Original Paper

Expression of leoA gene of *Helicobacter pylori* in CHO animal cells by RT-PCR method

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Abstract

Background and Objective: *Helicobacter pylori* infection is one of the most common chronic bacterial infections all over the world, particularly in the developing countries. LeoA gene plays an important role in pathogenesis, and the main role of this gene is to increase the bacterial toxin secretion. This study was conducted to isolate and clone the leoA gene in a pEGFP-C2 expression vector and evaluate its expression in eukaryotic system.

Methods: In this laboratory study, the leoA gene was amplified from the standard strain of *Helicobacter pylori* genome (ATCC 43504) by PCR method. It was then inserted into the pTZ vector by cloning T/A. Sub cloning of this gene was performed in a pEGFP-C2 expression vector with a ligase enzyme. The final structure of pEGFP-C2-leoA was transformed by electroporation in CHO (Chinese hamster ovary) cells and the expression of the leoA gene was evaluated by SDS-PAGE and RT-PCR.

Results: The results of PCR indicated that the 1758 bp fragment was amplified from the leoA gene. Cloning of this gene was performed successfully in pTZ and pEGFP-C2 vectors, respectively. The enzyme digestion with two KpnI and SacII enzymes, as well as sequencing, confirmed the accuracy of gene cloning. The observation of the protein product of the leoA gene in CHO cells indicated the successful expression of the LeoA gene in the eukaryotic system of *Helicobacter pylori*.

Conclusion: The final construct of pEGFP-C2-leoA had a successful expression of the leoA gene in animal cells.

Keywords: *Helicobacter pylori*, LeoA gene, Electroporation, Recombinant vaccine

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