

# **Effect of Cisplatin on Rat Liver Nuclear Membrane Phospholipids as Integral Participants in Signal Transduction**

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It is well known that the signal transduction is the field of science that seeks to comprehend the mechanisms that cells have developed to interpret the messages carried by extra- and intracellular chemicals into messages that the cell can understand. Lipids, lipid kinases, and lipid phosphatases have not received the same amount of attention as proteins in studies of signal transduction. Certainly, there are many details of lipid signaling that must be worked out. Cisplatin may have an effect on lipid metabolism of nuclear membranes, on functioning of signal transduction pathways via the alterations in their lipid content. Taking into account above mentioned the present research studies the cisplatin in vivo action on rat liver cells nuclear membrane phospholipids.

The experiments were carried out on albino rats. Cisplatin was injected peritoneal in concentration 5 mg per 1000g animal weight respectively. Rats were decapitated after 24 hours of cisplatin injections. The fractionation of phospholipids was carried out by thin layer chromatography using L silicagel, using chloroform-methanol-water in ratio 65:25:4 as a dividing mixture. The quantitative valuation of fractionated phospholipids was determined by the computer software FUGIFILM Science Lab. 2001 Image Gauge V 4.0.

The results show significant changes in sphingomyelin content of nuclear membrane preparations as well as the lowering of absolute quantity of phosphatidylinositol, which demonstrate the disturbance of functioning of nuclear sphingomyelin and phosphoinositol regulatory cycles by cisplatin in vivo action. The involvement of these phospholipids in signal transduction events in nuclei has been widely described. This study provides a framework in which to place those new details of lipid signaling as they emerge.