

Connecting Life Sciences

Newsletter 02/2014

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Newcomers in Vienna

With the help of funds provided by the Austrian Federal Ministry of Science, Research and Economy and the city of Vienna numerous companies open doors in Vienna each year. 13 of the promising life sciences start-ups founded in 2013 and during the first half of 2014 are introduced below.



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CVTec Cerebrovascular Technologies GmbH develops software for neurointerventionists. The first product, CoilControl 3D, an occlusion rate measurement system, will be available at the end of 2014. Further products on blood flow analysis and risk assessment system are in the pipeline.

Haplogen Genomics GmbH equips researchers with high quality knock-out cell lines to drive research. Knock-outs for nearly every gene are available in a unique haploid human cell line that is particularly suited to study the role of these genes in a variety of cellular processes.

MARK53 GmbH offers a standardized, clinically-approved p53 gene test for routine application in cancer therapy. The p53 gene has the potential to revolutionize oncology as it acts as a biomarker for deciding which therapeutic approach will be effective and which will not – with every single patient.

MITI Biosystems GmbH is specialized in the production of polycyclic peptide libraries for the discovery of peptide drugs and mimotopes. Randomization techniques are applied to natural product peptide scaffolds in order to achieve enormously broad chemical diversity.

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www.inits.at/startups/acticell www.blueskyvaccines.com www.cvtec.at www.haplogen-genomics.com www.mark53.com www.mitibio.com

The new biotech, pharma and medtech companies in Vienna cover topics from neurology to severe eye diseases and age-associated disorders, from life sciences apps to new processes for the production of organic acids. Those presented below have been supported by LISAvienna's owners austria wirtschaftsservice and the Vienna Business Agency.

Acticell GmbH offers an eco-friendly process for bleaching jeans. Both licensing packages and the respective biotech-based product for bleaching are offered. Existing production processes can easily be adapted, bleaching costs remain stable and no more hazardous wastewater is produced.

Blue Sky Vaccines KG develops therapeutic virus-based vaccines against cancer. The company's technology platform is based on a genetically modified and synthetically produced delNS virus that specifically destroys tumor cells and at the same time induces an immune response against cancer.

Dear readers!

At our initiative, in 2015, European investors in biotechnology will convene at "BioEquity Europe" in Vienna for the first time. As the host, Austria will have the unique opportunity to showcase an especially large number of exciting



life sciences companies and enhance their opportunities for investments.

Managing to attract such a conference acknowledges that Vienna's scientists and universities rank top on the international scale and that biotech, pharma and medtech companies in Vienna have some promising business concepts. Here, we update you on newcomers, clinical pipelines and partners for diagnostics.

To keep the pipeline active, austria wirtschaftsservice invites start-up teams to join BOB, the international biotech & medtech business plan competition. LISAvienna will again provide 10,000 Euros in sponsorship for the best medtech project. The deadline for submitting full-blown business plans is February 13, 2015.

Besides, the Vienna Business Agency recently closed its call for life sciences projects and received many promising applications for new R&D projects. A first-class jury will soon select the best projects which will receive the highly demanded grants. Up to 2 Million Euros worth of funding is available.

To bring Vienna's innovative businesses to the next level, we offer special partnering services for investors and large biotech, pharma and medtech firms. Contact us for your customized meeting schedule of promising partners from Vienna! Otherwise we are happy to update you on business opportunities in Vienna at the meetings in Germany, the Emirates and the USA we are attending in the coming months.

For now, enjoy reading and remember: Starting-up at the heart of Europe and expanding to Vienna pays off!

Peter Halwachs and Johannes Sarx LISAvienna Executive Board

Life Sciences in Vienna at a Glance

- 181 biotech/pharma companies with 13,300 employees
- 197 medtech companies with 7,731 employees
- 9,089 Million Euros revenues in total in 2012
- 25 research organzations employ 14,289 people in the life sciences
- 38,290 students in the life sciences, thereof 3,608 graduates
- 5,733 publications in international journals
 - Statistics on the smart life science city Viennal Download the Vienna Life Science Report at www.LISAvienna.at and be invited to order your free print copy at office@LISAvienna.at.



