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**CREATING OF SYSTEMS FOR BIOMONITORING AND PATHOLOGIES MODELING,
CONNECTED WITH DISORDERS OF METAL-LIGAND HOMEOSTASIS AND METHODS
FOR THEIR ADJUSTMENT**

Numerical contemporary methods of environment ecological protection, the role of electronic monitoring systems in this have been analyzed. Contemporary state of technical ecomonitoring system, novel information system (IS) have been studied with the aim of their perfection and making of new ones for ecological safety. Were defined two directions of stated tasks solution. The first of them is finding of the ways of insertion of elements of biological origin into the technical IS. The second one is the elaboration of the new technical systems, IS for mentioned branches taking into account peculiarities of medical and biological objects.

Few original IS and DB of images were developed and suggested for the use in ecological scientific and academic practice, for the defense of surrounding safety. First of all there are electronic working places linked with DB for professionals of few specialties (ecologist, zoologist, and some others). Detailed analysis and studying of peculiarities of B objects and necessity to use of mathematic and other methods that was not used before become the basis for the DB development. The series of these works were continued by the elaboration of some IS with DB, including DB of images.

With the aid of cytochemical methods the presence of chelatable metals (Zn, Cu, Mg) in the cells of some organs has been shown: submandibular glands, intestine, prostate, hippocampus, blood granulocytes, hypothalamus, pituitary, adrenals. All these cells may be attributed to secretory ones. Comparative investigation of chelatable metals and secretory material have been carried out in these cells by use. A similar localization of these components has been shown in them. Under various experimental influences changing these cells functional state content chelatable metals and secretory materials in them was changed in the same way. The research material includes the pattern of human blood and animal tissue (amphibians, reptiles, birds, mammals). We researched cells containing chelatable metals, it has been proved that all of them are linked with the help of metalligand homeostasis and stress reaction and they can be united in chelato-cell system.

It has been shown that stress influences on the content of chelatable metals in blood and tissue cells. Acute stress increases Zn and Mg content and decreases Cu content in this environment and under chronic stress it is observed vice versa.

Alteration of natural chelators and unfavorable ecological factors, can create deficit of Zn and Mg that leads to diabetes enteropathy and immunodeficiency. It has been demonstrated that with administration of cytotoxic chelators it is possible to modulate some diseases and pathological states which are connected with metalligand homeostasis violation (immunodeficiency, diabetes).

As a result of completed experiments it has been established that prolonged influence in unfavorable ecological factors, especially polluted atmospheric air, can create deficiency of chelatable and secretory materials in the cells. Established changed cells can be classified as symptoms of non-specific adaptive syndrome of system.

High efficiency of pharmaceutical preparations of «Zincteral» and «Cuprenil» for correction of the content of Zn, Mg and Cu under the conditions of chronic stress has been experimentally proved. All the mentioned preparations brought the content of these metals to the normal indices in alls and extracellular space.

The data of the work and conclusions were inculcated in theoretical and practical studies and also revealing of the promorbid states in inhabitants of various regions, the workers of industrial undertakings in order to prevent the professional diseases development. Numerical contemporary methods of environment ecological protection the role of electronic monitoring systems in this have been analyzed. Contemporary state of technical ecomonitoring system have been studied with the aim of their perfection and make of new ones for ecological safety.

It is created combinatorial library s-(histidin-4-yl) substituted cysteine is made preliminary estimate of the general biological potential join. For each of join are marked the most probable pharmacological effects for their further study and modulation.