

Rabbit Anti-PCNA (Nuclear Loading Control)antibody

SL0754R

Product Name PCNA (Nuclear Loading Control)

Chinese Name 增殖 The nucleus 抗原（核内参）抗体

Alias Cyclin; DNA polymerase delta auxiliary protein; HGNC8729; MGC8367; Mutagen-sensitive 20 Pcn/cyclin; PCNAR; Polymerase delta accessory protein; Proliferating Cell Nuclear Antigen; P

Product Type Internal reference anti

Research Area Tumour Cell biology Chromatin and nuclear signals Cyclin Cell type markers

Immunogen Species Rabbit

Clonality Polyclonal

React Species Human, Mouse, Rat, (predicted: Chicken, Dog, Cow, Rabbit,)

WB=1:1000-10000,IHC-P=1:200-1000,IHC-F=1:200-1000,ICC/IF=1:100-500,IF=1:200-1000,IF (Paraffin sections need antigen repair)

Applications not yet tested in other applications.
optimal dilutions/concentrations should be determined by the end user.

Theoretical molecular weight 29kDa

Cellular localization The nucleus

Form Liquid

Concentration 1mg/ml

immunogen KLH conjugated synthetic peptide derived from mouse PCNA: 185-261/261

Lsotype IgG

Purification affinity purified by Protein A

Buffer Solution 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

Storage Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

Attention This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

PubMed

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Proliferating cell nuclear antigen (PCNA) is a 28kDa nuclear protein associated with the cell cycle, vital for cellular DNA synthesis. Proliferating cell nuclear antigen was originally identified by immunoblotting as a nuclear protein whose appearance correlated with the proliferate state of the cell. PCNA is required for replication of DNA in vitro and has been identified as the auxiliary protein (cofactor) for DNA polymerase delta. The anti-PCNA antibodies react with the nuclei of proliferating cells. PCNA is essential for cellular DNA replication and is also required for the in vitro replication of simian virus 40 (SV40) DNA where it acts to coordinate leading and lagging strand synthesis at the replication fork. The PCNA protein may fulfil several separate functions in the nucleus associated with changes in its antigenic structure.

Function:

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 inhibitory effect on the 3'-5' exonuclease and 3'-phosphodiesterase, but not apurinic-apyrimidinic (AP) endonuclease 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, repair and DNA damage tolerance pathways. Acts as a loading platform to recruit DDR proteins for the completion of DNA replication after DNA damage and promote postreplication repair: Monoubiquitination leads to recruitment of translesion (TLS) polymerases, while 'Lys-63'-linked polyubiquitination is involved in error-free pathway and employs recombination mechanisms to synthesize across the lesion.

Product Detail

Subunit:

Homotrimer. Forms a complex with activator 1 heteropentamer in the presence of ATP. Interacts with POLH, POLK, DNMT1, ERCC5, FEN1, CDC6 and POLDIP2. Interacts with APEX2; this interaction is induced by reactive oxygen species and increased by misincorporation of uracil in nuclear DNA. Forms a complex with DNTTIP2 and core histone. Interacts with KCTD10 and PPP1R15A (By similarity). Interacts with POLD3 and POLD4. Interacts with BAZ1B; the interaction is direct. Interacts with HLTF and SIRT6. Interacts with NUDT15. Interaction is disrupted in response to UV irradiation and acetylation. Interacts with CDKN1A/p21(CIP1) and CDT1; interacts via their PIP-box which also recruits the DCX(DTL) and interacts with DDX11. Interacts with EGFR; positively regulates PCNA. Interacts with PARPBPP. Interacts with SPRTN (ubiquitinated) with SPRTN; leading to enhance RAD18-mediated PCNA ubiquitination. Interacts with ZRANB3 (polyubiquitinated) with ZRANB3. Interacts with SMARCA4. Interacts with CDKN1C. Interacts with KIAA0101/PAF15 (via PIP-box).

Subcellular Location:

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

Post-translational modifications:

Following DNA damage, can be either monoubiquitinated to stimulate direct bypass of DNA lesions by DNA polymerases or polyubiquitinated to promote recombination-dependent DNA synthesis across the lesion via template switching mechanisms. Following induction of replication stress, monoubiquitinated by UBE2B-RAD18 complex on Lys-164, leading to recruit translesion (TLS) polymerases, which are

across DNA lesions in a potentially error-prone manner. An error-free pathway also exists and represses non-canonical polyubiquitination on Lys-164 through 'Lys-63' linkage of ubiquitin moieties by the E2s 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 newly synthesized strand of the sister chromatid. Monoubiquitination at Lys-164 also takes place in non-proliferating cells, and is mediated by the DCX(DTL) complex, leading to enhance PCNA-dependent DNA synthesis. Sumoylated during S phase.