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LISAvienna – Connecting Life Sciences

LISAvienna is the joint life science platform operated by austria wirtschaftsservice and the Vienna Business Agency. On behalf of the Austrian Federal Ministry of Science, Research and Economics and the city of Vienna, it contributes to the advancement of life sciences in Vienna.

LISAvienna supports innovative biotech, pharmaceutical and medical technology 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.

Please visit our website www.LISAvienna.at to learn more about Vienna as a top location for life sciences!

NEW: LISAvienna e-Newsletter

Stay updated on hottest news from the life science city Vienna! Subscribe via e-mail to **office@LISAvienna.at**!

Life Science City Vienna: Broad Expertise in Diagnostics

Molecular biology and physics transform clinical routines. More and more Vienna-based companies are entering the field of high-tech diagnostics. Connect to Vienna's experts in signal processing and biomarker development!

Vienna's research organizations, hospitals and companies have significant potential to bring clinical diagnostics to the next level. True personalized medicine is still a long way off, but Vienna is on the right track. The Medical University of Vienna at the Vienna General Hospital with its more than 2,000 hospital beds has extensive knowledge regarding medical needs and provides a door towards clinical application. The recent decision to fund a Centre for Biomarker Research in Medicine in Austria, acknowledges the high potential linked to this topic.

Neurologic signal processing

Sigmund Freud operated in Vienna long time ago, but the brain has remained a principal R&D topic. For example, the Austrian Institute of Technology (AIT) developed algorithms to automatically detect epileptic seizure in EEG signals. Vienna is also home to one of the pioneers to develop digital EEG: Dr. Grossegger & Drbal GmbH's Alpha Trace. Today, the company develops new approaches and biomarkers for the detection, diagnosis and treatment monitoring of dementia, for example. The Siesta Group Schlafanalyse **GmbH** is a service provider with regard to drug effects on brain activity, wakefulness and sleep in clinical trials. In 2010, the company sold a software package integrating multiple physiological sleep parameters to Phillips. EMTensor GmbH uses the properties of how electromagnetic waves spread in tissues for medical imaging. The company's mobile diagnostic unit is applied to reconstruct a dynamic 3D image of stroke patients' brains. CVTec Cerebrovascular Technologies GmbH develops software for neurosurgery and neuroradiology to improve life-saving operations like the filling of cerebral aneurysms to avoid ruptures.

DNA- and RNA-based biomarkers

To individualize cancer therapy, a prognostic biomarker is necessary. The p53 gene has this potential and will help to select the right therapeutic approach for each patient. Therefore, MARK53 GmbH has developed a standardized, clinically evaluated p53 gene test for routine clinical application. The Vienna Lab Diagnostics GmbH on the other hand offers a multitude of strip assays for the detection of genetic mutations linked to inherited diseases and predispositions of cancer. LabDia Labordiagnostik GmbH provides diagnostic tools for hematology, oncology and infectious diseases. TAmiRNA GmbH applies microRNAs in the diagnosis and treatment of age-associated disorders such as osteoporosis, cardiovascular disease and neurodegenerative disease. Onco-Lab Diagnostics GmbH combines RNA expression signatures of leukocytes and protein biomarkers for early detection of cancer. For monitoring therapy response, circulating tumor cells are the diagnostic target. Kits and software developed by Lexogen GmbH allow the RNA variants involved in a certain disease to be determined via next generation sequencing approaches. In this way, the company opens up new horizons in diagnosis and therapy.

Proteins for molecular diagnostics

Long-standing, broad expertise in the development and production of immunoassays characterizes eBioscience, an Affymetrix company, in Vienna. The Vienna branch is not only the group's Center of Excellence in Immunoassays, but also serves as European headquarters for logistics and administration. Attoquant Diagnostics GmbH, a start-up at the Vienna Biocenter, runs a mass spectrometry platform for the quantification of peptide hormones in blood samples with the current focus set on the discovery and validation of biomarkers in hypertension and cardiovascular diseases. Biomarker Design Forschungs GmbH develops antibody-based biomarkers in cooperation with partners worldwide. Core knowhow includes antibody preparation and ELISA development for diseases of bone metabolism and the cardiovascular system. Molecules linked to diseases can be analyzed in many different tis-



sues. **AIT** established itself as a partner for saliva diagnosis and contributes to letting patients benefit from pain-free drawing of samples.

Why Vienna?



