

All calculations were made in the MS Excel application. The network graph is built in the graphical editor Paint.

Conclusions. The method of network planning is advisable to use when planning work schedules, schemes for implementing complex multistage technological processes, etc.

SYSTEMATIZATION OF ANTIOXIDANTS AND VITAMINS

Diachkova A. R.

Scientific supervisor: prof. Strizhachenko A.V.

National University of Pharmacy, Kharkiv, Ukraine

ein25423stein@gmail.com

Introduction. Free radical and peroxide reactions are integral parts of such important biological processes as, for example, electron transport in the respiratory chain, synthesis of prostaglandins and leukotrienes, proliferation and differentiation of cells, metabolism and synthesis of catecholamines, phagocytosis, metabolism of some xenobiotics. There is a powerful antioxidant system in the body, for example enzymes (catalases, peroxidases, superoxide dismutases) and "radical traps" (vitamins A, C, E, glutathione, sulfur compounds, biogenic amines, essential microelements). The state of the cell depends on the ratio of intensity of the processes and processes of the antioxidant system (these processes are mutually balanced in the healthy body).

Aim. Systematization of antioxidants and vitamins.

Materials and methods. Medicinal preparations, statistical methods of information processing.

Antioxidants – are substances of different chemical nature that inhibit or block the processes of free radical oxidation in the human body. Antioxidants are enzymatic (enzymes are synthesized by eukaryotic and prokaryotic cells) and nonenzymatic. The most known antioxidant enzymes (AOF) are the catalyst proteins (superoxide dismutase (SOD), catalase and peroxidase).

The AOF is the most important (internal) part of the body's antioxidant system. Due to AOF, each cell is normally capable of destroying excess free radicals, but with an overabundance of unbound free radicals, an external part of the antioxidant system, antioxidants that obtained with food, plays an essential role in protecting of body from oxidative stress.

The most well-known non-enzyme antioxidants are ascorbic acid (vitamin C), tocopherol (vitamin E), β -carotene (provitamin A) and lycopene (in tomatoes). They also include polyphenols: flavin and flavonoids (it often found in vegetables), tannins (in cocoa, coffee, tea), anthocyanins (in red berries).

Antioxidants are classified into two broad divisions, depending on whether they are soluble in water (hydrophilic) or in lipids (lipophilic). In general, water-soluble antioxidants react with oxidants in the cell cytosol and the blood plasma, while lipid-soluble antioxidants protect cell membranes from lipid peroxidation. These compounds may be synthesized in the body or obtained from the diet. The different antioxidants are present at a wide range of concentrations in body fluids and tissues, with some such as glutathione or ubiquinone mostly present within cells, while others such as uric acid are more evenly distributed. Some antioxidants are only found in a few organisms and these compounds can be important in pathogens and can be virulence factors.

The relative importance and interactions between these different antioxidants is a very complex question, with the various metabolites and enzyme systems having synergistic and interdependent effects on one another. The action of one antioxidant may therefore depend on the proper function of other members of the antioxidant system. The amount of protection provided by any one antioxidant will also depend on its concentration, its reactivity towards the particular reactive oxygen species being considered, and the status of the antioxidants with which it interacts.

Some compounds contribute to antioxidant defense by chelating transition metals and preventing them from catalyzing the production of free radicals in the cell. Particularly important is the ability to sequester iron, which is the function of iron-binding proteins such as transferrin and ferritin. Selenium and zinc are commonly referred to as antioxidant nutrients, but these chemical elements have no antioxidant action themselves and are instead required for the activity of some antioxidant enzymes.

Antioxidants can be synthesized in the body or come from the diet. Various antioxidants are present in a wide range of concentrations in body fluids and tissues, with some (glutathione or ubiquinone) mostly present within the cells, while others (uric acid) are distributed more evenly. Some antioxidants can be found only in individual organisms, these compounds can be important in pathogenesis and factors of microorganisms virulence.

Conclusion. Analysis of literature data and research results shows that the antioxidant system plays a role in regulation of the organism vital activity. There is also a disruption in the functioning of the antioxidant system in various diseases. Antioxidants have the property of providing a normalizing effect on the functional system and, thus, exhibit a therapeutic effect in pathological conditions. The use of antioxidants has a pronounced therapeutic effect and leads to the restoration of body functions.

KEY FEATURES OF THE USE OF AUTOMATED TESTING SYSTEMS IN THE STUDY OF TECHNICAL DISCIPLINES

Fedoseeva A. A.

Scientific supervisor: prof. Kharchenko V.S.

National University of Pharmacy, Kharkiv, Ukraine

Kharkiv Radiotechnical School

fedoseeva@nuph.edu.ua

Introduction. At the present time, automated testing systems are gaining increasing popularity. These systems allow increasing efficiency and speed of testing, availability for all forms of training. Moodle's learning environment is very popular/ It is a Web-application for creating online-oriented sites. The merits of this system include:

- formation of test tasks of various kinds;
- authentication and test passing from one ip-address;
- calculation of the index of differentiation.

However, in the teaching technical disciplines, this system has a number of significant disadvantages:

- the Moodle system does not provide for the possibility of entering a formula or containing mathematical data from the keyboard as a response;
- there is no possibility to work with screenshots and program code.

Therefore, there is a need to develop software to automate the process of test control for the technical disciplines.

Aim. The purpose of the study is to analyze the developed systems of automated testing: desktop and Web-applications, including a system in the simulator form.

Materials and methods. In the framework of the study, the work of automated testing systems was analyzed, in particular the Moodle system.

Results and discussion. As part of the study, software was developed - automated testing systems: desktop application (fig.1), Web-application (fig.2), system in simulator form (pic.3).

The first application features: the create test, modify test, the view of test results with correct and incorrect answers.

The second application is a web-based application with enhanced capabilities: availability of theoretical material - articles on disciplines, interface according to usability requirements, choice of difficulty level and statistics on passing the test by students.

The third application gives an opportunity to pass the test according to the age criterion: if the student has not reached the required age, then certain level issues will not be accessible to him.