

**PCNA Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AW5680**

**Specification**

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**PCNA Antibody - Product Information**

Application	<b>WB, IHC-P, FC,E</b>
Primary Accession	<a href="#">P12004</a>
Other Accession	<a href="#">P61258</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Calculated MW	<b>H=29;M=29;R=29 KDa</b>
Isotype	<b>IgG1,k</b>
Antigen Source	<b>HUMAN</b>

**PCNA Antibody - Additional Information**

**Gene ID** 5111

**Antigen Region**  
NA

**Other Names**  
Proliferating cell nuclear antigen, PCNA, Cyclin, PCNA

**Dilution**  
WB~~1:5000  
IHC-P~~1:25  
FC~~1:25

**Target/Specificity**  
This PCNA antibody is generated from a mouse immunized with a recombinant protein of human PCNA.

**Storage**  
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**  
PCNA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**PCNA Antibody - Protein Information**

**Name** PCNA

**Function**  
Auxiliary protein of DNA polymerase delta and epsilon, is involved in the control of eukaryotic DNA

replication by increasing the polymerase's processibility during elongation of the leading strand (PubMed:<a href="http://www.uniprot.org/citations/35585232" target="\_blank">35585232</a>). Induces a robust stimulatory effect on the 3'-5' exonuclease and 3'-phosphodiesterase, but not apurinic-aprimidinic (AP) endonuclease, APEX2 activities. Has to be loaded onto DNA in order to be able to stimulate APEX2. Plays a key role in DNA damage response (DDR) by being conveniently positioned at the replication fork to coordinate DNA replication with DNA repair and DNA damage tolerance pathways (PubMed:<a href="http://www.uniprot.org/citations/24939902" target="\_blank">24939902</a>). Acts as a loading platform to recruit DDR proteins that allow completion of DNA replication after DNA damage and promote postreplication repair: Monoubiquitinated PCNA leads to recruitment of translesion (TLS) polymerases, while 'Lys-63'-linked polyubiquitination of PCNA is involved in error-free pathway and employs recombination mechanisms to synthesize across the lesion (PubMed:<a href="http://www.uniprot.org/citations/24695737" target="\_blank">24695737</a>).

### Cellular Location

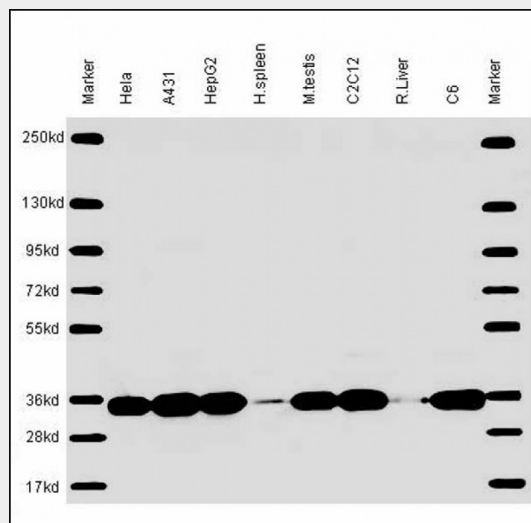
Nucleus Note=Colocalizes with CREBBP, EP300 and POLD1 to sites of DNA damage (PubMed:24939902). Forms nuclear foci representing sites of ongoing DNA replication and vary in morphology and number during S phase (PubMed:15543136). Co-localizes with SMARCA5/SNF2H and BAZ1B/WSTF at replication foci during S phase (PubMed:15543136). Together with APEX2, is redistributed in discrete nuclear foci in presence of oxidative DNA damaging agents.

### PCNA Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

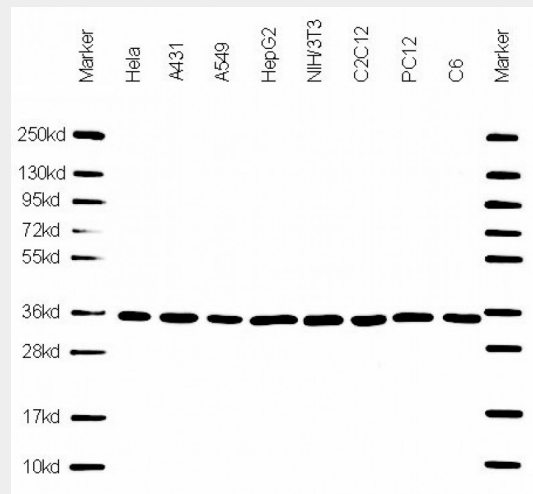
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### PCNA Antibody - Images