Rech-Weichselbraun, General Manager eBioscience / Affymetrix Vienna Bender MedSystems has been acquired by eBioscience/Affymetrix because of the unique expertise that had been built here regarding high efficiency high quality R&D and manufacturing in the core operation area. Maintaining this asset together with the fact that Vienna is situated in central Europe, thus a perfect hub for the EMEA region, are the most prominent drivers for Affymetrix to sustain and invest into the Vienna business unit. For sure Vienna's stability and security are on top important factors impacting the decision. The high quality of education offered in Austria ensures the availability of best in class employees, the excellent quality of life moreover attracts experts from all over the world. With this Affymetrix finds best conditions for successful growth and appreciation through the Vienna site.

www.ebioscience.com

Open for Partnering: Clinical-stage programs in Vienna

Vienna is a great place to live, but also for large international conferences and for conducting clinical trials. Broad expertise at the Medical University of Vienna is closely tied to the Vienna General Hospital which is the most important facility for high-tech medicine in Austria. Here, both widespread diseases and rare or undiagnosed diseases are center stage.

Vienna's dedicated biotech companies profit from the outstanding medical research in Vienna and develop drugs for the future with global partners. Below please find some information about advanced projects open for partnering.

PHASE III

APN311, Apeiron Biologics AG: monoclonal chimeric antibody produced in CHO cells targeting GD2: APN311 has been investigated in several late stage clinical trials against high-risk neuroblastoma and has shown efficacy. More than 700 patients in most European countries as well as in Israel, Australia and Hong Kong, received this treatment to date. Apeiron is in contact with EMA and FDA for making APN311 available to all patients quickly and will file submissions for marketing authorization soon. APN311 has orphan drug designation both in US and Europe. A new phase I trial started in Japan. The project has been in-licensed from CCRI / SIOPEN.

BC-3781, Nabriva Therapeutics AG: systemic pleuromutilin antibiotic for serious skin infections and bacterial pneumonia: BC 3781 (lefamulin) is the first of a new class of systemically-available pleuromutilin antibiotics that are highly active against multi-drug resistant pathogens. Phase 3 ready finalized oral and i.v. formulations are available. Phase 2 data show efficacy comparable to the gold standard and a good safety profile. Therapeutically relevant drug levels can be achieved with both oral and i.v. administration.

PHASE II

AD04, AFFiRiS AG: therapeutic approach for Alzheimer's Disease: In a Phase II clinical trial with Alzheimer's patients conducted in Austria, Germany, Croatia, Czech Republic, Slovakia and France, AD04 turned out to be the first drug ever to demonstrate clinical and biomarker effects consistent with disease modification as defined by FDA and EMA. Therefore, AFFiRiS will have a strong focus on AD04 for further clinical development.

AP301, APEPTICO Forschung und Entwicklung GmbH: peptide activating pulmonary edema clearance: A Phase lla clinical study conducted at the Medical University Vienna delivered top-line results in the treatment of pulmonary permeability edema in mechanically ventilated patients suffering from Acute Respiratory Distress Syndrome. Orally inhaled AP301 opens up the pulmonary epithelial sodium ion channel. Another Phase Ila study in lung transplant patients was completed in August, again with convincing results.

APN301, Apeiron Biologics AG: recombinant fusion protein of the humanized monoclonal antibody hu14.18 (targeting GD2) with interleukin-2: APN301 so far was developed for neuroblastoma and also for melanoma. It has shown activity in a Phase II clinical study in relapsed/refractory neuroblastoma and was also tested in late stage melanoma, both studies have been performed in the US. Another phase II trial in neuroblastoma in the US and Canada together with the Children's Oncology Group is awaiting final evaluation. APN301 has been in-licensed from Merck KgaA.

AV0113, Activartis Biotech GmbH: cancer immunotherapy: A randomized Phase II study investigating the treatment of glioblastoma with interleukin 12 producing dendritic cells charged with tumor antigens as an add-on to standard therapy is ongoing. The study is conducted at hospitals throughout Austria including Wagner-Jauregg, Rudolfstiftung, Kaiser Franz-Josef Spital, Donauspital, Feldkirch and the Medical Universities in Vienna, Innsbruck and Graz. This therapy is tailored to individual patients and might be applied for other types of cancerous diseases.

