SANTA CRUZ BIOTECHNOLOGY, INC.

Exportin 5 siRNA (h): sc-45569

BACKGROUND

The karyopherin-related nuclear transport factor Exportin 5, also known as Exp5, preferentially recognizes and transports RNAs containing minihelix motifs, structural cis-acting export elements that comprise a double-stranded stem (14 nucleotides) with a base-paired 5' end and a 3-8-nucleotide protruding 3' end. Exportin 5 also mediates protein transport between the nuclear and cytoplasmic compartment. Exportin 5 belongs to a large family of karyopherins and stimulates nuclear export of dsRNA binding proteins eEF1A and tRNA.

REFERENCES

1. Bohnsack, M.T., et al. 2002. Exp5 exports eEF1A via tRNA from nuclei and synergizes with other transport pathways to confine translation to the cytoplasm. EMBO J. 21: 6205-6215.
2. Brownawell, A.M., et al. 2002. Exportin 5, a novel karyopherin, mediates nuclear export of double-stranded RNA binding proteins. J. Cell Biol. 156: 53-64.
3. Chen, T., et al. 2004. Nucleocytoplasmic shuttling of Jaz, a new cargo protein for Exportin 5. Mol. Cell. Biol. 24: 6608-6619.
4. Gwizdek, C., et al. 2004. Minihelix-containing RNAs mediate Exportin 5-dependent nuclear export of the double-stranded RNA-binding protein ILF3. J. Biol. Chem. 279: 884-891.
5. Macchi, P., et al. 2004. The brain-specific double-stranded RNA-binding protein Staufen2: nucleolar accumulation and isoform-specific Exportin 5-dependent export. J. Biol. Chem. 279: 31440-31444.

CHROMOSOMAL LOCATION

Genetic locus: XPO5 (human) mapping to 6p21.1.

PRODUCT

Exportin 5 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 5 shRNA Plasmid (h): sc-45569-SH and Exportin 5 shRNA (h) Lentiviral Particles: sc-45569-V as alternate gene silencing products.

For independent verification of Exportin 5 (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-45569A, sc-45569B and sc-45569C.

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 5 siRNA (h) is recommended for the inhibition of Exportin 5 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.

GENE EXPRESSION MONITORING

Exportin 5 (A-11): sc-271036 is recommended as a control antibody for monitoring of Exportin 5 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 Exportin 5 gene expression knockdown using RT-PCR Primer: Exportin 5 (h)-PR: sc-45569-PR (20 µl, 554 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shapiro, J.S., et al. 2010. Noncanonical cytoplasmic processing of viral microRNAs. RNA 16: 2068-2074.
2. Abbas, W., et al. 2014. Blockade of BFA-mediated apoptosis in macrophages by the HIV-1 Nef protein. Cell Death Dis. 5: e1080.
3. Li, C., et al. 2023. Lipid kinase PIP5K1A regulates let-7 microRNA biogenesis through interacting with nuclear export protein XPO5. Nucleic Acids Res. 51: 9849-9862.

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.