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PNP shRNA (h) Lentiviral Particles: sc-45991-V

BACKGROUND

Mitochondrial polyribonucleotide nucleotidyltransferase, also designated 3'-5' RNA exonuclease OLD35, PNPase or PNPT1, is an evolutionarily conserved protein in which the mouse protein shares 90% identity with the human version. PNPase participates in mRNA degradation and hydrolyzes single-stranded ribonucleotides in the 3' to 5' direction. PNPase forms homotrimers and is upregulated in response to interferon- β induction. The N-terminus of PNPase contains a putative mitochondrial targeting sequence; mutation analysis confirms that N-terminal sequences of PNPase target the protein to the mitochondria. Endogenous PNPase also co-localizes with a mitochondrial marker protein in HeLa cells.

REFERENCES

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- Bollenbach, T.J., Lange, H., Gutierrez, R., Erhardt, M., Stern, D.B. and Gagliardi, D. 2005. RNR1, a 3'-5' exoribonuclease belonging to the RNR superfamily, catalyzes 3' maturation of chloroplast ribosomal RNAs in *Arabidopsis thaliana*. *Nucleic Acids Res.* 33: 2751-2763.
- Oussenko, I.A., Abe, T., Ujii, H., Muto, A. and Bechhofer, D.H. 2005. Participation of 3'-to-5' exoribonucleases in the turnover of *Bacillus subtilis* mRNA. *J. Bacteriol.* 187: 2758-2767.
- Sarkar, D., Park, E.S., Emdad, L., Randolph, A., Valerie, K. and Fisher, P.B. 2005. Defining the domains of human polynucleotide phosphorylase (hPNPaseOLD-35) mediating cellular senescence. *Mol. Cell. Biol.* 25: 7333-7343.

CHROMOSOMAL LOCATION

Genetic locus: NP (human) mapping to 14q11.2.

PRODUCT

PNP shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see PNP siRNA (h): sc-45991 and PNP shRNA Plasmid (h): sc-45991-SH as alternate gene silencing products.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

APPLICATIONS

PNP shRNA (h) Lentiviral Particles is recommended for the inhibition of PNP expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

PNP (F-10): sc-365551 is recommended as a control antibody for monitoring of PNP 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker[™] compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PNP gene expression knockdown using RT-PCR Primer: PNP (h)-PR: sc-45991-PR (20 μ l). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

STORAGE

Store lentiviral particles at -80 $^{\circ}$ C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4 $^{\circ}$ C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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