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PCNA Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52805

Product Information

Application	WB, IHC-P, IHC-F, IF, ICC, IP
Primary Accession	P12004
Reactivity	Rat, Human, Mouse, Hamster, Monkey
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Conjugate	Unconjugated
Immunogen	Purified recombinant human PCNA protein fragments expressed in E.coli.
Purification	Affinity Purified
Calculated MW	28769

Additional Information

Gene ID	5111
Other Names	Cyclin;DNA polymerase delta auxiliary protein;HGCN8729;MGC8367;Mutagen-sensitive 209 protein;OTTHUMP00000030189;OTTHUMP00000030190;PCNA;Pcna/cyclin;PCNA_HUMAN;PCNAR;Polymerase delta accessory protein;Proliferating Cell Nuclear Antigen.
Dilution	WB~~1:1000 IHC-P~~N/A IHC-F~~N/A IF~~1:50~200 ICC~~1:100 IP~~1:500
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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

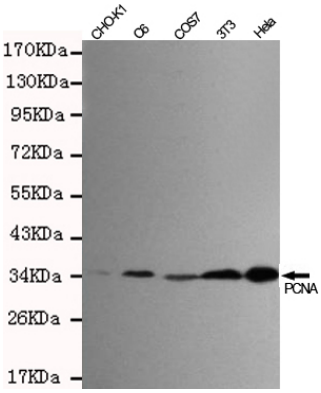
Background

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.

References

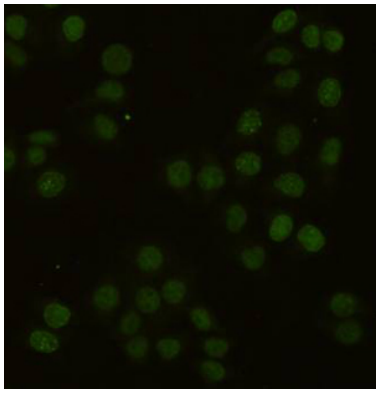
Almendral J.M.,et al.Proc. Natl. Acad. Sci. U.S.A. 84:1575-1579(1987).
Travali S.,et al.J. Biol. Chem. 264:7466-7472(1989).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Deloukas P.,et al.Nature 414:865-871(2001).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images

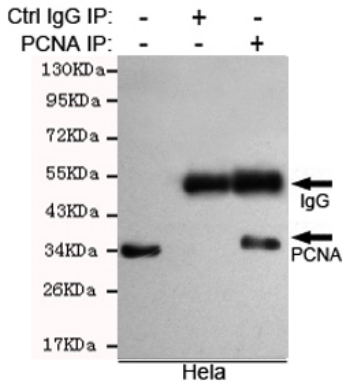


Western blot detection of PCNA in Hela,3T3,COS7,C6 and CHO-K1 cell lysates using PCNA mouse mAb (1:1000 diluted).Predicted band size:36KDa.Observed band size:36KDa.

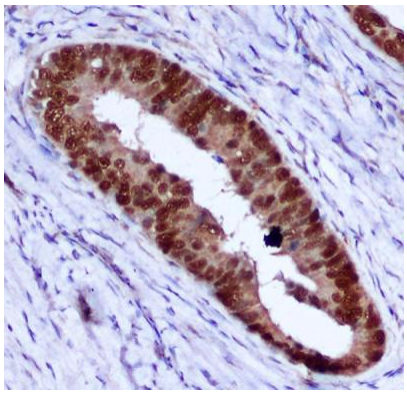
Immunocytochemistry staining of HeLa cells using PCNA mouse mAb (dilution 1:100).Fixed in 100% methanol for



2hr at -20℃.



Immunoprecipitation analysis of Hela cell lysates using PCNA mouse mAb.



Immunohistochemical analysis of paraffin-embedded human colorectal carcinoma with PCNA mouse mAb (2E1-G10-H10,1:400 diluted),showing nuclear localization.A high pressure mediated antigen retrieval step was performed in citrate buffer(pH6.0).