abcam

Product datasheet

Anti-PCNA antibody ab18197

51 Abreviews 371 References 11 Images

Overview

Product name	Anti-PCNA antibody
Description	Rabbit polyclonal to PCNA
Host species	Rabbit
Tested applications	**Suitable for:** WB, ICC/IF, Flow Cyt (Intra), IHC-P
Species reactivity	**Reacts with:** Mouse, Rat, Human, Common marmoset **Predicted to work with:** Sheep, Goat, Cow, Dog, Xenopus laevis, Monkey, Zebrafish
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituent: PBS Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help.
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab18197 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★☆ (10)	Use a concentration of 1 µg/ml. Detects a band of approximately 29 kDa (predicted molecular weight: 29 kDa).
ICC/IF	★★★★☆ (13)	Use a concentration of 1 µg/ml.
Flow Cyt (Intra)		Use 0.05µg for 10^6 cells.
IHC-P	★★★★★ (22)	Use at an assay dependent concentration.

Target

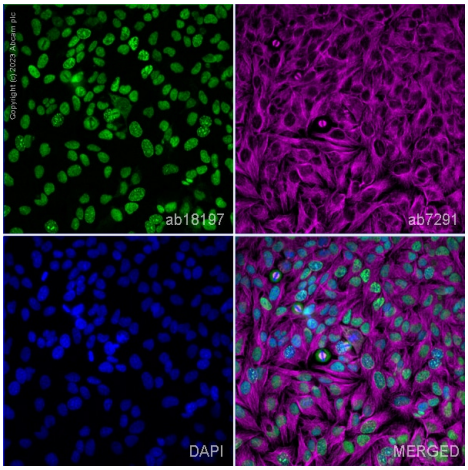
Function This protein is an auxiliary protein of DNA polymerase delta and is involved in the control of eukaryotic DNA replication by increasing the polymerase's processibility during elongation of the leading strand. Induces a robust stimulatory effect on the 3'-5' exonuclease and 3'-phosphodiesterase, but not apurinic-apyrimidinic (AP) endonuclease, APEX2 activities. Has to be loaded onto DNA in order to be able to stimulate APEX2.

Sequence similarities Belongs to the PCNA family.

Post-translational modifications Upon methyl methanesulfonate-induced DNA damage, mono-ubiquitinated by the UBE2B-RAD18 complex on Lys-164. This induces non-canonical polyubiquitination on Lys-164 through 'Lys-63' linkage of ubiquitin moieties by the E2 complex UBE2N-UBE2V2 and the E3 ligases, HLTF, RNF8 and SHPRH, which is required for DNA repair. 'Lys-63' polyubiquitination prevents genomic instability on DNA damage. Monoubiquitination at Lys-164 also takes place in undamaged proliferating cells, and is mediated by the DCX(DTL) complex, leading to enhance PCNA-dependent translesion DNA synthesis.
Acetylated in response to UV irradiation. Acetylation disrupts interaction with NUDT15 and promotes degradation.

Cellular localization Nucleus. Forms nuclear foci representing sites of ongoing DNA replication and vary in morphology and number during S phase. Together with APEX2, is redistributed in discrete nuclear foci in presence of oxidative DNA damaging agents.

Images

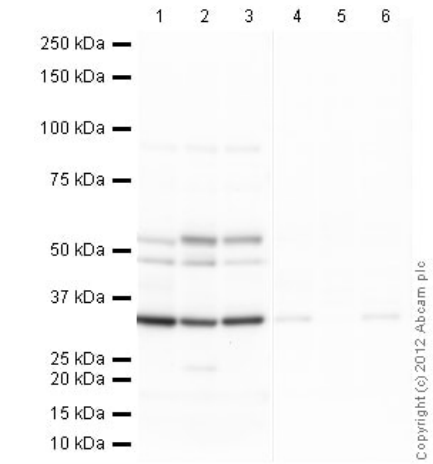


Immunocytochemistry/ Immunofluorescence - Anti-PCNA antibody (ab18197)

ab18197 staining PCNA in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab18197 at 0.1µg/ml and **ab7291**, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. Cells were then incubated with **ab150081**, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and **ab150120**, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 594), pre-adsorbed at 1/1000 dilution (shown in pseudocolour magenta). Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 4% paraformaldehyde (10 min).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Western blot - Anti-PCNA antibody (ab18197)

