Cairo University
Faculty of Veterinary Medicine
Department Of Virology

Preparation and Evaluation of Combined Inactivated vaccine from NDV Genotype 7D and Infectious Bronchitis Virus Variant 2 Strain

A thesis presented by
Asmaa Shawky Abd Elhamed Frag Yassin

B.V.Sc., Faculty of Veterinary Medicine,
Cairo University, Egypt, 2012.
For the Master Degree in Veterinary Medical Science
(Virology)

Under The Supervision Of

Prof. Dr. Ahmed Abd El-Ghani El-Sanousi
Professor of Virology,
Faculty of Veterinary Medicine,
Cairo University

Dr. Basem Mohamed Abd-Elhamed
Lecturer of Virology
Faculty of Veterinary Medicine
Cairo University

Prof. Dr. Hala Mohamed El-Makaky
Chief Researcher
Newcastle Department
VSVRI, Abbasia, Cairo

2020

Cairo University
Faculty of Veterinary Medicine
Department Of Virology

Name : Asmaa Shawky Abd –Elhamed Farg Yassin
Nationality : Egyptian
Date of birth: 10/9/1990
Degree : Master Degree in veterinary science (virology)
Title : **Preparation and Evaluation of Combined Inactivated vaccine from NDV Genotype 7D and Infectious Bronchitis Virus Variant 2 Strain**

Under The Supervision Of:
Prof. Dr. Ahmed Abd El-Ghani El-Sanousi
Prof. of Virology, Faculty of Veterinary Medicine,
Cairo University
Dr. Basem Mohamed Abd-Elhamed Ahmed
Lecturer of virology, Faculty of veterinary Medicine
Cairo University
Dr. Hala Mohamed El- Makaky
Chief Researcher, Newcastle Department
VSVRI, Abbasia, Cairo

Abstract
Vaccination is the main preventive measure against Newcastle Disease virus (NDV) infections and infectious bronchitis virus (IBV) infections. Vaccination can partially protect against IBV because of the continuous emergence of variant strains. The aim of the current study is to prepare and evaluate acombined multivalent inactivated vaccine candidate composed of NDV (genotype VII), and two IBV lineages (M41; GI-lineage) and (VarII; GI-23 lineage) in a Montanide ISA-71 oil adjuvant . The results revealed that the prepared vaccine candidate was sterile, safe, and potent . The result of potency test showed the ability of the prepared to stimulate the production of specific antibodies against IBV and NDV starting from 1-week post vaccination (WPV). The maximum levels of specific IBV ELISA antibody titers (2926) were observed at the sixth week post vaccination. HI antibodies against IBV reached their peak at 5th WPV (9.2 log2) while HI antibodies against NDV reached its peak at 4 WPV (9.5 log2). Vaccinated chickens showed 100% protection against challenge with virulent NDV, and variant IBV strains with complete absence of clinical signs and postmortem lesions compared to challenged non vaccinated groups. Our results revealed that the prepared vaccine candidate in this study is able to elicit good immune response, eliminate viral shedding, and provide complete protection against challenge. Meanwhile, it is better to control both IBV and NDV outbreaks in a single shot consequently that will save time, effort and reduce stress during chicken .vaccination

Keywords: IBV GI-lineage, IBV GI-23 linage, NDV genotype VII, inactivated multivalent vaccine, virulent challenge, efficacy, Shedding.

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES