

Connecting Life Sciences

VIENNA Highlights Spring 2017

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Biopharma trusts in Vienna

Pfizer is one of Austria's leading life sciences companies and continuously invests in clinical research. An outstanding example is the PALLAS trial. The EUR 340 million phase III study is designed to evaluate whether a specific CDK inhibitor is able to reduce the risk of breast cancer recurrence when taken in combination with endocrine therapy in the adjuvant setting. Except for the US, global study management is carried out by the academic study group ABCSG in Vienna.

Ranking among the largest biopharmaceutical players, Pfizer has 96 drug candidates in its pipeline. Clinical research plays a key role in bringing them to the patients in need. In Austria, the company currently runs some 20 clinical trials in close collaboration with academic partners, hospitals and practicing medical specialists. To advance treatment for breast cancer patients, Pfizer sponsors the global phase III trial PALLAS that is managed by a global academic network: the Alliance Trial Foundation (AFT) in the US and the Austrian Breast & Colorectal Cancer Study Group (ABCSG) in 23 other countries worldwide.



PALLAS



Michael Gnant
Medical University of Vienna
President of the Austrian
Breast & Colorectal Cancer
Study Group

Having the lead for such a major global study is a big honor for Austria being such a small country. At the same time the study needs to be regarded as a significant acknowledgement of the long-standing clinical research expertise at ABCSG."

The PALLAS Trial

PALLAS is an abbreviation for PALbociclib CoLlaborative Adjuvant Study. The trial explores whether palbociclib, a targeted medication taken with adjuvant endocrine therapy, will decrease the chance of breast cancer coming back beyond endocrine therapy alone. In the course of 15 years, a total of 4,600 women and men from 24 countries will be enrolled into this trial. It focuses on people who have had a diagnosis of hormone receptor-positive (HR+)/human epidermal growth factor receptor 2-negative (HER2-) breast cancer and are candidates to receive adjuvant endocrine therapy. Adjuvant endocrine therapy is treatment that is given after surgery, chemotherapy, and/ or radiotherapy.

Clinical Expertise in Vienna

Michael Gnant, Medical University of Vienna and President of ABCSG, developed the study protocol for PALLAS together with several other international experts and Pfizer scientists. The ABCSG is Austria's biggest and most renowned academic study group. More than 25,400 patients have participated in ABCSG trials since 1984. The current PALLAS trial includes global data management as well as patient and project management for the study worldwide (except for the US). In Austria, 18 hospitals are involved. 500 Austrian patients will be enrolled and get the chance to access a potentially new breast cancer treatment.



Pfizer in Austria:

- 520 employees
- Clinical research: 20 studies ongoing in Austria
- Sales of more than 135 OTC and prescription drugs in Austria
- Manufacturing of 10 million doses of MenC and TBE vaccines annually for the global supply



Robin Rumler Country Manager Pfizer Austria pfizer.at

"

We are very proud to partner with ABCSG, one of the world's most highly respected breast cancer research organizations. Collaborations of this kind are crucial to advance the science and general understanding of how we can best treat breast cancer. Working together, we will be able to efficiently answer important clinical questions in order to potentially further improve the life of patients in greatest need of treatment."







Dear readers!

Welcome to the spring edition of our biannual Highlights!

This time we provide you with some insights on why more than ten biotechnology and medical device companies start-up in Vienna each year. Please do not miss out on the table on page three, where we introduce twenty life science companies founded in Vienna recently. Starting-up and growing your business in Vienna pays off!

Are you considering setting up your own business in Europe? Please get in touch with us and our team to discuss how we can support you. To improve your business plan, we recommend participating in the ongoing international aws business plan completion "BOB - Best of Biotech". PreSeed teams and start-ups aged up to two years focusing on innovative biotech-based products and services or intending to develop medical devices for the future are best suited to win over the jury! In addition to the regular prizes, we sponsor a special award for the best start-up team in the medical device sector: EUR 10,000 and a beautiful "Vienna Golden Heart" trophy are waiting for you!

