**Cairo University**
**Faculty of Veterinary Medicine**
**Department of Virology**

# Evaluation of Recombinant HVT-H5 Vaccine

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# Approval Sheet

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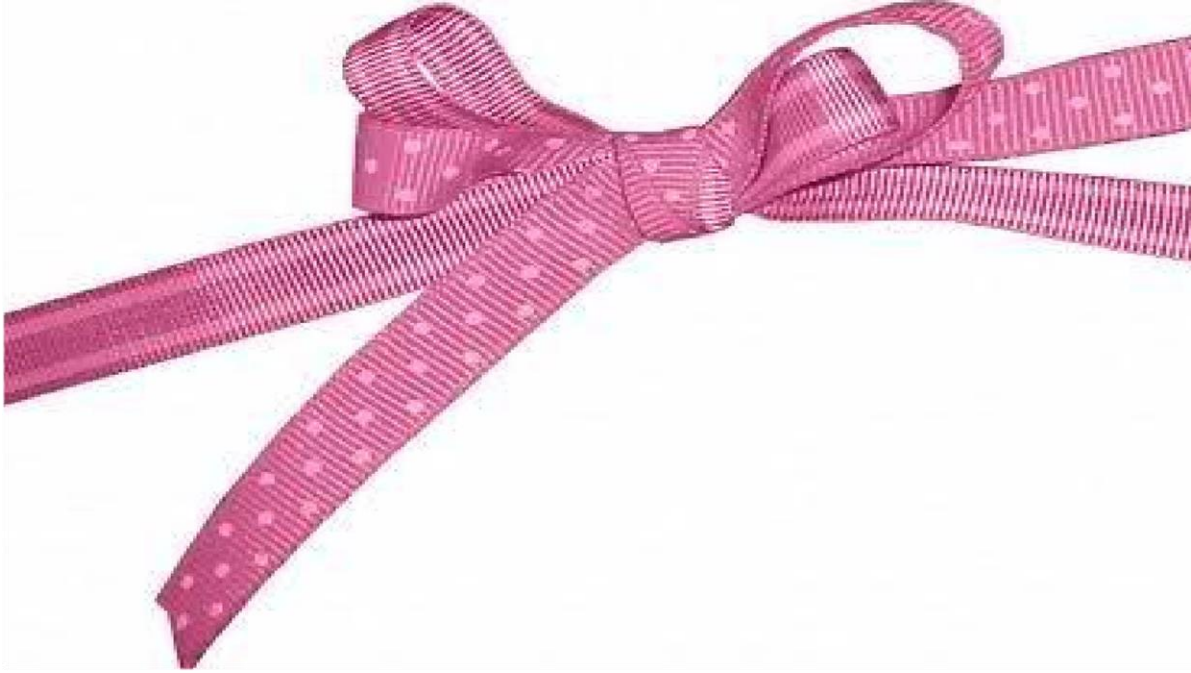
**Abstract:** A six vaccine batches selected randomly and coded as A, B, C, D, E, and F were evaluated by identity testing besides regular vaccine safety, purity and potency. The H5 insert identity was evaluated using real-time PCR while the vaccine potency was evaluated using the HVT virus titration, the reduction of virus shedding and challenge test. In this study, the vaccine batches were examined and proved to be identical by quantitative real-time PCR but the in- house ELISA was not significant for H5 gene detection and titration due to using of polyclonal H5 serum. The vaccine purity

was examined by intra allantoic inoculation of vaccine in SPF ECE. The vaccine safety was satisfactory by 10 field doses injection in SPF chicks. The protective efficacy of this vaccine was measured by challenge test parallel to titration of HVT in CEF. The real - time PCR was the most sensitive and specific test for identity testing of this vaccine but, cell-ELISA or H5 ELISA cannot be used to detect H5 gene insert without using monoclonal monospecific H5 serum. The negative result of intra allantoic inoculation of the vaccine in SPF ECE indicates that the vaccine is pure. The infectivity titration of HVT live vector in CEF was correlated with the vaccine potency as show in challenge test of this vaccine batches.

In conclusion, the developed evaluation protocol could depend mainly on q PCR for identity and titration of H5 insert gene in addition to vaccine safety and efficacy.

**Key words:** Recombinant HVT-H5 vaccine, quantitative real-time PCR, intra allantoic inoculation, titration, potency, purity, identity.



# Dedication

*To my family*

*My kind father, my lovely mother, my lovely sisters and brother*

*(A special thank you for being there in times of crisis.)*

*To my best friends*

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"Praise to Allah, who has guided us to this; and we would never have been guided if Allah had not guided us."

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