



Cairo University Faculty of Veterinary Medicine Department Of Virology

## Preparation of Inactivated Lumpy Skin Disease Virus Vaccine Using ISA 206 and ISA 50 Adjuvants

A Thesis Submitted By

Youssef Abd Allah Elsayed Abd Elhafiz

(B.V.SC., Cairo University, 2010) For The Degree of M.V.Sc. (Virology)

**Under Supervision of** 

## Prof. Dr. Mohammed Abd El-Hameed Shalaby

Professor of Virology& Immunology Faculty of Veterinary Medicine Cairo University

Dr. Ayman Hany M. El Deeb

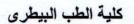
Assi. Prof. of Virology Faculty of Veterinary Medicine Cairo University Dr. Mervat Mohamed Ali

Chief Researcher
Veterinary Serum and Vaccine Research
Institute



قسم الفيروسات





S.A. Khall



# Approval Sheet

This is to approve that Thesis presented by

Youssef Abd Allah Elsayed Abd Elhafiz

For the degree of MV.Sc. (Virology) has been approved by the examining committee

Prof. Dr. Samy Abd -Elsalam Khalil

Professor and head of Department of Microbiology Faculty of Veterinary Medicine Alexandria University

Prof. Dr-Haitham Mohamed Mahmoud Amer

Professor and Head of Department of Virology Faculty of Veterinary Medicine Cairo University.

Jyman El-Deeb Prof. Dr- Ayman Hany M.M.El-Deeb

Ass. Prof. of Virology Faculty of Veterinary Medicine Cairo University (Supervisor)

Prof. Dr-Mohamed Abd El-Hamid Shalaby

Professor of Virology Faculty of Veterinary Medicine Cairo University (Supervisor)

hale by

2019





Cairo University
Faculty of Veterinary Medicine
Department Of Virology

## **SUPERVISION SHEET**

#### Prof. Dr. Mohammed Abd El-Hameed Shalaby

Professor of Virology & Immunology Faculty of Veterinary Medicine Cairo University

#### Dr. Ayman Hany M. El Deeb

Assi. Prof. of Virology Faculty of Veterinary Medicine, Cairo University

#### Dr. Mervat Mohamed Ali

Chief Researcher, Veterinary Serum and Vaccine Research Institute

# **Dedication**

For

My amazing father,

My wonderful mother,

My nationt wife And

My patient wife And My adorable friends For their perpetual encouragement

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I am greatly indebted in all my work and success to our merciful (ALLAH)

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Cairo University Faculty of Veterinary Medicine Department Of Virology

Name: Youssef AbdAllah Elsayed AbdElhafiz

**Nationality:** Egyptian

Birth place: Egypt, Mansoura

**Graduation:** B.V. SC. Faculty of Veterinary Medicine, Cairo University,

2010

**Under supervision of:** 

-Prof. Dr. Mohammed Abd El-Hameed Shalaby

Prof. of Virology, Fac. of Vet. Med., Cairo University.

- Dr. Ayman Hany M. El-Deeb.

Assi. Prof. of Virology, Fac. of Vet. Med., Cairo University.

- Dr. Mervat Mohamed Ali

Chief Researcher, Pox Dept., at Veterinary Serum And Vaccine Research Institute

**Thesis Title:** Preparation of inactivated Lumpy skin disease virus vaccine using ISA 206 and ISA 50 adjuvants.

#### **ABSTRACT**

Lumpy skin disease (LSD) is one of the most serious livestock diseases in Egypt since 1988 when the disease spread widely all over the country, since that attenuated sheep pox virus (SPV) used for vaccination cattle flocks against LSD due to immunological relationship between LSD and SPV. There have been numerous attempts to produce live attenuated LSD vaccine but it has stopped due to the seriousness of the disease's return to its virulence and the post vaccinal reaction of the vaccine so we prepare inactivated LSD virus(LSDV) vaccine to immunize the cattle with safe vaccine .Ismailia isolate of LSD was propagated and titrated on Madin Darby Bovine Kidney Cells (MDBK) till reach the highest titer (10 5.5 TCID<sub>50</sub>/ml). The inactivation process was performed using Bromoethylamine hydro bromide (BEI) that did not affect the immunogenic characters of the LSDV and the process last for 18 hours with 1% concentration of BEI at 37°c. The inactivated LSDV was tested on MDBK cells and the animals free of antibodies for residual live virus and determination of minimal protective dose (MPD) of prepared inactivated LSDV. The MPD was 1.5 ml of the inactivated virus and the vaccine was prepared by adding equal volume of the adjuvants (Montanide ISA 50 and Montanide ISA 206) to the total quantity 3ml of the vaccine. The prepared vaccine was tested for determination of immunological response against the vaccine with ISA 50 and ISA 206 adjuvants and the results was compared. The results of cellular and humoral immune response and the challenge test showed that using inactivated LSDV vaccine improved by Montanide ISA 206 elevate the protective immunity level and considered more safe and avoid viral reversion and transmission of the virus by the blood feeding arthropods.

Key Words: Lumpy skin disease, inactivated virus vaccine, ISA 206, ISA 50.

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