

SC Meeting minutes

Meeting title: InnovaBalt Steering Committee (SC)/ Stake holder session:
Industry and academia collaboration

Meeting location: Radisson Blu Hotel Latvija, 2nd floor Conference Hall Omega 1, Elizabetes 55, LV-1010, Riga.

Meeting time and date: 14:30-15:30, 27.08.2015.

Meeting attendees: Dr. Andis Slaitas, InGreSolutions, Latvia; Prof. Daumantas Matulis, the Institute of Biotechnology, Lithuania; Dr. Eriks Kupce, Bruker Biospin, UK; Prof. Ari Koskinen, Aalto University, Finland; Prof. Claudiu Supuran, University of Florence, Italy; Prof. Edvards Liepinsh LIOS, Latvia; Prof. Gunars Duburs, LIOS, Latvia, Prof. Ivars Kalviņš **InnovaBalt** Coordinator and Prof. Maija Dambrova **InnovaBalt** Manager; about 100 registered participants of the Drug Discovery Conference 2015..

1. Election of the Chair of the Meeting

Prof. Ivars Kalviņš was elected as the Chair of the Meeting.

2. Election of the Secretary of the Meeting

Prof. Maija Dambrova was elected as the Secretary of the Meeting.

3. Approval of the Agenda

The agenda was provided in the program of the Drug Discovery Conference 2015.

4. Absence from the meeting

Representative from Latvian Ministry of Education and Science Agrita Kiopa, Professor Ad IJzerman from Leiden University, Prof. Raimonds Valters, Latvian Academy of Sciences; Prof. Fabrizio Carta from University of Florence, sent their regards.

5. M. Dambrova opened the meeting and welcomed participants.

M. Dambrova presented achievements and activities of InnovaBalt WPs during the second year of its implementation (presentation in appendix). The presentation was prepared and presented also at the Latvian EU Presidency event **Week of Innovative Regions in Europe**, Poster session (June 3, 2015, <http://wire2015.eu/en/side->

[events/brokerage-event/about](#)) which was an excellent opportunity to demonstrate and to discuss the best examples of synergies between Research Framework Programme and Structural Funds projects, to share ideas and practices, and to find contacts and partners for future EU projects. The presentation of the **InnovaBalt** project was one of the best and it initiated discussions about discrepancies in the understanding of synergies issues among local administrators and EU guidelines. The presentation covered following examples of the synergies of the LIOS implemented FP7 **InnovaBalt** project to different EU Structural Fund activities and included following examples:

- The acquiring of new NMR equipment was funded by the EU Structural funds project ERAF 2011/0045/2DP/2.1.1.3.1./11/IPIA/viaa/001 “*The development of research infrastructure for the State Research Centre of Pharmacy and Biomedicine*”, **InnovaBalt** project provides synergy with EU Structural funds and offers possibilities for cooperation with the leading outstanding NMR centres in Europe (staff exchange, recruitment of experienced researchers).
- **InnovaBalt** project financed purchase of Zetasizer Nano ZSP system to perform studies of nanoparticles and to determine molecular weight of proteins. The equipment is extensively used for: studies and characterization of nanoparticles formed by cationic self-assembling compounds (funded by the European Social Fund, project Nr. ESF 2013/0002/1DP/1.1.1.2.0/13/APIA/VIAA/005 and EuroNanoMed, project “*CheTherDel*”); studies and characterization of nanocatalysts (funded by the European Social Fund, project Nr. ESF 2013/0002/1DP/1.1.1.2.0/13/APIA/VIAA/006).
- **InnovaBalt** project financed purchase of hybrid CPU-GPU computer cluster to establish a platform for structure-based drug design and to perform large-scale molecular dynamics simulations of protein-inhibitor complexes. In addition, LIOS has acquired license of GAUSSIAN software package within the ERDF co-financed project “*Implementation of the international Research Assessment Exercise recommendations*” which will allow chemists to perform quantum mechanical calculations of chemical reactions and reaction products. This will enable detailed studies of the reaction mechanisms and prediction of product physico-chemical properties.
- Together with four **InnovaBalt** partnering institutions (University of Parma, University of Antwerp, University of Helsinki and University of Ljubljana) LIOS participated in the consortium and successfully applied for an Innovative Training Network grant in Horizon 2020 call: “*Interdisciplinary Training Network for Validation of Gram-Negative Antibacterial Targets*” (INTEGRATE), 223,578 EUR.
- Dr. H. Biverstål is recruited by **InnovaBalt** to increase LIOS research capacity in the field of protein NMR spectroscopy for drug discovery applications, which is in line with a recent acquisition of a new 800 MHz NMR spectrometer for biomolecular studies. His application for research funding was successful in the European Economic Area (EEA) and Norway Grant program. Project “*Benefits and detrimental effects of sequence variants of Amyloid- β towards the use of small peptides for aggregate dissolution therapy in dementia*”, 499 000 EUR.