Acetylated in response to UV irradiation. Acetylation disrupts interaction with NUDT15 and promotes ubiquitination. Phosphorylated. Phosphorylation at Tyr-211 by EGFR stabilizes chromatin-associated PCNA.

Similarity:

Belongs to the PCNA family.

SWISS:

P12004

Gene ID:

18538

Database links:

[Entrez Gene: 515499](#) Cow

[Entrez Gene: 5111](#) Human

[Entrez Gene: 18538](#) Mouse

[Entrez Gene: 25737](#) Rat

[Omim: 176740](#) Human

[SwissProt: Q3ZBW4](#) Cow

[SwissProt: P12004](#) Human

[SwissProt: P17918](#) Mouse

[SwissProt: P04961](#) Rat

[Unigene: 147433](#) Human

[Unigene: 728886](#) Human

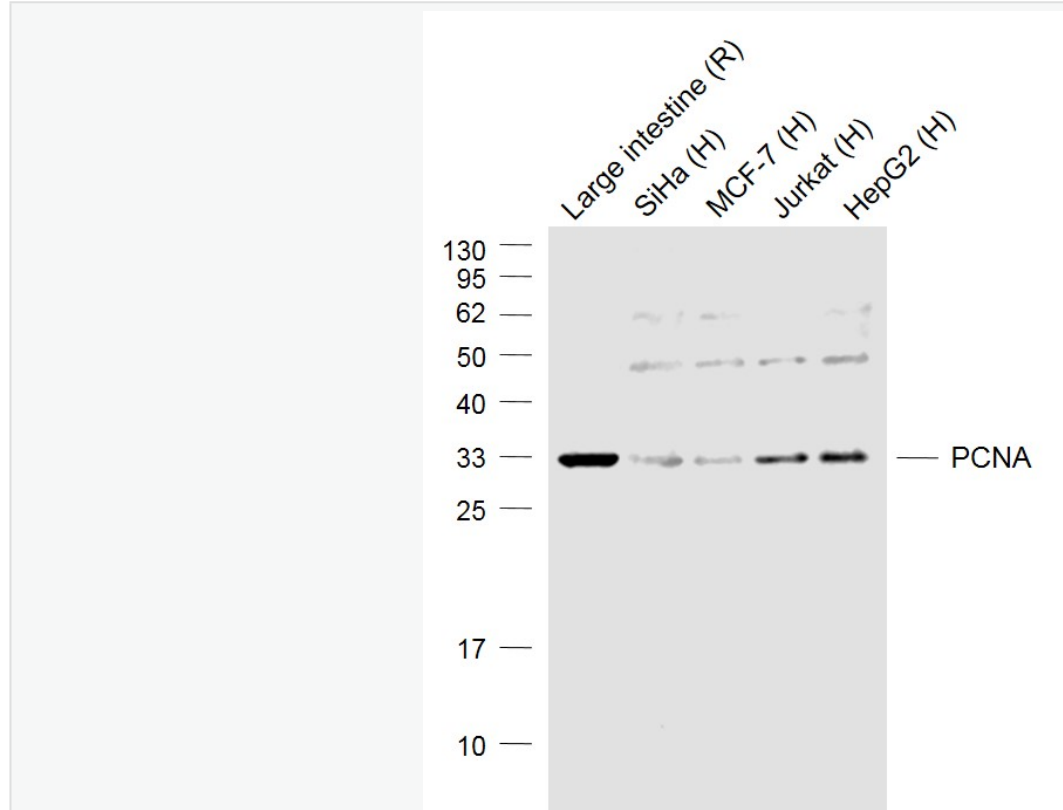
[Unigene: 7141](#) Mouse

[Unigene: 223](#) Rat

PCNA 是一种仅在增殖细胞中合成或表达的核内多肽，其表达和合成与细胞周期有关。主细胞的 S 期、G1 期和 G2 初期。

PCNA 主要作为判断各种恶性 Tumour(包括胃肠道癌肿、乳腺癌、肝癌、膀胱癌等)细胞增殖的一种指标

**Product
Picture**



Sample:

