

Thriving life science sector in Vienna

AUSTRIA The heart of the Austrian life sciences sector is beating ever stronger despite the pandemic. European Biotechnology spoke with Johannes Sarx and Philipp Hainzl about the tremendous growth and key figures of the Life Sciences Cluster Vienna.

EuroBiotech According to a new survey, Austria's life sciences sector and especially the Vienna cluster has grown significantly over the past three years. Can you please give our readers a more detailed picture?

Johannes Sarx With almost 1,000 companies active in biotechnology, pharma or the medical devices business, the life science sector is a highly important part of the Austrian economy. For 2020, the new Life Science Report Austria documents 7% more businesses than were reported for 2017. The companies were responsible for a turnover of €25 bn, which means a substantial increase of 12% compared to three years ago. In 2020, more than 60,000 people earned their living working for one of these companies, which is 9% more than in 2017. This strong economic development is supported by a tight network of internationally renowned research expertise plus other organizations, including business associations, scientific societies, investors, and IPR and marketing experts.

Philipp Hainzl Overall, Vienna hosts about half of Austria's biotech, pharma, medical device, and digital health companies as well as the related fields of research, and is the country's centre for advanced medicine. Revenues and the number of employees have both grown by 9% within only three years. Vienna is home to 600 life science organisations, including ambitious start-ups, successful SMEs, subsidiaries of internationally active large companies and world-class research facilities with a total of around 41,000 employees. The sector's significance can be seen through revenues of



JOHANNES SARX heads the seed funding department of the Austrian development bank Austria Wirtschaftsservice (aws). He is a member of the supervisory board of KHAN-I, a €60 million fund for translational drug research, and of the supervisory board of the Austrian Centre of Industrial Biotechnology, ACIB. Sarx has represented aws as Managing Director of the Vienna Life Sciences Platform LISVienna since 2010.

PHILIPP HAINZL has represented the Vienna Business Agency in an executive capacity at LISVienna since autumn 2020. As head of the Vienna Business Agency's Life Sciences Team, he helps shape strategic decisions for the further development of the sector in Vienna. He is responsible for the Vienna Business Agency's Startup Labs at the Vienna BioCenter and advocates for the provision of additional lab space.

around €13.3bn, over 42,000 students, and more than 8,000 internationally recognized specialised publications in 2020. Ten to twenty newly founded companies annually and large-scale site expansions by large companies show how much Vienna benefits from strengthening the sector through dedicated funding programs and infrastructure.

Johannes Sarx The new Vienna Life Science Report lists more than 100 investments, licensing and M&A agreements and major orders from 2018 to 2020. Start-ups and scale-ups announced the conclusion of investment agreements worth more than €900 million. Licensing deals, M&A and major orders totalled over €2.3 billion. Most of these high-volume deals focus on drug development. These figures are at an all-time high for Vienna even though many agreements are not included in these sums as no financial details were disclosed. Deal flow and quality are great in 2021 too, given top deals such as the acquisition of Allcyte by Exscientia for €50 million, and BioNTech's recent purchase of PhagoMed. There also have been major investment rounds this year, for example at contextflow, Delta4, JLP Health and Platomics.

Philipp Hainzl Vienna's biotechnology and pharma sector has 260 companies comprising of dedicated biotech plus active biotech plus pharma companies. As in the past, cancer, respiratory diseases, and infectious diseases are the three main focus areas of these dedicated medical biotech companies. Most of the companies are striving to develop new

drugs, drug components or new solutions to advance and improve drug development or diagnostics. This also concerns COVID-19, where Apeiron, Biomay, Ingenetix, Technoclone or Valneva are active in. Companies developing research reagents are also on the rise, and business ideas boosting the circular economy are gaining importance. Hosting the EFIB conference in Vienna recently provided a great opportunity to highlight the Vienna region's industrial biotech product range and pipeline projects.

