

PNUTS (47): sc-136044

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) holo-enzyme 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 α and PP1 γ . 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.

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 (47) is a mouse monoclonal antibody raised against amino acids 605-716 of PNUTS of rat origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

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. Not for resale.

APPLICATIONS

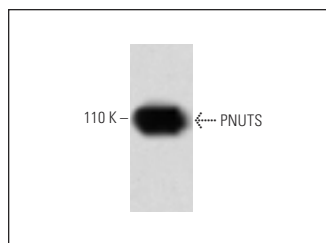
PNUTS (47) is recommended for detection of PNUTS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

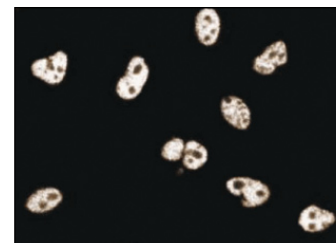
Molecular Weight of PNUTS: 110 kDa.

Positive Controls: rat brain extract: sc-239 or SK-N-MC nuclear extract: sc-2154.

DATA



PNUTS (47): sc-136044. Western blot analysis of PNUTS expression in rat brain tissue extract.



PNUTS (47): sc-136044. Immunofluorescence staining of human endothelial cells showing nuclear localization.

PROTOCOLS

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