Below please find an overview on the trade fairs and partnering meetings we will attend in the next months. Join us at our booths for a nice cup of coffee and Mozart chocolate! We are available for discussing licensing and investment opportunities and for updating you on start-up and relocation support. Also do not hesitate to pick up information on potential partners at Vienna's outstanding research institutes. Did you know that our hospitals serve some 3.7 million people living in the Vienna region? Experienced partners at clinical trials coordination centers are available to include your studies in their schedule. See the cover story on the PALLAS study for an impressive example.

We hope you enjoy reading through the following pages and are happy to receive any comments and requests for more details.

Have a great trade fair, partnering and conference season!

Peter Halwachs and Johannes Sarx
LISAvienna Executive Board

Vienna goes International

BIO-Europe Spring

Barcelona, March 20-22, 2017

conhIT

Berlin, April 25-27, 2017

BioTrinity

London, May 8-10, 2017

BIO International Convention

San Diego, June 19-22, 2017

LISAvienna Partnering Asia

Yokohama and Osaka, Japan Seoul, South Korea Shanghai, China October 9-19, 2017

BIO-Europe

Berlin, November 7-9, 2017

MEDICA & COMPAMED

Duesseldorf, November 13-16, 2017

Biolatam

November/December 2017

in cooperation with:





LISAvienna Partnering

Tailor-made schedule to meet all the Vienna based biotech and medical device start-ups you are interested in

One day in Vienna, for global players and investors only

LISAvienna - Connecting Life Sciences

We offer core services at no charge

Joint life science platform for the advancement of life sciences in Vienna







Cityof **Vi**enna

Personalized support for innovative biotech, pharmaceutical and medical technology companies

- in Vienna.
- that develop and market
- new products, services and processes

Connecting companies with development partners and key customers



Your partners at LISAvienna (Itr): Andrea Jan Coleselli (Administration, Controlling and Events), Johannes Sarx (Managing Director), Brigitte Tempelmaier (Project Manager Marketing & PR), Peter Halwachs (Managing Director), Martin Mayer (Technology Expert Medtech), Jürgen Fuchs (Technology Expert Biotech & Pharma)

Contact us and benefit from our services



Information & Consulting:

Tips and contacts relating to sponsorship, private financing options, lab space in Vienna, development partners, leading customers and internationalization



Networking & Matching:

Contacts for an improved exchange of experiences and knowledge transfer as well as contact with development partners, leading customers and investors worldwide



Expertise:

Analyses, background information, reports and studies relating to life sciences in Vienna



Marketing:

Electronic and printed news items from the field of life sciences in Vienna

Newsletter & Tweets

Stay updated on the hottest news from the life science city Vienna! Subscribe to our newsletter at www.lisavienna.at/en/e_newsletter
Follow us on Twitter **@lifesciencevie**

Starting-up at the Heart of Europe

Vienna is one of the most attractive cities in the world and the economic and political center of Austria. The city has a high economic strength, excellent infrastructure and a unique quality of life. The combination of these factors makes Vienna an ideal starting point for commercial success.

Most of the pharmaceutical and medical device companies ranked top on the bases of sales worldwide operate a strategic presence in Vienna. If you are planning to establish a branch office here, the Vienna Business Agency is your central contact point that offers free and unbureaucratic consulting. Monetary incentives, real estate and an Expat Centre speed up your professional and private start in Vienna.

> viennabusinessagency.at aws.at

Vienna: Economic center at the Heart of Europe

- Maximum corporate tax rate: 25%
- Deduction options and allowable deduction regulations for investments in research and training: 25% of R&D expenses, up to 35% in exceptional cases Research premium: 12% of R&D expenses for
 - Training premium: tax benefits for education and training

Booming start-up ecosystem

More than 9,000 companies are founded in Vienna each year. Courageous entrepreneurs strive to conquer a broad variety of market niches. These include bright people in biotechnology and the medical device sector. In the last years, more than ten life sciences start-ups settled in Vienna

For twenty examples please have a look at the table below. This list is not exhaustive.

Outstanding financial support

Innovative products, processes and services are not for free. To facilitate research and development, the Vienna Business Agency regularly issues calls where up to EUR 500,000 are granted per R&D project. High-tech start-up teams are also invited to apply for PreSeed money (EUR 200,000) and Seedfinancing (EUR 800,000) at aws. Please consult LISAvienna to learn about additional funding opportunities and on how to combine the instruments in place to let your business idea come true.