All lanes : Anti-PCNA antibody (ab18197) at 1 µg/ml

Lane 1 : HEK293 (Human embryonic kidney cell line) Whole Cell Lysate
Lane 2 : NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate
Lane 3 : PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate
Lane 4 : HEK293 (Human embryonic kidney cell line) Whole Cell Lysate with Human PCNA peptide (**ab18602**) at 1 µg/ml
Lane 5 : NIH 3T3 (Mouse embryonic fibroblast cell line) Whole Cell Lysate with Human PCNA peptide (**ab18602**) at 1 µg/ml
Lane 6 : PC12 (Rat adrenal pheochromocytoma cell line) Whole Cell Lysate with Human PCNA peptide (**ab18602**) at 1 µg/ml

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) preadsorbed

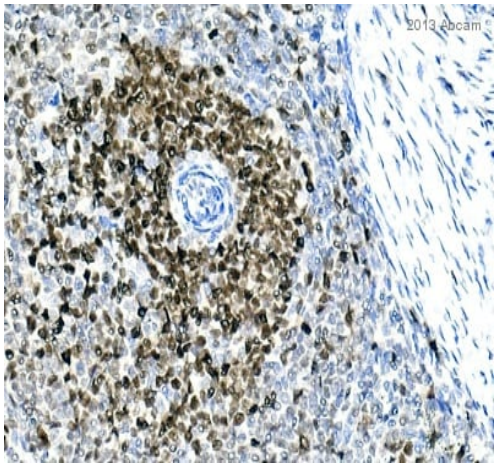
(**ab97080**) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 29 kDa
Observed band size: 29 kDa
Additional bands at: 48 kDa, 52 kDa. We are unsure as to the identity of these extra bands.

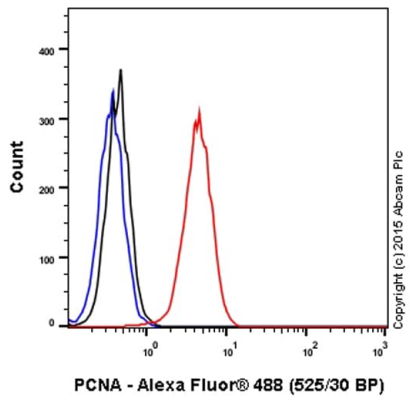
Exposure time: 1 minute



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, Kings College London, U.K.

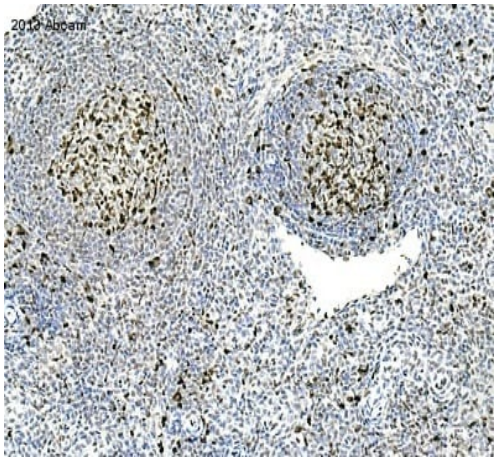
ab18197 staining PCNA in tissue sections of the goat spleen by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/4000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Flow Cytometry (Intracellular) - Anti-PCNA antibody (ab18197)

Overlay histogram showing HeLa cells stained with ab18197 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween 20 for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab18197, 0.05µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (**ab150081**) at 1/4000 dilution for 30 min at 22ºC. Isotype control antibody (black line) was rabbit IgG (polyclonal) (**ab171870**, 0.05µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control.

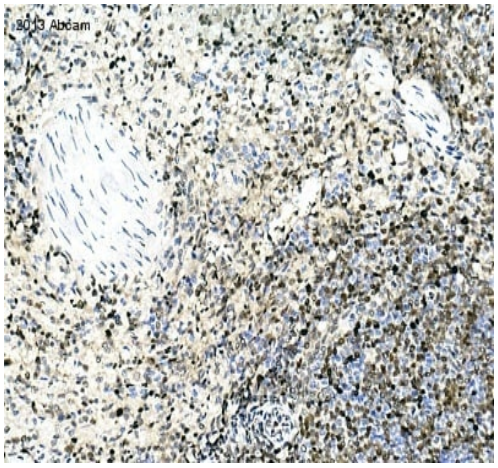
Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, Kings College London, U.K.

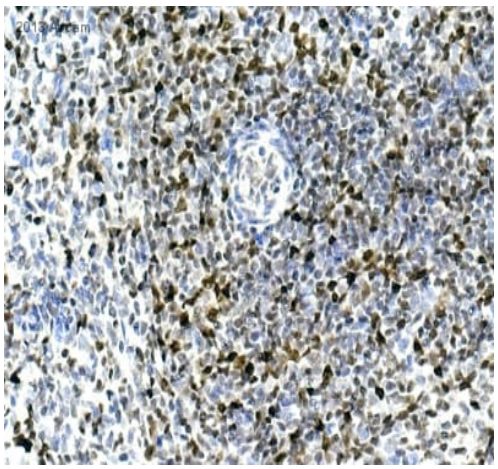
ab18197 staining PCNA in tissue sections of the marmoset spleen by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/6000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, King College London, U.K.

