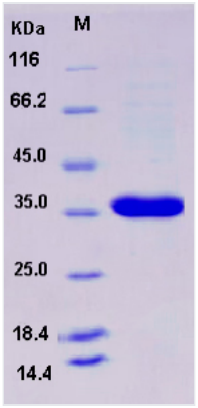
PCNA Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	PCNA, Recombinant Protein
Full Product Name	Recombinant Human PCNA Protein (His tag)
Product Gene Name	PCNA recombinant protein
Product Synonym Names	MGC8367
Host	Baculovirus-Insect Cells
Form/Format	Lyophilized from sterile 50mM Na3PO4, 300mM NaCl, 10% glycerol, pH 7.0, 2mM DTT
Purity/Purification	> 90 % as determined by SDS-PAGE
Preparation and Storage	Samples are stable for up to twelve months from date of receipt at -70 degree C
Molecular Weight	28,769 Da
OMIM	M15796 mRNA
3D Structure	ModBase 3D Structure for P12004
Predicted N Terminal	Met
Endotoxin	< 1.0 EU per mug of the protein as determined by the LAL method
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Application Notes for PCNA recombinant protein	The recombinant human PCNA consists of 280 amino acids and has a calculated molecular mass of 31 kDa. It migrates as an approximately 36 kDa band in SDS-PAGE under reducing conditions.
Related Product Information for PCNA recombinant protein	Background: Proliferating Cell Nuclear Antigen (PCNA) is a protein only expresse in nomal proliferate cells and cancer cells. It is central to both DNA replication and repair. One of the well-established functions for PCNA is its role as the processivity factor for DNA polymerase delta and epsilon. PCNA tethers the polymerase catalytic unit to the DNA template for rapid and processive DNA synthesis. Two forms of PCNA exist in cells: (i) a detergent-insoluble trimeric form stably associated with the replicating forks during S phase and (ii) a soluble form in quiescent cells in G1 and G2 phases. PCNA forms a toroidal trimer in S phase with replication factor-C (RF-C) and DNA in an ATP-dependent manner and enables the loading of DNA polymerase delta and epsilon onto the complex. The close association of PCNA with kinase complexes involved in cell cycle machinery indicates that PCNA has a regulatory role in cell cycle progression. PCNA also participates in the processing of branched intermediates that arise during the lagging strand DNA synthesis. Description: A DNA sequence encoding the mature form of human PCNA (P12004) (Met 1-Ser 261) was expressed, with a polyhistidine tag at the N-terminus.
Other Notes	Small volumes of PCNA recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for PCNA purchase	MBS2545567 is a recombinant protein targeting PCNA. Also known as Recombinant Human PCNA Protein (His tag). Host: Baculovirus-Insect Cells.



SDS-PAGE of PCNA recombinant protein

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PCNA. It may not necessarily be applicable to this product.

NCBI GI #	4505641
NCBI GeneID	5111
NCBI Accession #	NP_002583.1
UniProt Primary Accession #	P12004
UniProt Secondary Accession #	B2R897; D3DW02
UniProt Related Accession #	P12004
GenBank Nucleotide #	NM_002592.2
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
UniProt Protein Name	Proliferating cell nuclear antigen
UniProt Synonym Protein Names	Cyclin
Protein Family	Probable DNA polymerase sliding clamp
UniProt Gene Name	PCNA
UniProt Synonym Gene Names	PCNA
NCBI Protein Information	proliferating cell nuclear antigen
NCBI Summary for PCNA	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. [provided by RefSeq, Jul 2008]

UniProt Comments for PCNA	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. 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. Homotrimer. Forms a complex with activator 1 heteropentamer in the presence of ATP. Interacts with EXO1, POLH, POLK, DNMT1, ERCC5, FEN1, CDC6 and POLDIP2. Interacts with APEX2; this interaction is triggered by reactive oxygen species and increased by misincorporation of uracil in nuclear DNA. Forms a ternary complex with DNTTIP2 and core histone. Interacts with KCTD10 and PPP1R15A. Interacts with POLD1, POLD3 and POLD4. Interacts with BAZ1B; the interaction is direct. Interacts with HLTF and SHPRH. Interacts with NUDT15. Interaction is disrupted in response to UV irradiation and acetylation. Interacts with p21Cip1/p21(CIP1) and CDT1; interacts via their PIP-box which also recruits the DCX(DTL) complex. Interacts with DDX11. Interacts with EGFR; positively regulates PCNA. Interacts with C12orf48/PARI. Interacts with SMARCAD1. Belongs to the PCNA family. Protein type: Cell cycle regulation; DNA replication Chromosomal Location of Human Ortholog: 20p12.3 Cellular Component: centrosome; cytoplasm; DNA replication factor C complex; nuclear chromosome, telomeric region; nuclear replication fork; nucleoplasm; nucleus; PCNA complex; replication fork Molecular Function: chromatin binding; damaged DNA binding; dinucleotide insertion or deletion binding; DNA polymerase processivity factor activity; enzyme binding; histone acetyltransferase binding; identical protein binding; MutLalpha complex binding; protein binding; purine-specific mismatch base pair DNA N-glycosylase activity; receptor tyrosine kinase binding Biological Process: bypass DNA synthesis; cell proliferation; DNA damage response, detection of DNA damage; DNA damage response, signal transduction by p53 class mediator resulting in cell cycle arrest; DNA strand elongation during DNA replication; epithelial cell differentiation; error-prone postreplication DNA repair; G1/S transition of mitotic cell cycle; G1/S-specific transcription in mitotic cell cycle; leading strand elongation; mismatch repair; nucleotide-excision repair, DNA gap filling; nucleotide-excision repair, DNA incision; nucleotide-excision repair, DNA incision, 5'-to lesion; positive regulation of deoxyribonuclease activity; positive regulation of DNA repair; positive regulation of DNA replication; protein sumoylation; replication fork processing; telomere maintenance; telomere maintenance via recombination; transcription-coupled nucleotide-excision repair Disease: Ataxia-telangiectasia-like Disorder 2
Research Articles on PCNA	**1.** REV1 promote PCNA monoubiquitylation after UV radiation through interacting with ubiquitylated RAD18.
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