

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

Specification

PCNA Antibody - Product Information

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

PCNA Antibody - Additional Information

Gene ID 5111

Antigen Region
NA

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

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

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:35585232). 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 (PubMed:24939902). 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:24695737).

Cellular Location

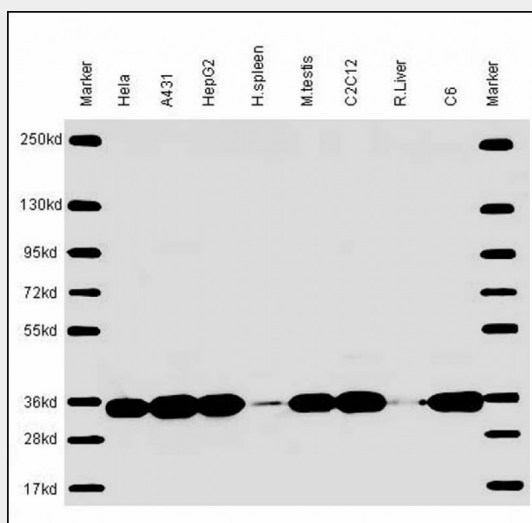
Nucleus. Note=Colocalizes with CREBBP, EP300 and POLD1 to sites of DNA damage (PubMed:24939902). Forms nuclear foci representing sites of ongoing DNA replication and vary in morphology and number during S phase (PubMed:15543136). Co-localizes with SMARCA5/SNF2H and BAZ1B/WSTF at replication foci during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

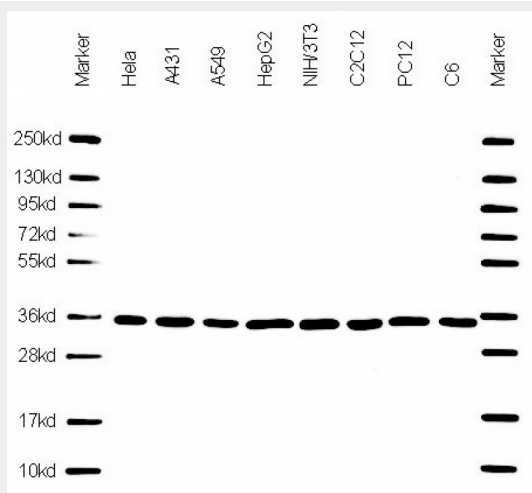
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

PCNA Antibody - Images

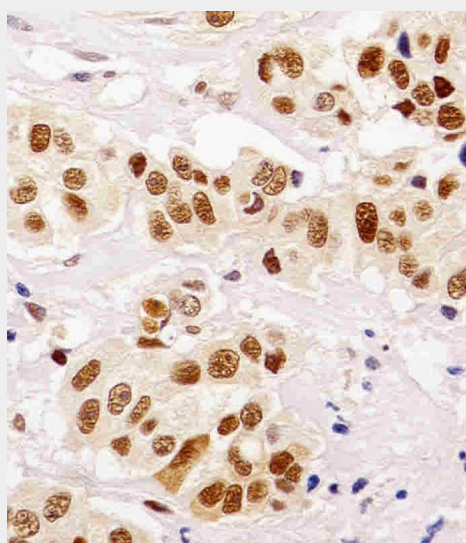


All lanes : Anti-PCNA Antibody at 1:3000 dilution Lane 1: HeLa whole cell lysate Lane 2: A431

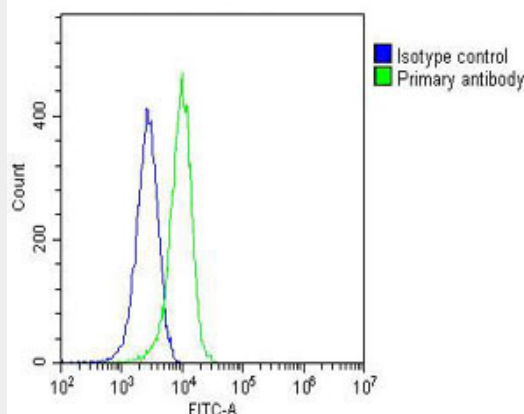
whole cell lysate Lane 3: HepG2 whole cell lysate Lane 4: human spleen lysate Lane 5: mouse testis lysate Lane 6: C2C12 whole cell lysate Lane 7: rat liver lysate Lane 8: C6 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. 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 (1µg/1x10⁶ 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.