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# Exposition of Phosphatidylserine in Lewis Carcinoma Cells under the Action of Anphen Sodium and Hydrogen Peroxide

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The apoptotic effect of an antioxidant, spatially hindered phenol of anphen sodium, which has antitumor activity, in particular, inhibits the development of tumor cells of sarcoma 37, has been investigated. It was found that the introduction of anphen sodium ($10^{-4}$ M) into the Lewis carcinoma cell culture of mice after 1–1.5 hours resulted in phosphatidylserine exposition and the beginning the apoptosis process of cells (by annexin-FITC fluorescence). Under the combined action of $H_2O_2$ (5 μM) and anphen sodium, cell permeability for the acridine orange fluorophore increased, and the number of apoptotic cells increased to 80–100%. Moreover, in the tumor cells, the formation of both single and numerous apoptotic bodies was observed inside the cell. Under the same conditions, a smaller

number of apoptotic cells (14–16%) were found in spleen cells (splenocytes) of healthy mice, probably due to acting only on cells ready for apoptosis. Earlier, we discovered the effect of anphen sodium on antiapoptotic proteins of the Bcl-2 family, and it was suggested that this compound causes the mitochondrial apoptosis pathway. At the same time, it is known that hydrogen peroxide in low concentrations can act as a secondary messenger and stimulate the external apoptosis pathway. It is assumed that the combined action of hydrogen peroxide and anphen sodium increases apoptosis due to the activation of the mitochondrial and external signaling pathways.

***Keywords:*** apoptosis, Lewis carcinoma, splenocytes, anphen sodium,annexin V-FITC