SANTA CRUZ BIOTECHNOLOGY, INC.

PCNA (PC5): sc-53408

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The proliferating cell nuclear antigen (PCNA), a protein synthesized in early G_1 and S phases of the cell cycle, functions in cell cycle progression, DNA replication and DNA repair. In early S phase, PCNA exhibits granular distribution and is absent from the nucleoli; however, in late S phase, it relocates to the nucleoli. PCNA exists in two basic forms: one involved in ongoing DNA replication, which localizes specifically to the nucleus, and a second, soluble form, not implicated in constant synthesis. Interestingly, the latter form degrades in the presence of organic solvents, rendering it undetectable by histological methods in tissues using organic fixatives, and thus also providing a method of visualizing only the synthesizing form.

REFERENCES

1. Bravo, R., et al. 1987. Existence of two populations of cyclin/proliferating cell nuclear antigen during the cell cycle: association with DNA replication sites. J. Cell Biol. 105: 1549-1554.
2. Waseem, N., et al. 1990. Monoclonal antibody analysis of the proliferating cell nuclear antigen (PCNA). Structural conservation and the detection of a nucleolar form. J. Cell Sci. 96: 121-129.
3. Woods, A.L., et al. 1991. The assessment of proliferating cell nuclear antigen (PCNA) immunostaining in primary gastrointestinal lymphomas and its relationship to histological grade, S+G_2+M phase fraction (flow cytometric analysis) and prognosis. Histopathology 19: 21-27.
4. Baida, A., et al. 2003. Germline mutations at microsatellite loci in homozygous and heterozygous mutants for mismatch repair and PCNA genes in *Drosophila*. DNA Repair 2: 827-833.
5. Thacker, S.A., et al. 2003. The contribution of E2F-regulated transcription to *Drosophila* PCNA gene function. Curr. Biol. 13: 53-58.
6. Hong, R., et al. 2003. The human proliferating cell nuclear antigen regulates transcriptional coactivator p300 activity and promotes transcriptional repression. J. Biol. Chem. 278: 44505-44513.
7. Kwon, E., et al. 2004. Armadillo/pangolin regulates PCNA and DREF promoter activities. Biochim. Biophys. Acta 1679: 256-262.

CHROMOSOMAL LOCATION

Genetic locus: PCNA (human) mapping to 20p13; Pcna (mouse) mapping to 2 F2.

SOURCE

PCNA (PC5) is a mouse monoclonal antibody raised against protein A-PCNA fusion obtained from pC2T of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PCNA (PC5) is recommended for detection of PCNA of mouse, rat, human and yeast 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PCNA siRNA (h): sc-29440, PCNA siRNA (m): sc-29441, PCNA shRNA Plasmid (h): sc-29440-SH, PCNA shRNA Plasmid (m): sc-29441-SH, PCNA shRNA (h) Lentiviral Particles: sc-29440-V and PCNA shRNA (m) Lentiviral Particles: sc-29441-V.

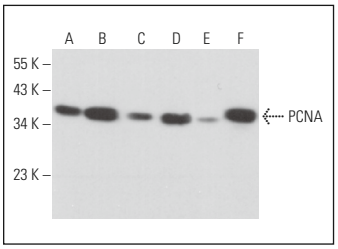
Molecular Weight of PCNA: 36 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, Sol8 cell lysate: sc-2249 or Neuro-2A whole cell lysate: sc-364185.

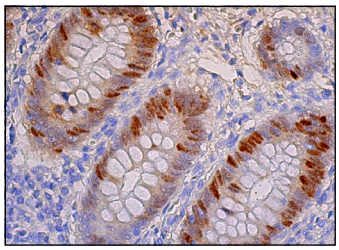
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PCNA (PC5): sc-53408. Western blot analysis of PCNA expression in MOLT-4 (**A**), SJRH30 (**B**), Sol8 (**C**), Neuro-2A (**D**) and A-10 (**E**) whole cell lysates and K-562 nuclear extract (**F**).



PCNA (PC5): sc-53408. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear staining of subset of glandular cells.

RESEARCH USE

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

CONJUGATES

See **PCNA (PC10): sc-56** for PCNA antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.