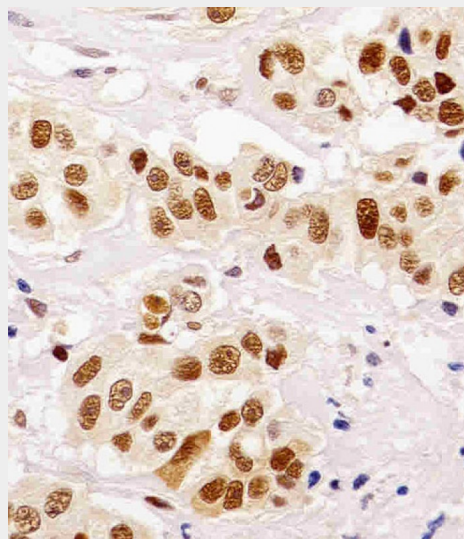


All lanes : Anti-PCNA Antibody at1:3000 dilution Lane 1: HeLa whole cell lysate Lane 2: A431

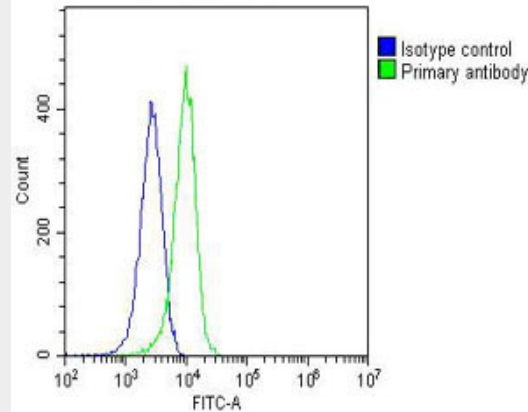
whole cell lysate Lane 3: HepG2 whole cell lysate Lane 4: human spleen lysate Lane 5: mouse testis lysate Lane 6: C2C12 whole cell lysate Lane 7: rat liver lysate Lane 8: C6 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 36 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



All lanes : Anti-PCNA Antibody at 1:5000 dilution Lane 1: HeLa whole cell lysate Lane 2: A431 whole cell lysate Lane 3: A549 whole cell lysate Lane 4: HepG2 whole cell lysate Lane 5: NIH/3T3 whole cell lysate Lane 6: C2C12 whole cell lysate Lane 7: PC-12 whole cell lysate Lane 8: C6 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 36 kDa Blocking/Dilution buffer: 5% NFDm/TBST.



AW5680 staining PCNA in human breast carcinoma tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



Overlay histogram showing HeLa cells stained with AW5680 (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AW5680, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed (OJ192088) at 1/200 dilution for 40 min at 37°C. Isotype control antibody (blue line) was mouse IgG1 (1 µg/1x10<sup>6</sup> cells) used under the same conditions. Acquisition of >10,000 events was performed.

### PCNA Antibody - Background

Auxiliary protein of DNA polymerase delta and is involved in the control of eukaryotic DNA replication by increasing the polymerase's processivity during elongation of the leading strand. Induces a robust stimulatory effect on the 3'-5' exonuclease and 3'-phosphodiesterase, but not apurinic-apyrimidinic (AP) endonuclease, APEX2 activities. Has to be loaded onto DNA in order to be able to stimulate APEX2. Plays a key role in DNA damage response (DDR) by being conveniently positioned at the replication fork to coordinate DNA replication with DNA repair and DNA damage tolerance pathways. Acts as a loading platform to recruit DDR proteins that allow completion of DNA replication after DNA damage and promote postreplication repair: Monoubiquitinated PCNA leads to recruitment of translesion (TLS) polymerases, while 'Lys-63'-linked polyubiquitination of PCNA is involved in error-free pathway and employs recombination mechanisms to synthesize across the lesion.

### PCNA Antibody - References

- Almendral J.M., et al. Proc. Natl. Acad. Sci. U.S.A. 84:1575-1579 (1987).
- Travali S., et al. J. Biol. Chem. 264:7466-7472 (1989).
- Ota T., et al. Nat. Genet. 36:40-45 (2004).
- Deloukas P., et al. Nature 414:865-871 (2001).
- Mural R.J., et al. Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.