NEW companies: Welcome to Vienna!

Accanis Biotech F&E GmbH & Co KG – Innovative mRNA based therapeutics accanis.com (2015)	MyeloPro Diagnostics and Research GmbH – Therapeutics for blood diseases myelopro.com (2016)
Akribes Biomedical GmbH - Treatments for chronic wounds akribes-biomedical.com (2015)	Pharma Mar GmbH – Branch office of a Spanish biotech company pharmamar.com (2016)
Austrianni GmbH - Antibody-based therapeutics for tuberculosis austrianni.com (2015)	OncoQR ML GmbH - Checkpoint Controlling Active Cancer Immunotherapies (CCACls) oncoqr.com (2015)
contextflow GmbH - Next generation medical image search engine contextflow.com (2016)	piur imaging GmbH – Tomographic ultrasound for vascular diagnosis piurimaging.com (2015)
Critical Core Technologies GmbH - Medical devices for critically ill patients criticalcoretechnology.com (2017)	RMB-Research GmbH – Innovative wound care I rmb-research.com (2015)
Evologic Technologies GmbH – Symbiotic fungi for a sustainable future evologic-technologies.com (2016)	SzeleSTIM GmbH – Electroceuticals for chronic pain szelestim.com (2015)
HappyMed GmbH – Entertainment for reducing anxiety medical contexts happymed.org (2015)	Tricolum Pharmaceuticals GmbH – Innovative therapies for trichomonosis (2015)
ImageBiopsy Lab GmbH - Software for early detection and diagnosis of bone diseases imagebiopsylab.com (2016)	Vacthera BioTech GmbH – Influenza virus based vaccines and cancer immunotherapies vacthera.com (2016)
IMPROCESS GmbH – Process optimization for the pharmaceutical industry improcess.at (2016)	Vertex Pharmaceuticals GmbH – Branch office of a U.S. pharma company vrtx.com (2015)
MacroArray Diagnostics GmbH - Next Generation Immunodiagnostics macroarraydx.com (2016)	Viravaxx AG - Antiviral vaccines and related diagnostic products viravaxx.eu (2016)

This list of 20 newcomers for 2015+ is not exhaustive.

Bulletin Board

Innovative Products and Services for Labs Worldwide



















TAMIRNA



Profit from research reagents, enzymes, cell lines, knowhow and much more!







Life Sciences City

Join the city and make a difference for start-ups, at global players

Vienna

and in academia!









SEMPERIT ()





Life Sciences in Vienna at a Glance

- 480 organizations
- 35,730 employees
- 9.9 billion euros revenues
- 32,870 students
- 4,800 publications

Vienna supports business

The Vienna Business Agency is the first point of contact for national and international companies. It offers financial support, real estate and urban development incentives as well as free service and advice. Special Location Initiative grants are available for companies that significantly extend their location or transfer their business location to Vienna. R&D and innovation programs speed up the development of new products and services with female entrepreneurs benefiting from an extra bonus. In addition, a highly experienced international team is available to support expatriates in Vienna.

viennabusinessagency.at



A service offered by the City of Vienna











Life Science City Vienna: Solutions for Critical Conditions

Life-threatening situations and critical conditions and diseases require experienced medical professionals able to operate the right tools and to prescribe the right drugs at the right time. Vienna is home to several start-ups that develop and provide innovative solutions for improving the outcomes of critical care.

