antiviral, anti-carcinogenic effects. Fl are typical phenolic compounds and that is why they possess a chelating activity with regard to metals, as well as fulfil a part of scavengers to free radicals.

It is important that some Fl have vitamin-like effects in the human organism. This was shown for a pair: citrine+hesperidin, which maintain vessel strengthening and anti-oxidant activities of vitamins P and C. At the end of the previous century many investigations were conducted to find out a connection between Fl structure and their systemic activities. Scientists made an accent on studying Fl carcinogenic, mutagenic and cancer preventing activities.

Nowadays we may say that Fl are present in many natural products, which are widely used in therapy, e.g. medical preparations on Ginkgo biloba basis possess a therapeutic effect due a great extent to different Fl in its content. It was also assumed that Fl were capable to accumulate in tissues and then model their functions (e.g. quercetin had been found in bovine retina).

Conclusions. The results of these investigations allow us to conclude that prevailing margin of different Fl and isoflavonoids are not only harmless to the human organism, but can bring much good to correction of metabolism under various pathologies.

ROLE OF d-ELEMENTS IN BIOCHEMICAL PROCESSES

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Introduction. d-elements are trace elements and provide in the body is actively involved in the most important processes that occur in the cells of the body: enzymatic catalysis of the reactions of the synthesis of transfer of electrons, molecules and molecular enzymes, regulation of the activity of the mechanisms and systems of cells. The study of the biochemical role of elements, the establishment of the possibility of their interaction with bioligands contributes to the creation of effective medicinal agents and the establishment of effective doses required for treatment.

Aim. To study the dependence of the biological role of d-elements on their electronic structure and position in the periodic system of D.I. Mendeleev.

Materials and methods.a literary analysis of the role d-elements in biological systems.

Result. biological systems mainly consist of Hydrogen, oxygen, carbon, and nitrogen. More than 99% of the atoms needed by biological cells are composed of these four elements. however, biological systems need many other elements. These include six d-elements: Iron, Copper, Zinc, Manganese, Cobalt and Molybdenum.

These essential trace elements are called “metals of life”. The role of these elements in the body is due to their ability to form complex compounds, most of which are stable in aqueous solutions. A special feature of d-elements is the fact that d-electrons screen the nuclear charge is weaker than s-and p-elements, therefore the energy of the acceptor, d-orbitals is most energetically beneficial. Anions and cations of d-elements have a smaller atomic radius compared to s-and p-elements and a larger nuclear charge, therefore molecules and ions of ligands easily polarize and form stable complex compounds. Interacting with diverse electron-donor groups Proteins. The ability to form covalent bonds by the donor-acceptor mechanism. Increasing the increase in the atomic number of an element in the rows of d-elements, respectively, increases the stability of their complexes formed by doubly charged ions Ln^{2+}< $Fe^{2+} < Co^{2+} < Zn^{2+} < Ni^{2+} < Cu^{2+}$.

Many enzymes that perform the role of catalysts in the body function due to the presence of metal ions in their composition. Almost all biochemical reactions are catalytic and enzymes contribute to a significant increase in the rate of these reactions in a narrow range of low temperatures of 36°-40°C.

Enzymatic Catalysis has high efficiency, specificity and is carried out under certain conditions. The activation energy of biochemical processes is 2-3 times less than the activation energy of ordinary chemical reactions, therefore the rate of biochemical reactions increases 10^3-10^6 times, compared with non-biological catalysts.

A specific enzyme in these conditions catalyzes only one biological reaction, or several similar ones.

Currently, several thousand individual enzymes have been discovered in biological objects, and it has been established that each cell can contain up to 1000 different enzymes, each of which accelerates a particular reaction.

According to the chemical structure of the molecule, all enzymes are proteins, they are formed alive in living cells and may contain one protein chain or several, loosely interconnected. Two-component enzymes also contain coenzymes (these are metal cations, mainly d-elements, various vitamins or their primers).

For bicomponent enzymes, neither the protein portion nor the coenzyme separately possess catalytic activity. Only their complex exhibits enzymatic properties. At the same time, the protein part sharply increases the catalytic activity of the coenzyme, which stabilizes the protein part and makes it less vulnerable to denaturing agents.

d-Elements are trace elements and provide an active participation in the body in the most important processes that occur in the cells of the body, namely:

-enzymatic catalysis of synthesis reactions and reactions of cellular energy

- transfer of electrons, ions, molecules and molecular enzymes

-regulating the activity of cell mechanisms and systems

A special role in biochemical processes is played by 10 d-elements « life metals».

So, copper is a necessary trace element of plant and animal organisms, it is 25 copper-containing proteins and enzymes that catalyze the interaction of oxygen and substrate. Copper and iron are involved in the blood circulation process. In the case of copper deficiency, the exchange of iron between the blood plasma and red blood cells is disturbed, which is accompanied by the destruction of red blood cells.

Zinc is contained in more than 40 metalloenzymes that catalyze the hydrolysis of peptides, proteins, certain esters and aldehydes.

Manganese in the body forms complexes with proteins, nucleic acids (RNA, DNA) and amino acids. These complexes are integral parts of many metalloenzymes.

Most of the iron is concentrated in hemoglobin (70%) is also contained in a large number of enzymes. A group of iron-containing enzymes that catalyze the process of electron transfer in mitochondria is called cytochrome. About 50 cytohorums of iron are known.

Cobalt in the role of trace elements forms the active centers of many enzymes necessary for DNA synthesis. In the body, cobalt is in the form of B12 vitamins.

It is known that enzymes that contain molybdenum take part in reactions of transfer of oxo groups, catalyze redox reactions in plant and animal organisms.

Conclusion. a special role in biochemical processes play 10 d-elements "metals of life". The peculiarity of their electronic structure, namely the small ionic radii, the large nuclear charge and the presence of energetically favorable atomic orbitals contribute to the formation of numerous bicomplexes contained in biosystems and ensuring their existence.

GADGETS AS POTENTIAL «INCUBATORS» FOR MICROORGANISMS

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Introduction. Nowadays, gadgets become integral part of our life. Everyone doesn't get out of hand phone almost all day long: while staying in transport; by visiting cafe, markets, parks, using phone as means of communication at home and at work. But not everyone is conceived about what microorganisms and in what amount are living there. In 2011 scientists of London's school of hygiene and tropical medicine carried out that every sixth cellphone contained microparticles of faces with pathogenic bacteria (Staphylococcus aureus) which can cause disorders of gastrointestinal tract and food poisoning. But still remains a rather unexplored issue of quantity and specificity of microorganisms which living on cellphones. That said about actual of research topic for modern medicine.