SANTA CRUZ BIOTECHNOLOGY, INC.

Importin-12 siRNA (m): sc-105574

BACKGROUND

The Importin complex consists of Importin-α and Importin-β proteins which assist in transport of arginine- or serine-rich (SR) proteins across the nucleus. Importin-12, also known as Transportin-3 or Transportin-SR, is a member of the Importin-β family and functions as a nuclear transport receptor for serine/arginine-rich proteins. Through recognition of phosphorylated RS domains, Importin-12 mediates the nuclear import of several SR proteins, such as splicing factors SFRS1 and SFRS2. By regulating the nucleocytoplasmic transport of these and other SR mRNA splicing factors, Importin-12 controls their access to mRNA and, therefore, acts a transcriptional regulator.

REFERENCES

1. Kataoka, N., Bachorik, J.L. and Dreyfuss, G. 1999. Transportin-SR, a nuclear import receptor for SR proteins. J. Cell Biol. 145: 1145-1152.
2. Lai, M.C., Lin, R.I., Huang, S.Y., Tsai, C.W. and Tarn, W.Y. 2000. A human importin-β family protein, transportin-SR2, interacts with the phosphorylated RS domain of SR proteins. J. Biol. Chem. 275: 7950-7957.
3. Zhang, C., Sweezey, N.B., Gagnon, S., Muskat, B., Koehler, D., Post, M. and Kaplan, F. 2000. A novel karyopherin-β homolog is developmentally and hormonally regulated in fetal lung. Am. J. Respir. Cell Mol. Biol. 22: 451-459.
4. Lai, M.C., Lin, R.I. and Tarn, W.Y. 2001. Transportin-SR2 mediates nuclear import of phosphorylated SR proteins. Proc. Natl. Acad. Sci. USA 98: 10154-10159.
5. Allemand, E., Dokudovskaya, S., Bordonne, R. and Tazi, J. 2002. A conserved *Drosophila* transportin-serine/arginine-rich (SR) protein permits nuclear import of *Drosophila* SR protein splicing factors and their antagonist repressor splicing factor 1. Mol. Biol. Cell 13: 2436-2447.
6. Lai, M.C., Kuo, H.W., Chang, W.C. and Tarn, W.Y. 2003. A novel splicing regulator shares a nuclear import pathway with SR proteins. EMBO J. 22: 1359-1369.
7. Hamelberg, D., Shen, T. and McCammon, J.A. 2007. A proposed signaling motif for nuclear import in mRNA processing via the formation of arginine claw. Proc. Natl. Acad. Sci. USA 104: 14947-14951.

CHROMOSOMAL LOCATION

Genetic locus: Tnpo3 (mouse) mapping to 6 A3.3.

PRODUCT

Importin-12 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 Importin-12 shRNA Plasmid (m): sc-105574-SH and Importin-12 shRNA (m) Lentiviral Particles: sc-105574-V as alternate gene silencing products.

For independent verification of Importin-12 (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-105574A, sc-105574B and sc-105574C.

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

Importin-12 siRNA (m) is recommended for the inhibition of Importin-12 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

Importin-12 (C-2): sc-376346 is recommended as a control antibody for monitoring of Importin-12 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 Importin-12 gene expression knockdown using RT-PCR Primer: Importin-12 (m)-PR: sc-105574-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.