

Connecting Life Sciences

LISAvienna Highlights

Fall & Winter 2020/21

COVID-19: Tests and medicine candidates in the Vienna region page 4-7

MSD completes acquisition of Themis Bioscience page 12



Startup Labs at the Vienna BioCenter

The Vienna Business Agency has set up affordable and flexible Startup Labs at the Vienna BioCenter. This offer is intended primarily for start-ups doing research and development in the fields of biotechnology, medical devices and pharmaceuticals. A total of 60 laboratory workstations combined with 30 office workstations are available.

Information about some of the Startup Labs' first users is provided on page 10 to 11.



Dear readers!

The pandemic has become the new normal. What was unimaginable a year ago, is reality today. Physical distancing, nose and mouth covering masks, virtual meetings, sanitizing, a mix of home and office-based work, etc. are part of our daily routines. We have become used to checking infection rates before travelling and many of us have been tested for SARS-CoV-2 during the last months.

At the same time, Vienna's and Austria's life sciences community has mobilized its scientific power to contribute to overcoming the crisis in concerted actions with peers from around the globe. To encourage and speed up such highly relevant projects, the Austrian Federal Government and the City of Vienna quickly launched special support schemes complementing international funds. A few of them are described on page 7 to 8. In this newsletter, we also introduce some of Austria's companies that focus on COVID-19-related solutions. Please read page 4 to 6.

In parallel, Vienna pursued its regular plans for advancing the life sciences and the Vienna

Business Agency celebrated the opening of its highly flexible Startup Labs at the Vienna Bio-Center. Please read the article on page 10 to 11 to learn more about the first users.

Did you know that LISAvienna has contributed to attracting the European Forum for Industrial Biotechnology and the Bioeconomy to Vienna? Save the date for October 6-7, 2021!

Finally, there is also news about LISAvienna's team: Since our longstanding Managing Director Peter Halwachs has taken over as Head of the Business Support Department at the Vienna Business Agency, the agency has appointed Philipp Hainzl as the new representative for Vienna's life sciences cluster. Me and Johannes Sarx from the Austrian promotional bank Austria Wirtschaftsservice are now sharing responsibility for managing LISAvienna.

We hope you enjoy reading this new edition of our biannually printed Highlights newsletter. If you have any questions, reach out to us and our team. We are happy to support you in starting up and growing your life sciences business in Vienna.

Johannes Sarx and Philipp Hainzl LISAvienna Executive Board

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EUROPE'S LEADING EVENT ON INDUSTRIAL

BIOTECHNOLOGY AND THE BIOECONOMY

6-7 October 2021 · Vienna · Austria

Life Sciences in Vienna at a Glance

e European Forum for Industria

Biotechnology and the Bioeconomy

14th Annual

Vienna is Austria's capital city and clearly in first place in the country when it comes to the field of life sciences. Some 555 organizations employ more than 38,000 people in Vienna with the businesses generating \in 12.2 billion in revenues and the research institutes publishing some 4,600 articles in peer-reviewed journals annually.

Each year, ten to fifteen biotech, medical device and digital health start-ups open their doors in the region and big players strongly invest in their premises in the heart of Europe.

Vienna is Austria's most important node for high-end medicine and experienced partners for clinical research are available. Whether you are focusing on health or bioeconomy-related questions, you will certainly find outstanding scientists and entrepreneurs to partner with in Vienna.

About LISAvienna

LISAvienna is a joint life science platform operated by Austria Wirtschaftsservice and the Vienna Business Agency. On behalf of the Austrian Federal Ministry for Digital and Economic Affairs and the City of Vienna, it contributes to the advancement of life sciences in Vienna.

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LISAvienna

LISAvienna supports innovative biotech, pharmaceutical, medical device and digital health companies in Vienna that develop and market new products, services and processes.

