SANTA CRUZ BIOTECHNOLOGY, INC.

QIP1 siRNA (h): sc-62916

BACKGROUND

QIP1, also known as KPNA4 (karyopherin α4), IPOA3 (importin α3) or SRP3, is a member of the importin α family. It is involved in nuclear import and forms a complex with the importin β protein, karyopherin β1, functioning as its adapter protein. QIP1 binds to substrates containing nuclear localization signal (NLS) motifs, while karyopherin β1 facilitates the binding of the importin/substrate complex to the nuclear pore complex (NPC). Subsequently, the importin/substrate complex is translocated through the pore via a Ran-dependent mechanism. QIP1 contains one IBB domain at its hydrophilic N-terminus which is required for binding karyopherin β1 and ten ARM repeats in its hydrophobic central region. QIP1 is expressed at high levels in pancreas, lung, ovary, testis, small intestine, heart and skeletal muscle, exhibiting both cytoplasmic and nuclear localization.

REFERENCES

1. Miyamoto, Y., et al. 1997. Differential modes of nuclear localization signal (NLS) recognition by three distinct classes of NLS receptors. J. Biol. Chem. 272: 26375-26381.
2. Seki, T., et al. 1997. Cloning of a cDNA encoding a novel Importin α homologue, QIP1: discrimination of QIP1 and Rch1 from hSRP1 by their ability to interact with DNA helicase Q1/RecQL. Biochem. Biophys. Res. Commun. 234: 48-53.
3. Köhler, M., et al. 1997. Cloning of two novel human importin α subunits and analysis of the expression pattern of the importin α protein family. FEBS Lett. 417: 104-108.
4. Köhler, M., et al. 1999. Evidence for distinct substrate specificities of importin α family members in nuclear protein import. Mol. Cell. Biol. 19: 7782-7791.
5. Ayala-Madrigal, M.L., et al. 2000. Assignment of KPNA4 and KPNB1 encoding karyopherin α4 and β1 to human chromosome bands 11q22 and 17q21 respectively, by *in situ* hybridization. Cytogenet. Cell Genet. 89: 258-259.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602970. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: KPNA4 (human) mapping to 3q25.33.

PRODUCT

QIP1 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 QIP1 shRNA Plasmid (h): sc-62916-SH and QIP1 shRNA (h) Lentiviral Particles: sc-62916-V as alternate gene silencing products.

For independent verification of QIP1 (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-62916A, sc-62916B and sc-62916C.

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

QIP1 siRNA (h) is recommended for the inhibition of QIP1 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

QIP1 (3D10): sc-101547 is recommended as a control antibody for monitoring of QIP1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor QIP1 gene expression knockdown using RT-PCR Primer: QIP1 (h)-PR: sc-62916-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.