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A multivalent chimeric vaccine to *Schistosoma mansoni* composed of recombinant Sm29 and Sm-TSP-2 was able to induce an additive protective effect against challenge infection in mice

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Schistosoma mansoni is a blood fluke parasite responsible for schistosomiasis. The best long-term strategy to control schistosomiasis is through immunization combined with drug treatment. In this study, we cloned, expressed and purified Sm-TSP-2 fused to the N- and C-terminal halves of Sm29 and tested these chimeras as vaccine candidates. The results demonstrated that the association of Sm-TSP-2 with N- or C- terminus of Sm29 elicited a protective effect when compared to the immunization with Sm29 alone regarding the reduction of the worm burden, however these association are not effective in diminish the liver pathology. Additionally, we detected high levels of mouse specific IgG, IgG1 and IgG2a against chimeras A and B and significant amounts of IFN- γ and TNF- α and no IL-4. Finally, studies with sera from patients resistant to infection and living in schistosomiasis endemic areas revealed IgG recognition of chimeras A and B. In conclusion, the chimeric proteins tested here induced superior protection against infection compared to Sm29 alone and higher levels of IgG in serum of patients from endemic areas with different status of resistance and susceptibility, therefore they should be considered as potential vaccine candidates instead of Sm29 alone.

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