

LISAvienna Highlights

Spring & Summer 2021

**Smart environments
spur innovation**

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**EFIB in Vienna: Grow your
bioeconomy network**

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Biomay AG: New headquarters and manufacturing facility in Vienna

- **GMP manufacturing lines**
- **4,000 m² total floor area**
- **Bioreactor scales: 5L, 50L, 150L, 750L**
- **Dedicated area for the production of innovative, patient-specific batches**

www.biomay.com



Biomay is a biopharmaceutical contract development and manufacturing organization and particularly recognized as a supplier for plasmid DNA (pDNA), recombinant proteins and messenger RNA (mRNA). Biomay's clients include start-ups, midsize biotech companies and multinational enterprises, predominantly from Europe and the US. For example, it cooperates with BioNTech to supply DNA template for the in-vitro transcription of the mRNA active ingredient in its COVID-19

vaccine. Besides manufacturing of active ingredients and drug products according to GMP standards, the company offers process and assay development as well as manufacturing of microbial cell banks. The company expects to start manufacturing in its new facilities in Q1/2022. The new parallel GMP manufacturing lines increase Biomay's capacities by a factor of 10 with respect to batch size and volume.



Dear readers!

The global coronavirus pandemic is not over yet. While vaccination rates rise in some countries, others still are experiencing major outbreaks, and huge efforts are underway to bring them to an end. We hope that many of you have been offered a vaccination appointment or got your shots already and will be able to relax a little this summer. Read this folder to gain some insights into Vienna's thriving life sciences community. We'll begin by updating you on infrastructure projects having a major impact on the regional life sciences community and highlight further headlines. We are happy to have many outstanding institutes and companies contributing to ending the pandemic. A growing number are striving to overcome an even more dangerous threat, the climate and environmental crises. Read the article on pages 9-11 to learn more about some selected organizations in this field in Austria. We also feature EFIB 2021 which will be staged in Vienna this year and is expected to be one of the first in person conferences focusing on bioeconomy and industrial biotechnology after so many months of virtual meetings, such as our ViennaUP B2B Health Partnering in May, where we were overwhelmed by the success of our virtual event. We thank all 230 participants from over 170 organizations in 23 countries for joining us online. Enjoy reading - and don't forget to subscribe to our electronic newsletter or follow us on Twitter and LinkedIn.

Johannes Sarx and Philipp Hainzl
LISAvienna Executive Board



+++ Funding Opportunities +++

aws Green PreSeed & Seedfinancing
max. €200,000 + €800,000, apply at any time

aws Green.IP
max. €200,000, apply at any time

Vienna Business Agency: Innovate4Vienna
max. €150,000, deadlines: 15.8., 15.11., 31.3.

Vienna Business Agency: Life Sciences Call 2021
max. €500,000, deadline: 10.9.

**New statistics
will be available
later this year:**



Regulatory conference, October 12, 2021



**Meet us at trade shows and partnering
conferences – in person and online!**

HIMSS Annual Conference & Exhibition
Virtual / Las Vegas, 9.-13.8. 2021

EFIB – European Forum for Industrial Biotechnology & the Bioeconomy
Vienna, 6.-7.10. 2021

BIO-Europe
Virtual, 25.-28.10. 2021

Medica
Duesseldorf, 15.-18.11. 2021

Smart environments spur innovation

Not only global players including Boehringer Ingelheim, MSD, Novartis, Octapharma, Pfizer or Takeda are upgrading their facilities in Austria, the academic ecosystem is also renewing itself and growing. Get an idea about the buildings that will spark innovation in Vienna in the future here.



FH Campus Wien: House of Science and Engineering

New home for research and education at the Department of Applied Life Sciences and additional units



University of Vienna: Biology Center

19,000 m² at the Vienna BioCenter for some 500 life sciences researchers and 5,000 students; new library and bio art provided



Vetmeduni Vienna: Small animal clinic

Clinic for state-of-the-art treatment of small animals; provides students with opportunities for hands-on learning

MedUni Vienna



Campus Mariannengasse

35,000 m² building for some 740 preclinical researchers and state-of-the-art education of 2,000 students



Center for Translational Medicine

14,000m² research center dedicated to research from bench to bedside and back, including phase I/II study center

Center for Precision Medicine

Austrian Federal Ministry of Education, Science, and Research to invest € 75 million from the European Resilience and Recovery Facility

Center for Technology Transfer

Facility to spur collaborative projects with business partners and for start-ups



allcyte:

Acquisition by Exscientia following a seed investment

Exscientia will pay €50 million, comprised of cash and Exscientia ordinary shares to acquire Allcyte. Exscientia plans to expand the Vienna site as its hub in the European Union.