Myocardial infarction is still one of the most dreaded heart diseases and the main cause for cardiac arrest. The Vienna based company EMCOOLS Medical Cooling Systems GmbH offers special cooling pads for the immediate prevention of local and global reperfusion damages. The cooling therapy can be easily started on scene, e.g. in emergency vehicles or in the emergency department. To improve the clinical outcome of patients, Miracor Medical Systems GmbH has developed the so-called PiCSO (Pressure-controlled Intermittent Coronary Sinus Occlusion) Impulse System. PiCSO^{AMI} Therapy seeks to increase blood flow to the affected heart tissue, thereby improving the overall heart function after an acute myocardial infarction. The PiCSO^{AMI} Impulse System consists of a driving console and associated catheters. Recent preclinical and clinical studies have successfully demonstrated the positive effects of PiCSO on myocardial function and infarct size. Angel Valve, a new MedUni Vienna spin-off project, is currently developing the first transvascular catheter-deployed mitral valve repair implant for the heart targeting mitral valve prolapse. The device, Mitral Butterfly is named for the wings spreading above and below the prolapsing segment. It is designed for early intervention and may be used instead of a standard "conventional" chordal repair which requires major surgery. Critical Core Technologies GmbH also develops innovative medical devices to support critically ill patients. Extending from their proprietary platform technology LiquiClear®, their first product will be an intravascular catheter for CO₂ removal using a novel approach that will change existing practices.

Why Vienna?



Bernhard Fischer, CEO APEPTICO GmbH APEPTICO GmbH has run its core R&D facility in Vienna since 2008. We appreciate the opportunity for collaborative work with highly motivated and skilled researchers from the MedUni Vienna, the University of Vienna and the Vetmeduni Vienna. In addition, governmental and regional organizations, such as LISAvienna, FFG and the Vienna Business Agency provide an excellent supportive climate for starting up, co-funding and growth."

In case of critically ill patients, often also the lungs are affected and artificial ventilation is required. Carl Reiner GmbH has developed the Twin-Stream™ ICU Respirator, which can be regarded as the world's finest solution for lung protective ventilation. Respiration with TwinStream™ ICU opens alveoli and keeps them open, reduces volutrauma to an absolute minimum and prevents CO, retention. Additionally, oxygen index and mucus mobilization is significantly improved. Vienna however, is also proud to be home to companies developing drugs for life-threatening diseases. APEPTICO GmbH provides a good example. The biotech company is developing a portfolio of peptide-based products which correspond to validated, pharmacodynamic active structures and domains of well-known proteins and biopharmaceuticals. The portfolio includes solnatide which is a therapeutic peptide for the activation of alveolar liquid clearance in critically ill patients, ready to enter into phase III clinical development for different life-threatening pulmonary indications.

Hygiene and antibiotics for serious infections

Bugs lingering around in hospitals often are resistant against a multitude of antibiotics. Even bacteria resistant against all antibiotics available on the market have been reported recently. Keeping the highest possible standards in hygiene and disinfection is still the ultimate way to avoid hospital-acquired infections. Some 50 glove types offered by the Semperit group, headquartered in Vienna, are available to reduce the risk of contamination. This global player is ranked among the leading international manufacturers of medical gloves. However, solutions by smaller companies are also able to make a difference to hygiene: Braincon GmbH & Co KG for example has developed DCXpert for the decontamination of surfaces and entire rooms. The instrument uses a special DCXF-fluid containing hydrogen peroxide in a non-dangerous good concentration and can be applied in labs, hospitals, but also in child care centers or emergency vehicles. Despite the strong effort to avoid the spreading of infections in healthcare facilities, the European Centre for Disease Prevention and Control estimates that more than 4 million patients acquire

a healthcare-associated infection in the EU each year. For the US, the Centers for Disease Control and Prevention note that about one in 25 hospital patients acquires at least one healthcare-associated infection. This is why the development of new approaches is of utmost importance to health care. **Nabriva Therapeutics AG**, headquartered in Vienna, is one of the players that have decided to enter this challenge. Nabriva is developing pleuromutilins as a new class of antibiotics for systemic but also topical administration in humans.

Be prepared

Cases of emergency often come about unheralded. However, they should not catch health care professionals flatfooted. Improvisation is one point, but a good deal of complications can be avoided by going through realistic training scenarios. The MedUni Vienna plays a key role here and is a strong partner for establishing new approaches at spin-offs and start-ups: The Vienna based start-up **SIMCharacters GmbH** is about to revolutionize this field. Its amazingly realistic preterm baby simulator Paul is the world's most advanced patient simulator. With Paul, SIMCharacters transforms simulations beyond high-fidelity into high-emotion. Providing realistic learning experiences is also at stake at 123sonography GmbH. The global leading e-learning platform for echocardiography and ultrasound provides a medical community of over 200,000 users in 200 countries with awardwinning, credited online courses made in Vienna. Interestingly, the founder is a Professor at the Medical University of Vienna partnering with a former Google Manager. The company's secret of success? High-quality and up-to-date video content combined with a "user first" philosophy.

