abcam

ab220208

Anti-PCNA antibody [PCNA/694]

Lab Essentials

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS, 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human PCNA. Database link P12004
Clone number	PCNA/694
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg for 10^6 Cells
Notes	-

Predicted

Species	Mouse, Rat, Chicken, Cow, Zebrafish, Cynomolgus monkey, Chinese hamster
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

Predicted

Species	Mouse, Rat, Chicken, Cow, Zebrafish, Cynomolgus monkey, Chinese hamster
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	0.25-0.5 µg/mL
Notes	Primary incubation for 30 minutes at room temperature Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat, Chicken, Cow, Zebrafish, Cynomolgus monkey, Chinese hamster
Dilution info	-
Notes	-

Target data

See full target information PCNA

Function	Confers DNA tethering and processivity to DNA polymerases and other proteins (PubMed:24695737, PubMed:24939902, PubMed:35585232). Auxiliary protein of DNA polymerase delta and epsilon, is involved in the control of DNA replication by increasing the polymerases' processivity 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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	PCNA or Proliferating Cell Nuclear Antigen functions as a sliding clamp for DNA polymerases during DNA replication. This important role enables it to coordinate the orderly duplication of the genome by increasing the processivity of DNA polymerase δ. PCNA weighs approximately 29 kDa and forms a homotrimeric ring structure. It is expressed in the nucleus of cells often found abundantly in proliferating cells. Aside from its main name some people also refer to it as PC10.

Biological function summary	This protein serves a core function in cell cycle regulation and DNA repair. PCNA acts as a scaffold for the assembly of numerous proteins involved in DNA processing forming part of the replication fork complex. It interacts with cyclins and cyclin-dependent kinases (CDKs) linking DNA synthesis to cell cycle progression. Furthermore PCNA partners with proteins involved in DNA mismatch repair base excision repair and nucleotide excision repair.
Pathways	PCNA is integral in the DNA replication and repair pathways. It closely associates with the p21 protein which regulates the cell cycle by inhibiting cyclin-CDK complexes upon DNA damage. PCNA also plays a part in the ubiquitin-proteasome pathway where its modification by ubiquitin impacts how cells respond to DNA damage. This modification recruits specific proteins for DNA repair highlighting its central role in maintaining genomic stability.
Associated diseases and disorders	PCNA is linked to cancer and autoimmune diseases. Its overexpression is common in various cancers reflecting its role in cell proliferation and the cell cycle. PCNA antibodies are sometimes found in the serum of patients with systemic lupus erythematosus (SLE) a connection also related to alterations in the p21 protein pathway. The interaction between PCNA and disease-specific proteins emphasizes its importance in both cell proliferation and immune system disorders.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

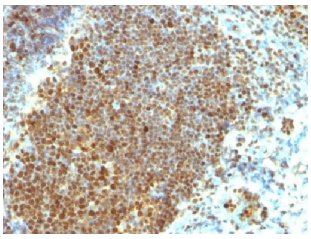
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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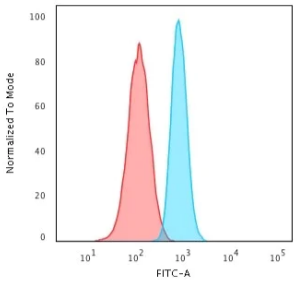
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody [PCNA/694] (ab220208)

PCNA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-PCNA antibody

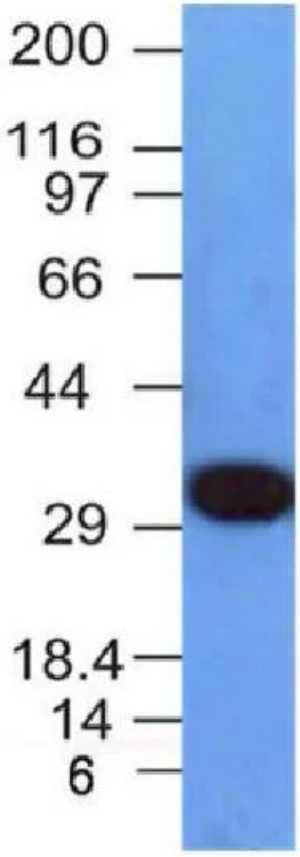
Immunohistochemical analysis of formalin-fixed paraffin-embedded human tonsil tissue labeling PCNA with ab220208 at 1 µg/mL.



Flow Cytometry - Anti-PCNA antibody [PCNA/694] (ab220208)

PCNA Flow Cytometry staining using mouse Anti-PCNA antibody

Flow Cytometry analysis of PFA-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling PCNA with ab220208 at 2 µg/10^6 cells followed by Goat anti-Mouse IgG-CF488 (Blue); Isotype Control (Red).



Western blot - Anti-PCNA antibody [PCNA/694] (ab220208)

All lanes:
Western blot - Anti-PCNA antibody [PCNA/694] (ab220208) at 1 µg/mL

All lanes:
HepG2 cell lysate

Predicted band size: 29 kDa

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