Allcyte's goal is to provide physicians with actionable insights on how to treat cancer patients with the right drug at the right time in situations where classical genetics-driven precision medicine does not give precise answers. This is achieved by measuring functional anticancer drug activity in viable, primary human patient tissues at single cell resolution to gain a preview of likely clinical efficacy. Allcyte's precision medicine technology is the first AI platform to successfully improve cancer patient outcomes in a clinical trial. The acquisition by Exscientia, headquartered in Oxford, is currently being reviewed in the customary Austrian regulatory process prior to closing.

\$6 million seed round

Allcyte closed a seed investment after a breakthrough clinical trial that proves its "functional" precision method is effective. The financing round was led by 42cap, Air Street Capital, PUSH Ventures, Amino Collective, and VP Venture Partners. Five of the world's top 15 pharmaceutical companies are already working with the company to guide their drug development process and clinical trials.

www.allcyte.com

a:head 

BI Innovation Prize and financing round for a:head bio

Boehringer Ingelheim awarded a:head bio with the BI Innovation Prize shortly after the company closed a seven-digit financing round to fuel its revolutionary approach to combating neurological disorders.

a:head bio is focusing on the development of next generation therapeutics based on human cerebral organoids for the treatment of brain disorders. After securing more than €4 million of private and public funding in 2019, a:head closed another seven-digit equity round with a consortium of investors, including redstars.com data AG, the company's seed investor. a:head is planning a series A financing round in late 2022 to prepare the company for its next growth phase, and already reaches out to interested venture capital firms active in the field of neuroscience and 3D biology.

BI Innovation Prize

In addition to providing access to Boehringer Ingelheim's expertise and mentorship, the pharmaceutical company will cover a:head bio's office and lab rental costs in the Vienna Business Agency's Startup Labs at the Vienna BioCenter for 12 months.

www.aheadbio.com

www.boehringer-ingelheim.at

Cebina and Evotec to launch Danube Labs



Danube Labs aims to create biotech companies and out-licensing opportunities, and is supported by a private fund committed to providing a minimum investment of €10 million.

“We are excited to join forces with Evotec to expand our mission to transform promising research and early-stage drug discovery projects from central and eastern Europe into mature projects attractive for forming new companies that will be embedded in the biotech ecosystem Cebina has created. This partnership brings together great entrepreneurial expertise and experience in drug

development that, we believe, will enable us to generate breakthrough therapeutics.” comments Eszter Nagy from CEBINA, a central European biotech incubator and accelerator.

Putting research into action

Danube Labs will accelerate early-stage academic life sciences projects and turn them into innovative therapies. Mark Slack, VP for Academic Partnerships at Evotec comments: “Through our partnership with Cebina, we see the opportunity to seek out and validate promising innovative research in Central and Eastern Europe.”

www.danubelabs.eu

€12 million funding for JLP Health



The investment facilitates the development of first-in-class treatments in the areas of cancer and life-threatening viral diseases based on novel drug target structures. International R&D partners are on board.

Under the roof of JLP Health in Vienna, Austria, novel drug targets will be defined, and new medicines developed. The goal to develop first-in-class medicines is supported by two JLP affiliate companies, Acus Laboratories and Angal Biotechnology.

Vienna, Cologne & Suzhou

Acus Laboratories is a Max-Planck spin-out company based in the Max-Planck Institute for Biology of Ageing in Cologne, Germany. Acus offers target deconvolution services and strongly supports JLP target discovery projects. Angal Biotechnology is based in Suzhou, China. Angal Biotechnology



offers target deconvolution services through forward genetics and fosters the development of first-in-class drugs in the JLP Health family.

www.jlphealth.com

Bulletin Board

Virusure is expanding its facilities in Vienna

The company doubles its lab capacity at TechGate Tower in Q4/2021 and plans a BSL3 lab.

www.virusure.com

€60 million for early stage drug development

The technology transfer fund KHAN-I and w4i concluded a framework agreement with 19 Austrian research institutes. It will focus on financing highly innovative drug discovery projects that open up new therapeutic options for patients. The first projects have already started.

www.w4i.org

New at Vienna's Startup Labs

- **Tridem Bioscience:** New platform technology for developing medicines for immunotherapeutic applications

www.tridem.at

- **Heartbeat.bio:** Stem cell-derived human mini-heart chambers in-a-dish for reinventing cardiac drug discovery

www.heartbeat.bio

Welcome!