- LIOS researchers employed in the EU Structural fund projects use **InnovaBalt** support to participate in international scientific events to disseminate results and increase the visibility of the IOS research potential in European Research Area.

It was concluded that in the synergy to different EU Structural Fund activities **InnovaBalt** improves the organization and quality of science in LIOS:

- ✓ Recruited researchers and purchased equipment fill in gaps in the in-house expertise;
- ✓ Exchange visits and organized scientific events and trainings improve international-level transfer process of accumulated knowledge and technologies, as well as initiate new directions in drug discovery;
- ✓ Participation in international events increases visibility of LIOS in ERA;
- ✓ Special attention is paid to the education of early stage researchers.

6. Discussion on **Industry and academia collaboration** (Moderators Dr. Andis Slaitas, SC Committee member, and Dr. Osvalds Pugovics, LIOS Director).

M. Dambrova introduces to the background of discussion about possibilities for the collaboration between academic research institutions and industry. In case of LIOS there are under-used acquired IPs, as well as increasing pressure from science administrators to commercialize research results and to pay more attention to possibility of spin-offs. We have invited participants who have different experience with drug discovery related issues. **A. Slaitas** invites the first presenter.

Prof. Dr. Paul Finn, InhibOx, UK, presented his experience in drug discovery research and attraction of funding from different sources. The way from laboratory to Spin-off Company in this case has lead to the discovery of belinostat, a novel hydroxamic acid-type histone deacetylase (HDAC) inhibitor with antineoplastic activity, and success in form of revenue and a new medicine. Biotech companies and spin-offs have been often funded around new drug targets. P. Finn notes that intellectual property is an important consideration in investment decisions. Patent filling in academia is a complex issue, since publication and patenting can lead to conflicting requirements. Patents are often filed too early because it is seen positively from funding organizations, but the technology might still be relatively immature. In case of Prolifix, they did not have IP on target of compounds, but just scientific idea which was successfully developed in contract research with LIOS.

Rising funds is very difficult and depends on quality of people. Much depends on timing, and funding levels and timelines are hard to match with the requirements of drug discovery. Prolifix/TopoTarget had limited resources; therefore a highly pragmatic approach was required. In academia there is excellent science, low cost, and people are responsible, while CROs have better infrastructure and experience in project management. Belinostat (Beleodaq) was approved by FDA on July 3, 2015. Investors and academia company founders came from different backgrounds and had

different expectations. Timing for commercialization in drug discovery is difficult to judge. Everybody needs to invest in relationships and addressing problems early.

Prof. Dr. Erich Gnaiger, Medizinische Universität Innsbruck, OROBOROS

Instruments, Austria, presented lecture “*From innovation to dissemination*”.

OROBOROS instruments turnover is 100 instruments per year. The vision: invest in innovation, not law suits. For small sized company it is easier to sell, but not protect their products. We publish everything (manuals, protocols, research articles), including publications on a dedicated website. Publications are important to preclude others to follow the same path. Features of OROBOROS and advice to others:

1. Top level instrument - to be the best on the market.
2. Provide training, contact with users.
3. World-wide network for users.
4. Service in the service for science.
5. Innovation, continuous development and optimization.
6. No investors involved.
7. No expensive advertisement.
8. Not only drugs can be innovated, also accessories.
9. If this will be a great idea, distribution will be easy.
10. Cooperation and corporate social responsibility (Bioblast Wiki).

