International Journal of Biological Engineering and Agriculture
ISSN: 2833-5376
Volume 03 Number 01 (January) 2024
Impact Factor: 9.51
SJIF (2023): 3.916

www.inter-publishing.com

Results of the Use of Allergy Diagnostic Agents in the Diagnosis of Animals Brucellosis in the Conditions of Uzbekistan

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Abstract
This article provides materials on the preparation of allergens from local crops and research on the use of allergic methods for the diagnosis of brucellosis, which is dangerous for humans and animals.
Keywords: *brucellosis, culture, allergen, antibodies, sensitization, agglutination, inactivation, reactogenicity, stabilization.*

Introduction. Brucellosis is a chronic disease of humans and animals caused by Brucella bacteria, which belongs to the 2nd group in terms of infection rate and is a very dangerous infectious-allergic disease. Specific clinical signs of animal brucellosis are characterized by mass abortion, infertility, decreased fetal viability and decreased animal productivity. Brucellosis ranks first among occupational diseases of infectious and parasitic etiology and is of great socio-economic importance.

Currently, the epizootic and epidemiological situation with brucellosis in Uzbekistan is not completely positive, and this is determined by the presence of brucellosis among farm animals, which are the main causes of brucellosis in humans.

Today, the method of detecting brucellosis in animals, their isolation, slaughter and implementation of a complex of organizational, economic, veterinary, sanitary and general preventive measures is expensive, labor-intensive and ineffective. Therefore, in all countries of the world, in the fight against this disease, control and prevention of the disease is important.

The basis of the fight against brucellosis in farm animals in the country is organizational, economic and veterinary-sanitary measures, which include protecting the farm from infections, timely diagnosis and detection of the disease, identification, elimination of the pathogen in the environment, creating optimal sanitary and hygienic conditions for feeding and keeping animals.

There has been a lot of research around the world on the creation and use of allergens, and many allergens have been created. One of the most notable is the creation in 1968 by E.S. Orlov and A.N. Kasyanov of a non-agglutinogenic strain - brucellin VIEV, which is still used in the diagnosis of brucellosis in sheep, goats, pigs and deer.

It is known that the allergic state of a sick animal occurs after the formation of specific antibodies in the body and persists for a long time, that is, up to 16 months (P.P. Samoilov, 1958). Although there is work in the literature on the preparation of an allergen for the diagnosis of brucellosis and its use if necessary, this problem still remains relevant and promising.

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In Uzbekistan, allergic diagnostics is included in comprehensive health measures for brucellosis in sheep, goats and pigs. However, because these allergens are not produced locally and there are no commercial allergens available, allergy testing is not conducted. Therefore, the development and improvement of allergens against animal brucellosis is a very urgent task for scientific research and veterinary practice.

The purpose of the study is to study the cultural, morphological, biochemical and virulent properties of local epizootic and vaccine crops selected in Uzbekistan in comparison with reference cultures in order to select the most suitable anti-brucellosis allergens for the production.

From selected Brucella cultures, prepare experimental series of anti-brucellosis allergens using different methods and conduct a comparative study of the biochemical composition, as well as activity, sensitivity, sensitizing properties, harmlessness, reactogenicity, agglutinogenicity in experiments on laboratory animals (guinea pigs, white mice, sheep).

Materials and methods. From 4 cultures, B.abortus and B.melitensis were inoculated into MPPGGA (meat peptone liver glucose-glycerol agar) in 7 samples each and grown in an incubator for 72 hours. Then, after isolating pure cultures, a total of 5 MPPGGA mattress flasks from all strain samples were transplanted and placed in an incubator for incubation at +37°C for 72 hours. After the allotted time, the flasks were observed visually, they were washed with sterile 0.85% saline solution and inactivated in the same place in a water bath at a temperature of +80°C. In accordance with the work plan, all cultures were inactivated with 5% phenol saline solution (PSS). PSS was dripped into the flask slowly using a pipette, mixed and placed in the refrigerator for stabilization.

Research results. To check the harmlessness and allergic properties of the studied cultures, suspensions were prepared and examined under a microscope using the Kozlovsky method. The density and pH of microbial cells were studied based on the Tarasevich optical turbidity standard. When a decrease in pH was observed in the suspension, alkalize with 4% sterile caustic soda until the pH reached 7.5. To test the harmlessness of allergens in laboratory animals, 3 albino mice and guinea pigs were selected for each culture. The shoulder part of white mice was injected with a suspension of 0.25 ml subcutaneously and kept under control for 10 days, and the right shoulder part of guinea pigs was injected subcutaneously with 1 ml and kept under control for 25 days. In albino mice and guinea pigs, no physiological changes were observed during this time, and the reactogenicity of these local cultures was determined and confirmed to meet the parameters required for the diagnosis of brucellosis.

Each culture was first centrifuged at 3,000 rpm for 60 minutes, 30 minutes at 6,000 rpm, and 40 minutes at 10,000 rpm, where the concentrates were filtered into sterile containers and experimental allergen series were prepared.

To investigate the reactogenic and antigenic properties of a series of allergens, each series of allergens from the above-mentioned cultures was tested on 3 heads (total 12 heads) of Karakul sheep vaccinated with various vaccines against brucellosis 10 months ago in a laboratory vivarium, initially at the injection site (left eyelid, 2-3 cm below the eye) were treated with 70% alcohol, in syringes used for insulin, each allergen was injected separately in an amount of 0.5 ml. The allergen was not introduced into two sheep; they were used as a control.

The injection site was monitored daily in sheep: reactogenicity was assessed for 5 days, blood samples were examined after 15 days to check the antigenic properties in the RBP and RA.

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The reactogenic properties of the allergens were studied during a 5-day control, the following results were obtained: these sheep were kept in place, free feeding and drinking water, and they were controlled, the average daily body temperature was ∑X-39.0 ° C when using Allergen No. 1 . In particular, when using Allergen No. 3, Allergen No. 2, Allergen No. 4, no changes in the physiological state of sheep were observed, and the average body temperature was, respectively, ∑X-39.8°C, ∑X-39.4°C va ∑X-39.6°C.

Conclusion. As a result of the study, the reactogenicity and antigenicity (agglutinogenicity) of a series of experimental allergens obtained from local strains were studied in Karakul breed sheep vaccinated 10 months ago with various vaccines against brucellosis; they have the properties and meet the requirements for brucellosis allergens.

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