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Original Article

Expression of Green Fluorescent Protein (GFP) using In Vitro translation cell free system

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Abstract:

ABSTRACT

Background and the purpose of the study: One of the major concerns about recombinant protein production is its possible toxicity for the organism. Purification of the recombinant protein is another challenge in this respect. Recently In Vitro translation cell free system that provides a coupled transcription-translation reaction for protein synthesis to overcome the above mentioned problems has been emerged. The aim of this study was expression of GFP as a marker for gene expression and protein in In Vitro translation system.

Methods: pIVEX2.3-GFP plasmid was cloned to E. coli and the plasmid DNA extracted. In Vitro translation was performed with RTS 100 E. coli Hy kit according to manufacture's instructions. Expression of recombinant fusion protein, His- GFP, was determined by SDS-PAGE, ELISA and western blot analysis.

Results: Expected size of recombinant protein was detected in SDS-PAGE and further confirmed by western blot analysis and ELISA.

Major conclusion: Results showed that In Vitro translation is suitable for expression of recombinant protein and fusion of the recombinant protein with His-tag facilitates the purification.

Keywords:

Green Fluorescent Protein (GFP), pIVEX, In Vitro cell free expression system

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