Lane 1: Large intestine (Rat) Lysate at 40 ug

Lane 2: SiHa (Human) Cell Lysate at 30 ug

Lane 3: MCF-7 (Human) Cell Lysate at 30 ug

Lane 4: Jurkat (Human) Cell Lysate at 30 ug

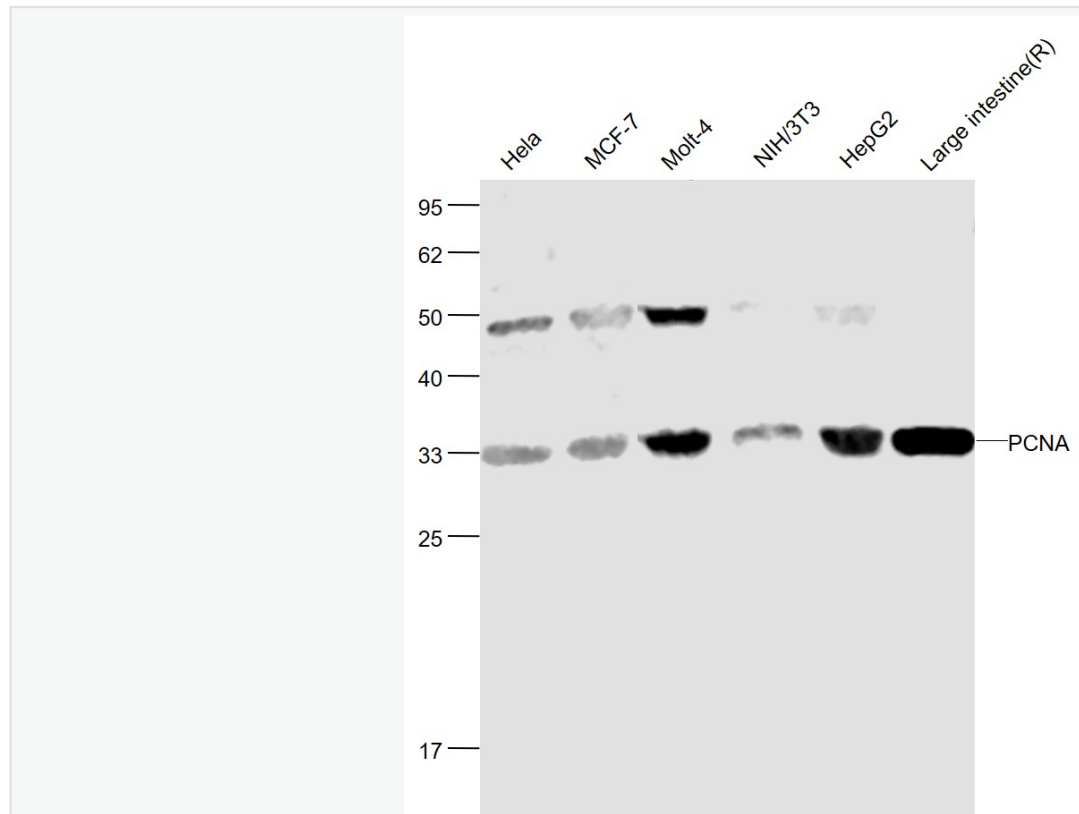
Lane 5: HepG2 (Human) Cell Lysate at 30 ug

Primary: Anti-PCNA (SL0754R) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 36 kD

Observed band size: 33 kD



Sample:

HeLa(Human) Cell Lysate at 30 ug

MCF-7(Human) Cell Lysate at 30 ug

Molt-4(Human) Cell Lysate at 30 ug

NIH/3T3(Mouse) Cell Lysate at 30 ug

HepG2(Human) Cell Lysate at 30 ug

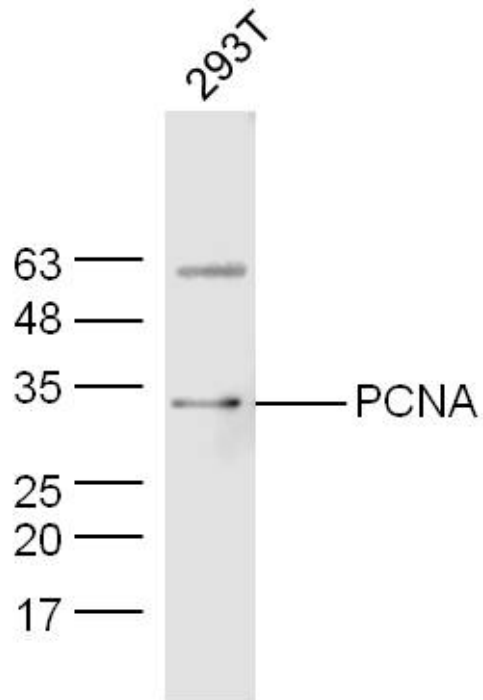
Large intestine (Rat) Lysate at 40 ug

Primary: Anti-PCNA (SL0754R) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 32 kD