The platform links these companies with development partners and key customers. As a central knowledge carrier, LISAvienna provides input for decisions to advance the life sciences in Vienna and contributes to positioning the city of Vienna as one of the leading European innovation centers.



LISAvienna partnering

We arrange tailor-made meeting schedules for global players and investors. Contact us and meet all the Vienna based start-ups you are interested in on a single day in Vienna or online.



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

A member of:



COVID-19: Tests and medicine candidates in the Vienna region

Austria's life sciences sector is mobilizing against the SARS-CoV-2 pandemic. These efforts are part of the activities around the globe. Below we introduce some products and product candidates from the Vienna region – the development of most of them has been facilitated with public funding.

Coronavirus diagnostics

Attoquant Diagnostics specializes in the analysis of the Renin-Angiotensin system, a hormonal system that controls blood pressure. ACE2, the entry receptor for SARS-CoV-2, is part of this system. Special analyses for the development of new drug candidates are provided as a service for numerous studies conducted by partners. In addition, a new test system will be developed.

www.attoquant.com

EUCODIS Bioscience and Biosynth-Carbosynth have teamed up to develop a novel diagnostic tool for fast and reliable detection of an acute SARS-CoV-2 infection. Based on viral enzymatic activities and a novel enzymatic bioluminescence substrate, the diagnostic test should identify active as well as asymptomatic early infections within minutes.

www.eucodis-enzymes.com

Ingenetix has developed several SARS-CoV-2 tests based on one-step reverse transcription real-time PCR. The product portfolio includes a SARS-CoV-2 Multiplex IVD Kit and a SARS Coronavirus & Influenza A/B Kit to differentiate between SARS-CoV-2 and influenza virus infections. Ingenetix collaborates with a partner on a LAMP-based SARS-CoV-2 detection method that works without RNA extraction and is faster than PCR testing.

www.ingenetix.com

Lexogen, an RNA expert and Next-Generation Sequencing company launched a pioneering ultra-high-throughput COVID-19 test that will allow for the first time a true mass screening of the whole population. This unique assay is based on the detection of SARS-CoV-2 viral RNA using Lexogen's industry-leading kits and widely employed sequencing technology. It provides the sensitivity and specificity required for mass screening. Tens of thousands samples can be analyzed in one setup, and results are available in 24 hours.

www.lexogen.com

Technoclone has developed SARS-CoV-2 antibody tests in collaboration with BOKU, MedUni Vienna and Vetmeduni Vienna. Two different ELISA test kits have been designed with one showing more sensitivity in the early stage of the immune response and the other only responding in the main and late phases. Both tests are manufactured in Austria and available worldwide.

www.technoclone.com

RT-LAMP test: Scientists from the Vienna BioCenter developed a new loop-mediated isothermal amplification-based SARS-CoV-2 detection method that is cheaper than PCR testing and achieves results with comparable sensitivity and specificity. Anyone can recognize an infection via a simple color change in the sample.

www.viennabiocenter.org/about/news/rt-lamp

Vienna COVID-19 Detection Initiative (VCDI):

A robust, cost-effective, and scalable RT-qPCR testing pipeline based on standard laboratory equipment has been set up. The VCDI Standard Operating Procedures is available online. VCDI for example leads large-scale monitoring of COVID-19 infections at Austrian schools using gargling-based samples and pooling strategies.

www.maxperutzlabs.ac.at/vcdi

Medicines in the pipeline

APEIRON Biologics is developing APN01 (rhACE2) which blocks SARS-CoV-2 virus infection by directly binding viral particles and in addition reduces disease mediated organ pathology. Promising data from named patient use were published in September 2020. APN01 is currently in clinical phase II trials.

www.apeiron-biologics.com

Apeptico's Solnatide is a synthetically produced peptide that was developed for treating critically ill ARDS patients. It reduces pulmonary oedemas and combats harmful reactive oxygen radicals. Solnatide has been approved for compassionate use treatment of severe COVID-19 patients with ARDS in various countries, and it is in advanced clinical development driven by Apeptico and the Medical University of Vienna.

