DB095: PCNA (PC10)

Background:

The evolutionarily conserved protein PCNA, or cyclin, was first characterized as a DNA polymerase accessory protein. It functions as a DNA sliding clamp for DNA polymerase delta and epsilon, and is an key component of for eukaryotic chromosomal DNA replication (1-3). In more recent research PCNA has been linked to an increasing number of cellular functions, these include cell cycle regulation, DNA repair, Okazaki fragment joining, DNA methylation, and chromatin assembly (2,4, &5). In cell cycle regulation p21 interacts with PCNA, which inhibits DNA replication (2,5). It has also been described that high levels of PCNA in the presence of p53 will lead to DNA repair (4). PCNA is also a very useful marker of cellular proliferation as it is seen most prominently expressed during the S phase of the cell cycle (6).

Origin:

PCNA (PC10) is a mouse monoclonal IgG_{2a} derived from the fusion of spleen cells, from a BALB/c mouse immunized with recombinant PCNA, with Sp2/0-Ag14 myeloma cells.

Product Details:

Each vial contains 100 µg/ml of mouse monoclonal IgG_{2a} PCNA (PC10) DB095, in 1 ml PBS containing 0.1 % sodium azide and 0.2% gelatin.

Specificity:

PCNA (PC10) DB095 reacts with PCNA of mouse, rat, human, insect and S. *pombe* origin by Western blotting, immunoprecipitation and immunohistochemistry (including paraffin-embedded sections). Western blotting starting dilution 1:500.

Storage:

Store this product at 4º C, do not freeze. The product is stable for one year from the date of shipment.

References:

1. Kelman Z. 1997. PCNA: structure, functions and interactions. Oncogene 14(6):629-40.
2. Tsurimoto T. 1999. PCNA binding proteins. Front Biosci 4:D849-D858.
3. Balajee A.S., Geard C.R. 2001. Chromatin-bound PCNA complex formation triggered by DNA damage occurs independent of the ATM gene product in human cells. Nucleic Acid Res 29(6):1341-1351.
4. Pauneshku T., Mittal S., Protic M., Oryhon J., Korolev S.V., Joachimiak A., Woloschak G.E. 2001. Proliferating cell nuclear antigen (PCNA): ringmaster of the genome. Int J Radiat Biol 77(10):1007-1021.
5. Rossig L., Jadidi A.S., Urbich C., Badorff C., Zeiher A.M., Dimmeler S. 2001. Akt-dependent phosphorylation of p21(Cip1) regulates PCNA binding and proliferation of endothelial cells. Mol Cell Biol 21(16):5644-5657.
6. Celis J.E., Madsen P., Nielsen S., Celis A. 1986. Nuclear patterns of cyclin (PCNA) antigen distribution subdivide S-phase in cultured cells—some applications of PCNA antibodies. Leuk Res 10(3):237-249.