Progress at Valneva

Valneva has completed phase 3 trial recruitment for its inactivated COVID-19 vaccine candidate and recruitment for phase 3 lot-to-lot consistency trial of its Chikungunya vaccine candidate

www.valneva.com

More than €40 million in fresh capital for life sciences and tech spin-offs

IST cube increases its venture fund for science company founders tenfold in cooperation with the European Investment Fund (EIF) and 25 other investors

www.ist-cube.com

Lithoz CEO Johannes Homa wins 'Big Five Award' 2021 in Additive Manufacturing

www.lithoz.com



Are you up to date?

Vienna's growing life sciences community is continuously announcing important business and research highlights. We are happy to share a selection of recent news items with you.

More are available at www.lisavienna.at.

To stay up to date, register for our e-newsletter or follow us on LinkedIn @LISAVienna and Twitter @lifesciencevie!

Explore the Austrian Life Sciences Directory

The database includes profiles from companies and major research and education institutes and covers the following areas:

- Biotechnology
- Pharmaceuticals
- Digital Health
- Medical Devices

www.lifesciencesdirectory.at

MedUni Vienna to honor inventors

Congratulations to Johannes Stöckl and Guido Gualdoni!

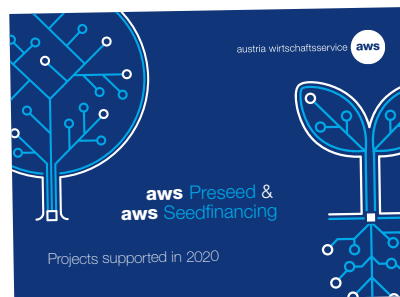


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www.meduniwien.ac.at www.gst-antivirals.com

Available now: Booklet on aws PreSeed projects and Seedfinancing companies funded in Austria in 2020

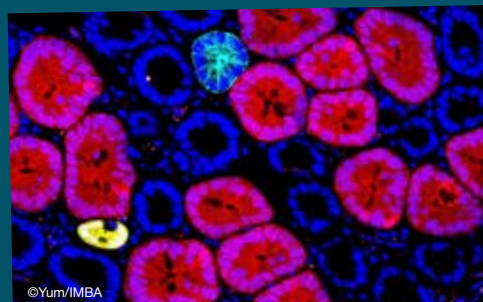
www.aws.at



APEIRON's APN01 shows clinical benefits for severely ill COVID-19 patients in phase 2 trial and is selected for large-scale US trial

www.apeiron-biologics.com

IMBA: Coloring tumors reveals their bad influence



©Yum/IMBA

www.oeaw.ac.at/imba

EIT Health Network to launch Co-Location Center (CLC) Austria

AIT Center for Health & Bioresources coordinates the activities to install the regional innovation hub in Vienna

www.ait.ac.at

AIT Austrian Institute of Technology
Center for Health & Bioresources

AIT
BETTER TOMORROW
TOMORROW TODAY

EIT Health Network
CLC Austria



© AIT/Purtscher

WWTF to boost precision medicine in Vienna

€6 million granted to fund seven excellent research projects

www.wwtf.at

I ♥ Vienna

contextflow closed Series A investment



contextflow, a leading provider of artificial intelligence for medical image analysis, announced its first Series A financing round closing with a mid-seven-digit investment.

The investment round was led by B&C Innovation Investments GmbH with TTIP Beteiligungs GmbH as new Co-Investor and additional participation from current investors APEX Ventures, Crista Galli Ventures, IST cube, Nina Capital and Novacapital. contextflow develops deep learning-based software to improve radiology workflows, saving radiologists time and improving reporting quality. Its core technology is a 3D image-based search engine, which detects disease patterns in 3D medical images, such as CTs and MRs. The new funds will be used to support European and US market entry, FDA approval, and new features and products that will expand the company's range of offerings.

