SANTA CRUZ BIOTECHNOLOGY, INC.

Importin-7 siRNA (m): sc-62502

BACKGROUND

Importin-7 (ran-binding protein 7, RanBP7) is a 1,038 amino acid protein encoded by the human gene IPO7. Importin-7 belongs to the importin β family and contains one importin N-terminal domain. Importin-7 functions in nuclear protein import, either by acting as an autonomous nuclear transport receptor or as an adapter-like protein in association with the Importin β subunit KPNB1. Acting autonomously, Importin-7 is thought to serve itself as receptor for nuclear localization signals (NLS) and to promote translocation of import substrates through the nuclear pore complex (NPC) by an energy requiring, Ran-dependent mechanism. At the nucleoplasmic side of the NPC, Ran binds to Importin-7, the Importin-7/substrate complex dissociates and Importin-7 is re-exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran. Importin-7 is a nuclear protein that is expressed in most tissues.

REFERENCES

1. Jäkel, S., et al. 1999. The importin β/importin 7 heterodimer is a functional nuclear import receptor for histone H1. EMBO J. 18: 2411-2423.
2. Baker, S.E., et al. 2002. Genetic interaction between integrins and moleskin, a gene encoding a *Drosophila* homolog of importin-7. Genetics 162: 285-296.
3. Fassati, A., et al. 2003. Nuclear import of HIV-1 intracellular reverse transcription complexes is mediated by importin 7. EMBO J. 22: 3675-3685.
4. Freedman, N.D., et al. 2004. Importin 7 and importin α/importin β are nuclear import receptors for the glucocorticoid receptor. Mol. Biol. Cell 15: 2276-2286.
5. Zielske, S.P., et al. 2005. Importin 7 may be dispensable for human immunodeficiency virus type 1 and simian immunodeficiency virus infection of primary macrophages. J. Virol. 79: 11541-11546.
6. Vrailas, A.D., et al. 2006. smoothened and thickveins regulate Moleskin/Importin 7-mediated MAP kinase signaling in the developing *Drosophila* eye. Development 133: 1485-1494.

CHROMOSOMAL LOCATION

Genetic locus: Ipo7 (mouse) mapping to 7 F1.

PRODUCT

Importin-7 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-7 shRNA Plasmid (m): sc-62502-SH and Importin-7 shRNA (m) Lentiviral Particles: sc-62502-V as alternate gene silencing products.

For independent verification of Importin-7 (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-62502A, sc-62502B and sc-62502C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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-7 siRNA (m) is recommended for the inhibition of Importin-7 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-7 (E-2): sc-365231 is recommended as a control antibody for monitoring of Importin-7 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (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-7 gene expression knockdown using RT-PCR Primer: Importin-7 (m)-PR: sc-62502-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.