INCREASING THE EFFECTIVENESS OF THE BIOLOGICAL METHOD OF INVESTIGATION IN BRUCELLOSIS

Translation No. 1469

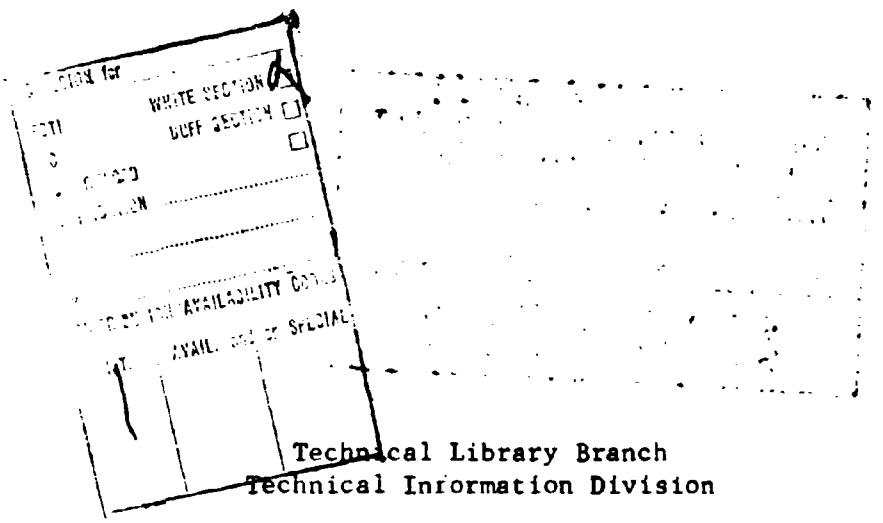
JULY 1965

U. S. ARMY
BIOLOGICAL LABORATORIES
FORT DETRICK, FREDERICK, MARYLAND

DDC AVAILABILITY NOTICE

Qualified requestors may obtain copies of this document from DDC.

This publication has been translated from the open literature and is available to the general public. Non-DOD agencies may purchase this publication from Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Springfield, Va.



Technical Library Branch
Technical Information Division

INCREASING THE EFFECTIVENESS OF THE BIOLOGICAL METHOD OF INVESTIGATION IN BRUCELLOSIS

[Following is the translation of an article by P. A. Polulyakh, T. A. Varivodina, and L. F. Shilyayev, Kirgiz Antiplague Station, published in the Russian-language periodical Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (Journal of Microbiology, Epidemiology and Immunobiology), No. 3, 1965, page 148. Translation performed by Sp/7 Charles T. Ostertag Jr.]

The comparatively low seeding ability of brucella from bioassay animals in connection with the chronic flow of the infection in them and the absence of death have impelled investigators to search for a method of increasing the effectiveness of the biological method. The authors undertook the mission of obtaining increased sensitivity of experimental animals to brucellosis infection and by this increasing the possibility of exposing the causative agent. The yolk of chicken egg was used with the aim of lowering the resistance of the organism of the experimental animals. The use of chicken egg yolk ensured good results in the authors' work on speeding up the biological investigation for plague (1962). In the tests we used three species of laboratory animals -- guinea pigs, white mice, and Syrian (golden) hamsters. The infecting material was the highly virulent strain Br. melitensis No. 320, the infecting dose of which comprised 2--3 microbial cells for guinea pigs, and the vaccine strain No. 19. The animals were infected subcutaneously with 10, 100, and 1000 microbial cells. The stated doses of causative agent were administered to the animals in a volume of 1 ml in a mixture with an equal volume of dilution of egg yolk. The egg yolk was prepared in a physiological solution on a calculation of 8 ml for yolk, preliminarily released from the embryonic membrane.

Four guinea pigs, four Syrian hamsters and 20 white mice were infected with each dose (the animals of all the groups were infected in one day). In 5, 10, 20 and 30 days the animals were killed and from their organs and tissues (liver, spleen, site of injection and the para-aortal lymph nodes) seedings were made on glucosoglycerin agar.

The results of the seedings testified to the significant (2--3 times) increase of sensitivity of all the species of laboratory animals to the vaccine following its simultaneous administration with the yolk of chick embryo. The intensive discharge of the causative agent from the organism of the animals was observed after 10 days from the moment of infection and continued for approximately 10--14 days. The guinea pig proved to be the best laboratory model during the stated method of investigation.