Cloning, Expression and Biological Characterization of a Recombinant Multiepitope for Hepatitis B Diagnosis


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Introduction: Hepatitis B is a liver inflammation caused by the HBV virus and can be diagnose in clinical stage by antibody anti-HBcIgM. Anti-HBcIgG appears quickly after IgM, reaching high titers in chronic hepatitis, and remains even after cure. Since anti-HBc is the first antibody identified and sometimes the only marker detected during the course of infection, it can be used both to indicate HBV acute infection (anti-HBc-IgM), and to identify individuals who have come into contact with the virus (anti-HBc-IgG). Material and Methods: In this work, a recombinant HBcAg (core antigen) multiepitope protein (rMEHB) was produced in order to be used for diagnosis of hepatitis B. Results and Discussion: For this purpose, the synthetic gene was cloned into vector pET21a containing a coding sequence for a 6xHis tag at the C-terminal. Time course induction in E.coli showed an induced protein with an apparent molecular mass of approximately 21 kDa. Protein purification was performed by a single step with affinity chromatography Ni-NTA. Conclusions: Purified rMEHB presents no structural folding profile and thus was successfully used to perform an ELISA assay with positive and negative sera.

Keywords: Cloning, Multiepitope, Hepatitis B, Diagnosis.
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