10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PCNA Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2260a

Product Information

Application	WB, IHC, FC, E
Primary Accession	P12004
Reactivity	Human, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	7H4F8
Isotype	IgG1
Calculated MW	28769
Description	The protein encoded by this gene is found in the nucleus and is a cofactor of DNA polymerase delta. The encoded protein 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. Two transcript variants encoding the same protein have been found for this gene. Pseudogenes of this gene have been described on chromosome 4 and on the X chromosome.
Immunogen	Purified recombinant fragment of human PCNA (AA: 53-196) expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	5111
Other Names	Proliferating cell nuclear antigen, PCNA, Cyclin, PCNA
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PCNA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	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).

Cellular Location

Nucleus. Note=Colocalizes with CREBBP, EP300 and POLD1 to sites of DNA damage (PubMed:24939902). Forms nuclear foci representing sites of ongoing DNA replication and vary in morphology and number during S phase (PubMed:15543136). Co-localizes with SMARCA5/SNF2H and BAZ1B/WSTF at replication foci during S phase (PubMed:15543136). Together with APEX2, is redistributed in discrete nuclear foci in presence of oxidative DNA damaging agents

References

1.Cancer Res. 2012 Jul 1;72(13):3217-27. 2.PLoS One. 2012;7(1):e29416.

Images

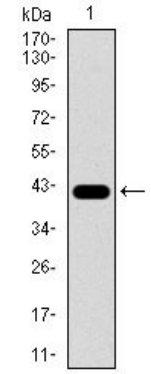


Figure 1: Western blot analysis using PCNA mAb against human PCNA recombinant protein. (Expected MW is 41.2 kDa)

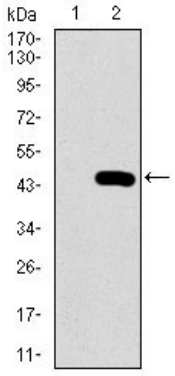


Figure 2: Western blot analysis using PCNA mAb against HEK293 (1) and PCNA (AA: 53-196)-hIgGFc transfected HEK293 (2) cell lysate.

Figure 3: Western blot analysis using PCNA mouse mAb against A431 (1), HEK293 (2), HeLa (3), HepG2 (4), Raji (5), MOLT4 (6), COS7 (7), and MCF-7 (8) cell lysate.

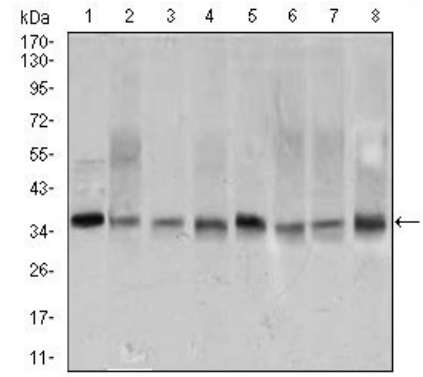


Figure 4: Flow cytometric analysis of MOLT4 cells using PCNA mouse mAb (green) and negative control (purple).

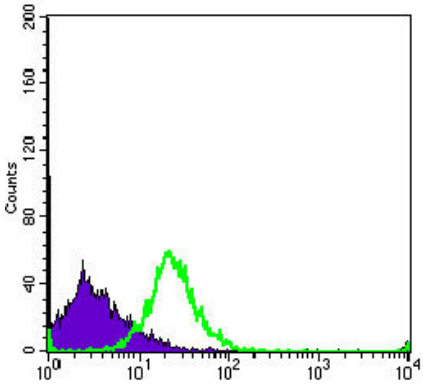


Figure 5: Immunohistochemical analysis of paraffin-embedded cervical cancer tissues using PCNA mouse mAb with DAB staining.

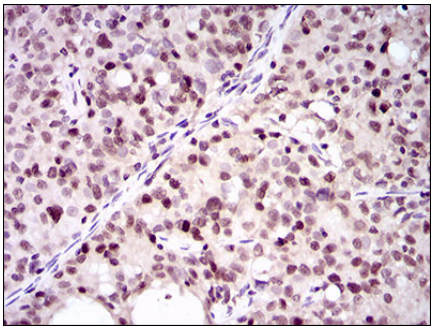
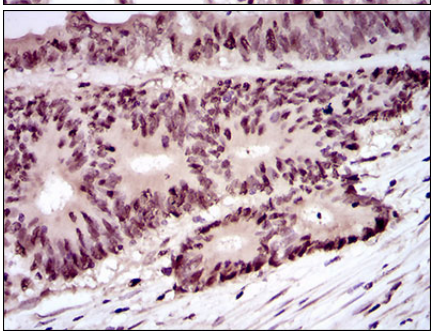


Figure 6: Immunohistochemical analysis of paraffin-embedded colon cancer tissues using PCNA mouse mAb with DAB staining.



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