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Transient expression of IpaB of *Shigella flexneri* in *Nicotiana tabaccum* in comparison to expressed protein in *Escherichia coli*

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Background and Aims: Shigellosis is caused by Shigella species and there is a high rate of morbidity and mortality. Because of the antibiotic increasing resistancy, vaccine development is one of the goals ofWorld Health Organization. Invasion Plasmid coding Antigensare the major Shigella virulencefactors and recently they became vaccine candidate proteins. “Molecular farming” is a low cost method for large scale production of pharmaceuticals recombinant proteins (vaccine, antibodies and pharmaceuticals) in plants.
Methods: In thepresent study IpaB protein was transiently expressed using agro-infiltration method in Nicotianatobaccum leaves. Plant transformation was confirmed by expression of GFP that was coded by vector.The ipaBgene was cloned in pCAMBIA1304 and the plasmid was transferred intoAgrobacterium tumefaciensstrain LBA4404. Cloning of ipaB in Escherichia coli was done using pBAD/gIII vectorand the expression was induced by arabinose. Expression of IpaBprotein was compared in the two hosts using monoclonal antibody in western blotting.
Results: Our study showed that IpaB is better expressed in plant leaves than E coli.
Conclusions: The aim of the present study was to investigate the possibility of expression of IpaB of S. flexneri in Nicotiniatobaccumwhich was difficult to express by E. coli. The results showed that the expression in plant is achievable and further studies on the level of expression are under progress.

Keywords: Shigellosis; Recombinant proteins; *Esherichia coli*; IpaB gene; Transient expression; Tobacco plant