www.apeptico.com

www.solnatide.eu

CEBINA has initiated several initiatives to tackle COVID-19, including projects on drug repurposing, new anti-viral compounds and vaccine approaches. In September 2020 positive findings were reported on repurposing of the common allergy nasal spray medication containing azelastine as an anti-COVID-19 approach.

www.cebina.eu



G.ST Antivirals and Takeda have started a research collaboration on antiviral drugs against COVID-19. Antiviral substances that lead to an intracellular starvation of the virus are in the company's focus with 2-deoxyglucose (2-DG) against respiratory viruses being the first product candidate.

www.gst-antivirals.com

Marinomed has developed Carragelose, which is widely effective against respiratory viruses, shortening illnesses caused by previously known coronaviruses. Both therapeutic and preventive use is possible. In November 2020, Marinomed announced a clinical trial with a Carragelose nasal spray to investigate prevention of COVID-19 infection in frontline healthcare staff.

www.marinomed.com

F4 Pharma focuses on FX06 that is designed to preserve the integrity of the endothelium and to prevent the leakage of fluid from a blood vessel into the surrounding tissue. It also has anti-inflammatory properties. In June 2020, promising results from named patient use in severely ill COVID-19 patients have been published. Clinical phase II trials are underway.

www.f4-pharma.com

Panoptes is developing PP-001, which exhibits anti-viral and anti-inflammatory effects. This is particularly promising as regards COVID-19, because not just the virus, but also the overwhelming immunological response (cytokine storm) is addressed. The substance was tested for severe, inflammatory eye diseases, including in phase 2 of clinical trials.

www.panoptes-pharma.com

Polymun Scientific has strong expertise in the liposomal formulation of drugs. Lipid nanoparticles can transport RNAs into cells which is a prerequisite of an immune response to RNA-vaccines. Polymun collaborates with several partners on SARS-CoV-2 vaccines, including Imperial College London, BioNTech/Pfizer, CureVac and Arcturus Therapeutics.

www.polymun.com

Takeda, together with CSL, we have established the global CoVIg-19 Plasma Alliance, including several world-leading plasma and other support companies, to accelerate the development of a plasma-based hyperimmune therapy for the treatment of people at risk for serious COVID-19 complications. The development is based on established immunoglobulin manufacturing platforms which are already known to result in safe product, and the virological expertise of the Takeda Global Pathogen Safety Team in Vienna. A phase 3 clinical trial is ongoing.

www.takeda.com

Themis Bioscience, part of the MSD group, is developing a Covid-19 vaccine based on its existing measles vector technology. CEPI is funding a consortium between Themis, Institut Pasteur, and the University of Pittsburgh. The vaccine candidate is currently in Phase 1 clinical development.

www.themisbio.com

Valneva announced a major vaccine partnership with the UK government for its inactivated COVID-19 vaccine, VLA2001. If vaccine development is successful, Valneva will provide the UK government with many millions of doses. VLA2001 is based on a proven approach and will leverage Valneva's manufacturing platform for its US FDA and EMA-approved JE vaccine. Clinical studies are expected to start in December 2020.

www.valneva.com

Viravaxx, in collaboration with MedUni Vienna, has launched a project to develop an integrated immunodiagnostic and vaccination platform for COVID-19. At core, it involves the identification of neutralizing antibody signatures as a basis for the design of vaccine candidates that can trigger a potent and focused immune response.

www.viravaxx.eu



Please find a more comprehensive overview online

www.lisavienna.at/life-sciences-in-vienna/ covid-19

Advancing SARS-CoV-2-related innovation in Austria

The Austrian Federal Government and the City of Vienna are investing in research, development and innovation that contribute to mastering the pandemic. Below, we introduce some of the support schemes.

