PCNA (human), functional

**BACKGROUND**

PCNA (Proliferating cell nuclear antigen) is a homotrimeric protein (261 aa; 29 kDa) known to act as a co-factor for DNA polymerase d, 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. Crystal structure data suggests that a PCNA homotrimer ring encircles and slides along the DNA double helix. Multiple proteins involved in DNA replication, DNA repair, and cell cycle control bind to PCNA rather than directly associates with DNA, thus facilitating rapid processing of DNA. PCNA is a useful marker for DNA synthesis and some cancers. It is highly conserved among most animals.

**Applications confirmed:**

1. Functional studies on DNA replication, recombination and repair. (Ref 2, 3, 5, 6, 7, 8, 9, 10).
2. Identification of proteins interacting with PCNA by using PCNA –conjugated resin. (Ref 1, 5)
3. Ubiquitination targets (Ref 4, 9, 10).
4. SDS-PAGE (Fig. 1).
5. Western blot (Fig. 2).
6. Dot blot.
7. ELISA. Not tested for other applications.

**Source:** Human PCNA was over-expressed in *E. coli* as a recombinant full-size protein without any tag and highly purified.

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

**Size:** 20 ug

**Storage:** Sent at 4°C or -20°C. Upon arrival spin-down and store at -20°C (or at -80°C for longer storage)

**Purity:** Greater than 98% purity as determined by SDS-PAGE (Fig.1).

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

**References:** This product has been used in the following References.


