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***CONTROL OF ANTIBIOTIC COMPOSITION BY VOLTAMPEROMETRY
IN MEDICAL DIAGNOSTICS***

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Actuality. Medical diagnostics and control of the quality of drug means are based on the conduction of the analysis by electrochemical methods. A great attention is given to the discovery of laevomycetin, penicillin, tetracycline, and antibiotics of amino-glycoside range, antibiotics of the group of carbopene, cephalosporin.

Aim: is the choice of conditions for determining the distribution of a number of widely used antibiotics, the study of electrochemical alterations and digitalization of azithromycin and the examination of the voltammetry methods of analysis of medical substances and bio-objects in the composition of the mentioned antibiotics.

Materials methods. In the work the voltammetry complex is used for analytical measurements. Two and three electrode systems, the indicator of EMS and EM with comparing of the silver chloride electrodes and all the auxiliary platinum electrodes are used.

Results and its discussion. The voltammetry curvilinear recovery of laevomycetin and streptomycin, oxidation and reduction of azithromycin, oxidation of tetracycline, the change of different speeds of the mode of the voltamperogram registration (EMS and EM). In registration of voltamperogram of all antibiotics, the speed of changing potential changes from within the range from 15 to 50 mV/s. The current magnitude of antibiotics in voltamperogram in a differential pulse mode of the polar graph is the minimum, and in the voltamperogram mode, on the contrary, in the linear mode. For the selection of the background electrolyte for streptomycin and azithromycin, various solutions were used: NaOH, KOH, Na₂HPO₄, Na₃PO₄, NaClO₄, Na₃Citr; buffer solutions: Britton-Robinson (pH 8.00–11.00), Boron Alkaline Na₂B₄O₇– NaOH (pH 9, .23–11.02). An important factor of organic matter is the pH - solutions. They influence not only the speed of the electrode process, but also on the mechanism. The pH-solutions also influence on the maximum potentials of antibiotics. The increase in the buffer solution of solvents in pH showed that the oxidation of azithromycin in zones, where Britton Robinson's potential, the increase was from 0.774 to 0.850 V. The increase of pH solution at registration of the cathode peak of streptomycin led to a mixture of sweat from the opposite side, that is, to the difficulty of the process of its restoration, which is connected with the preceding protolithic reaction of the proto-lower forms of streptomycin. De-protonation can pass from the electrode to the mole of the depot polarizer of the electrodes until it is simultaneously with the stationary line of the train and into the molecule of the depolarizer. Very shallow foliar solutions are higher than pH 9.8 and obstruct the registration of voltamperograms, therefore it was recommended to use for the determination of streptomycin in pH as an optimum, best value from 9.0 to 9.5.

Conclusions. According to the research data, the increase of pH of the buffer solutions of Britton-Robinson above 8, pike of the potential of oxidation of azithromycin from 0.774 to 0.850 V. in pH above 9, the additional oxidation CSKE = 0.90V, which hinders its analytic detection of the pH reveal, of azithromycin molecule, which is less than ionized, and therefore, the oxidation occurs in a positive sweat. The pH is less than 6 in the acidic medium. The decomposition of the molecule of azithromycin occurs, the pH values of are the optimal number and the estimated distribution of azithromycin from 8 to 9. The oxidation processes of azithromycin in EMS and oxidation in EM are complex diffuse ion-controlled electrolytic electro-dynamics and process in which one electron is involved; it is more difficult by not only additional intermediate stages, but also by the processes of absorption.