SANTA CRUZ BIOTECHNOLOGY, INC.

PDSS2 siRNA (h): sc-76100

BACKGROUND

Prenyl diphosphate synthase subunit 2 (PDSS2), also known as decaprenyl-diphosphate synthase subunit 2, decaprenyl pyrophosphate synthetase subunit 2 and candidate tumor suppressor protein, is a 399 amino acid member of the FPP/GGPP synthetase family. PDSS2 exists as a hetrotetramer, with two PDSS2 and two PDSS1 subunits, and functions primarily as a candidate tumor suppressor protein. Defects in PDSS2 have been shown to cause co-enzyme Q10 deficiency, an autosomal recessive disorder with three predominant phenotypes: a predominantly myopathic form with central nervous system involvement, an infantile encephalomyopathy with renal dysfunction and an ataxic form with cerebellar atrophy. The gene encoding PDSS2 maps to chromosome 6q21. Two isoforms of PDSS2 exist as a result of alternative splicing events.

REFERENCES

1. Saiki, R., et al. 2005. Characterization of solanesyl and decaprenyl diphosphate synthases in mice and humans. FEBS J. 272: 5606-5622.
2. López, L.C., et al. 2006. Leigh syndrome with nephropathy and CoQ10 deficiency due to decaprenyl diphosphate synthase subunit 2 (PDSS2) mutations. Am. J. Hum. Genet. 79: 1125-1129.
3. Hom, J.R., et al. 2007. Thapsigargin induces biphasic fragmentation of mitochondria through calcium-mediated mitochondrial fission and apoptosis. J. Cell. Physiol. 212: 498-508.
4. Quinzii, C.M., et al. 2007. CoQ10 deficiency diseases in adults. Mitochondrion 7: S122-S126.

CHROMOSOMAL LOCATION

Genetic locus: PDSS2 (human) mapping to 6q21.

PRODUCT

PDSS2 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 PDSS2 shRNA Plasmid (h): sc-76100-SH and PDSS2 shRNA (h) Lentiviral Particles: sc-76100-V as alternate gene silencing products.

For independent verification of PDSS2 (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-76100A, sc-76100B and sc-76100C.

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

PDSS2 siRNA (h) is recommended for the inhibition of PDSS2 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

PDSS2 (C-12): sc-515137 is recommended as a control antibody for monitoring of PDSS2 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 PDSS2 gene expression knockdown using RT-PCR Primer: PDSS2 (h)-PR: sc-76100-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chen, P., et al. 2014. The tumor-suppressing activity of the prenyl diphosphate synthase subunit 2 gene in lung cancer cells. Anticancer Drugs 25: 790-798.
2. Peng, M., et al. 2015. Inhibiting cytosolic translation and autophagy improves health in mitochondrial disease. Hum. Mol. Genet. 24: 4829-4847.

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.