



The *InnovaBalt* project of Latvian Institute of Organic Synthesis

Latvian Institute of Organic Synthesis (IOS) is the leading public scientific institution in the field of drug design and discovery in Baltic States. According to scientific excellence evaluation performed by experts of Technopolis group (Nordic Council of Ministers) the achievements of IOS were graded as the best in Latvia between 148 evaluated institutions. Experts recognized IOS as one of the world's leaders in its field.

Nevertheless, there are still some "bottlenecks" in capacities and competences of IOS to be eliminated. Therefore, IOS recently applied and received the funding from the EC 7th Framework Program for the project "*Strengthening the research and innovative capacities of the Latvian Institute of Organic Synthesis, the leading Baltic regional centre for drug discovery*" (*InnovaBalt*). The total budget of the project is 5.262 million euro. The project is coordinated by the Chairman of Scientific Council of IOS Professor Ivars Kalvinsh. Maija Dambrova, the Head of Laboratory of Pharmaceutical Pharmacology, is the Manager of *InnovaBalt* project.

The implementation of this project started on September 1, 2013. The general objective of the *InnovaBalt* project is to strengthen the multidisciplinary research capacities, management of intellectual property as well as human resources in the innovative drug discovery at IOS. *InnovaBalt* involves 50 strategic, training, and network organizations. The work plan of *InnovaBalt* includes promotion of the exchange of experience and collaboration with leading European research centers. The project enables the recruitment of 14 experienced researchers and the upgrading of research infrastructure, as well as organizing of 12 important trans/international conferences and seminars.

During the period of the first two *InnovaBalt* years, a number of activities are already ongoing and 20 long-lasting (4–5 months) outgoing visits to our partnering institutions have taken place. To improve expertise in biophysical chemistry and *in silico* drug discovery IOS has hosted 22 visitors from 14 institutions. The level of knowledge has been increased substantially also in modern process chemistry, green chemistry, and organic synthesis methods for drug discovery. In addition, the new test systems for pharmacological characterization of drugs and advanced drug delivery forms have been developed. The

exchange of scientists with leading research centers contributes also to research and innovation management and technology transfer capacity in IOS.

The *InnovaBalt* project implementation strengthens also the scientific infrastructure in the IOS. Thus, IOS has acquired and is extensively using recently established computer cluster for molecular modeling purposes, a crystallization robot and a light microscope for protein crystallography, as well as the system for light scattering measurement of hydrodynamic size, zeta potential, and molecular weight of proteins and nanoparticles. The *InnovaBalt* project also financed the purchase of a fluorescence emission computer tomography system with in-line microCT, which is the first in the world 360° CT and 360° optical imaging benchtop multi-modality *in vivo* imaging system produced. As a result, the capacity of IOS in the field of drug discovery and pharmacological investigation has been essentially upgraded and strengthened.

Exchange of opinions and communication is one of the most important components in the development of scientific ideas. Therefore, ten seminars and workshops were organized in the framework of *InnovaBalt* and there will be more events coming in the near future. The main *InnovaBalt* event **The Drug Discovery conference** will take place in August 27–29, 2015, Riga, Latvia. This conference will cover topics starting from organic synthesis and medicinal chemistry to biological and pharmacological applications of novel ligands. The scientific program of the conference and discussions will be organized for chemists in organic and analytical chemistry and process development, as well as for pharmacologists and biologists to present investigations of mechanistic aspects of developmental drugs. A session for the stakeholders will be organized. The satellite seminar dedicated to the 50th anniversary of journal *Chemistry of Heterocyclic Compounds* also will take place to celebrate the history of IOS and drug discovery in Latvia.

The external evaluation of the *InnovaBalt* achievements will be carried out in 2017. It will provide an essential contribution towards the definition of the further strategic plan to strengthen IOS research and innovation capacities essential for the regional economic and social development, as well as to promote the integration of IOS in the ERA activities.