Effect of cisplatin on neutral lipids and phospholipids composition of rat liver cells nuclear fraction

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Cisplatin is an effective antitumor agent which widely used in chemotherapy. Although DNA was considered as the primary target of cisplatin, it is well known, that only 5-10% of injected drug is found covalently bound with DNA, whereas 75-85% of this agent binds to other cellular constituents.

How cisplatin penetrated into nuclei still remains unknown. Nuclear lipids, seems to play an important role in the regulation of major nuclear functions. It is possible that in mechanisms of cisplatin induced apoptosis may be involved lipids of nuclei and intranuclear structures.

Knowledge about cisplatin-sensitivity of nuclear lipids might contribute to a better understanding the cisplatin antitumor action mechanisms.

The *in vivo* 24-hour effect of cisplatin on rat liver cells nuclear phospholipids and neutral lipids was investigated. Lipids were fractionated by microTLC technique. The quantitative valuation of fractionated lipids was established by computer program FUGIFILM Science Lab. 2001 Image Gauge V 4.0, which was destined for densitometry.

The alteration of total phospholipids and total neutral lipids content as well, as the changes among the individual fractions of lipids in rat liver nuclear fraction after *in vivo* action of cisplatin were established. The total content of nuclear phospholipids and neutral lipids are significantly decreased after the cisplatin action. Six from seven individual phospholipids and four of six individual neutral lipids were markedly changed after the cisplatin 24-hour action. It seems that high sensitivity of nuclear lipids exhibited to cisplatin action may play an important role in the antitumor effects revealing mechanisms of this drug.