Dr. A. Slaitas starts discussion with questions: LIOS has many patents, but no spin-offs have emerged. What is the best way to go forwards? How to encourage initiatives coming from the labs?

Dr. Vilnis Liepiņš, JSC "Olainfarm", Latvia, stresses importance of strong patents. Academia should look at this from infringe point. If you go to industry, you have to explain in which way this is a good patent (market analysis), you should offer a real thing, backed up.

Dr. Osvalds Pugovics asks about the choice to keep the rights for the Institute or to spin off. When it is the right time?

P. Finn. It is a complex question, but spin-off is the right way to do this. However, one must consider also other routs, such as licensing, especially for technologies.

A. Slaitas names incubators (Karolinska Institute example).

O. Pugovics adds that an Advisory board could consider project ideas.

Prof. Dr. Tangui Maurice, CNRS, France, works for academia, and also has founded a company which offered experimental disease models to industry. T. Maurice stresses importance to become the best, not concentrate on patents. As soon as you take patent, time flies and you have to go on and look for new investments.

Question from audience: When you have multiple patents, are there some check lists which could help to choose the strongest one?

Each investor has its own check list. Some want to see clinical results; others are satisfied with preclinical evidence. Comities offer the first expertise; usually they represent people who are ½ academia and ½ industry background. In some cases

projects get counsellor which advises even if he is not investing. This is a possibility for a kind of organization to build.

Dr. Ilmārs Stonāns, JSC "Grindeks", Latvia. Company Grindex has no check list for scientists, but the best way is to present the idea to somebody who is an expert. One has take steps to pay attention to confidentiality issues, of course. We analyse, make decisions about additional preclinical research needed, and make further decisions. Not only about drug activity, also products as such - commercial benefits. Do not hesitate to talk. LIOS is an example of an academic institute which talks to Grindex and has many ideas.

V. Liepiņš mentions again the discussion about mid-stage organization, incubator or consultant.

O. Pugovics: How about the possibility to go to big pharma instead of making spin-offs?

P. Finn: It depends on the stage of project. Some academics want to be involved. There is no single answer. Some academics exaggerate early finding, it is easy to get carried away. The target properties must be clear: what my compound must have and demonstrate that your drug has those.

Dr. Dmitrijs Chernaks, LIOS: The most of the private universities (USA experience) have in-house people to make business plans. Try to sell your invention to your grandma, and if she buys, everybody will.

Prof. Ivars Kalvins: There are different companies, also those which will use your patent as a proof of concept but chose their own compound for the further development. There are no spin-offs of LIOS, because of such reasons as: it was forbidden, no state support to incubators. Everything belongs to state if you work in state institute, do scientists have motivation to innovate?

I. Stonāns. Grindeks bought several patents from LIOS, and those are going to be commercialized. Who and when? – this is a mental thing. Are one ready to switch from research to development? It is expensive to go on with an idea, but you should do that if you are ready to risk. This is the point to start your business.

E. Gnaiger says that he is “a non-pure and un-applied scientist”. He is happy to introduce through business the quality which is not possible in laboratory and feed back to science.

V. Liepiņš: Each case is individual, we cannot generalize. There is a possibility to work on process development and sell to partners without patenting.

T. Maurice: Try to organize the transition from laboratory to industry. Look for examples find business people who have experience in business similar to yours.

P. Finn: IP is complex; there are many other ways than patenting. Do as much as you can in academia before you patent.

A. Slaitas and **O.Pugovics**, conclusions:

1. Evaluate ideas yourself, inside the organization/institute; experienced in-house people are an advantage;
2. Evaluate your personality, if you are the right one to drive the commercialization;
3. Incubators/technology transfer offices/advisory boards could be of help; however there might not be enough of high level professionals in Latvia.

7. Next meeting

Next meeting will be organized in one year, the end of August, 2016.

8. End of the meeting

Meeting ended 15:45.