بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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Efficacy of Inactivated AI H5 Vaccines in SPF Chicks Against Challenge with Egyptian H5N8 clade 2.3.4.4b Viruses Isolated in 2017 and 2018

A Thesis presented by

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(B.V.Sc., Cairo University, 2013)

For the Degree of

Master in Veterinary Medical Sciences

(Virology)

Under supervision of

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2021

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ABSTRACT

Vaccination is the routinely used tool for control of highly pathogenic avian influenza (HPAI) H5N8 subtype in Egypt. Inactivated avian influenza vaccines are the most frequently registered and commercially used against avian influenza (AI) infection in poultry farms. Both genetic and antigenic mismatching between the seed strain used in vaccine and the recent circulating HPAI H5N8 viruses may affect the efficiency of commercial vaccines used in AI control in Egypt. In this study, we evaluated inactivated AI commercial vaccines (H5N1, H5N2 and H5N3) in challenge trials using specific pathogen free (SPF) chicks at 2 and 3 weeks post vaccination (WPV). Two Egyptian HPAI H5N8 viruses isolated in 2017 and 2018 clade 2.3.4.4b were used. Survival percentages, antibody titers and the virus shedding titers as well as the histopathological changes in kidney and spleen were recorded.

All studied vaccines revealed protection percentages between 70 to 100 % within 10 days post challenge. Haemagglutination inhibition (HI) results of sera samples showed antibody titers ranged from 0.6 to 5.4 log2 starting 1 week (PV) with the highest titers at 4^{th} WPV. Vaccinated challenged SPF chicks showed remarkable virus shedding reduction with an average of 2 log_{10} compared to control birds. Various histopathological lesions with different scores were demonstrated.

H5N1 and H5N3 AI vaccines were the most effective against the challenge HPAI H5N8 viruses.

We recommend annual evaluation of the currently used vaccines using the most prevalent challenge H5N8 viruses isolated from field outbreaks in poultry farms based on the annual surveillance for AI in Egypt.

Key words: Avian influenza, clade 2.3.4.4b, Highly pathogenic H5N8, H5 vaccines.

Dedication

To the Great Soul of my Great Father
& My Great Mother
& My Beloved sisters
& My brothers in law and
My lovely nephews and nieces
and
To all of my family and everyone supported me during my work

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