Title of the project: "Express test for the diagnosis of trichinosis"

Relevance: Timely detection of animals infected with trichinosis, or identification of meat infected with domestic or wild cattle, allows to eradicate this disease among the population of the country. In this regard, the creation of a fast, very specific and accurate method for assessing the safety of meat for trichinosis is of great importance for the prevention of infection of people from this disease. Currently, in addition to the direct method of veterinary and sanitary examination of meat (detection of trichinella larvae in muscles), a number of indirect immunological methods have been proposed that determine the contamination of meat based on the detection of specific antibodies. IHA, being a modern test, has many advantages over traditional immunological methods, such as low cost, easy feasibility with immediate results, independence from specialized equipment and qualified specialists. In addition, this test can be used in field or household conditions.

Aim of the project: to develop an immunochromatographic test (IHA test) for the lifetime and post-slaughter diagnosis of animal trichinosis.

Expected and achieved results:

Upon completion of the project, there will be:

- optimal design parameters of the "IHA test for assessing the safety of meat for trichinosis" have been worked out and factors affecting the sensitivity and specificity of the analysis have been determined;
- a laboratory regulation has been developed for the production and use of the "IHA-test for assessing the safety of meat for trichinosis", which allows for a short time (10-15 minutes) to determine the presence or absence of specific Trichinellaspp antibodies. in animal blood serum;
- a prototype of the test system, "IHA-test for assessing the safety of meat for trichinosis" has been made ready for commercialization;
- 2 (two) articles and (or) reviews have been published in peer-reviewed scientific publications in the scientific direction of the project, indexed in the Science Citation Index Expanded of the Web of Science database and (or) having a CiteScore percentile in the Scopus database of at least 50 (fifty) as well as at least 1 (one) article or review in a peer-reviewed foreign or domestic publication recommended by CQASHE;
- three reports were made at scientific forums, including two at international conferences of non-CIS countries with the publication of abstracts;
- defended two dissertations for the academic degree "Master of Technical Sciences" in the specialty "Biotechnology" (direction Veterinary biotechnology) and two theses in the same specialty;
- a copyright certificate for the research results has been obtained.

Achieved results for 2022

1. Determined the antigen of trichinell drugs on the line of mice *Balb/c*, received a pool of immunocompromised lymphocytes. It was carried out hybridization of B-lymphocytes with myeloid cells with the purpose of obtaining strains-producers of monoclonal antitels.
2. Created clones of the hybrid, steadily producing MCA with a reserve specificity. Cloned hybrids and beat off the most active subclones. The drug composition of monoclonal antitel is administered *in vitro* and *in vivo*.
3. Immunochemical and immunological property of the MCA is studied. The scheme of immunization of rabbits antigens trichinell and received antiseptics.
4. The preparation of kka and PCA to *Trichinella spp* is carried out. The antithesis of the Supreme Personality and specificity of the ICA.

5. Protected 4 student`s work on specialty 5B070100 "Biotechnology", 1 Master's thesis on specialty 7M05101 on topic:

1. "The effect of positive temperatures on the glycogen content in trichinella larvae".

2. " *Trichinella nativa* preparation of specific monoclonal antibodies to the excretory-secretory antigen Trichinella nativa".

3. "Comparative diagnostic efficacy of somatic and excretory-secretory antigens of Trichinella".

4. "*Trichinella spp*. obtaining monoclonal antibodies to the immune dominant epitope".

Published in 2022:

1. Акибеков О.С., Жагипар Ф.С., Сыздыкова А.С., Гаджимурадова А.М. Получение экскреторно-секреторного и соматического антигенов Trichinella spiralis // Вестник науки Казахского агротехнического университета им. С.Сейфуллина - 2022. - No2 (113). – Ч. 2. – С. 133-145

2. Шеруова Е., Жумат А., Байболин Ж. Trichinella spp. личинкаларын балауда қолданылатын «гастрос-12м» аппаратының тиімділігі мен артықшылықтары //Материалы международной научно-практической конференции «Сейфуллинские чтения – 18: «Молодежь и наука – взгляд в будущее» - 2022.- Т.I, Ч.III. - Б. 161-165.

3. Orken S. Akibekov, Alfiya S. Syzdykova, Lyudmila A. Lider, Aibek Kh. Zhumalin, Zhasulan K. Baibolin, Fariza S. Zhagipar, Zhannara Zh. Akanova, Ainur a. Ibzhanova, Aissarat M. Gajimuradova "Hematological, biochemical and serological parameters of rabbits experimentally infected with Trichinella nativa and Trichinella spiralis for early identification of trichinellosis" // Veterinary world EISSN: 2231-096 CiteScore в базе Scopus 79

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5. F.S. Zhagipar, A.M.Gajimuradova Comparative characteristics of the diagnostic value of somatic and excretory-secretory Trichinella antigens // Сборник тезисов в рамках международного симпозиума: «Единое здоровье – взгляд в будущее» в печати.

Research group members:

Project Supervisor Akibekov Yerken Sultankhamitovich: https://orcid.org/0000-0002-8647-0083 , h-index 1, Author ID:56606295400

Senior researcher Zhumalin Aibek Khasiyetovich: h-index 3, Author ID:57192061558

Senior researcher Syzdykova Alfiya Safiollayevna: https://orcid.org/0000-0002-5405-2469 , h-index 1, Author ID: 57193998019

Researcher Gajimuradova Aissarat Makhmudovna: https://orcid.org/0000-0003-1808-4188 Author ID: 57918105600

Researcher Baibolin Zhasulan Kuatbekovich: https://orcid.org/0000-0002-6499-664 X Author ID:57918697800

Researcher Zhagipar Fariza Sabitkyzy: https://orcid.org/0000-0001-5296-1127 Author ID: 57918499700

Junior researcher Uashev Rinat Dauletovich

Laboratory assistant Zhumat Aida Serikbaykyzy

Information for potential users: an immunochromatographic test (ICA test) will be developed for the lifetime and post-slaughter diagnosis of animal trichinosis, which is fast and practical to use.