SANTA CRUZ BIOTECHNOLOGY, INC.

IPPK siRNA (h): sc-75343

BACKGROUND

IPPK (inositol-pentakisphosphate 2-kinase) is a 491 amino acid gene product that belongs to the IPK1 type 2 family. IPPK expresses the conserved EXKPK motif which is found in both inositol-pentakisphosphate 2-kinase families 1 and 2. The primary function of IPPK has been found to be the ATP dependent phosphorylation of Ins(1,3,4,5,6)P5 at position 2 to form Ins(1,2,3,4,5,6)P6 (InsP6 or phytate). In plants, phytic acid (myo-inositol hexakisphosphate, InsP6) is an important molecule for phosphate storage and signaling. Mutation of the InsP6 gene can cause plants to be of greater susceptibility to many viral pathogens. In mice, InsP6 is believed to influence endocytosis and mRNA export. Homozygous mutations of the IPPK gene will prevent yolk sac development, indicating the importance of this gene product. IPPK is a ubiquitously expressed protein with highest expression found in heart, testis and brain.

REFERENCES

1. Verbsky, J.W., et al. 2002. The synthesis of inositol hexakisphosphate. Characterization of human inositol 1,3,4,5,6-pentakisphosphate 2-kinase. J. Biol. Chem. 277: 31857-31862.
2. Verbsky, J. and Majerus, P.W. 2005. Increased levels of inositol hexakisphosphate (InsP6) protect HEK293 cells from tumor necrosis factor α- and Fas-induced apoptosis. J. Biol. Chem. 280: 29263-29268.
3. Verbsky, J., et al. 2005. Disruption of the mouse inositol 1,3,4,5,6-pentakisphosphate 2-kinase gene, associated lethality, and tissue distribution of 2-kinase expression. Proc. Natl. Acad. Sci. USA 102: 8448-8453.
4. Jackson, S.G., et al. 2007. Structural analysis of the carboxy terminal PH domain of pleckstrin bound to D-myo-inositol 1,2,3,5,6-pentakisphosphate. BMC Struct. Biol. 7: 80.
5. Gao, Y. and Wang, H.Y. 2007. Inositol pentakisphosphate mediates Wnt/β-catenin signaling. J. Biol. Chem. 282: 26490-26502.

CHROMOSOMAL LOCATION

Genetic locus: IPPK (human) mapping to 9q22.31.

PRODUCT

IPPK 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 IPPK shRNA Plasmid (h): sc-75343-SH and IPPK shRNA (h) Lentiviral Particles: sc-75343-V as alternate gene silencing products.

For independent verification of IPPK (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-75343A, sc-75343B and sc-75343C.

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

IPPK siRNA (h) is recommended for the inhibition of IPPK 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 IPPK gene expression knockdown using RT-PCR Primer: IPPK (h)-PR: sc-75343-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.