Interview: Kurt Zatloukal – National Node Director, BBMRI Austria

"Personalised medicine is one of the key drivers in the pharma industry, but I must admit that I am concerned about the sustainability of the current status of personalised medicine."

19.09.2017

Tags: Austria, BBRMI, Biobank, R&D, Research

Dr. Kurt Zatloukal, national node director of the Bio-Banking and Bio-Molecular Resources Research Infrastructure of Austria (BBMRI Austria), discusses the challenges of collaboration between the private and academic pharmaceutical sectors and the importance of their work in advancing pharmaceutical innovation. Furthermore, he looks into the growing trend of personalised medicines and the importance of Austria, and more specifically Graz, as the centre point for BBMRI Europe´s (BBMRI-ERIC) operations.

As the national node director, could you introduce our international readers to BBMRI Austria?

The Biobanking and Biomolecular Resources Research Infrastructure of Europe, also known as BBMRI-ERIC, is a dedicated multinational legal entity created by the European commission to set up operations of research infrastructures in different member states.

On a national level, we are known as BBMRI Austria, and we engage with the key stakeholders; for example, BBMRI Austria joined forces with the medical universities of Vienna, Innsbruck and Salzburg as well as the University of Vienna, and the Alpe-Adria University of Carinthia. They all help us with ethical, legal and data management issues. Furthermore, we have a collaboration with the University of Veterinary Medicine Vienna, and I consider this network to be of high importance and very unique, as animals´ similarities are very relevant for understanding human diseases.

What areas of medicine are relevant from a European perspective?

[Featured_in]

Our role is essentially to provide access to human biological materials such as blood, tissue from a tumour, spinal fluid, and isolated cells as well as the associated information on diseases and outcomes. Biobanks are the cornerstone for providing the research environments with material from the healthcare ecosystem.

One of our tasks consists of standardizing the procedures for collecting and processing of biomaterials, to improve the quality of our materials and to supervise compliance with legal and ethical standards. The latter is increasingly complicated especially in the field of multinational research, because it is a real challenge to correctly comply with differing ethical research standards of multiple countries. BBMRI-ERIC has the knowledge, experience and procedures to deal with these potential roadblocks as we are specifically located in local markets. As we go forward the main hurdle to overcome is the implementation of the European data protection regulation in regard to medical research.

What is the importance of efficient and high-quality biobank services?

Biomarkers and drug developments are applications that rely on BBMRI services as biological materials are needed to identify a new drug target and to design clinical trials. This is due to the fact that designing a clinical trial requires one to know how often a certain disease which is targeted by a drug is present in a population. A company typically does not have access to sufficient biomaterials covering various diseases in different populations which is required to characterize the relevance of a target for a therapy or to plan clinical trials and how to identify the patients to treat; in other words, essentially no biomarkers and new drugs can be developed without the existence of biobanks.

Having said that, BBMRI Austria´s relationship with the industry is still in development as our biological materials and medical data are donations. They are generated in the public healthcare environment and are considered a public good. On one hand, patients are currently unhappy with the idea of industry using their donation to make profit. On the other hand, a scientific paper has never cured a patient; therefore, they fully acknowledge that only industry can deliver innovative drugs and diagnostics. All in all, collaboration between the public and private sectors is needed, but the solution is not easy.

What initiatives have you implemented to link retail and research?

[related_story]

We have come up with a model called Expert Centres. This model is forward looking and generates a lot of interest because it addresses a genuine problem. The industry needs access to biobanks´ resources, namely patients´ biomaterials and associated data to develop drugs and the industry is willing to pay for it. However, it is illegal to sell human biomaterials and data. Therefore, BBMRI tried to create a model where the return to the public sector would be other than financial to overcome this incompatibility.

The approach of the Expert Centres is as follows: the industry needs the information rather than the physical material – therefore – why not join forces to transform biomaterial into information, which can be shared and benefits both sectors. This however requires that biomaterials and their analysis are highly standardized to meet industries quality requirements. The government is supportive because of the positive outcomes that building bridges between the public, academic and industry sectors has. More specifically, there is a wide range of dedicated funding programs for these public private partnerships.

What structures are in place to interact with the healthcare ecosystem?

First of all, nobody is more interested in improving healthcare than the patients. They want their biomaterials and data to be used rather than stored away in fridges or data centres. For this reason, we have a dynamic and forward-looking engagement process with patients. We participate in stakeholder forums and work with the patient advocacy groups to understand patients´ needs and help them understand our responsibilities. The prerequisite for solid collaboration is trust.

We produce a lot of information material, and publish articles in newspapers for patients, doctors, scientists and authorities. We reach out quite often to policy makers, the European parliament, and European commission. Additionally, we collaborate with regulators, such as the EMA, and standardization organizations like CEN and ISO. On the doctor level, we observe a lack of understanding if medical staff are not involved in research activities, as they consider our processes to be burdensome. I personally view this as the biggest challenge we face and we need to improve this as physicians are the prime contact for patients, acting as our voice.

How do you view the trend of personalised medicine?

Personalised medicine is one of the key drivers in the pharma industry, but I must admit that I am concerned about the sustainability of the current status of personalised medicine. The way we categorise diseases today is not optimal from the personalised medicine point of view. Today’s

organ-based ontology creates too many subcategories, which render personalised medicine unaffordable for healthcare systems. I think we need approaches that allow definition of larger patient groups with common molecular disease features to be treated with a certain drug which in the end increases the number of patients benefitting from personalized medicine and at the same time can be more easily financed.

A large group of informed stakeholders in the US recently joined forces to understand how the industry could render personalised medicine sustainable. They concluded that by capturing all the information from a molecular mechanism perspective it is possible to create new and larger groups of diseases. In summary, once a common underlying mechanism in different diseases is identified, the category can then be a common target for a single drug. All this information is derived from biobanked materials using a combination of advanced analytical technologies, such as genome sequencing or metabolomics as well as bioinformatics.

What challenges are you facing in relation to changing research approaches?

The individualistic mind set is no longer suitable for scientific research. Neither a single person, nor a single campus can successfully achieve ground-breaking discoveries concerning the current great health challenges related to ageing populations. We should really think how we can collectively take the next steps together. To a certain extent, fields such as astronomy and physics have managed this, and this is a model we can use for our operations.

Furthermore, genetic research has to start focusing on more than a single gene at a time. Of course, affecting a single element can at times cure some diseases, but most diseases are highly complex. Acknowledging that biology is a highly complex system that needs to be addressed at an interdisciplinary level while in the meantime studying multiple genes and their interactions with the environment will help us understand such complexity.

Where would you like to see the biobanking environment at a broader level?

Several countries are preparing to become members of BBMRI-ERIC. We intend to increase our global integration through collaboration with the US, Middle East, Africa and Asia. We face similar health problems across the world and therefore it makes sense to further integrate globally. Moreover, the pharmaceutical industry is global, and we would like as BBMRI-ERIC to provide a real collaborative impact on advancing pharmaceutical developments.

What does Austrian research offer on the global scale?

Actually, Austria has a really interesting role in the field of research for many reasons. Firstly, Austria, and in particular the region of Styria, is a leading European region attracting R&D investments. Secondly, we act as the bridge between northern, eastern and western Europe and we have learnt to collaborate with a diverse range of cultural backgrounds. Additionally, Austria is a leading contributor to Biobanking initiatives which ultimately enabled BBMRI-ERIC’s European headquarter to be located here.

See more interviews