

# PNPase (H-124): sc-99006

## 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- $\beta$  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

- Bermúdez-Cruz, R.M., et al. 2005. Conserved domains in polynucleotide phosphorylase among eubacteria. *Biochimie* 87: 737-745.
- Bollenbach, T.J., et al. 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: 2751-2563.
- Oussenko, I.A., et al. 2005. Participation of 3'-to-5' exoribonucleases in the turnover of *Bacillus subtilis* mRNA. *J. Bacteriol.* 187: 2758-2767.
- Sarkar, D., et al. 2005. Defining the domains of human polynucleotide phosphorylase (hPNPaseOLD-35) mediating cellular senescence. *Mol. Cell. Biol.* 25: 7333-7343.
- Gewartowski, K., et al. 2006. Upregulation of human PNPase mRNA by  $\beta$ -interferon has no effect on protein level in melanoma cell lines. *Acta Biochim. Pol.* 53: 179-188.
- Chen, H.W., et al. 2007. Human polynucleotide phosphorylase: location matters. *Trends Cell Biol.* 17: 600-608.
- Portnoy, V., et al. 2008. Analysis of the human polynucleotide phosphorylase (PNPase) reveals differences in RNA binding and response to phosphate compared to its bacterial and chloroplast counterparts. *RNA* 14: 297-309.

## CHROMOSOMAL LOCATION

Genetic locus: PNPT1 (human) mapping to 2p16.1; Pnpt1 (mouse) mapping to 11 A3.3.

## SOURCE

PNPase (H-124) is a rabbit polyclonal antibody raised against amino acids 656-779 mapping near the C-terminus of PNPase of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

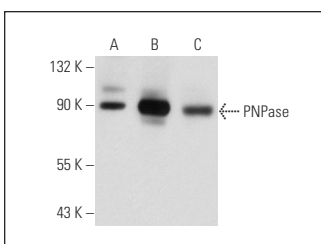
PNPase (H-124) is recommended for detection of PNPase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PNPase siRNA (h): sc-61371, PNPase siRNA (m): sc-61372, PNPase shRNA Plasmid (h): sc-61371-SH, PNPase shRNA Plasmid (m): sc-61372-SH, PNPase shRNA (h) Lentiviral Particles: sc-61371-V and PNPase shRNA (m) Lentiviral Particles: sc-61372-V.

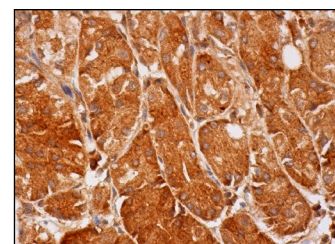
Molecular Weight of PNPase: 88 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PNPase (h): 293T Lysate: sc-116464 or SK-MEL-28 cell lysate: sc-2236.

## DATA



PNPase (H-124): sc-99006. Western blot analysis of PNPase expression in non-transfected 293T: sc-117752 (A), human PNPase transfected 293T: sc-116464 (B) and SK-MEL-28 (C) whole cell lysates.



PNPase (H-124): sc-99006. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Koltai, E., et al. 2012. Age-associated declines in mitochondrial biogenesis and protein quality control factors are minimized by exercise training. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 303: R127-R134.
- Hart, N., et al. 2013. Resveratrol enhances exercise training responses in rats selectively bred for high running performance. *Food Chem. Toxicol.* 61: 53-59.
- Hart, N., et al. 2014. Resveratrol attenuates exercise-induced adaptive responses in rats selectively bred for low running performance. *Dose Response* 12: 57-71.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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Try **PNPase (D-1): sc-271479** or **PNPase (A-4): sc-271690**, our highly recommended monoclonal alternatives to PNPase (H-124).