



ACCELERATED DEFINITION OF BACILLARY AGENTS OF FOOD POISONING AND FOOD SPOILAGE

The purpose and scope of application

Hygienic safety of food products and food raw materials, and issues of environmental safety are of primary importance for agro-industrial enterprises, therefore, the accelerated identification of pathogens causing food poisoning and food spoilage is extremely topical. The development can be used in the food industry, biology, molecular biology, medicine, microbiology in laboratories staffed with appropriate equipment and qualified personnel.

Important indicators that characterize the level of the scientific result obtained

The methodology for determining bacillary pathogens of food poisoning and food spoilage is based on polymerase chain reaction (PCR). Molecular genetic diagnostics in chosen conditions and with pairs of primers allows to accelerate the process 2-3 times compared to the known methods of phenotypic diagnosis of regulated bacilli due to the detection of specific genes that determine entero- and emetic toxicity at the same time. Due to the detection of regulated microorganisms, in particular *B. cereus*, as well as bacilli that cause food damage (*P. polymyxa*, *P. macerans*), it is possible to evaluate complex bacillary contaminants according to the developed schemes for



Thermocycler (BioRad, USA)

different product groups. The proposed approach and methodology allow to accurately and quickly identify potentially hazardous objects with contaminants of microbial contaminants, which is important for defining the safety of food and food raw materials and environmental safety, as well as monitoring the quality of food systems.

State of intellectual property protection

Two applications for the invention and four applications for the utility model were submitted for development. Received 1 patent for utility model.

Demand for the market

For all modern food enterprises which have laboratories, for the regional veterinary inspectorates to control safety and quality in order to preserve and improve the health of country's population.

Development status

The schemes of sanitary-hygienic research with precise detection of regulated bacillary microorganisms using molecular-genetic diagnostics for different groups of products are already elaborated.



Equipment for electrophoresis of PCR products (BioRad, USA)



Video system for taking photographing of electrophorogramme of PCR products (BioRad, USA)