Johannes Sarx *In addition to biotechnology, Vienna also is home to a strong medical device sector that is composed of some 250 companies. We were happy to welcome many of their representatives in person to our LISAvienna Regulatory Conference on Medical Devices and IVD in October. More and more of these entrepreneurs address business opportunities at the interface of IT, material science or biotechnology. Software as a medical device and involving big data sets and AI clearly stands out – the number of companies in Vienna has tripled within the past six years. Companies developing single-use devices, active implantable devices, and in-vitro diagnostics are also on the rise.*

EuroBiotech *In your view, what factors have led to this remarkable growth?*

Philipp Hainzl *Excellence in research and education is one of the key reasons why Vienna is such an important and growing life science hub in the heart of Europe. This talent base, the presence of several big players and Vienna's high-profile role models in biotechnology are key factors for what we observe. It has become kind of cool to become an entrepreneur converting new knowledge into highly demanded products and services, instead of putting their energy into strictly scientific publications. Happily, the regional start-ups and scale-ups appreciate sharing their lessons learned with newcomers. Co-locating at the Vienna BioCenter, for example, facilitates informal exchange. The Vienna Business Agency's Startup Labs have become a true success and are brimming with new business ideas. Attending international conferences and trade shows in person and online also contributes to Vienna's success, because participants can pick up important market trends and know-how, explore opportunities for deals and make connections with future partners and investors.*

Johannes Sarx *Growing today's entrepreneurial spirit took some time and is linked to the government's strategic investments in the life sciences. The LISA program at the Austrian Federal Promotional Bank Austria Wirtschaftsservice runs the Best of Biotech business plan competition and supports sound business ideas with up to €1 million through its PreSeed and Seedfinancing programs. Additional funds for R&D projects can be applied for at the Austrian Research Promotion Agency FFG and at the Vienna Business Agency. Regional actors, of course, have access to all kinds of great opportunities for support at EU level. Besides, Austria's healthcare system ranks among the best worldwide and includes a great social insur-*

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ance plan and reimbursements. Furthermore, you should not underestimate Vienna's top quality of life for high profile opinion leaders. These assets make attracting talent and keeping top people in the city a rather simple task as compared to other locations.

EuroBiotech Looking back at 2021, significant investments by large companies such as Boehringer Ingelheim stand out. Could you please give us a brief overview and explain what is happening?

Philipp Hainzl This year has been extraordinary. We celebrated the opening of Boehringer Ingelheim's Large-Scale Cell Culture plant that allows the production of big amounts of complex APIs. The investment of €700m has generated 500 new jobs in the city. Then there was the groundbreaking of a new manufacturing facility for Hookipa Pharma, which will bring another 100 top jobs to Vienna. The company will manufacture clinical material and commercial products for a new class of immunotherapies here. Next door at the Aspern Seestadt quarter, Vienna's CDMO Biomay's construction of its new GMP production facility is on schedule, and in November Takeda announced investing more than €120m in a new R&D centre focusing on biologics and gene therapy. MSD, Octapharma, Pfizer and Takeda also develop or produce lifesaving medicines in Vienna and strive to meet the growing demand. AOP Orphan opened its new headquarters and a packaging unit in the city and companies such as Lithoz and ViruSure renewed and expanded their premises. At the same time, the pandemic's market pull is kicking in as regards medical devices, IVDs and research reagents, and is speeding up the application of solutions from the digital health sector. All these companies and many others hire talent in our city.

Johannes Sarx Success stories don't come about by chance, but require dedication, courage, proper planning, robust funding, and time for realization. The Austrian Federal Government and the City jointly encourage and support the advancement of the regional life sci-

ences community. This includes strengthening our academic side, which drives innovation. The Austrian Federal Ministry of Education, Science and Research, and the City of Vienna, for example, invest another €60m in maintaining and developing cutting-edge research infrastructure and the expert pool at the Vienna BioCenter Core Facilities. This will enable us to meet the new demands sparked by the growth of the campus. Overall, a tremendous renewal process is ongoing in Vienna that will propel the sector forward. The University of Vienna opened its new biology building at the Vienna Biocenter recently, Vetmeduni Vienna is constructing another small animal clinic, FH Campus Wien has laid the cornerstone for its House of Science and Technology, and the Medical University of Vienna also has major infrastructure projects up and running: At the AKH quarter, a 35,000m² building is under construction for about 740 preclinical researchers and state-of-the-art education of 2,000 students. Still in the pipeline is a large additional block of buildings dedicated to translational medicine, clinical phase I/II studies, precision medicine and technology transfer.

