

PGs5 (N-12): sc-103117

BACKGROUND

Polyglutamylation, polyglycylation and tyrosination are posttranslational modifications that Tubulin undergoes in order to perform at maximal function. Polyglutamylation is evolutionarily conserved from protists to mammals and is involved in several microtubule functions such as axonemal beating, stability of centrioles, neuronal differentiation and mediating the interaction between Tubulin and microtubule associated proteins. The neuronal Tubulin polyglutamylase is a complex that contains a TTL (Tubulin tyrosine ligase-like) domain through which it catalyzes the ligation of glutamate to tubulins. The TTL domain contains ATP-grasp-like motifs that correspond to the ATP/Mg²⁺ binding site typical of enzymes with ATP-dependent carboxylate-amine/thiol ligase activity. PGs2 (Tubulin polyglutamylase complex subunit 2), also known as C18orf10, is a 300 amino acid cytoplasmic protein that participates in the neuronal Tubulin polyglutamylase complex, along with PGs1, PGs3, PGs4 and PGs5. There are two isoforms of PGs2 that are produced as a result of alternative splicing events.

REFERENCES

1. Boucher, D., et al. 1994. Polyglutamyl-ation of Tubulin as a progressive regulator of *in vitro* interactions between the microtubule-associated protein Tau and Tubulin. *Biochemistry* 33: 12471-12477.
2. Regnard, C., et al. 1996. Microtubules: functional polymorphisms of Tubulin and associated proteins (structural and motor MAP's). *C. R. Seances Soc. Biol. Fil.* 190: 255-268.
3. Bonnet, C., et al. 2001. Differential binding regulation of microtubule-associated proteins MAP1A, MAP1B, and MAP2 by Tubulin polyglutamyl-ation. *J. Biol. Chem.* 276: 12839-12848.
4. Regnard, C., et al. 2003. Characterisation of PGs1, a subunit of a protein complex co-purifying with Tubulin polyglutamylase. *J. Cell Sci.* 116: 4181-4190.
5. Yamada, S., et al. 2004. Expression profiling and differential screening between hepatoblastomas and the corresponding normal livers: identification of high expression of the PLK1 oncogene as a poor-prognostic indicator of hepatoblastomas. *Oncogene* 23: 5901-5911.
6. Petroziello, J., et al. 2004. Suppression subtractive hybridization and expression profiling identifies a unique set of genes overexpressed in non-small-cell lung cancer. *Oncogene* 23: 7734-7745.

CHROMOSOMAL LOCATION

Genetic locus: NICN1 (human) mapping to 3p21.31; Nicn1 (mouse) mapping to 9 F2.

SOURCE

PGs5 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PGs5 of human origin.

STORAGE

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

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-103117 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PGs5 (N-12) is recommended for detection of PGs5 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); non cross-reactive with family member PGs2.

PGs5 (N-12) is also recommended for detection of PGs5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PGs5 siRNA (h): sc-78116, PGs5 siRNA (m): sc-152197, PGs5 shRNA Plasmid (h): sc-78116-SH, PGs5 shRNA Plasmid (m): sc-152197-SH, PGs5 shRNA (h) Lentiviral Particles: sc-78116-V and PGs5 shRNA (m) Lentiviral Particles: sc-152197-V.

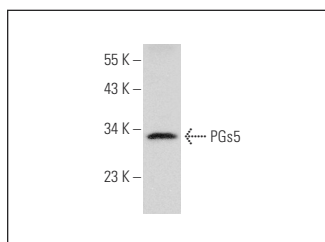
Molecular Weight of PGs5: 24 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138.

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



PGs5 (N-12): sc-103117. Western blot analysis of PGs5 expression in NIH/3T3 nuclear extract.

RESEARCH USE

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