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Immunization of rats against *Fasciola hepatica* using the recombinant FhTP16.5 of *Fasciola hepatica* incorporated in immunostimulating complexes (ISCOMs)

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In fascioliasis, a T helper (Th2)-predominant immune response has been correlated with chronic infection, while a vaccine-induced protection is more associated to a Th1-type response. Immunostimulating Complexes (ISCOMs) is an adjuvant system comprised of antigen, cholesterol, phospholipids and saponin (Quil A *Quillaja saponaria*), and has the capability to enhance the humoral immunogenicity as well as a strong cell-mediated immune responses in animals. The characteristic polarization of the immune responses by ISCOMs makes it an attractive adjuvant that could provide protection against an infection with *Fasciola hepatica*. In this study we have evaluated a Tegument-Associated 16.5-kDa Protein (FhTP16.5) of *F. hepatica* for its capability of inducing a Th1 predominant immune response when delivered in ISCOMs via subcutaneous injection (s.c.) in Wistar rats. The humoral response elicited in rats either immunized by the recombinant FhTP16.5 or infected with *F. hepatica* has been analyzed by examining circulating total IgG dynamics and specific IgG subclass at final bleedings. The experiment was continued for 10 weeks. With regard to the total IgG subclass responses, IgG1 predominated over IgG2a in infected rats, while the reverse was true in rats immunized with the FhTP16.5-ISCOMs formulation. These results demonstrate that FhTP16.5-ISCOMs induce a predominantly Th1 response in this model and suggests that our formulation could be a good candidate as vaccine against the Liver Fluke.

Biography

He obtained a bachelor degree in Cell and Molecular Biology at Universidad Metropolitana (UMET-SUAGM) in 2005. Currently, he is concluding his doctoral thesis in molecular parasitology at the University of Puerto Rico-Medical Sciences Campus. His project involves the immunodiagnosis and immunoprophylaxis of fascioliasis by employing recombinant proteins, with Dr. Ana M. Espino as mentor. He expects to complete his degree by December 2013. He has published in peer-review journals and plans to continue a postdoctoral training.