FWF: Urgent Funding SARS-CoV-2

The Austrian Science Fund FWF started a fast track procedure which is open to all research proposals that deal with the prevention, early detection, containment, and research into the causes and effects of epidemics and pandemics such as SARS-CoV-2. This also includes projects that focus on the technical, ecological, economic, political, legal, medical, cultural, psychological, or ethical implications of SARS-CoV-2. The current situation calls for the expertise of nearly every domain of basic research. By November 2020, the FWF supported 14 projects with € 7 million. Submissions are accepted until March 31, 2021.

www.fwf.ac.at

FFG: Emergency Call for Research into COVID-19

The Austrian Federal Ministry for Digital and Economic Affairs (BMDW) and the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) have provided € 26 million for business R&D projects and clinical trials relating to COVID-19. The Austrian Research Promotion Agency FFG reports that it has supported 48 projects, including two vaccine development projects, the development of ten additional drugs, 19 diagnostics initiatives and 16 projects focusing on the prevention of infections, including disinfection and protective masks and clothes as well as COVID-19-related apps and simulation tools.





aws Investment Bonus

Investments by companies of all sizes and branches are supported in Austria. Grants are available for upgrading or extending business premises and for securing or creating jobs and training positions. Apply to aws for 7% of your investment costs or for 14% when investing in measures that contribute to protecting the environment, digitalization or health-related topics. The basis of calculation ranges from \in 5,000 to \notin 5 million. Submit your proposal by February 28, 2021. Proposals are evaluated on a rolling basis. The total budget for this funding program is \notin 2 billion. Projects are required to start before March 1, 2021 and must be completed by February 28, 2022 at the latest.

www.aws.at

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>>> WWTF: COVID-19 Rapid Response Funding

The Vienna Science and Technology Fund launched a special support scheme with funds from the private non-profit WWTF and two private sponsors, including the ME-GA-Bildungsstiftung. 24 research projects were selected for funding with up to € 50,000 per project. Scientists from all disciplines have been mobilized to contribute to solving the crisis by sharing their knowledge and engaging in research on numerous aspects of the pandemic. Topics range from understanding and fighting the virus, to finding solutions for expanding test capacities and epidemiology-related questions to understanding society in the crisis, education-related issues and research focusing on the economy.

www.wwtf.at/covid

Vienna Business Agency: Innovate4Vienna

Vienna is home to many highly innovative companies. To enable them to quickly start applying their know-how for overcoming the crisis, the Vienna Business Agency provided € 4 million through the funding program "Innovate4Vienna". Up to € 200,000 were granted to 37 business R&D projects. Topics include the development, validation and manufacturing of diagnostic tests, development of new disinfections solutions, 3D crowd printing of face shields, digital tools for simulating the spreading of infectious diseases, training hospital staff, streaming and virtual reality solutions for home office and education purposes, and new patient safety solutions.

www.viennabusinessagency.at

Please contact us for a more comprehensive and detailed overview and for information on COVID-19 related business support in Austria.



BI Innovation Prize goes to Proxygen

Boehringer Ingelheim supports excellent life science innovation and has awarded the first BI Innovation Prize in Europe to Proxygen.

www.boehringer-ingelheim.at

Dedalus Group to become a strong player in Vienna

The Dedalus Group has completed the acquisition of a part of the Agfa HealthCare IT business. This means that a large share of Vienna's expertise in healthcare IT is now part of this leading European company, which is active in clinical healthcare information systems.

www.dedalusgroup.de

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

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!



