



Production of recombinant Zika virus-like particles for use as vaccine antigen

Gabriela Brzuska, Department of Recombinant Vaccines, Intercollegiate Faculty of Biotechnology UG&MUG

Supervisor: prof. dr. hab. Bogusław Szewczyk, co-supervisor: dr. Ewelina Król

Zika virus (ZIKV) is a mosquito transmitted flavivirus, which remains in the main focus of many laboratories throughout the world in recent years. It is due to the fact that ZIKV has been connected with several diseases including infant microcephaly, Guillain Barre Syndrome, and other neurological defects. Moreover, recent outbreaks of Zika virus infections have put the human population, especially in Americas and Asia at a great risk, thus it emphasizes the need for the development of a safe and efficient vaccine.

The project aims at designing a cost-effective platform for production of recombinant antigens used for diagnostic and vaccine purposes, which can be easily adapted for a large scale production. In this research we will produce virus-like particles (VLPs) in different expression systems. VLPs can be used as non-replicative vaccine antigens, capable of inducing high immunological response in human body. Furthermore, two vaccines based on VLPs against HBV and HPV have been approved by the FDA for the prophylactic use in humans. In order to obtain Zika virus-like particles different variants of prM and/or E proteins will be expressed in various expression systems. Molecular biology methods will be employed to analyze the obtained VLPs and to propose adequate methods for their purification. In the next part of the project we will investigate immunogenicity of produced VLPs in a mouse model.

KSZTAŁCIMY NAJLEPSZYCH – kompleksowy program rozwoju doktorantów, młodych doktorów oraz akademickiej kadry dydaktycznej Uniwersytetu Gdańskiego. Zad. 2. Life Sciences and Mathematics Interdisciplinary Doctoral Studies (LiSMIDoS)



HUMAN CAPITAL
NATIONAL COHESION STRATEGY

EUROPEAN UNION
EUROPEAN
SOCIAL FUND

