

Rabbit PCNA Polyclonal Antibody | anti-PCNA antibody

PCNA Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA320880	Rabbit	Human, Mouse, Rat	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

PCNA; Polyclonal Antibody; PCNA Antibody; ATLD2; cb16; Cyclin; DNA polymerase delta auxiliary protein; etID36690.10; fa28e03; fb36g03; HGCN8729; MGC8367; Mutagen-sensitive 209 protein; OTTHUMP00000030189; OTTHUMP00000030190; Pcn/cyclin; PCNA_HUMAN; PCNAR; Polymerase delta accessory protein; Proliferating cell nuclear antigen; wu:fa28e03; wu:fb36g03; anti-PCNA antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	PCNA antibody detects endogenous levels of total PCNA
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	261
Applicable Applications for anti-PCNA antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human PCNA
Subcellular Location	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.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IF (Immunofluorescence)

AAA320880 staining K-562 cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



WB (Western Blot)

Western blot analysis on HepG2 cell lysate using PCNA Antibody, The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA320880 at 1/100 staining Human breast cancer tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

Related Product Information for anti-PCNA antibody

Description: PCNA 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. Belongs to the PCNA family. Homotrimer. Forms a complex with activator 1 heteropentamer in the presence of ATP. **Function:** 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. 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.

Subunit Structure: Homotrimer (PubMed:24939902). Interacts with p300/EP300; the interaction occurs on chromatin in UV-irradiated damaged cells (PubMed:24939902). Interacts with CREBBP (via transactivation domain and C-terminus); the interaction occurs on chromatin in UV-irradiated damaged cells (PubMed:24939902). Directly interacts with POLD1, POLD3 and POLD4 subunits of the DNA polymerase delta complex, POLD3 being the major interacting partner; the interaction with POLD3 is inhibited by CDKN1A/p21(CIP1) (PubMed:11595739, PubMed:16510448, PubMed:22148433, PubMed:24939902). Forms a complex with activator 1 heteropentamer in the presence of ATP. Interacts with EXO1, POLH, POLK, DNMT1, ERCC5, FEN1, CDC6 and POLDIP2 (PubMed:9305916, PubMed:9302295, PubMed:9566895, PubMed:11784855, PubMed:12522211, PubMed:15225546, PubMed:15149598, PubMed:24911150, PubMed:15616578). Interacts with APEX2; this interaction is triggered by reactive oxygen species and increased by misincorporation of uracil in nuclear DNA (PubMed:11376153, PubMed:19443450). Forms a ternary complex with DNTTIP2 and core histone (PubMed:12786946). Interacts with KCTD10 and PPP1R15A (By similarity). Directly interacts with BAZ1B (PubMed:15543136). Interacts with HLTF and SHPRH (PubMed:17130289, PubMed:18316726, PubMed:18719106). Interacts with NUDT15; this interaction is disrupted in response to UV irradiation and acetylation (PubMed:19419956). Interacts with CDKN1A/p21(CIP1) and CDT1; interacts via their PIP-box which also recruits the DCX(DTL) complex. The interaction with CDKN1A inhibits POLD3 binding (PubMed:11595739, PubMed:16949367, PubMed:18794347, PubMed:18703516). Interacts with DDX11 (PubMed:18499658). Interacts with EGFR; positively regulates PCNA (PubMed:17115032). Interacts with PARBP (PubMed:22153967). Interacts (when ubiquitinated) with SPRTN; leading to enhance RAD18-mediated PCNA ubiquitination (PubMed:22681887). Interacts (when polyubiquitinated) with ZRANB3 (PubMed:22704558, PubMed:22705370, PubMed:22759634). Interacts with SMARCA1 (PubMed:21549307). Interacts with CDKN1C (PubMed:22634751). Interacts with PCNA (via PIP-box) (PubMed:21628590, PubMed:23000965). Interacts with RTEL1 (via PIP-box); the interaction is direct and essential for the suppression of telomere fragility (PubMed:24115439). Interacts with FAM111A (via PIP-box); the interaction is direct and required for PCNA loading on chromatin binding (PubMed:24561620). Interacts with LIG1 (PubMed:24911150). Interacts with SETMAR (PubMed:20457750). Interacts with ANKRD17 (PubMed:23711367). Interacts with FBXO18/FB1 (via PIP-box); the interaction recruits the DCX(DTL) complex and promotes ubiquitination and degradation of FBXO18/FB1 (PubMed:23677613). Interacts with POLN (PubMed:19995904). Interacts with SDE2 (via PIP-box); the interaction is direct and prevents ultraviolet light induced monoubiquitination (PubMed:27906959). Component of the replisome complex composed of at least DONSON, MCM2, MCM7, PCNA and TICRR; interaction at least with PCNA occurs during DNA replication (PubMed:28191891).

Post-translational Modifications: Phosphorylated. Phosphorylation at Tyr-211 by EGFR stabilizes chromatin-associated PCNA. Acetylated by CREBBP and p300/EP300; preferentially acetylated by CREBBP on Lys-80, Lys-13 and Lys-14 and on Lys-77 by p300/EP300 upon loading on chromatin in response to UV irradiation (PubMed:24939902, PubMed:19419956). Lysine acetylation disrupts association with chromatin, hence promoting PCNA ubiquitination and proteasomal degradation in response to UV damage in a CREBBP- and EP300-dependent manner (PubMed:24939902). Acetylation disrupts interaction with NUDT15 and promotes degradation (PubMed:19419956). Ubiquitinated (PubMed:24939902, PubMed:20227374). Following DNA damage, can be either monoubiquitinated to stimulate direct bypass of DNA lesions by specialized DNA polymerases or polyubiquitinated to promote recombination-dependent DNA synthesis across DNA lesions by template switching mechanisms. Following induction of replication stress, monoubiquitinated by the UBE2B-RAD18 complex on Lys-164, leading to recruit translesion (TLS) polymerases, which are able to synthesize across DNA lesions in a potentially error-prone manner. An error-free pathway also exists and requires 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. This error-free pathway, also known as template switching, employs recombination mechanisms to synthesize across the lesion, using as a template the undamaged, newly synthesized strand of the sister chromatid. 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. Sumoylated during S phase. Methylated on glutamate residues by ARMT1/C6orf211.

Similarity: Belongs to the PCNA family.

References	Liu Y, Liu L, Yu T, Lin HC, Chu D, Deng W, Yan MX, Li J, Yao M; Journal: Mol Med Rep. Systematic analysis of mRNA expression profiles in NSCLC cell lines to screen metastasis-related genes.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	4505641
NCBI GeneID	5111
NCBI Accession #	NP_002583.1
NCBI GenBank Nucleotide #	NM_002592.2
UniProt Accession #	P12004; B2R897; D3DW02
Molecular Weight	Observed: 36 kDa Predicted: 29 kDa
NCBI Official Full Name	proliferating cell nuclear antigen
NCBI Official Synonym Full Names	proliferating cell nuclear antigen
NCBI Official Symbol	PCNA
NCBI Official Synonym Symbols	ATLD2
NCBI Protein Information	proliferating cell nuclear antigen
UniProt Protein Name	Proliferating cell nuclear antigen
UniProt Gene Name	PCNA
UniProt Synonym Gene Names	PCNA

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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