CONTENT

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

Abbreviation	Complete words
ADOL	Avian Disease and Oncology Laboratory
ADCC	Antibody Dependent Cell mediated Cytotoxicity
AI	Avian influenza
ALV	avian leukosis virus
APC	Antigen presenting cells
BAC	Bacterial Artificial Chromosomes
°C	Celsius Degree
CEF	Chicken Embryo Fibroblast
ChB6	Chicken B Cell marker 6
CIAV	Chicken Infectious Anemia virus
CKC	Chicken Kidney Cell
CLEVB	Central Laboratory for Evaluation of Vet. Biologics
DEF	Duck Embryo Fibroblast
DPI	day post infection
EMS	Early Mortality Syndrome
FAO	Food and Agriculture Organization of the United Nations
FCT	Federal Capital Territory
FFE	Feather Follicle Epithelium
GPD	Gross Domestic Product
HVT	Herpes Virus of Turkeys
IBD	Infectious bursal disease (Gumboro disease)
ICTV	International Committee on Taxonomy of Viruses
IFN	Interferon
LL	lymphoid leukosis
M	Mild
MD	Marek's Disease
MDV	Marek's Disease Virus
MHC	Major Histocompatibility Complex
ND	Newcastle disease

NK	Natural Killer
nt	Nucleotide
PAMP	Pathogen-Associated Molecular Patterns
PARP	poly (ADP ribose) polymerase
PCR	Polymerase Chain Reaction
PI	post infection
PRR	Pattern Recognition Receptors
REV	Reticuloendotheliosis virus
RIR	Rhode Island Red
TAP	Transporters Associated with Antigen-Processing
Temp.	Temperature
TLR	Toll-Like Receptor
V	Virulent
VN	Virus Neutralization
VV	Very Virulent
VV+	Very Virulent Plus

Cairo University
Faculty of Veterinary Medicine
Virology Department

Name: Hala Ahmad Mohammad Saied Shaheen. **Ntionality:** Egyptian
Degree: Ph. D. Degree in Vet. Science, (Virology).
Under Supervision of:
1- Prof. Dr. Mohamed Abd El-Hamid Shalaby. Professor of Virology and Immunology Faculty of Veterinary Medicine Cairo University.
2- Prof. Dr. Hussein Ali Hussein. Professor of Virology Faculty of Veterinary Medicine Cairo University.
3- Dr. Mounir El-Safty. Chief Researcher in Central Laboratory for Evaluation of Veterinary Biologics, Abbasia, Cairo, Egypt**.**

Thesis Title: Studies on the presence of Chicken B-cell marker 6 (*ChB6*) gene in some native Egyptian chicken breeds and the resistance to the Marek's disease virus.

Abstract

Breeds (Elmandra, Gimmizah, Sinai, Dandarawi, Anshase, Fayoumi, Golden Montazah , Matrouh, Beheri, Dokki) ,SPF Lohmann, High line, Bovans and Rhode island tested by PCR for the presence of resistant gene for marek's disease (CHB6) in Egypt and revealed that positive for 10 out of 14 breeds (Gimmizah, Sinai, Dandarawi, Fayoumi, Golden Montazah , Matrouh, Beheri, Dokki) also in SPF Lohmann and High line while negative for Bovans, Elmandra, Anshase and Roodiland). The purified positive PCR products were subjected to sequence and Phylogenetic analysis. Positive breeds containing CHB6 gene were experimentally infected by 0.5 ml of 10^3 PFU of MDV via subcutaneous route under the skin on the back of the neck in one day old unvaccinated chicks. Spleen samples were collected at 20^{th}, 25^{th}, 30^{th}, 35^{th} and 40^{th} weeks revealed negative for the presence of challenged MDV by PCR in those mentioned 10 breeds and positive in Bovans breed. Transmission electron microscope (TEM) is used to confirm MDV infection in Bovans group which demonstrated tumors.

Histopathological pictures of brain, sciatic nerve, proventriculus, liver, spleen and kidney confirmed the negativity and positivity of the tested breeds for resistance to MDV infection.

Indeed, the study reports the existence of *ChB6* gene which found high related to the resistance to develop tumors in MDV-challenged 10 native breeds in Egypt.

(**Key Words**: ChB6 gene – Egyptian breeds – Marek's disease – Sequencing – Phylogenetic tree – TEM – Histopathology – PCR - Challenge test).