



Regulation of Proliferating Cell Nuclear Antigen Gene Expression

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Proliferating cell nuclear antigen (PCNA) is the target antigen of the autoantibodies in some patients with systemic lupus erythematosus. As an auxiliary factor of DNA polymerase δ , PCNA is involved in the replication and repair of the cellular genome. Expression of PCNA is tightly growth-regulated, with the peak level at the G1/S boundary of the cell cycle. The amount of PCNA is controlled by its mRNA level. Evidences have shown that the mRNA level may be modulated at the transcription or at the post-transcription steps. Tumor suppressor gene p53 down-regulates the expression of PCNA, while E2F produces the opposite effect. The promoter of rat PCNA is serum-responsive. While without interacting sites, the promoter is inhibited by p53 probably due to direct (or indirect) protein-DNA interaction.