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SUMMARY OF THESIS*

OLIVEIRA, Edward José de - **Desenvolvimento de um método sorológico para o diagnóstico laboratorial da esquistossomose mansoni baseado em peptídeos sintéticos.** São Paulo, 2005. (Tese de Doutorado - Faculdade de Ciências Farmacêuticas da Universidade de São Paulo).

DEVELOPMENT OF A SEROLOGIC METHOD FOR LABORATORY DIAGNOSIS OF THE SCHISTOSOMIASIS MANSONI BASED ON SYNTHETIC PEPTIDES

Based on algorithms of hidrophilicity and flexibility, obtained by the use of the ProtScale software, disposable at the site http://au.expasy.org/cgi-bin/protscale.pl, seven potentially antigenic peptides were selected from different *Schistosoma mansoni* proteins: cathepsin B (Sm31), heat shock protein (SmHSP-70), cathodic circulating antigen (CCA) and the polypeptidic sequence of the open reading frame (ORF) of the ET-03 clone. The peptides were produced by chemical synthesis and denominated as P1, P2, P3, P4, P5, P6 and P7. These were independently tested against two pools of human sera, one positive and one negative for schistosomiasis. The peptides P1, P2, P3, P6 and P7, that presented better reactivity when assayed by an immunoenzymatic method, were chosen to be used as antigen for the standardization of an ELISA method, by utilizing Costar 3590 micro plates, and it was called Peptide-ELISA (Pp-ELISA). This method was evaluated on 192 serum samples, divided in four groups: (A) 23 samples from patients with acute schistosomiasis and positive for *S. mansoni* eggs in fecal examination, who were living in a Brazilian Northeast state; (B) 30 samples from patients with chronic schistosomiasis and positive for *S. mansoni* eggs, who were living in a Brazilian North state; (C) 39 samples from individuals with other parasite infection, but no schistosomiasis, living in a Brazilian North state; (D) 100 samples from clinically healthy individuals who presented negative results for coproparasitologic method, living in Campinas, São Paulo State. The serological data obtained by Pp-ELISA were comparatively analyzed with the results obtained by other immunodiagnostic methods: immunofluorescence test for detection of IgM antibodies against gut associated antigens (IgM-IFT); ELISA for detection of IgM antibodies against gut associated polysaccharide antigens (IgM-ELISA) or for detection of IgG antibodies against worm crude antigens (IgG-ELISA). The sensitivity of Pp-ELISA was of 86.6%, considering as schistosomiasis patients only the ones who presented *S. mansoni* eggs in stool examination, and 79.3%, when a serological criterion was used for definition of schistosomiasis patients, with positive results for both IgM-IFT and IgM-ELISA. The specificity of the Pp-ELISA was respectively 94.2% or 94.7%, considering as control group, without schistosomiasis, *S. mansoni* egg negative individuals in stool examination or serologically negative individuals by both tests, IgM-IFT and IgM-ELISA. The positive predictive value for Pp-ELISA was 85.2%, while for the other serologic methods varied from 63.4% to 78.6%. The negative predictive value for Pp-ELISA was as a rule 3% lower than the indices obtained for other serologic methods. When the results of Pp-ELISA were compared with the ones obtained by other serologic methods, better concordance was demonstrated with IgM-ELISA (Kappa indice = 0.75). The reactivity indices for detection of IgG and IgM antibodies were significantly higher ($p < 0.05$) in acute (group A) than chronic schistosomiasis patients (group B). In this study the Pp-ELISA presented a good performance (Diagnostic efficacy = 81.0%), however further studies should be necessary for the evaluation of its applicability on seroepidemiologic surveys.

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