

INVESTIGATION OF THE ANTIOXIDANT ACTIVITY OF PHARMACY OBJECTS

Gerasimova E. L., Gazizullina E. R., Popova K. G., Davletchurina A. G., Ivanova A. V.

Ural Federal University named after the first Russian President B. N. Yeltsin,

Ekaterinburg, Russia

e.l.gerasimova@urfu.ru

Currently, natural and synthetic antioxidants are of great use in the prevention and treatment of a wide range of diseases associated with an increase in the intensity of free radical processes in the body. In particular, the need increases in the consumption of vitamin drugs and medicinal plants with antioxidant properties as antioxidants for exogenous source organism. Also, the effects of excessive free radicals are exposed to the eyes, as the main source of information. In this regard, in ophthalmology fairly widespread use of topical dosage forms for the regulation of antioxidant red-ox processes and regeneration of damaged tissues.

An approach based on the use of the oxidized form of the metal complex compound composed of a model of oxidant with registration potentiometric analytical signal. Measurement of potential is carried out after the passage of a chemical reaction between a test sample and oxidant, the oxidant and further additives. The criteria of selecting the optimal model oxidant. As the oxidants used complex iron (III) $K_3[Fe(CN)_6]$. Studied its electrochemical properties by cyclic voltammetry and defined working conditions for analysis in various concentration ranges. Antioxidants studied model solutions and mixtures thereof: phenolic (catechol, pyrogallol, phloroglucinol, resorcinol, quercetin, gallic acid, caffeic acid); thiol compounds (cysteine, glutathione); a hydroxyl group-containing heterocyclic compound (ascorbic acid).

To develop methods studied formulations for ophthalmic use the declared and potential antioxidant properties. Determine the relationship of antioxidant activity to the content of the main active ingredient. Showed a statistically significant difference between the values of the antioxidant activity of the objects.

The antioxidant activity of aqueous extracts of medicinal plants, are determined depending on the antioxidant activity determined by the extraction time. Also determine the total polyphenol content colorimetric method using Folin-Ciocalteu reagent. The high degree of correlation results confirmed the correctness of the results.

The antioxidant activity of vitamins and vitamin preparations containing the composition in vitamin C (ascorbic acid) as a base material. Evaluate the effects of mold release and actions of auxiliaries by the amount of antioxidant activity. Multivitamin preparations also investigated. Analysis conditions were optimized based on the solubility of drugs associated with the multi-component composition. Thus, the proposed approach is quite informative, and an express promise for analysis of pharmacy objects.