EU MDR certificate

Fresh off its Series A funding round, contextflow has announced that it has received an MDR certificate, which allows the company to place class IIa medical devices on the EU market. Only ten other AI solutions have secured this certification so far. Moreover, the company is one of only four MDR-certified manufacturers to offer a solution for chest imaging.

www.contextflow.com



Delta 4 announces closing of multi-million Series A round



Delta 4 is a digital drug discovery company focusing on the identification of new indications of existing drug compounds. This additional funding was provided by a major European family office investing in life sciences, technology and other industries.

In 2020, the company announced that it had identified promising drug compounds for the treatment of a rare kidney disease and COVID-19. In recent months, these compounds were readied for Phase 2 clinical development. Delta 4 will now expand its clinical scope and initiate discovery and development programs relating to additional indications.

Dry and wet lab

Delta 4's drug discovery platform was successfully applied in contract research for global pharma and

biotechnology companies. The platform integrates in-silico drug discovery and big data analysis with extensive expertise in molecular biology and clinical development. Due to its unique technology, Delta 4 delivers not only drug candidates but also a mechanistic hypothesis about the underlying mode of action, significantly increasing their value for pharmaceutical development.

www.delta4.ai

EFIB: Grow your bioeconomy network in Vienna



The key European conference on industrial biotechnology and the bioeconomy - EFIB - will take place in Vienna this year, and is themed “Delivering the EU Green Deal: Industrial biotechnology into business”. Join the dialogue on how biotech can enable a more circular and sustainable future. As EFIB’s local partner, LISAVienna is looking forward to connecting you to experts in the region. Mark your calendar for October 6-7, 2021 and read further information at efibforum.com.

EFIB will unite the European industrial biotechnology and bioeconomy actors and facilitate setting up new partnerships. The conference will put a spotlight on game-changing solutions on the market and draw attention to product pipelines and promising R&D. Topics include nutrition, textiles, packaging, and novel approaches for urban environments and climate protection. In addition, it will focus on challenges in bioprocessing and financing issues. LISAVienna’s managing directors Johannes Sarx and Philipp Hainzl add: “Knowledge from all scientific disciplines needs to be combined and applied at a great speed to reverse trends. There’s no time to waste and the life sciences are in the position to deliver significant contributions in the ongoing change processes. Many of these breakthrough innovations will be showcased at EFIB in Vienna.”

Accessing regional expertise

Academic research is key to driving the bioeconomy and industrial biotechnology. Austria hosts a growing and diverse set of actors pushing at the frontiers of knowledge and who are highly appreciated collaborators for partners around the globe. The University of Natural Resources and Life Sciences, Vienna (**BOKU**), the University of Vienna and TU Wien host many of Austria’s most renowned researchers in the field and are collab-



orating with other institutes throughout Austria to educate the next generation. The universities have built strong portfolios of spin-off projects and start-up companies. **The Austrian Centre of Industrial Biotechnology (acib)** is Austria’s research hub for industrial biotechnology offering expertise and a constantly growing marketplace of inspiring ideas for new products and joint research projects for all kinds of industries.

Efficient biopharmaceutical production

Biomanufacturing processes can be quite tricky and require optimization and new solutions for increasing efficiency. There also is a need for strategic investments in recycling by-products or using waste heat for example. Modern biopharmaceutical manufacturing plants for antibiotics, vaccines, drugs for rare diseases or CDMO facilities for drug components and liposomes such as those operated by **Biomay, Boehringer Ingelheim, Octapharma, Pfizer, Polymun, Takeda** in Austria already are considering these issues. Small and agile companies including the BOKU spin-off **enGenes** provide tools for optimized manufacturing processes like next generation host cell lines and plasmid expression vectors. A TU Wien start-up **usePAT**, on the other hand provides accurate



in-line measuring solutions for enhanced process control in industrial liquids. A new application is in-line detection of microplastics in various liquids such as oceans, lakes, waste- and drinking water.

