OBTAINING L1 PROTEINS FROM HUMAN PAPILOMAVIRUS TYPES 16 AND 18 IN *E. COLI*® T7

Susana Brito Molina1, Yunier Serrano1, Elsa Pimienta1, Alina Falero1, Carlos Fernández1, Sandra Rodriguez1, Karen Marrero1

1Unit of Biological Product Research, Direction of Research, Development & Innovation, National Center for Scientific Research, Ave. 25 esquina 158. Cubanacán. Playa. La Habana. Cuba. P.O. Box 6412/6414.

Telf. 72085236- ext 202

MsC. Susana Brito Molina, susana.brito@cnic.edu.cu

Lic. Yunier Serrano Rivero, yunier.serrano@cnic.edu.cu

DrC. Elsa Pimienta Rodríguez, elsa.pimienta@cnic.edu.cu

MsC. Alina Falero Morejón, alina.falero@cnic.edu.cu

Tec. Carlos Fernández, carlos.fernandez@cnic.edu.cu

DrC. Sandra Rodriguez, sandra.rodriguez@cnic.edu.cu

DrC. Karen Marrero Domínguez, karen.marrero@cnic.edu.cu

Thematic: Chemical and Biochemical Engineering

The incidence of Cervical Cancer (CC) worldwide is 530,000 cases per year, of which 85% occur in developing countries. Genotypes 16 and 18 are identified as the most prevalent and responsible for 70% of cases of CC worldwide. The vaccines currently available against HPV are highly expensive, which limits their use in developing countries like our country. L1 is the major capsid protein of the HPV, it can be expressed recombinantly in strains of *Escherichia coli*. In our laboratory, the HPV 16 and 18 genes were amplified from a sample of total DNA from a Camagüey patient. The L1 HPV 16 and 18 proteins were expressed in the *E. coli* Shuffle®T7 strain. The inclusión bodies were solubilized with 8M urea and the proteins were purified by metal chelate chromatography. The strategy described could be used to obtain L1 proteins for the future development of a Cuban vaccine candidate against CC. This process would contribute to the development of preventive vaccines with a more economical production process and affordable price to the population.

Keywords: human papillomavirus, purification, *Escherichia coli*