MacroArray Diagnostics wins the Houska Prize 2020

B&C Privatstiftung recognizes the company's achievements with the ALEX Allergy Explorer. This is the first in vitro multiplex allergy test allowing simultaneous measurement of total IgE (tIgE) and specific IgE (slgE) against a plethora of allergen extracts and molecular allergens.

www.macroarraydx.com

HOOKIPA Pharma discloses progress on key milestones

HOOKIPA has announced positive phase 2 interim safety and immunogenicity results for its CMV vaccine candidate HB 101. In addition, its immunotherapy for HPV16+ cancers demonstrates high immunogenicity

www.hookipapharma.com

F2G closes financing round

The rare fungal disease company F2G closes a US\$60.8 million financing to fund the late-stage development of a novel mechanism antifungal agent.

www.f2g.com

Milestone in technology transfer:

€ 60 million KHAN-I fund and w4i sign framework contract with 19 research institutions in Austria, financing of the first 3 projects has already started

www.w4i.org



Nobel Prize winner **Charpentier: A Vienna** BioCenter Alumnus

Emmanuelle Charpentier, who shares this year's Nobel Prize in Chemistry with Jennifer A. Dounda, spent several years of her career at the Vienna BioCenter. Congratulations on this outstanding award recognizing the groundbreaking discoveries about the CRISPR/Cas9 system!

www.viennabiocenter.org

First CDG Prize for Research and Innovation awarded

MedUni Vienna and Ottobock received the first CDG Prize for Research and Innovation: On the occasion of its 25th anniversary, the Christian Doppler Research Society honors excellent investigations on the position and function of nerves and muscles in intuitively controlling arm movements.

www.meduniwien.ac.at, www.ottobock.com



Welcome to the Startup Labs at the Vienna BioCenter!

Vienna is one of Europe's leading metropolises for innovation in the life sciences. The Vienna Business Agency is now offering co-working labs and offices to facilitate start-up processes. The new Startup Labs are in high demand. Read on to learn more about some of the first users.

a:head bio AG

a:head bio AG develops a next generation drug discovery platform employing human brain organoids. Self-organized 3D tissue is generated from pluripotent stem cells derived from healthy and diseased people. Our organoids contain functionally active neurons arranged in circuits creating miniature neural networks, which we can analyze at cellular resolution. As abnormal network activity is a core feature of many brain disorders, the technology may be leveraged across a variety of central nervous system diseases.

www.aheadbio.com

Ablevia biotech GmbH

Ablevia biotech GmbH removes disease-causing and other undesired antibodies. Ablevia's proprietary platform technology enables the development of infusible therapeutics that target harmful antibodies involved in autoimmune conditions, or anti-drug antibodies that neutralize biotherapeutics. The company focuses on preclinical R&D as regards rare diseases and conditions with unmet clinical needs.

www.ablevia.com

G.ST Antivirals GmbH

G.ST Antivirals GmbH is dedicated to the development of therapies against different viruses by applying an entirely novel approach of antiviral therapy. The company utilizes the viral dependency on the host cell metabolism and exploits this to design specific interventions counteracting viral nutrient supply. This leads to intracellular starvation of the virus, ultimately resulting in highly impaired replication.

www.gst-antivirals.com

Miti Biosystems GmbH

Miti Biosystems GmbH is specialized in the production of polycyclic peptide libraries for the discovery of peptide drugs and mimotopes. Using our patented platform technology, we apply randomization techniques on natural product scaffolds to realize their chemical space. The randomization procedure leads to several billion of chemically diverse structures that are displayed on bacteriophage M13, thus enabling fast screening for substances with desired phasic-chemical properties.

www.mitibio.com



MyeloPro Diagnostics and Research GmbH

MyeloPro Diagnostics and Research GmbH aims to develop innovative therapeutics for the treatment of blood diseases e.g. by targeting mutated calreticulin. The lead asset is immunotherapy modality in preclinical development stage to treat myeloproliferative neoplasms, partnered with a global pharmaceutical company. In addition, the company provides R&D services to other companies in the field of hematology oncology.

www.myelopro.com

Pregenerate GmbH

At Pregenerate, we use a scalable cartilage-ona-chip technology for the personalized treatment of arthritis. With this technology we are not only able to characterize the individual response to inflammation, but also to determine the best available treatment for each patient. Pregenerate's cartilage-on-a-chip technology will speed up drug development and has the power to reduce and replace animal testing in pharmaceutical research and development.

