DNA solutions are radiated at 48,3 GHz frequency, the thermodynamic parameters of antitumour compounds binding with the radiated DNA change insignificantly as compared with nonradiated DNA and are within the range of experiment error. Consequently, as a result of DNA radiation at resonant for water structures frequencies, such changes in the hydrate shell of the DNA occur, that antitumour compounds form more stable complex with them.

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Cisplatin Action on Content of Neutral Lipids of Rat Liver and Brain Nuclei

Hakobyan N. R.
Yavroyan Zh. V.
Hovhannisyan A. G.
Gevorgyan E. S.

Yerevan State Univ.
1 Alex Manoogyan
St. Yerevan, 0025, Armenia
*gevorgyan_emil@yahoo.com

Cisplatin (Cis-diaminedichloroplatinum) is an effective antitumor agent commonly used in chemotherapy. Although DNA was considered primary target of cisplatin, many aspects of its action at the cellular level still remain unknown.

The plasmatic membrane constitutes the first cellular barrier that encounters cisplatin and other drugs. Many anticancer drugs show membrane effects via binding to membrane phospholipids before entering the cytoplasm. Cisplatin has been shown to decrease fatty acid synthase activity, which causes changes in cell membrane fluidity and function. Cisplatin induces apoptosis also by increase in membrane fluidity via sphingomyelinase activation.

At present a number of additional properties of cisplatin emerge including activation of signal transduction pathways leading to apoptosis. How cisplatin passed through nuclear membrane and how it penetrated into the nuclei still remains unknown. It is possible that lipids may be involved in mechanisms of cisplatin induced apoptosis as second messengers of nuclear autonomous signaling pathway, or as intranuclear structure components. It is of interest to establish to what extent cisplatin alters lipid metabolism in nuclei.

The *in vivo* effect of cisplatin (after 24 hour) on neutral lipids content of rat liver and brain nuclei was investigated. Neutral lipids were fractionated by microTLC technique. The quantitative valuation of fractionated neutral lipids was established by computer software FUGIFILM Science Lab. 2001 Image Gauge V 4.0. The results of our study confirm that neutral lipids of rat liver and brain nuclei exhibit diversity in content and in sensitivity to cisplatin action. These changes may be resulted from cisplatin antitumor action.

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Cooperative Effect of EtBr on DNA-*cis*-DDPt Complexes

Poghos O. Vardevanyan[1,*]
Anush V. Arakelyan[1]
Ara P. Antonyan[1]
Lilit S. Baghdasaryan[1]
Gor S. Sarkisyan[2]

[1]Dept. of Biophysics, Yerevan State University, Yerevan, 0025, Armenia
[2]The Scripps Research Inst.
10550 N. Torrey Pines Rd.
La Jolla, CA 92037
*biophys_dep@mail.ru

In the current series of investigations the effects of EtBr on *cis*-DDP-DNA complexes was studied. The experiments were conducted within the relative *cis*-DDP/DNA concentration ranging between $1 \cdot 10^{-5}$ to $5 \cdot 10^{-2}$. The concentrations of EtBr were chosen in the lowers range to insure low levels of DNA saturation. The conditions were optimized to obtain isotherm of adsorption of EtBr with *cis*-DDP-DNA complexes within the linear region in the Sketchard's coordinates. The linear isotherm of DNA-ligand binding allow to determine characteristic parameters of binding such as the binding constant (K) and the number of biding sites (n) on DNA for a ligand (*e.g.*, EtBr) (1, 2). Experimental results show that both binding constant and number of biding sites change with the relative concentration of *cis*-DDP/DNA complex.

At low *cis*-DDP/DNA relative concentration, the molecule of DNA undergoes fundamental changes in which *cis*-DDP forms pseudo circular structure in DNA, which, in turn, allows EtBr to intercalation into the dsDNA with greater ease in the circular regions of DNA. As a result the value of K increases. Simultaneously the value of n is readily reduced. At high *cis*-DDP/DNA relative concentration value of