Observed band size: 32 kD



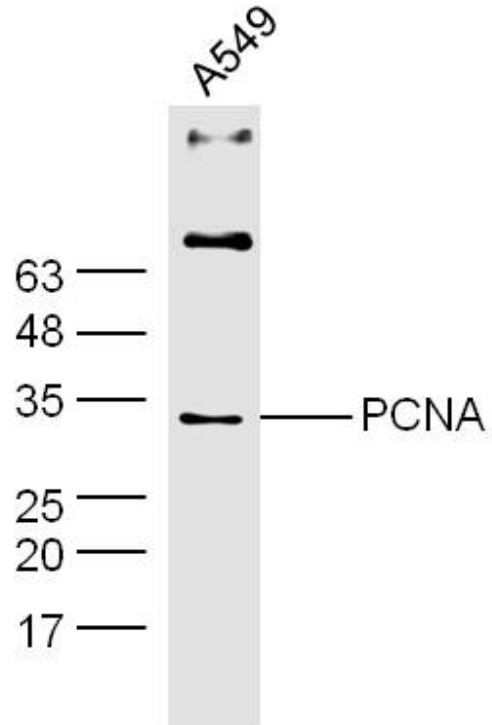
Sample: 293T (human)Cell Lysate at 40 ug

Primary: Anti- PCNA (SL0754R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 29 kD

Observed band size: 32 kD



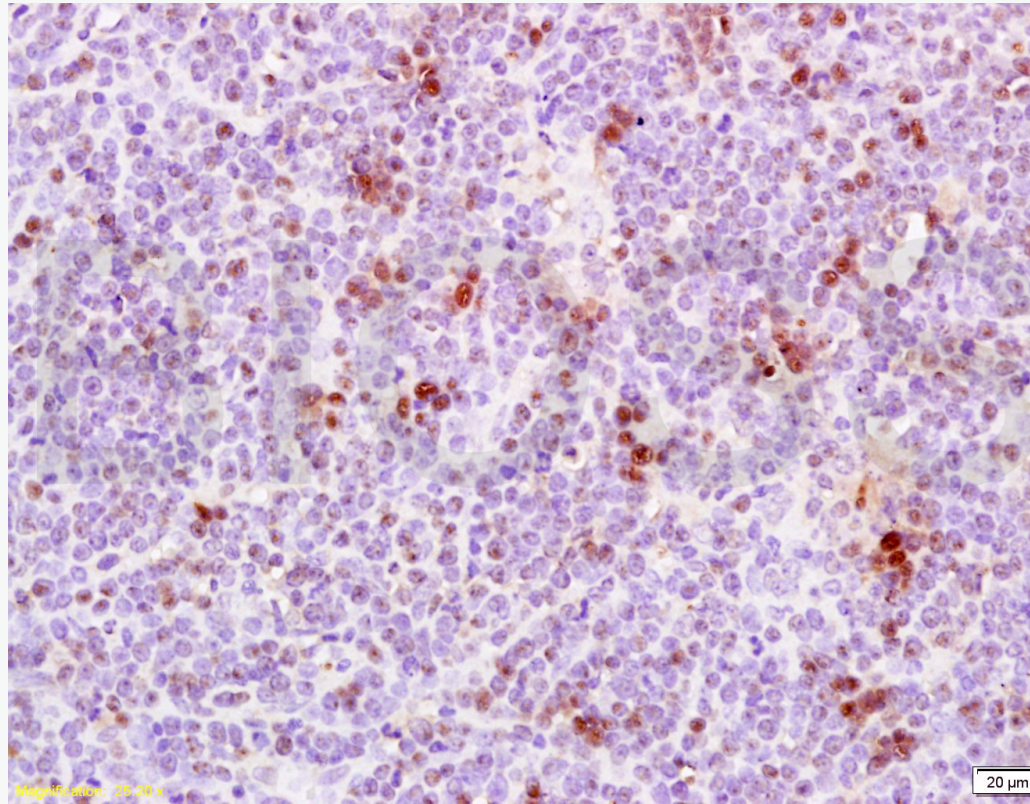
Sample: A549 (human)Cell Lysate at 40 ug

Primary: Anti- PCNA (SL0754R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 29 kD

Observed band size: 32 kD



Tissue/cell: rat thymus tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer (1M, pH 6.0), Boiling bathing for 15min; Block endogenous p

Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 mi

Incubation: Anti-PCNA Polyclonal Antibody, Unconjugated(SL0754R) 1:200, overnight at 4°C

conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining