SANTA CRUZ BIOTECHNOLOGY, INC.

PNUTS (N-18): sc-47340

SANTA CRUZ BIOTECHNOLOGY

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 PP1α and PP1γ. It is a nuclear protein primarily detected in nucleoplasmic bodies and within nucleoli. PNUTS expression levels are highest in brain, heart, lung, placent, liver, kidney, pancreas and skeletal muscle.

REFERENCES

1. Kreivi, J.P., et al. 1997. Purification and characterisation of p99, a nuclear modulator of protein phosphatase 1 activity. FEBS Lett. 420: 57-62.
2. Totaro, A., et al. 1998. Cloning of a new gene (FB19) within HLA class I region. Biochem. Biophys. Res. Commun. 250: 555-557.
3. Kim, Y.M., et al. 2003. PNUTS, a protein phosphatase 1 (PP1) nuclear targeting subunit. Characterization of its PP1- and RNA-binding domains and regulation by phosphorylation. J. Biol. Chem. 278: 13819-13828.
4. Lesage, B., et al. 2004. Interactor-mediated nuclear translocation and retention of protein phosphatase-1. J. Biol. Chem. 279: 55978-55984.
5. Tran, H.T., et al. 2004. Proteomic characterization of protein phosphatase complexes of the mammalian nucleus. Mol. Cell Proteomics 3: 257-265.
6. Landsverk, H.B., et al. 2005. PNUTS enhances *in vitro* chromosome decondensation in a PP1-dependent manner. Biochem. J. 390: 709-717.

CHROMOSOMAL LOCATION

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

SOURCE

PNUTS (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PNUTS of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-47340 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PNUTS (N-18) is recommended for detection of PNUTS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

PNUTS (N-18) is also recommended for detection of PNUTS in additional species, including canine, bovine and porcine.

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.

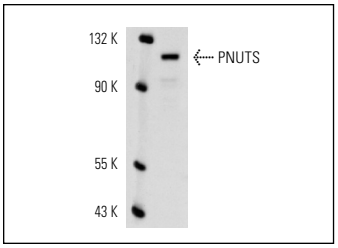
Molecular Weight of PNUTS: 110 kDa.

Positive Controls: SK-N-MC nuclear extract: sc-2154.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PNUTS (N-18): sc-47340. Western blot analysis of PNUTS expression in SK-N-MC nuclear extract.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **PNUTS (F-8): sc-271681** or **PNUTS (47): sc-136044**, our highly recommended monoclonal alternatives to PNUTS (N-18).