Cairo University
Faculty of Veterinary Medicine
Department of Microbiology

Preparation of Inactivated Vaccine from *Streptococcus equi* subsp. *equi* and Evaluation of its Efficacy

A Thesis Presented by

Sara Mohamed Hemeda Abd-Elgelil

(B.V.Sc. 2011 - Cairo University)

For

M.V.Sc in Microbiology
(Bacteriology- Mycology - Immunology)
Under the supervision of

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Supervision Sheet

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Abstract

In the present work Streptococcus species have been isolated from horses clinically suffering from strangles disease. The isolated streptococci were identified using bacteriological and molecular techniques. One isolate was identified as *S. equi* subsp. *equi* and the other 4 isolates were identified as *Streptococcus equi* subsp. *zooepidemicus*. The isolated streptococcal species were used to develop vaccine against strangles disease. Also two types of adjuvants were investigated and compared as immuno-potentiating agents, namely Montanide gel and ISA 70. Four vaccine formulations were prepared and its immunizing efficacy was investigated. The first two vaccine formulations were composed only from *Streptococcus equi* subsp. *equi*; the first one was adjuvanted with Montanide gel and the second with ISA70. The other two vaccine formulations were combined vaccines composed from both the *Streptococcus equi* subsp. *equi* and *Streptococcus equi* subsp. *zooepidemicus*. These 2 vaccine formulations were adjuvanted with Montanide gel (the third vaccine formulation) or with ISA70 (the fourth formulation). Using passive hemagglutination test and ELISA significant specific antibody titers have been measured in the immunized mice, rabbits and donkeys. The combined vaccine proved more effective than the monovalent one. Also ISA 70 adjuvant was better than the Montanide gel one. In challenge test in immunized mice with virulent *S. equi* subsp. *equi*, 55% protection rate was recorded.

Dedication

Dedicated to:

My mother, father,

My husband Islam

And my brother and my sister

And my lovely Kid

Mariam Islam

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