A CHIMERIC VACCINE ADJUVANTED WITH POLY-ICLC ELICITS A ROBUST IMMUNE RESPONSE AND PROTECTION AGAINST EXPERIMENTAL VISCERAL LEISHMANIASIS

Thais Lopes Valentim Di Paschoale Ostolin[1]; Arthur Pinheiro Bueno[1*]; Thiago Pimenta Reis[1]; Gabriel José Lucas Moreira[1]; Letícia Captein Gonçalves[1]; Ana Clara Assis Barcelos[1]; Amanda De Cassia Ferreira Santos[1]; Felipe Oliveira da Silva[1]; Rafael Efigênio de Almeida[1]; Thais Alexia Silva Oliveira[1]; Bruno Mendes Roatt[1]; Rodrigo Dian de Oliveira Aguiar Soares[1] and Alexandre Barbosa Reis[1]

[1]Laboratório de Imunopatologia, Núcleo de Pesquisas em Ciências Biológicas/NUPEB, Universidade Federal de Ouro Preto, Minas Gerais, Brazil
*e-mail: arthur.bueno@aluno.ufop.edu.br

Over the past years, several studies have been carried out to achieve an ideal vaccine for visceral leishmaniasis (VL). Many *Leishmania* antigen candidates have been purified and evaluated based on the development of a T_H1-type immune response and the induction of a protective response against *Leishmania* infection. The design of leishmaniasis vaccines has been constantly advancing. The biotechnology applied to vaccinology is a suitable approach that optimizes data analysis and computational recognition of vaccine targets. The ability to predict T cell-specific epitopes makes immunoinformatic an even more necessary approach, as in VL an efficient immune response against the parasite is triggered by T cells in response to *Leishmania spp*. immunogenic antigens. Vaccine adjuvants can be added to improve the immunogenicity and efficacy of vaccines against VL. Poly-ICLC is a synthetic adjuvant that has been successfully tested for safety and immunogenicity in phase I clinical trials in patients with various types of cancer. Using Poly-ICLC may contribute to the development of vaccines against human VL (HVL). The present study aimed to evaluate the Chimera A adjuvanted with Poly-ICLC (Chi-A/Hiltonol) as a vaccine candidate against VL. BALB/c mice were vaccinated with 3 doses subcutaneously with 15-day intervals between doses. Immunogenicity and efficacy were assessed 45 days after the *L. infantum* challenge. Our results revealed that chimera can elicit T cells producing T_H1-type cytokines in the vaccinated mice's spleen. Vaccination led to increased IL-2, TNF, and IFN-γ-producing $CD4^+CD44^+$ and $CD8^+CD44^+$ T cells and reduced IL-10-producing $CD4^+$ and $CD8^+$ T cells, reinforcing the establishment of T_H1 response. Lastly, ChiA/Hiltonol vaccinated mice exhibited a remarkable reduction in the splenic and hepatic parasite burden. Our candidate shows promise against VL and could be considered for further investigations in phase I and II clinical trials in dogs and/or humans.

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