

the derivative of camphoric acid is carried out by sowing (deep and superficial) on the dishes (breeding 1:10).

The standardization of the microbiological purity of the medicinal product subject to investigation must be carried out in accordance with the criteria for the acceptability of non-sterile finished medicinal products, the State Pharmacopoeia of Ukraine 2 – non-aqueous medicines for oral use, not containing bacteria of the genus Enterobacteriaceae - *Escherichia coli*, the total number of aerobic microorganisms of bacteria should not exceed 10<sup>3</sup> CFU/g, and the content of yeast and mildew mushrooms should be considerably less 10<sup>2</sup> CFU/g..

**Conclusions.** This method has been chosen due to simplicity and testing flexibility exactly on unsterile drugs.

### **BIOTESTING RESEARCH ON *PARAMECIUM CAUDATUM***

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**Introduction.** Recently, more often, scientists are turning to the use of unicellular organisms (paramezii) as a test facility for pharmacological and toxicological studies, since they represent a miniature copy of a multicellular organism. The body of paramezes has the same functional systems, with the help of which it is possible to screen new synthetic substances and pharmacological assessment of the safety of natural and synthetic complex drugs.

**Aim.** The purpose of this paper was to consider the possibility of using unicellular organisms (paramezii) in biotesting pharmaceutical and cosmetic products.

**Materials and methods.** Biotesting is a procedure for determining the toxicity of the medium through test objects that signal the danger, regardless of what substances and in what combination cause changes in vital functions in the test objects. Thanks to its simplicity, efficiency and availability, biotesting has gained widespread acceptance throughout the world, and is increasingly being used along with analytical chemistry. There are 2 types of biotesting: morphophysiological and chemotactic. The chemotactic method is more precise, since it uses a special device, and the morphophysiological one allows more accurately to describe what happens to test objects, for example, in contaminated water.

It is known that various types of infusoria (*Paramecium caudatum*, *Colpoda stenii*, *Tetrahymena pyriformis*) are widely used in biotesting.

**Results and discussion.** The choice of *Paramecium caudatum* as a living model for the study of various substances is due to the fact that they react to the external environment as an independent organism. In the pharmacology of paramecia as a biological model, antioxidant drugs (regulatory lipid peroxidation) and membrane-stabilizing action types are used to screen drugs.

Infusion classes have a high degree of adaptability. They are capable of producing protective reactions aimed at reducing the damaging effects of various stimuli, and resistance to stimuli is retained for some time after their removal. This property of paramezii is used for the screening of natural compounds possessing adaptogenic properties.

As control of toxicity, the most widely used growth and reproduction reactions of infusoria in the nutrient medium with the addition of chemical substances, as well as the reaction of chemotaxis. Criteria for toxicity are various concentrations of live paramets in experimental and control samples and concentrations of substances that cause functional and morphological changes in cells.

**Conclusions.** Biotesting methods using the simplest can be used to assess the immunological and physiological state of various aquatic organisms in reservoirs of various trophic status, pollution of water bodies with a variety of economic and industrial effluents, as well as the influence of other anthropogenic factors. It is possible to determine the toxicity of meat products, pharmaceuticals, beverages, cosmetics.

At the Department of Biotechnology have begun the research on biotesting of new medical forms and perfume-cosmetics using model *Paramecium caudatum*.