www.pregenerate.net

Proxygen GmbH

Proxygen GmbH aims to develop therapies against cancer and other life-threatening diseases by reprogramming the cellular protein quality control system. Proxygen is focused on "molecular glue degraders" which allow directing disease-causing proteins to the proteasome for degradation. Instead of merely blocking the function of harmful proteins, molecular glue degraders enable their complete, targeted and selective elimination.

www.proxygen.com



THT Biomaterials GmbH

THT Biomaterials GmbH aims to overcome major methodological issues underlying false positive or negative results in current drug development, tissue engineering and regenerative medicine research. A new visionary platform technology is under development that will speed up research as it makes its results more realistic by replacing animal components with human components.

www.tht-biomaterials.com

QUANTRO Therapeutics GmbH

QUANTRO Therapeutics GmbH strives to develop novel therapeutics for the treatment of cancer and other diseases. Its highly innovative drug-discovery pipeline will employ time-resolved RNA sequencing and comparative transcriptomics to identify and develop drug candidates interfering with transcriptional regulators. The first focus will be on cancer-associated transcription factors, which so far have been resistant to pharmacological intervention.

quantro-tx.com

Are you interested in joining the Startup Labs? Follow this link for details:

viennabusinessagency.at/property/ working-space/labs-for-rent/

MSD completes acquisition of Themis

Themis Bioscience was founded in Vienna in 2009 by a group of internationally renowned vaccine and biotech executives. Themis is now a wholly-owned subsidiary of MSD.



MSD announced the completion of the acquisition of Themis, a Vienna-based biotech company focused on vaccines and immune-modulation therapies for infectious diseases and cancer. An initial focus of this agreement is acceleration of the development of a measles vector-based SARS-CoV-2 vaccine candidate. The vaccine candidate is currently in Phase 1 clinical development.

"Building on the pioneering work of the Institut Pasteur, the Themis team has established specialized expertise that complements MSD's own capabilities in the discovery, development, manufacturing and global distribution of vaccines," said Roger M. Perlmutter, president, Research & Development, MSD. "We are eager to combine our strengths both to develop an effective COVID-19 vaccine in the near term and to build a pandemic preparedness capability directed toward emerging agents that pose a future epidemic threat."

Vienna provides 360-degree support

Themis Bioscience has started up in Vienna with the help of public support schemes. Together with LISAvienna, Themis attended international trade shows and partnering conferences to negotiate with development partners and investors. Do you plan founding or growing your own life sciences company in the heart of Europe? Contact LISAvienna and discuss how you can benefit from our 360-degree support landscape. Various grants, loans and guarantees as well as free consulting services and flexible start-up offices and labs are available in Vienna. The research tax premium of 14% makes Austria even more attractive.

Outstanding measles vector platform

The measles vector platform is being evaluated across a wide range of infectious disease and immunology indications. It uses a modified measles vaccine virus as a vector and can be engineered to express a wide range of antigens. It is designed to provide a vehicle to deliver antigens to the immune system capable of triggering a protective memory response. It has been incorporated into vaccine development programs against infectious diseases including SARS, Chikungunya, MERS, and Lassa fever. Originally developed at the Institut Pasteur, the technology platform was first licensed to Themis in 2010.



Why Vienna?

"Vienna has become a biotech hotspot over the last years combining a great deal of scientific and entrepreneurial expertise, especially in the fields of immunology

and infectious disease research. The excellent academic infrastructure in these areas is represented, for example, by the "Immunology" and "Oncology" research cluster of the MedUni Vienna, and a high density of companies have emerged from the excellent local institutions, contributing to the innovative climate. This overall package makes Vienna a very attractive location for Themis Bioscience. Themis is now a wholly-owned subsidiary of MSD."

Erich Tauber, CEO Themis Bioscience GmbH