عنوان مقاله:

Expression of Recombinant Streptokinase from Streptococcus Pyogenes and Its Reaction with Infected Human and Murine Sera

محل انتشار:

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خلاصه مقاله:

Objective(s): Streptokinase (SKa) is an antigenic protein which is secreted by Streptococcus pyogenes. Streptokinase induces inflammation by complement activation, which may play a role in post infectious diseases. In the present study, recombinant streptokinase from S. pyogenes was produced and showed that recombinant SKa protein was recognized by infected human sera using Western blot analysis. Materials and Methods: In this study, the ska gene from S. pyogenes was amplified and cloned into pET۳۲a which is a prokaryotic expression vector. pET۳۲a-ska was transformed to Escherichia coli BL۲۱ (DE۳) pLysS and gene expression was induced by IPTG. Protein production was improved by modification of composition of the bacterial culture media and altering the induction time by IPTG. The expressed protein was purified by affinity chromatography using the Ni-NTA resin. The integrity of the product was confirmed by Westernblot analysis using infected mice. Serum reactivity of five infected individuals was further analyzed against the recombinant SKa protein. Results: Data indicated that recombinant SKa protein from S. pyogenes can be recognized by patient and mice sera. The concentration of the purified recombinant protein was ۳.۲ mg/L of initial culture. The highest amount of the expressed protein after addition of IPTG was obtained in a bacterial culture without glucose with the culture optical density of ۰.۸ (OD۶۰۰ = ۰.۸). Conclusion : Present data shows, recombinant SKa protein has same epitopes with natural form of this antigen. Recombinant SKa also seemed to be a promising antigen for the serologic diagnosis of S. pyogenes infections.

کلمات کلیدی:

Anti-Streptokinase Gene Expression Recombinant Streptokinase Protein Streptococcus pyogenes