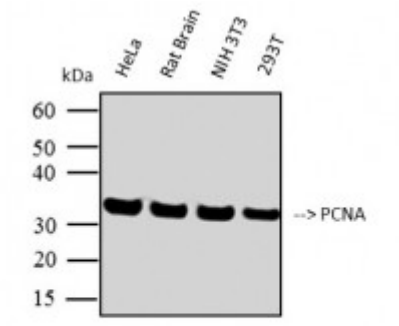
Anti-PCNA antibody



Western Blot (WB) analysis of 1)HeLa cell, 2)Rat Brain tissue, 3)NIH 3T3 cell, 4)293T cell using PCNA antibody(STJ96933), diluted at 1:5000.

Description	PCNA is a protein encoded by the PCNA gene which is approximately 28,7 kDa. PCNA is localised to the nucleus. It is involved in the telomere C-strand synthesis and trans-lesion synthesis. It is found in the nucleus and is a cofactor of DNA polymerase-delta. It acts as a homotrimer and helps increase the processivity of leading strand synthesis during DNA replication. In response to DNA damage, this protein is ubiquitinated and is involved in the RAD6-dependent DNA repair pathway. PCNA is expressed in the liver, lung, bone marrow, muscle and kidney. Mutations in the PCNA gene may result in ataxia-telangiectasia-like disorder. STJ96933 was developed from clone 12D10 and was affinity-purified from mouse ascites by affinity-chromatography using specific immunogen. This antibody detects endogenous PCNA protein.

Model	STJ96933
Host	Mouse
Reactivity	Human, Mouse, Rat
Applications	IHC, WB
Immunogen	Synthetic Peptide
Immunogen Region	N-term
Gene ID	5111
Gene Symbol	PCNA
Dilution range	WB 1:5000IHC 1:200
Specificity	The antibody detects endogenous PCNA protein.
Purification	The antibody was affinity-purified from mouse ascites by affinity-

	chromatography using specific immunogen.
Clone ID	12D10
Note	For Research Use Only (RUO).
Protein Name	Proliferating cell nuclear antigen PCNA Cyclin
Clonality	Monoclonal
Conjugation	Unconjugated
Isotype	IgG1
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:8729OMIM:176740
Alternative Names	Proliferating cell nuclear antigen PCNA Cyclin
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 . 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.
Cellular Localization	Nucleus. Colocalizes with CREBBP, EP300 and POLD1 to sites of DNA damage . 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.
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 . 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 . Acetylation disrupts interaction with NUDT15 and promotes degradation . Ubiquitinated . 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.