

PNK (B-5): sc-365724

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.

CHROMOSOMAL LOCATION

Genetic locus: PNKP (human) mapping to 19q13.33; Pnkp (mouse) mapping to 7 B4.

SOURCE

PNK (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 379-411 within an internal region of PNK of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365724 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PNK (B-5) is recommended for detection of PNK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

PNK (B-5) is also recommended for detection of PNK in additional species, including canine and porcine.

Suitable for use as control antibody for PNK siRNA (h): sc-44826, PNK siRNA (m): sc-45370, PNK shRNA Plasmid (h): sc-44826-SH, PNK shRNA Plasmid (m): sc-45370-SH, PNK shRNA (h) Lentiviral Particles: sc-44826-V and PNK shRNA (m) Lentiviral Particles: sc-45370-V.

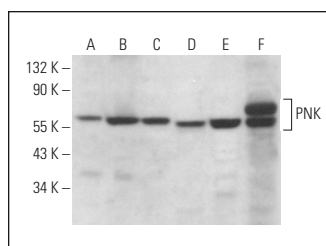
Molecular Weight of PNK: 60 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, RAW 264.7 whole cell lysate: sc-2211 or A549 cell lysate: sc-2413.

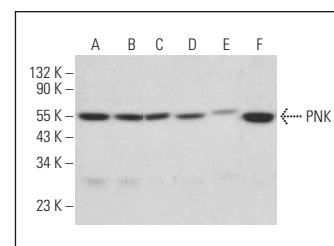
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-5): sc-365724. Western blot analysis of PNK expression in HeLa (A) and Jurkat (B) nuclear extracts, A549 (C), PC-12 (D) and RAW 264.7 (E) whole cell lysates and rat testis tissue extract (F).



PNK (B-5): sc-365724. Western blot analysis of PNK expression in WEHI-231 (A), F9 (B), Daudi (C), A-10 (D) and DU 145 (E) whole cell lysates and MOLT-4 nuclear extract (F).

SELECT PRODUCT CITATIONS

- Chalasan, S.L., et al. 2018. Persistent 3'-phosphate termini and increased cytotoxicity of radiomimetic DNA double-strand breaks in cells lacking polynucleotide kinase/phosphatase despite presence of an alternative 3'-phosphatase. *DNA Repair* 68: 12-24.
- Shin, W., et al. 2021. PNKP is required for maintaining the integrity of progenitor cell populations in adult mice. *Life Sci. Alliance* 4: e202000790.
- El Gendy, M.A.M., et al. 2022. Hydrazonoyl chlorides possess promising antitumor properties. *Life Sci.* 295: 120380.
- Jiang, B., et al. 2022. Mutations of the DNA repair gene PNKP in a patient with microcephaly, seizures, and developmental delay (MCSZ) presenting with a high-grade brain tumor. *Sci. Rep.* 12: 5386.

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.