Food, feed and beyond

Austria is home to some big players in the food and feed industry who are increasingly transforming their processes and products to make them more sustainable. Recently, **DSM** acquired Erber Group's Biomin and Romer Labs. Biomin specializes in mycotoxin risk management and gut health performance management, whereas the Romer Labs business focuses on food and feed safety diagnostic solutions. Both expand DSM's range of higher value-added specialty solutions for nutritional products. The newly founded **SAN Group** carries on Erber's animal health and biotechnological crop protection business. **Jungbunzlauer** is a global leader in manufacturing bio-based ingredients by fermentation. Renewable raw materials are the basis of the company's environmentally friendly, biodegradable products. In Austria, citric acid, xanthan gum and glucose are focused on with a new production plant being planned that will also comply with Jungbunzlauer's no waste policy. **Agrana** is a world market leader in the manufacturing of fruit preparations, a major supplier of customized potato, corn and wheat starch products and bioethanol in Europe, and a leading sugar company. Agrana Research & Innovation Center is Austria's largest industrial research laboratory in the food sector. It develops solutions for modern nutrition trends, environmentally friendly, energy-saving production processes, solutions for by-products, organic plastics that can be composted at home, and green glues. New food tech companies are pursuing different paths to make nutrition more climate friendly. **Rebel Meat** for example produced hybrid meat products to reduce overall meat consumption by replacing 50% with mushrooms, plants, and crops. Feeding the world while saving the planet also is the focus at **Livin Farms**. The company's insect technology allows upcycling low value agricultural and food industry waste into high value proteins. Seafood gourmets might want to try luxury shrimps from **White Panther** in Styria, which are grown in a sustainable process in one of Europe's largest indoor aquaculture facilities. Waste heat from a

regional power plant, a cutting-edge hatchery and green packaging characterize this unique circular economy approach. **Revo Foods** on the other hand offers seafood made of plants that also help to prevent overfishing the ocean. BOKU's **CarboFeed** project even goes one step further. It combines the sustainable production of feed with removing greenhouse gas from the atmosphere by using a yeast strain for converting CO₂ into protein-rich biomass. **Jongerius ecoduna**, on the other hand focuses on large-scale production of microalgae for the food industry in a patented photo-bioreactor-system, which for the first time enables resource efficient, sustainable and continuous production in a controlled environment. And TU Wien spin-off **Evologic Technologies** makes science-based biologicals economically feasible using a proprietary bioreactor design for filamentous fungi yielding formulations that are free of contaminants, highly concentrated and stable. Products target the agricultural (biocontrol and biostimulant) and feed additive sector.

Enzymes and biosensors

Collaboration and co-location of facilities increase efficiency and reduce environmental costs. **Novartis** recently opened its life sciences campus in Tyrol to external research and manufacturing companies. The first partner on board is **BASF**. By investing at Novartis' Kundl/Schaftenau campus, BASF is strengthening its global production of enzymes and other biotechnology products. In the future, a world-scale production set-up for bacterial detergent enzymes will be available in Austria. Such enzymes play a key role in washing agents such as those manufactured by **Henkel** in Vienna. The city is home to a major production plant for liquid detergents. **Eucodis Bioscience** is located at the nearby Vienna BioCenter. This is an enzyme engineering and manufacturing SME with a portfolio of over 50 innovative enzymes including lipases, beta-lactamases, and peroxidases. Enzymes are applied in a broad range of use cases and have pushed the development of biosensors, that are widely used e.g. to manage disease or track food allergens. BOKU-spin-off **DirectSens**, for example, provides a user-friendly, certified lactose assay for high precision analysis of lactose-free and low lactose milk products. In addition, the company has developed an enzyme for continu-

ous glucose monitoring in diabetes patients.

Commodities and packaging

Several young companies in Austria strive to make commodities and packaging more environmentally friendly while keeping an eye on costs. **ab&cd innovations** contributes to converting industrial wastes and by-products into value. The company started planning an industrial polylactic acid (PLA) production facility. Investors are invited to join in to realize this opportunity to produce compostable bioplastics. And **Syconium Lactic Acid** develops a production process for lactic acid operating at significantly lower costs compared to currently established production processes. One new packaging initiative is **BOKU's** approach to convert fast growing aquatic **macrophytes** from the Danube River into packaging material or biodegradable plates and cups. Investors are invited to support setting up a biorefinery in the region. Researchers based at the **University of Vienna** and **TU Graz** contribute to testing a different strategy in the **BreadCell EU FETopen** project by focusing on environmentally friendly foam material to create cellulose-based sandwich composite materials.

Fashion and textiles

Lenzing turns wood from certified sustainable forestry and plantations into cellulosic textile fibers with highly appreciated characteristics. These fibers are already widely used on the market and are biodegradable and compostable at the end of their life cycle, thus providing soil for new plants to grow. Did you know that innovative solutions also concern dyes? **Vienna Textile Lab** fabricates organic colors made by naturally occurring bacteria to provide the most sustainable, wholesome, and environmentally friendly alternative to conventional synthetic dyes. Innovative solutions for emerging trends in the textile industry also are on the agenda at **Acticell**: Environmentally friendly chemicals that support modern technologies in the production of denim articles which cuts water consumption by 90%.