123sonography.com
angelvalve.com
apeptico.com
braincon.com
carlreiner.at
criticalcoretechnology.com
meduniwien.ac.at
miracormedical.com
nabriva.com
semperitgroup.com
simcharacters.com





New IMP Research Building Opened

Within just 19 months of construction work, the new home for the Research Institute of Molecular Pathology (IMP) was completed. The shiny building with the striking façade marks the entrance to the Campus on which the Vienna Biocenter is located.

The new IMP-building was designed to facilitate communication, save resources and offer maximum flexibility to adapt to future requirements. Research at the IMP spans a wide range of topics, broadly organized into these areas:

- Molecular and cellular biology
- Structural biology and biochemistry
- Gene expression and chromosome biology
- Stem cell biology and development
- Immunology and cancer
- Neuroscience

IMP in numbers

250 employees

15 research groups

93 patents filed

72 publications in peer-reviewed journals in 2016

The common goal of the IMP-scientists is to elucidate the mechanisms and principles that underlie complex biological processes. Boehringer Ingelheim, the main sponsor of the IMP, invested 52 Million Euros to create a research environment in which ideas can grow and first-class, independent science can thrive.

IMP: Seed and heart of the Vienna Biocenter

The Vienna Biocenter in Neu Marx has over 90,000 m² of laboratory and office space and houses some 30 companies and institutes related to the life sciences. Of the 2,100 individuals working here, around 120 are students enrolled in the international VBC PhD Programme. For many of them, this is the stepping stone to embark on a career in molecular biology. 37 ERC grants and 11 Wittgenstein Awards to date prove the international reputation of the scientists at the Vienna Biocenter.

imp.ac.at viennabiocenter.org



Why Vienna?



Jan-Michael Peters, Scientific Director, IMF Vienna is a cosmopolitan hub with strong global ties, ideally located at the heart of Europe. With ten universities, numerous research centers and a total of 185,000 students, the city has a strong academic focus. With the added bonus of a rich cultural life and scenic beauty, this creates an ideal backdrop for our vibrant research community."

Recent Investment Deals & Collaboration Agreements

High-tech start-ups require competent partners for bringing their innovative products and services to the market. Key to success is to bring in money and collaboration partners at the right time. This is exactly what the examples given below managed to do.

APEPTICO GmbH and Mediolanum Farmaceutici S.p.A. sign R&D cooperation and license agreement on solnatide APEPTICO is developing peptide-based products targeting chronic and life-threatening diseases. The therapeutic peptide solnatide activates alveolar liquid clearance, and is ready to enter into phase III clinical development for different life-threatening pulmonary indications. www.apeptico.com

Miracor Medical Systems GmbH receives up to EUR 7 million funding in Series-C Miracor is developing disruptive solutions to treat severe heart diseases. Its PiCSO (Pressure-controlled Intermittent Coronary Sinus Occlusion) Impulse System is a technology platform designed to improve clinical outcome of patients with impaired cardiac function. Imiracormedical.com

mySugr to strengthen ties to leading providers of glucose monitoring systems including Abbott and Roche mySugr has developed one of the most successful mobile health apps for diabetes with a rapidly growing user base of some 900,000 users worldwide. Collaboration agreements with major providers of glucose monitoring systems allow for seamless diabetes monitoring. mySugr.com

Themis Bioscience GmbH successfully closes EUR 10 million financing round Themis develops prophylactic vaccines from the preclinical to the early clinical phase, focusing on emerging tropical infectious diseases, with initial vaccine candidates currently being developed against Chikungunya and Zika. I themisbio.com

Tiani Spirit Group: Heliad Equity Partners on board as new investor Tiani Spirit provides the world's most comprehensive standard-based clinical document and imaging exchange solution on the market. The investment by Heliad Equity Partners sums up to several million euros and will boost internationalization.

