

# PNK (B-4): sc-166188

## BACKGROUND

Bifunctional polynucleotide phosphatase/kinase (PNK), also referred to as polynucleotide kinase-3'-phosphatase, is a member of the DNA 3' phosphatase family. PNK is the protein expressed by the gene PNKP and contains a 3'-phosphatase domain with similarity to L-2-haloacid dehalogenases and a reported ATP binding site. PNK is a nuclear protein that is involved in DNA repair following damage caused by radiation or oxidation. The protein catalyzes the phosphorylation of DNA at the hydroxy termini but can also dephosphorylate its 3'-phosphate termini. The highest levels of expression of PNK occur in testis, pancreas, spleen, kidney and heart.

## REFERENCES

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3. Fanta, M., et al. 2001. Production, characterization, and epitope mapping of monoclonal antibodies against human polydeoxyribonucleotide kinase. *Hybridoma* 20: 237-242.
4. Meijer, M., et al. 2002. PNK1, a DNA kinase/phosphatase required for normal response to DNA damage by  $\gamma$ -radiation or camptothecin in *Schizosaccharomyces pombe*. *J. Biol. Chem.* 277: 4050-4055.
5. Plo, I., et al. 2003. Association of XRCC1 and tyrosyl DNA phosphodiesterase (Tdp1) for the repair of topoisomerase I-mediated DNA lesions. *DNA* 2: 1087-1100.
6. Zhu, H., et al. 2004. Characterization of polynucleotide kinase/phosphatase enzymes from *Mycobacteriophages*  $\omega$  and Cjw1 and vibriophage KVP40. *J. Biol. Chem.* 279: 26358-26369.
7. Martins, A., et al. 2005. An end-healing enzyme from *Clostridium thermocellum* with 5' kinase, 2',3'-phosphatase, and adenyllyltransferase activities. *RNA* 11: 1271-1280.
8. Bernstein, N.K., et al. 2005. The molecular architecture of the mammalian DNA repair enzyme, polynucleotide kinase. *Mol. Cell* 17: 657-670.
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## CHROMOSOMAL LOCATION

Genetic locus: PNKP (human) mapping to 19q13.33.

## SOURCE

PNK (B-4) is a mouse monoclonal antibody raised against amino acids 222-521 mapping at the C-terminus of PNK of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166188 X, 200  $\mu$ g/0.1 ml.

## APPLICATIONS

PNK (B-4) is recommended for detection of PNK of human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PNK siRNA (h): sc-44826, PNK shRNA Plasmid (h): sc-44826-SH and PNK shRNA (h) Lentiviral Particles: sc-44826-V.

PNK (B-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

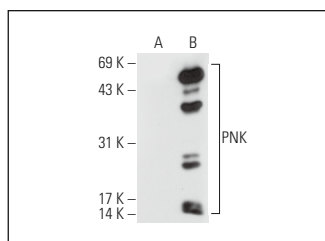
Molecular Weight of PNK: 60 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat nuclear extract: sc-2132 or PNK (h): 293T Lysate: sc-115119.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



PNK (B-4): sc-166188. Western blot analysis of PNK expression in non-transfected: sc-117752 (A) and human PNK transfected: sc-115119 (B) 293T whole cell lysates.

## STORAGE

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