SANTA CRUZ BIOTECHNOLOGY, INC.

Exportin 4 siRNA (h): sc-41273

BACKGROUND

Exportins preferentially bind their substrates at high RanGTP concentrations in the nucleus and then exit the nucleus as trimeric cargo-Exportin-RanGTP complexes. The disassembly of the Exportin-RanGTP complexes involves RanGAP and either RanBP1 or RanBP2, and frees the Exportins for additional nuclear exports. Exportin 1 (soluable cellular export receptor) is a receptor for leucine-rich export sequences and mediates nucleocytoplasmic translocation of Rev-HIV RNA complexes through the nuclear pore. Exportin T binds to functional tRNA and mediates tRNA export from the nucleus. Exportin 4 mediates nuclear export of the eukaryotic translation initiation factor 5A (eIF-5A) by means of a hypusine modification unique to eIF-5A. While a distant member of the importin β superfamily, Exportin 4 shares an N-terminal RanGTP-binding motif with Exportin 1 and Exportin T.

REFERENCES

1. Gorlich, D., Dabrowski, M., Bischoff, F.R., Kutay, U., Bork, P., Hartmann, E., Prehn, S. and Izaurralde, E. 1997. A novel class of RanGTP binding proteins. J. Cell Biol. 138: 65-80.
2. Kutay, U., Bischoff, F.R., Kostak, S., Kraft, R. and Gorlich, D. 1997. Export of Importin α from the nucleus is mediated by a specific nuclear transport factor. Cell 90: 1061-1071.
3. Boyle, S.M., Ruvolo, V., Gupta, A.K. and Swaminathan, S. 1999. Association with the cellular export receptor CRM1 mediates function and intracellular localization of Epstein-Barr virus SM protein, a regulator of gene expression. J. Virol. 73: 6872-6881.
4. Lipowsky, G., Bischoff, F.R., Izaurralde, E., Kutay, U., Schafer, S., Gross, H.J., Beier, H. and Gorlich, D. 1999. Coordination of tRNA nuclear export with processing of tRNA. RNA 5: 539-549.
5. Collier, S., Chan, H.Y., Toda, T., McKimmie, C., Johnson, G., Adler, P.N., O'Kane, C. and Ashburner, M. 2000 The *Drosophilia* embargoed gene is required for larval progression and encodes the functional homolog of *Schizosaccharmomyces* CRM1. Genetics 155: 1799-1807.
6. Lipowsky, G., Bischoff, F.R., Schwarzmaier, P., Kraft, R., Kostka, S., Hartmann, E., Kutay, U. and Görlich, D. 2000. Exportin 4: a mediator of a novel nuclear export pathway in higher eukaryotes. EMBO J. 19: 4362-4371.

CHROMOSOMAL LOCATION

Genetic locus: XPO4 (human) mapping to 13q12.11.

PRODUCT

Exportin 4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Exportin 4 shRNA Plasmid (h): sc-41273-SH and Exportin 4 shRNA (h) Lentiviral Particles: sc-41273-V as alternate gene silencing products.

For independent verification of Exportin 4 (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-41273A, sc-41273B and sc-41273C.

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

Exportin 4 siRNA (h) is recommended for the inhibition of Exportin 4 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Exportin 4 gene expression knockdown using RT-PCR Primer: Exportin 4 (h)-PR: sc-41273-PR (20 µl, 308 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Huang, T., Ditzel, E.J., Perrera, A.B., Broka, D.M. and Camenisch, T.D. 2015. Arsenite disrupts zinc-dependent TGFβ2-Smad activity during murine cardiac progenitor cell differentiation. Toxicol. Sci. 148: 409-420.

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.