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TITLE

EVALUATION OF THE REACTIVITY OF 17 PEPTIDES AND A MULTIPEPTIDE AGAINST SCHISTOSOMA MANSONI INFECTION

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ABSTRACT

The trematode of the species Schistosoma mansoni is the etiological agent of schistosomiasis mansoni, one of the neglected tropical diseases that is of greatest concern to public health due to the prevalence of its severe forms and the large number of deaths that occur worldwide. Currently, the standard diagnosis recommended by the WHO is the Kato-Katz parasitological method, which performs well in regions with high infection intensity. However, low sensitivity in regions with low intensity makes diagnosis difficult and masks the real number of infected individuals, interfering with their treatment and proper control of the infection. The objective of this work was to validate, through the Enzyme-Linked Immunosorbent Assay (ELISA), 17 peptide targets derived from the S. mansoni proteome, previously identified and selected by bioinformatics and immunoblotting, in their individual forms and in multipeptide form, in addition to evaluating recognition at different infection intensities. For this purpose, 33 sera from infected individuals from the endemic area of Januária/MG (23 of low intensity; 8 of moderate intensity and 2 of high intensity) and 7 sera from uninfected individuals from a non-endemic area were used. Of the 17 peptides, 6 presented satisfactory reactivity frequency, being above 30% in their individual forms. With the multipeptide, a reactivity frequency of 54.5% was observed. When different infection intensities were evaluated, the multipeptide showed greater recognition of low-infection individuals (65.2%), when compared with the recognition of the 6 individual forms. Through these results, we can conclude that the use of peptides in the recognition of S. mansoni infection in its different forms represents a promising tool to aid in tracking and improving the diagnosis of the infection, especially in areas of low-intensity infections.

KEYWORDS

Schistosoma mansoni; Serological Diagnostics; Peptides

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