

**DEVELOPMENT OF A COST EFFECTIVE ROMANIA-NORWAY JOINT PLANT-  
BASED TECHNOLOGY PLATFORM FOR PRODUCTION OF VACCINES  
AGAINST HUMAN  
HEPATITIS VIRUSES B (HBV) AND C (HCV)  
GREENVAC**

*1st Project meeting, Bucharest, October 2nd, 2014*

*Venue: Institute of Biochemistry, The Seminar Room, 2nd floor*



**Minute of the meeting**

The workshop was opened by Dr. Norica Nichita, the project coordinator, representing the Institute of Biochemistry of the Romanian Academy, who welcomed the audience and addressed special thanks to the two guests from Norway, Dr. Jihong-Liu Clarke and Dr. Stephanos Xenarios. The audience was composed of team leaders of the consortium institutions, team members, PhD and master students. Dr. Nichita presented an overview of the project, the teams of the consortium, the general aims and objectives and potential bottlenecks. Her talk focused on HBV, introducing the current knowledge on HBV vaccine development and the new strategies proposed by the consortium to develop new, improved viral antigens. Preliminary experimental results on the expression of two HBV chimeric envelope proteins in mammalian cells were also shown.

The discussion continued with Dr. Ioan Popescu's presentation about a new HCV vaccine. He briefly introduced the novel concepts in the field, the approaches proposed in the project, the production and characterization of the new antigens and the validation protocols. As Prof.

Jean Dubuisson the leader of the Center for Infection and Immunity of Lille team, Dr. Popescu also introduced this partner institution. Officially launched in January 2010, as a mixed research unit of the Pasteur Institute of Lille, the National Institute of Health and Medical Research (INSERM), the National Center for Scientific Research (CNRS) and the University of Lille, the center covers three major fields of research, Parasitology, Molecular and Cellular Microbiology (including virology) and Immunity and Inflammation.

At the end of these presentations there were questions from the audience referring to the purity and the amount of viral proteins required for the immunization studies and the most suitable assays to investigate the immune response. Dr. Clarke proposed to enlarge the number of HBV/HCV antigens initially proposed in the project, which will be transiently expressed in plant cells, a reliable approach for quick screening of efficiency of protein expression.

Next speaker was Dr. Jihong Liu-Clarke, the leader of the Norwegian Institute for Agricultural & Environmental Research (Bioforsk) team. She talked about the vast experience of her institute in plant biotechnology and production of foreign proteins in plants and discussed various technologies available to express these proteins in tobacco or lettuce. She also presented the results obtained in previous projects dealing with human and fish plant-produced vaccines.

The social and economic aspects of vaccine production in plants were further analyzed by Dr. Stefanos Xenarios, from Bioforsk. Dr. Xenarios discussed the potential design of a preference survey, to understand end-users choice when purchasing vaccines, at the same time enhancing social awareness about the threat from HBV and HVC. Dr. Otelea suggested the possibility to select the participants of the social survey amongst the patients diagnosed with HBV/HCV infections, treated at the “Matei Bals” National Institute for Infectious Diseases.

Dr. Crina Stavaru, the leader of the “Cantacuzino” National Institute for Research and Development for Microbiology and Immunology team, made a brief introduction of her institute, the new facilities that will be used to implement the project and the animal house, a key facility in this project. The discussion focused on the immunology procedures used in the project to assess the immune response of the newly designed antigens, the number of animals taken into the study as well as the suitability to produce these antigens in bacterial cells, as supplementary controls.

The next speaker was Dan Otelea, the leader of the Matei Bals” National Institute for Infectious Diseases (NIID) team. He described the institute facilities for diagnosis, treatment and monitoring of patients with viral chronic infectious diseases. NIID is the reference center for monitoring treatment in HIV/AIDS patients and for HIV resistance genotyping, participating in several international research projects and clinical trials in this field. Dr Otelea presented a background of the HIV-1 epidemics in Romania: historical data, statistics on newly diagnosed cases, risk populations, trends in transmission, antiretroviral therapy availabilities and resistance implications. He also presented several phylogenetical studies performed by his team to better understand specific sub-epidemics and particular subtypes.

The last results on the recent HIV outbreak among Romanian IDUs (intravenous drug users) were presented by Simona Paraschiv. She showed the clinical and social profile of the IDU recently diagnosed with HIV and the presence of HCV co-infection. Phylogenetic analysis of HIV and HCV in these patients has shown that the two viruses were transmitted independently for most of IDUs. The expertise gained in these projects is to be used also in the GREENVAC project.

The meeting was closed by a round table, recapitulating all the work packages assumed in the project, the milestones and deadlines of the proposed activities and of the technical and financial reports to submit to the financing agency. The participants were taken on a tour of the Institute of Biochemistry, visited the main facilities of the institute and had the opportunity to discuss with other scientists.

### **Program**

- 9.30 CO: Dr. Norica Nichita: Short presentation of the GREENVAC project
- 10.00 CO: Dr. Costin Ioan Popescu: Production, characterization and validation of new HCV vaccines
- 10.30 P1: Dr. Jihong Liu-Clarke: Human and fish plant-produced vaccines
- 11.30 P1: Dr. Stefanos Xenarios: Social economic aspects of vaccine production in plants
- 12.00 P2: Dr. Crina Stavaru: Short presentation of the “Cantacuzino” National Institute for Research and Development for Microbiology and Immunology
- 12.30 P3: Dr. Dan Otelea/Dr. Simona Paraschiv: Short presentation of the “Matei Bals” National Institute for Infectious Diseases and the HIV projects
- 14.00 Light lunch at the Institute of Biochemistry
- 14.30 Visit of the Institute of Biochemistry, discussion