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"Biochemical and molecular studies on Virus like particles (VLPs) of avian influenza virus (H5N1) in Egypt "

Thesis Presented

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Supervision sheet

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Abstract

Avian influenza (AI) viruses H5N1 subtype have attracted the current global attention due to its adverse effect on public health, as well as the high economic losses in poultry industry. In Egypt, (AI) was reported in 2006 and confirmed to be Highly Pathogenic Avian Influenza (HPAI) of subtype H5N1. Egypt was declared endemic country for H5N1 HPAI in July 2008. The weaknesses in the current immunization program in poultry in Egypt require finding a new approach to limit the spread of infection in poultry and increase the maintenance of public health safety. Current study aim was to prepare and characterize (HA) protein within Virus-like Particles (VLPs) and evaluate its expression in the (VLPs) and the ability to stimulate the immune system of the chickens. The preparation of (VLPs) was carried out by optimization of the codon bias of the selected strain and expression of the hemagglutinin (HA), Neuraminidase (N) and Matrix (M1) proteins using Baculovirus expression system. (VLPs) were characterized using hemagglutination assay, SDS-PAGE, western blot and immunofluorescence assay (IFA) . Our results showed that VLPs could induce immunity in chickens and further studies for protection, efficacy and quality will be required to apply this approach.

Key Words: Avian influenza , Hemagglutinin and Virus like particles (VLPs) .

Dedication

To

My Family

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