Urban environments

The way people live their lives in densely populated cities have a big impact on environment and climate issues. Urban locations therefore hold a lot of potential for change. Greening and cooling the

city rank high on Vienna's agenda. A broad range of projects have started, ranging from greening roofs and façades with appropriate plants to urban micro farming. One of Vienna's largest climate protection projects concerns **Vienna's wastewater treatment plant**, which is one of the largest of its kind in Europe. Water purification involves micro-organisms and requires a lot of energy. To make sewage water treatment more environmentally friendly, Vienna's plant has been transformed into an ecological power plant in recent years. Now, six 30-meter-high digestion tanks are available for converting sludge into gas in a highly efficient manner. More energy and heat are created than are needed for operating the wastewater treatment plant. Austria's **BEST – Bioenergy and Sustainable Technologies** competence center provides new knowledge for future advancements. It carries out research on the joint use of bioenergy and other renewable energy supply technologies as well as on the conversion of biomass and waste to liquid fuels, green gas and valuable chemicals for industry.

We thank you for supporting EFIB in Vienna:



VIENNA
CONVENTION BUREAU



Photo © EuropaBio

Why Vienna?

"Vienna is in many ways a frontrunner on intelligent and smart urban solutions, an advanced city when it comes to sustainable technologies and innovation projects. We

are delighted to be hosting the EFIB conference in Vienna in 2021. It's an outstanding location and setting in many different ways. Vienna is a lively – and forward-looking city."

Agnes Borg, Director for Industrial Biotechnology at EuropaBio

Vienna BioCenter Core Facilities (VBCF): € 60 million investment



The Vienna BioCenter constitutes one of the most outstanding and prominent life sciences hubs in Central Europe. Its research infrastructure (VBCF) provides access to cutting-edge instruments, expertise and experience, enabling breakthrough discoveries. Its cost-efficient services are available for academia and business.

The Austrian Federal Ministry of Education, Science and Research and the City of Vienna invest another € 60 million to maintain and develop cutting-edge research infrastructure and the expert pool at the VBCF. This will allow to meet new demands sparked by the growth of the campus. LISAVienna's managing directors Johannes Sarx and Philip Hainzl note: "The Vienna BioCenter Core Facilities provide a competitive advantage to innovators in Vienna. We strongly encourage start-up companies and SMEs to reach out to its experts for improving pipeline projects and increasing their success rate." Young companies in the Vienna Business Agency's Startup Labs such as a:head bio, Proxygen and QUANTRO Therapeutics highly appreciate their services. Start-ups are typically interested in the following services:

Next generation sequencing: All common NGS sequencing applications are available, and novel methods and protocols are in development. VBCF's experts provide advice and guidance to make sequencing projects a success.

Metabolomics: Both targeted and non-targeted metabolomics analysis are provided, revealing changes in metabolic pathways, consequences of perturbations or quantifying small molecules and metabolites of any origin. So far, the VBCF has established methods for some 1,000 molecules.

Protein technologies: Services include molecular cloning, protein production and purification, and biophysical characterization.

(Cryo-)Electron Microscopy: A wide range of preparation and visualization techniques is offered for biological samples ranging from standard methods to cutting-edge cryo-EM for high-resolution 2D or 3D imaging.

Plant sciences: Highly specialized plant growth chambers and professional support for green research are available. The focus is on environmental simulation, high-throughput plant phenotyping and subsequent image and data processing.

Further details and information on the entire service portfolio can be found online:

www.viennabiocenter.org/vbcf

Additional opportunities

In Vienna, advanced scientific equipment also is available at the MedUni Vienna / AKH campus, at TU Wien, and Vetmeduni Vienna. BOKU EQ provides access to an extreme climate chamber or bioreactor pilot plant facilities. Information on additional facilities are provided in Austria's award-winning research infrastructure database operated by the Austrian Federal Ministry for Education, Science and Research:

www.forschungsinfrastruktur.bmbwf.gv.at



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Why Vienna?

"The Vienna BioCenter Core Facilities are a key driver of Vienna BioCenter's remarkable journey towards success. Our shared core facilities were a bold and visionary move

a decade ago, one that became an internationally followed model. We are looking forward to further advancing our facilities and services in the future."

Daniele Soroldoni, Managing Director VBCF