Viravaxx AG closes Series A investment round worth EU 4.22 million The emerging biopharmaceutical company Viravaxxx is focused on the development of antiviral vaccines for difficult to treat virus infections as well as diagnostic products for the detailed analysis of the immunological response to virus infections. Viravaxx.eu

Innovation made in Vienna: Sanochemia's Photodynamic Cancer Diagnostic

Bladder cancer is the most common malignancy of the urinary tract. Sanochemia Pharmazeutika AG has developed Vidon® (PVP-Hypericin) for the photodynamic detection of urinary bladder tumors. In a phase IIb trial, Vidon® showed significantly improved detection rates as compared to standard approaches and an excellent safety profile. The US PTO has granted a patent to Sanochemia recently, which will protect the diagnostic use of Vidon® until 2035.

The Sanochemia group is a specialty pharmaceuticals company headquartered in Vienna. It runs its own production facilities and is widely recognized for outstanding levels of expertise in radiology, neurology and oncology. 150 employees in seven countries carry out research and development and are involved in extensive synthesis and manufacturing activities as well as in sales. In addition to covering in-house needs, Sanochemia also offers contract manufacturing services. Some tons of active pharmaceutical ingredients and more than 3 million packaging units of drugs are manufactured by Sanochemia each year. As a full-service provider to the global pharmaceutical industry, the company covers the entire value chain from product development, scale-up and synthesis through to pharmaceutical formulation and packaging. Sanochemia not only focuses on unmet need in humans, but also runs a unit focusing on veterinary medicine.

Urgent need for better bladder cancer diagnosis

Approximately 75% of bladder cancers are non-muscle invasive tumors, which means that the tumor is restricted to the bladder mucosa. However, to date surgeons have difficulties in tumor elimination

as standard white-light cystoscopy does not allow detecting all malignant areas. Therefore, in 30-80% of the patients, recurrences occur, requiring repeated surgeries. About 45% of bladder cancers even progresses to a muscle-invasive bladder carcinoma with a significantly poorer clinical outcome for patients.

Photodynamic detection: A game changing technology

Early detection combined with timely and appropriate treatment are essential factors for improving the prognosis of bladder carcinoma patients. Photodynamic diagnosis improves visualizing non-muscle invasive bladder tumors. Using a special formulation of PVP-Hypericin allows urologists to better differentiate between malignant and normal cells as PVP-Hypericin selectively accumulates in tumor cells. Therefore, malignant cells can be detected early on and treatment is facilitated because the border delineating malignant tissue from non-affected tissue becomes better visible. A clinical phase IIb trial completed in 2015 confirms the game changing nature of this approach. Sanochemia is currently preparing for a phase III trial and evaluating partners for codevelopment.

sanochemia.at

Sanochemia

SANOCHEMIA

Pharmazeutika AG

The Specialty Pharma Company



Why Vienna?

© Sanothamia

Christina Abrahamsberg, CSO Sanochemia Pharmazeutika AG

Vienna offers an outstanding network of universities, research institutions and clinics. The Austrian social system, infrastructure and political and financial stability are among the best in the world. Additionally, the Austrian government provides financial support for startup companies. Hence, the high quality of life attracts experts from all over the world."

Sanochemia in brief (FY15/16)

- Headquarter in Vienna
- EUR 39 million annual sales
- 150 employees in 7 countries, thereof 130 in Austria
- 7 drugs and 2 medical devices approved for human use, 2 drugs in the approval process, 3 R&D pipeline products
- Synthesis and manufacturing of some tons of active pharmaceutical ingredients (API) and more
 than 3 million packaging units of drugs per year
- Listed at the stock exchange (SAC Frankfurt, Vienna)

Contract Services at Sanochemia

- Full-service contract manufacturing of prescription and OTC pharmaceuticals
- Long-standing scale-up expertise and commercial scale API production including chiral synthesis and resolution, hydride reactions, heterocyclic chemistry
- Multi-purpose reactors with volumes ranging from 600 L to 4,000 L and a total reactor volume of 12 m³ (to double soon) allow synthesis at temperatures ranging from -35°C to +150°C
- Well-established SOP system for cGMP and validated data management procedures to meet all existing filing requirements – including those of the FDA and EDQM