Proliferating Cell Nuclear Antigen (PCNA), human, functional

**BACKGROUND**

Proliferating cell nuclear antigen (PCNA) is a 36 kDa homotrimeric protein known to act as a co-factor for DNA polymerase δ, which is responsible for leading strand DNA replication. PCNA was originally identified as an antigen that is expressed in the nuclei of cells during the DNA synthesis phase of the cell cycle. A cell cycle-dependent protein called cyclin was shown to be identical to PCNA. Crystal structure data suggests that a PCNA homotrimer ring can encircle and slide along the DNA double helix. Multiple proteins involved in DNA replication, DNA repair, and cell cycle control bind to PCNA rather than directly associating with DNA, thus facilitating fast processing of DNA. PCNA is a useful marker for DNA synthesis and is highly conserved among most species. Human PCNA was over-expressed in *E. coli* as a recombinant full-size protein without any tag and highly purified.

**Applications:**
1. Research for DNA replication, recombination and repair.
2. Identification of proteins that interact with PCNA.
3. Useful for studying autoimmune diseases such as systemic lupus erythematosus.

**Size:**
20 µg

**Form:**
1.0 mg/ml in 25 mM HEPES (pH 7.9), 1 mM EDTA, 0.01% NP40, 1 mM DTT, 2 µg/ml leupeptin, 0.1 mM PMSF, 75 mM NaCl, 50% glycerol

**Quarity:**
Greater than 98% purity determined by SDS-PAGE (CBB staining) (Fig.1)

**Activities:**
Promotes DNA replication in vitro by polymerase delta.
Facilitates ATPase activity of RFC

**Data Link:**
Swiss-Prot P12004 (human), P04961 (rat), P17918 (mouse), Q9PTP1 (Zebrafish)

**Storage:**
Store at -70°C

**References:**

www.cosmobio.com
Proliferating Cell Nuclear Antigen (PCNA), human, functional

Fig. 1 SDS-PAGE of PCNA

For research use only. Not for clinical diagnosis.

Manufactured by BioAcademia, Inc.