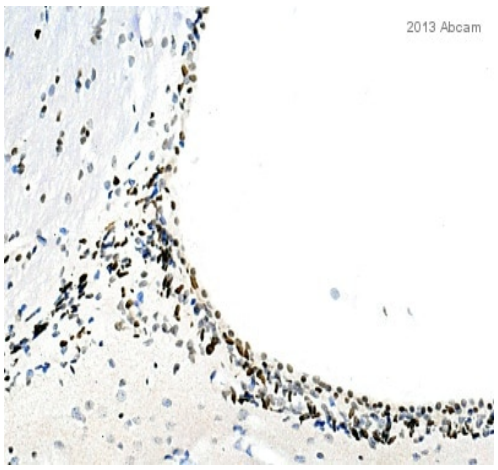
ab18197 staining PCNA in tissue sections of the cow spleen by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/4000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, King College London, U.K.

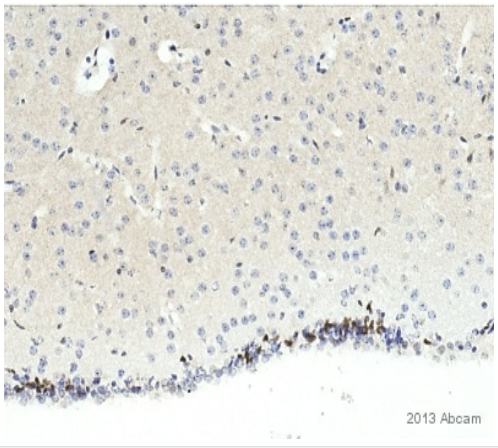
ab18197 staining PCNA in tissue sections of the sheep spleen by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/6000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, Kings College London, U.K.

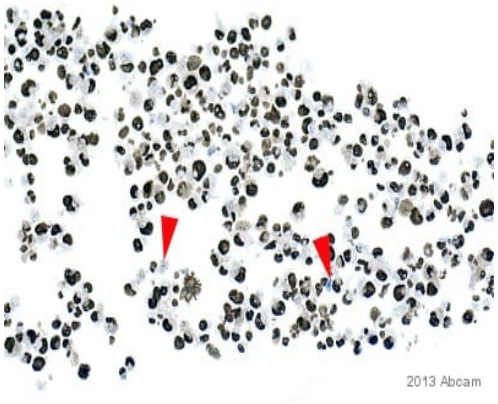
ab18197 staining PCNA in tissue sections of the rat brain by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/10000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image courtesy of Carl Hobbs, Kings College London, U.K.

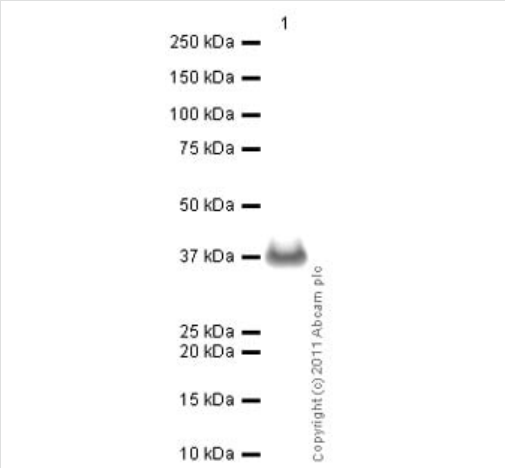
ab18197 staining PCNA in tissue sections of the mouse brain by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/6000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PCNA antibody (ab18197)

Image Courtesy of Carl Hobbs, Kings College London, U.K.

ab18197 staining PCNA in monkey COS cell pellet by Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections). Tissue was fixed with formaldehyde and a heat mediated antigen retrieval step was performed. Samples were then blocked with 1% B.S.A. for 10 minutes at 21ºC followed by incubation with the primary antibody for 2 hours at 1/4000. A biotin-conjugated goat anti-rabbit polyclonal was used as secondary antibody at a 1/250 dilution.



Western blot - Anti-PCNA antibody (ab18197)

Anti-PCNA antibody (ab18197) at 1 µg/ml + Recombinant Human PCNA protein (**ab85651**) at 0.01 µg

Secondary

Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (**ab97080**) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 29 kDa

Exposure time: 10 seconds

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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