

**AM10035FC-N****Monoclonal Antibody to PCNA FITC**

<b>Alternate names:</b>	Cyclin, Proliferating Cell Nuclear Antigen
<b>Quantity:</b>	0.1 mg
<b>Concentration:</b>	0.1 mg/ml
<b>Background:</b>	<p>Proliferating Cell Nuclear Antigen, commonly known as PCNA, is a protein that acts as a processivity factor for DNA polymerase delta in eukaryotic cells. The protein encoded by this gene is found in the nucleus and is a cofactor of DNA polymerase delta. The encoded protein acts as a homotrimer and helps increase the processivity of leading strand synthesis during DNA replication. In response to DNA damage, this protein is ubiquitinated and is involved in the RAD6-dependent DNA repair pathway. Two transcript variants encoding the same protein have been found for this gene. Pseudogenes of this gene have been described on chromosome 4 and on the X chromosome. PCNA was originally identified as an antigen that is expressed in the nuclei of cells during the DNA synthesis phase of the cell cycle. It is increased during late G1 phase and S phase of the cell cycle and declines during G2 and M phases.</p>
<b>Uniprot ID:</b>	<a href="#">P12004</a>
<b>NCBI:</b>	<a href="#">9606</a>
<b>GenelD:</b>	<a href="#">5111</a>
<b>Host / Isotype:</b>	Mouse / IgG2a
<b>Clone:</b>	PC10
<b>Immunogen:</b>	Rat PCNA made in the protein A expression vector pR1T2T.
<b>Format:</b>	<b>State:</b> Liquid purified IgG fraction <b>Purification:</b> Affinity Chromatography on Protein G <b>Buffer System:</b> PBS <b>Preservatives:</b> 0.09% Sodium Azide <b>Stabilizers:</b> 1% BSA <b>Label:</b> FITC – Fluorescein Isothiocyanate Isomer 1
<b>Applications:</b>	<b>Flow Cytometry:</b> Use 10 µl of Neat-1/10 of diluted antibody to label 10 <sup>6</sup> cells in 100 µl. Cell permeabilisation is required for this application. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

**Specificity:**

This antibody recognises the proliferating cell nuclear antigen (PCNA), a nuclear protein vital for cellular DNA synthesis.

PCNA is highly conserved between mammalian species and other vertebrates. Mouse anti Human PCNA, clone *PC10* has been used for the detection of PCNA in a number of species including Rat (Elsässer et al. 1994), Mouse (Park et al. 2008), Chicken (Franz-Odendaal 2008) and Abalone (Harris et al. 2006).

**Species:** Human, Insects, Vertebrates, Rat, Ferret, Chicken, Rabbit, Xenopus, Rhesus Monkey, Hamster, Atlantic Salmon, Mouse, Horse, Sheep, Dog, Cat, Cynomolgus monkey.

Other species not tested.

**Storage:**

Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.

This product is photosensitive and should be protected from light.

Avoid repeated freezing and thawing.

Shelf life: one year from despatch.

**General Readings:**

1. Mathews MB, Bernstein RM, Franza BR, Garrels JI. Identity of the proliferating cell nuclear antigen and cyclin. *Nature*. 1984 May 24-30;309(5966):374-6. PubMed PMID: 6145097.
2. Garcia RL, Coltrera MD, Gown AM. Analysis of proliferative grade using anti-PCNA/cyclin monoclonal antibodies in fixed, embedded tissues. Comparison with flow cytometric analysis. *Am J Pathol*. 1989 Apr;134(4):733-9. PubMed PMID: 2565087.
3. Landberg G, Tan EM, Roos G. Flow cytometric multiparameter analysis of proliferating cell nuclear antigen/cyclin and Ki-67 antigen: a new view of the cell cycle. *Exp Cell Res*. 1990 Mar;187(1):111-8. PubMed PMID: 1967582.
4. Wilson, G.D. et al. (1992) Flow cytometric characterisation of proliferating cell nuclear antigen using monoclonal antibody PC10. *Eur. J. Cancer* 28A: 2010-2017.
5. Elsässer HP, Biederbick A, Kern HF. Growth of rat pancreatic acinar cells quantitated with a monoclonal antibody against the proliferating cell nuclear antigen. *Cell Tissue Res*. 1994 Jun;276(3):603-9. PubMed PMID: 7914831.
6. Prosperi E, Stivala LA, Sala E, Scovassi AI, Bianchi L. Proliferating cell nuclear antigen complex formation induced by ultraviolet irradiation in human quiescent fibroblasts as detected by immunostaining and flow cytometry. *Exp Cell Res*. 1993 Apr;205(2):320-5. PubMed PMID: 8097724.
7. Harris, L. et al. (2006) Characterisation of cell types in abalone (*Haliotis* spp.) tissues using immunohistochemical techniques *Aquaculture* 261: 1413-21
8. Buggins AG, Milojkovic D, Arno MJ, Lea NC, Mufti GJ, Thomas NS, et al. Microenvironment produced by acute myeloid leukemia cells prevents T cell activation and proliferation by inhibition of NF-kappaB, c-Myc, and pRb pathways. *J Immunol*. 2001 Nov 15;167(10):6021-30. PubMed PMID: 11698483.
9. Kapitonova MY, Kuznetsov SL, Khlebnikov VV, Zagrebina VL, Morozova ZCh, Degtyar YV. Immunohistochemical characteristics of the hypophysis in normal conditions and chronic stress. *Neurosci Behav Physiol*. 2010 Jan;40(1):97-102. doi: 10.1007/s11055-009-9217-4. Epub 2009 Dec 11. PubMed PMID: 20012496.

10. Franz-Odenaal TA. Toward understanding the development of scleral ossicles in the chicken, *Gallus gallus*. *Dev Dyn*. 2008 Nov;237(11):3240-51. doi: 10.1002/dvdy.21754. PubMed PMID: 18855894.
11. Hashimoto Y, Ray Chaudhuri A, Lopes M, Costanzo V. Rad51 protects nascent DNA from Mre11-dependent degradation and promotes continuous DNA synthesis. *Nat Struct Mol Biol*. 2010 Nov;17(11):1305-11. doi: 10.1038/nsmb.1927. Epub 2010 Oct 10. PubMed PMID: 20935632.
12. Jenkins H, Hölman T, Lyon C, Lane B, Stick R, Hutchison C. Nuclei that lack a lamina accumulate karyophilic proteins and assemble a nuclear matrix. *J Cell Sci*. 1993 Sep;106 ( Pt 1):275-85. PubMed PMID: 7903671.
13. Park JH, Seok SH, Baek MW, Lee HY, Kim DJ, Park JH. Gastric lesions and immune responses caused by long-term infection with *Helicobacter heilmannii* in C57BL/6 mice. *J Comp Pathol*. 2008 Nov;139(4):208-17. doi: 10.1016/j.jcpa.2008.04.005. Epub 2008 Sep 26. PubMed PMID: 18823636.
14. Izhak L, Wildbaum G, Jung S, Stein A, Shaked Y, Karin N. Dissecting the autocrine and paracrine roles of the CCR2-CCL2 axis in tumor survival and angiogenesis. *PLoS One*. 2012;7(1):e28305. doi: 10.1371/journal.pone.0028305. Epub 2012 Jan 18. PubMed PMID: 22279523.

**Pictures:**

Staining of KM-H2 cells (permeabilised) with MOUSE ANTI PCNA:FITC (SM1421F)

