

## Cloning and Expression of antigenic ABAYE2132 Protein of *Acinetobacter baumannii* in *E. coli*

Behnam behnooye<sup>1</sup>, Safa Lotfi<sup>1\*</sup>, Seyed Mohammad Moshtaghioun<sup>2</sup>, Mojtaba Mortazavi<sup>1</sup>, Ali Falahati<sup>2</sup>

<sup>1</sup> Department of Biotechnology, Institute of Science and High Technology and Environmental Sciences, Graduate University of Advanced Technology, Kerman, Iran.

<sup>2</sup> Department of Biology, Faculty of Science, Yazd University, Yazd, Iran.

\*Corresponding author Email address: safalotfi@ut.ac.ir

Among the various pathogenic bacteria causing nosocomial infections, *Acinetobacter baumannii* (*A. baumannii*) is the most common. *A. baumannii* is a gram negative and non- mobile coccobacilli, which causes severe infections in patients hospitalized in the hospital. Adherence to the host cell surface is the first and the most important stage of infection caused by *A. baumannii*. ABAYE2132, one of *A. baumannii* fimbrial proteins, is the most effective factor in cell adhesion and has been proposed as an appropriate candidate for vaccination against *A. baumannii* infection. In the present work, ABAYE2132 gene was cloned and expressed in *E. coli* for the first time. For this aim, at first the primers were designed according to the gene sequence and then the gene region fragment was amplified using PCR. The PCR product was finally cloned into the cloning (pTG19-T) and expression (PET26b) plasmids, respectively and the plasmids were inserted into *E. coli*. The protein expression in *E. coli* was induced with 1 mM IPTG. The SDS-PAGE results confirmed that the expression of the recombinant protein was successfully performed. Considering that ABAYE2132 is an antigenic protein and an appropriate candidate for production of the vaccine and also for rapid diagnostic tests of *A. baumannii*, the results obtained from this work possess great importance.

**Keywords:** *Acinetobacter baumannii*, ABAYE2132 protein, Nosocomial infections, Recombinant protein, Vaccine.