

PNPase (D-1): sc-271479

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

- 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' exonuclease 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' exonucleases 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. Up-regulation of human PNPase mRNA by β -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.

CHROMOSOMAL LOCATION

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

SOURCE

PNPase (D-1) is a mouse monoclonal antibody raised against amino acids 656-779 mapping near the C-terminus of PNPase of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PNPase (D-1) is available conjugated to agarose (sc-271479 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271479 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271479 PE), fluorescein (sc-271479 FITC), Alexa Fluor[®] 488 (sc-271479 AF488), Alexa Fluor[®] 546 (sc-271479 AF546), Alexa Fluor[®] 594 (sc-271479 AF594) or Alexa Fluor[®] 647 (sc-271479 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271479 AF680) or Alexa Fluor[®] 790 (sc-271479 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

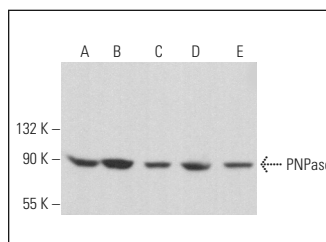
PNPase (D-1) is recommended for detection of PNPase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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.

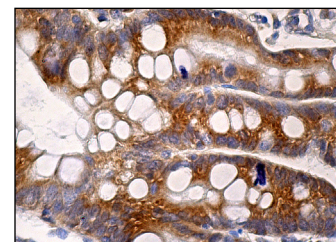
Molecular Weight of PNPase: 88 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or Jurkat whole cell lysate: sc-2204.

DATA



PNPase (D-1): sc-271479. Western blot analysis of PNPase expression in HeLa (A), Hep G2 (B), Jurkat (C), 3T3-L1 (D) and IB4 (E) whole cell lysates.



PNPase (D-1): sc-271479. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Noh, J.H., et al. 2019. Loss of RNA-binding protein GRSF1 activates mTOR to elicit a proinflammatory transcriptional program. *Nucleic Acids Res.* 47: 2472-2486.
- Kerr, C.H., et al. 2020. Dynamic rewiring of the human interactome by interferon signaling. *Genome Biol.* 21: 140.

STORAGE

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

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.