

# PNUTS (F-8): sc-271681



The Power to Question

## BACKGROUND

Eukaryotic protein phosphorylation and dephosphorylation on serine and threonine residues regulates numerous cell functions, including division, homeostasis and apoptosis. A group of proteins that play a major role in this process are the serine/threonine protein phosphatases. Protein phosphatase (PP) holoenzyme is a trimeric complex that contains a regulatory subunit, a variable subunit and a catalytic subunit. Families of PP catalytic subunits include PP1, PP2A, PP2B, PP2C, PPX and PP5. Regulatory subunits include nuclear inhibitor of PP1 (NIPP1), PP1 nuclear targeting subunit (PNUTS), PP2A-A, PP2A-B, PP2A-B56, PP2A-C, PP2B-B and PR48. PNUTS, also designated CAT53 or FB19, is encoded by the gene PPP1R10. PNUTS acts as an inhibitor for the phosphatase activity of PP1 $\alpha$  and PP1 $\gamma$ . It is a nuclear protein primarily detected in nucleoplasmic bodies and within nucleoli. PNUTS expression levels are highest in brain, heart, lung, placenta, liver, kidney, pancreas and skeletal muscle.

## CHROMOSOMAL LOCATION

Genetic locus: PPP1R10 (human) mapping to 6p21.33; Ppp1r10 (mouse) mapping to 17 B1.

## SOURCE

PNUTS (F-8) is a mouse monoclonal antibody raised against amino acids 63-156 mapping near the N-terminus of PNUTS of human origin.

## 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.

PNUTS (F-8) is available conjugated to agarose (sc-271681 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271681 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271681 PE), fluorescein (sc-271681 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271681 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271681 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271681 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271681 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271681 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271681 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

PNUTS (F-8) is recommended for detection of PNUTS of mouse, rat and 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 PNUTS siRNA (h): sc-61377, PNUTS siRNA (m): sc-61378, PNUTS shRNA Plasmid (h): sc-61377-SH, PNUTS shRNA Plasmid (m): sc-61378-SH, PNUTS shRNA (h) Lentiviral Particles: sc-61377-V and PNUTS shRNA (m) Lentiviral Particles: sc-61378-V.

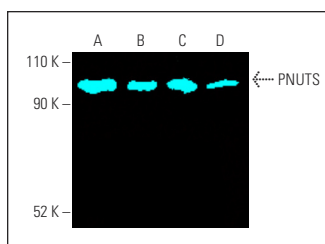
Molecular Weight of PNUTS: 110 kDa.

Positive Controls: H4 cell lysate: sc-2408, Jurkat whole cell lysate: sc-2204 or SK-N-MC cell lysate: sc-2237.

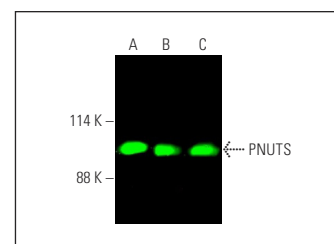
## RECOMMENDED SUPPORT REAGENTS

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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



PNUTS (F-8): sc-271681. Fluorescent western blot analysis of PNUTS expression in H4 (A), SK-N-MC (B), HeLa (C) and Jurkat (D) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$  BP-CFL 647: sc-533664.



PNUTS (F-8): sc-271681. Near-Infrared western blot analysis of PNUTS expression in H4 (A), Jurkat (B) and SK-N-MC (C) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$  BP-CFL 680: sc-516180.

## SELECT PRODUCT CITATIONS

- Yu, D., et al. 2019. PNUTS mediates ionizing radiation-induced CNE-2 nasopharyngeal carcinoma cell migration, invasion, and epithelial-mesenchymal transition via the PI3K/Akt signaling pathway. *Onco Targets Ther.* 12: 1205-1214.
- White, C.R., et al. 2019. Activation of human macrophage sodium channels regulates RNA processing to increase expression of the DNA repair protein PPP1R10. *Immunobiology* 224: 80-93.
- Cossa, G., et al. 2020. Localized inhibition of protein phosphatase 1 by NUA1 promotes spliceosome activity and reveals a MYC-sensitive feedback control of transcription. *Mol. Cell* 77: 1322-1339.e11.

## 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](http://www.scbt.com) for detailed protocols and support products.

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