 snRNA. *Nucleosides Nucleotides Nucleic Acids* 25: 909-923.

## CHROMOSOMAL LOCATION

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

## SOURCE

Snurportin-1 (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Snurportin-1 of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55300 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Snurportin-1 (M-15) is recommended for detection of Snurportin-1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Snurportin-1 siRNA (m): sc-63049; and as shRNA Plasmid control antibody for Snurportin-1 shRNA Plasmid (m): sc-63049-SH.

Molecular Weight of Snurportin-1: 46 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## 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) or our catalog for detailed protocols and support products.