EuroBiotech How does the future look? Do you foresee the growth curve at the Vienna Cluster flattening out?

Johannes Sarx Actually, we foresee quite the opposite. The current pandemic has shown how important it is to support the translation of biotech and pharma inventions into lifesaving medications and diagnostics. In 2019, the Austria Wirtschaftsservice, the European Investment Fund and the Max Planck Foundation committed in a first closing an investment of a total volume of €60 million into the KHAN-I Fund focusing on early-stage drug discovery projects. To facilitate professional translation in life sciences in Austria, KHAN-I has founded the Vienna-based wings4innovation GmbH company for scouting and advancing promising drug discovery projects on behalf of KHAN-I. However, Austria and Vienna not only have a strong scientific base in new medical applications, but also in

tech for a green economy. At Austria Wirtschaftsservice we have more and more start-ups in our PreSeed and Seedfinancing portfolio that contribute to combating climate change and overcoming the environmental crisis. We actually expect the growing societal demand for innovative solutions combined with our increasing understanding of the causes of today's challenges to rapidly transform and green the entire economy. If applied in a responsible way, biotechnology is a key enabling technology for these developments. And such developments will only come when the best people around the globe join forces. We are happy to have so many outstanding scientists and entrepreneurs in Vienna who actively engage in key projects and partnerships at the EU level and internationally, also beyond their separate disciplines and organisational traditions. Today, the entire sector is ready to deliver.

EuroBiotech What remains to be done at the location?

Philipp Hainzl To continue to be an attractive location for the economy as well as the society requires metropolises such as Vienna to reinvent themselves continuously. As in the past, we at LISAvienna will contribute as much as possible to making the city an even better location for life science R&D and business. The next step is to set up new lab space to accommodate scale-ups and the innovators of tomorrow. My home institution, the Vienna Business Agency, is a key player and we are working hard to accomplish this. Another important topic for us is keeping up the regulatory framework that enables granting allowances for plasma donors. This is important for maintaining Vienna as a central hub providing the world with life-saving plasma-based medicines. In addition, we look forward to the approval of a new Notified Body for medical devices and in-vitro diagnostics in Vienna. As you know this is an urgent bottleneck in the EU. ■

Bio-pharma growing in Austria

Pictures: Boehringer Ingelheim

R&D/PRODUCTION Last November, Swiss pharma giant Novartis AG chose its traditional antibiotics production site in Kundl, Austria, to become its European Excellence Centre for the growing field of nucleic acid and plasmid production for gene and cell therapies. At Kundl, the company will particularly produce raw materials for viral vectors. In mid-November Japanese Takeda announced an investment of €130m to build a new R&D centre in Vienna, where about 50% of the Austrian biotech companies are clustered. From 2025 onwards, around 250 researchers will be working at the new site, focusing on biotechnologically produced medicines and gene therapies. At the beginning of October, Boehringer Ingelheim had opened a €700m production plant of biotechnological therapies, the largest investment in the company's history. The LSCC (Large Scale Cell Culture) facility in Vienna comprises 48 bio-

reactors with a total of 185,000 litres and nine bioreactors with 15,000 litres each. The mix of smaller but also larger fermenter volumes allows for a high degree of flexibility, as both blockbuster indications and smaller markets by volume can be served. Christian Eckermann, Boehringer Ingelheim manager responsible for biologics production in Vienna, called these "production facilities for the future", as they allow fast product changes and the simultaneous production of different products.

Huge biotech growth

The life sciences sector in Austria has also grown strongly compared to 2017: in 2020, there were 982 life sciences companies – 405 of which were biotech and pharmaceutical companies – in Austria, 7% or 65 more than in 2017. These companies generated a turnover of



Biomanufacturing at the LSCC in Vienna

€25.1bn (+12%) – €16bn of which was in the biotech and pharma sector. There were also more than 60,000 jobs in the life sciences companies (+9%), of which a bit more than 32,000 were in the bio/pharma sector. This is according to the just-published Report Biotech in Austria. The number of researchers employed at 17 universities, 13 universities of applied sciences and 25 non-university research institutions in the life sciences amounted to a good 24,000 employees. ■



Did you know that Vienna's life science industry generated €13.3 bn revenues in 2020?

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