L1tag Protein Expression of Human Papillomavirus Type 18 in Two *Escherichia coli* Strains, in Auto-inducing Media.

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Abstract

Introduction: Inducible production of proteins from cloned genes in E. coli is economical, effective and widely used to develop vaccines and drugs.

Objective: Describe the manufacture of prophylactic vaccines against Human Papillomavirus type 18.

Materials and methods: Major capsid protein L1 of Human Papillomavirus genotype 18 (HPV18) was produced in a fused form in two strains of *Escherichia coli*: BL21 (DE3) and Shuffle C3026 using an inducible expression system.

Results: The protein was detected by anti-His monoclonal antibodies in the insoluble fraction, forming insoluble aggregations (inclusion bodies). The yield was more than 10% of total cell proteins in the culture media tested (ZYB 5052 y SBM 5052). Shuffle C3026 strain shows the highest percent (17.1 % ±1) of recombinant protein in ZYB 5052 auto-inducing media.

Conclusions: This work offers a potential route for convenient manufacture of prophylactic vaccines against Human Papillomavirus type 18, which is one of the etiologic cause of human cervical carcinoma in developing countries.

Keywords: Human Papillomavirus, prophylactic vaccines, *Escherichia coli*: