

PNK (h): 293T Lysate: sc-115119

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 translation product of 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 de-phosphorylate its 3'-phosphate termini. The highest levels of expression of PNK occur in testis, pancreas, spleen, kidney and heart.

REFERENCES

1. Jilani, A., et al. 1999. Molecular cloning of the human gene, PNKP, encoding a polynucleotide kinase 3'-phosphatase and evidence for its role in repair of DNA strand breaks caused by oxidative damage. *J. Biol. Chem.* 274: 24176-24186.
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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 γ -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 Repair* 2: 1087-1100.
6. Zhu, H. et al. 2004. Characterization of polynucleotide kinase/phosphatase enzymes from Mycobacteriophages ω 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 adenyltransferase 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.
9. Keppetipola, N. et al. 2006. Mechanism of the phosphatase component of *Clostridium thermocellum* polynucleotide kinase-phosphatase. *RNA* 12: 73-82.

CHROMOSOMAL LOCATION

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

PRODUCT

PNK (h): 293T Lysate represents a lysate of human PNK transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

PNK (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PNK antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

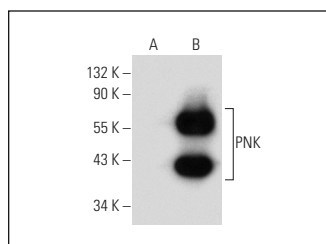
PNK (A-4): sc-271525 is recommended as a positive control antibody for Western Blot analysis of enhanced human PNK expression in PNK transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

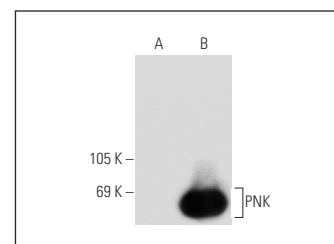
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



PNK (A-4): sc-271525. Western blot analysis of PNK expression in non-transfected: sc-117752 (A) and human PNK transfected: sc-115119 (B) 293T whole cell lysates.



PNK (F-3): sc-271505. 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 -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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