



pyridoxal phosphatase siRNA (m): sc-61426

BACKGROUND

Pyridoxal phosphatase (PLPase) is an autoantigen comprising 296 amino acids. PLPase catalyzes the dephosphorylation of pyridoxal 5'-phosphate (the active form of vitamin B6) and exhibits a high level of expression various parts of the central nervous system, especially the brain. PLPase activity is catalyzed by haloacid dehalogenase (HAD), and it is the cofactor of both aromatic L-amino acid decarboxylase and glutamate decarboxylase. Autoantibodies against pyridoxal phosphatase show a strong correlation with certain types of cancer.

REFERENCES

- Choi, S.Y., et al. 1987. Brain pyridoxine-5-phosphate oxidase. Modulation of its by reaction with pyridoxal 5-phosphate and analogs. *J. Biol. Chem.* 262: 12013-12017.
- Jang, Y.M., et al. 2003. Human pyridoxal phosphatase. Molecular cloning, functional expression, and tissue distribution. *J. Biol. Chem.* 278: 50040-50046.
- Boe, A.S., et al. 2004. Pyridoxal phosphatase is a novel cancer autoantigen in the central nervous system. *Br. J. Cancer* 91: 1508-1514.
- Kawai, S., et al. 2004. Cytosolic NADP phosphatases I and II from *Arthrobacter sp.* strain KM: implication in regulation of NAD⁺/NADP⁺ balance. *J. Basic Microbiol.* 44: 185-196.

CHROMOSOMAL LOCATION

Genetic locus: Pdxp (mouse) mapping to 15 E1.

PRODUCT

pyridoxal phosphatase 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see pyridoxal phosphatase shRNA Plasmid (m): sc-61426-SH and pyridoxal phosphatase shRNA (m) Lentiviral Particles: sc-61426-V as alternate gene silencing products.

For independent verification of pyridoxal phosphatase (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-61426A, sc-61426B and sc-61426C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

pyridoxal phosphatase siRNA (m) is recommended for the inhibition of pyridoxal phosphatase 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 μ M in 66 μ l. 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

pyridoxal phosphatase (F-2): sc-271379 is recommended as a control antibody for monitoring of pyridoxal phosphatase 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-IgG λ BP-HRP: sc-516132 or m-IgG λ 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-IgG λ BP-FITC: sc-516185 or m-IgG λ 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 pyridoxal phosphatase gene expression knockdown using RT-PCR Primer: pyridoxal phosphatase (m)-PR: sc-61426-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Le Dour, C., et al. 2022. Actin-microtubule cytoskeletal interplay mediated by MRTF-A/SRF signaling promotes dilated cardiomyopathy caused by LMNA mutations. *Nat. Commun.* 13: 7886.

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.