# 26th International Conference of the World Association for the Advancement of Veterinary Parasitology

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***Conference Theme***

# Combating Zoonoses: Strength in East-West Partnerships

# ABSTRACT BOOK

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## Contents

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# Recombinant Glutathione S-Transferase adsorbed to aluminum hydroxide: A vaccine candidate against *Fasciola hepatica* in mice

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## Abstract Content

Fasciolosis is a parasitic zoonosis caused by infection with *Fasciola hepatica*. Disease control using Triclabendazole (TCBZ) results in the development of anthelmintic resistance against the drug. Vaccination would be an attractive option to pursue in fasciolosis control to reduce the need for anthelmintics. We evaluated the immunogenicity and protection conferred by a recombinant Glutathione-S Transferase- Mu (rFhGSTMu) protein against *F. hepatica* in mice. The recombinant enzyme was produced in *Escherichia coli.* IgG and IgG subisotypes were measured using an ELISA. Liver damage was estimated by the determination of serum Aspartate Aminotransferase (AST), Alanine Aminotransferase (ALT) and Alkaline Phosphatase (AP) activity. Balb/c mice were distributed across four groups (n=10/group) immunized subcutaneously at weeks 0, 2 and 4 as follows: Group 1: rFhGSTMu + Freund Incomplete Adjuvant (FIA); Group 2: rFhGSTMu + Aluminum Hydroxide (AH), Group 3: rFhGSTMu + Quil A and Group 4 (control group) was injected with saline. All groups were challenged two weeks after the last immunization with six metacercariae of *F. hepatica*. All vaccine formulations induced IgG specific antibodies with a mixed IgG1/IgG2a response. rFhGSTMu + AH induced significant reduction in worm counts (90% ). Other formulations, however did not induce a significant reduction in worm counts (0 to 10% similar to the unvaccinated control group). Liver enzyme activities in the group immunized with rFhGSTMu + AH were significantly lower than values recorded in the other groups. Our results indicated that rFhGSTMu formulated in AH is a potential vaccine candidate against *F. hepatica* in the mouse model.

*Keywords: Fasciola hepatica, GST, Vaccine, Mice*