Expression, Purification and Evaluation of Antigenicity for CagA Antigenic Fragment of *Helicobacter pylori*

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Background & Objectives: *Helicobacter pylori* is one of the most common chronic infections worldwide. The cytotoxin-associated gen A (CagA) is important virulence determinant involved in gastric injury. The aim of the present study was to construct a recombinant protein containing antigenic region of cagA from *H. pylori* and determining its antigenicity as a vaccine candidate of H. pylori.

Methods: The antigenic region of cagA gene was detected by bioinformatics. The target gene encoding cagA high antigenic region amplified from *H. pylori* chromosome by PCR, digested by BamHI and XhoI restriction endonuclease enzyme and inserted into the prokaryotic expression vector pET32a. The target protein was expressed in the *E.coli* BL21 (DE3) pLYsS. The expressed protein was purified by affinity chromatography with Ni-NTA resin. The integrity of the product was confirmed by western-blot analysis using Sera of infected individual.

Results: Enzyme digestion analysis, PCR and sequencing showed that the target gene (1245 bp) was inserted correctly into the recombinant vector. The expressed protein was purified by affinitychromatography by Ni-NTA resin. The data also indicated that cagA protein from *Helicobacter pylori* recognized by patient sera.

Conclusion: Results indicates that antigenic region of recombinant cagA protein (65kDa) were recognized as an antigen by patient sera, so it might be a candidate for the development of *H. pylori* vaccine and ELISA kits and serological diagnosis of *H. pylori* infections.

Keywords: Antigenic Region; Antigenicity; CagA Gene; *Helicobacter pylori*