BM32, Biomay AG: recombinant grass pollen allergy vaccine based on peptide-carrier fusion protein: The interim analysis of the first treatment year in a Phase IIB study with 180 patients in 6 European countries (A, D, DK, NL, BE, SLO) lead to the recommendation for continuation into the next treatment year, final data will be obtained at the end of 2014. The first-inman Phase IIA trial of this 3rd generation allergy vaccine showed significantly reduced allergy-related nasal symptoms in a study group of 70 patients suffering from grass pollen allergy.

IC43, Valneva Austria GmbH: Pseudomonas aeruginosa vaccine: A Phase II/III trial with 394 patients in Europe is ongoing. Interim data analysis lead to the decision to recruit another 400 ventilated intensive care patients in 40 different sites. Preliminary results are expected at the end of 2015/early 2016. The Pseudomonas aeruginosa program is part of the strategic alliance between Novartis and Valneva. The current trial follows an exploratory Phase II study in which lower all-cause mortality rates were observed.

Discuss partnering details now! www.activartis.com www.affiris.com www.apeiron-biologics.com www.apeptico.com www.biomay.com www.nabriva.com www.valneva.com

Continuation Newcomers in Vienna

ORIGIMM Biotechnology GmbH offers a better way to select highly protective antigens for vaccine production. Its protection-based vaccine discovery platform is available for partnering and applied for the development of the world wide first therapeutic vaccine against acne vulgaris.

Panoptes Pharma GmbH focuses on small molecule based therapies for the treatment of severe eye diseases. Panoptes' clinical candidate is a selective immune-modulating inhibitor for severe and chronic uveitis. This compound also reduces abnormal blood vessel growth in the back of the eye.

Platomics GmbH provides a powerful software platform & market place for life science apps. By simplifying app development it enables partners to develop commercial apps directly from their research tools. No IT expert knowledge is required! Commercialization is achieved via an app store.

RD&C Research, Development & Consulting GmbH offers a novel systemic analysis concept for impurity profiling and impurity related deviation management in pharmaceutical drug process development and routine manufacturing.

SCARLETRED Biomedicals GmbH links biomedical engineering and ICT. Its SCARLETRED® Vision system is the first e-medical device enabling real time monitoring and objective analysis of cutaneous drug effects and skin diseases in pre-/clinical trials which enables to significantly speed up biopharmaceutical drug development.

Syconium Lactic Acid GmbH has the goal to develop a production process for lactic acid operating at significantly lower costs compared to established procedures. Newest knowhow in metabolic engineering and yeast genetics are combined with innovative approaches in bioprocess engineering.

TAMIRNA GmbH is a biopharmaceutical R&D company founded to drive the discovery and development of microRNAs (miRNAs) as tools for diagnosis and treatment of age-associated disorders such as osteoporosis, cardiovascular disease and neurodegenerative disease.

www.origimm.com www.panoptes-pharma.com www.platomics.com www.rdc-concepts.com www.scarletred.at www.syconium.at www.tamirna.com

Marinomed Biotechnologie GmbH:

French Nicox S.A successfully bids for anti-viral eye drop program

Marinomed Biotechnologie GmbH agreed to sell its promising anti-viral eye drop program to Nicox S.A. of France. The France-based international ophthalmic company acquires the entire program as well as all associated rights, data, contracts and information. In return Marinomed will receive up to \in 5.3 Mio.

www.marinomed.at

EUCODIS Bioscience GmbH:

Eucodis offers a new enzyme family in its portfolio of recombinant industrial enzymes. Its 20 Peroxidases display unique properties for their utility in chemical, flavor, feed, cosmetics, paper and other industries and use hydrogen peroxide as a co-substrate. This elimanates the need for expensive cofactor recycling systems.

www.eucodis.com

Vienna Business Agency: Spotlight on Life Sciences

Long-standing engagement as the secret of success

www.viennabusinessagency.at

The city of Vienna has supported the Life Sciences sector for many years. It is through this that it has contributed to the successful development of this highly important technology area.

vienna business agency

The Vienna Business Agency is the first contact point for national and international companies and offers financial support, real estate and consulting. In 2014, the Vienna

Business Agency is placing a special focus on the life sciences. Periodic life sciences missions, real estate programs, support for core facilities in research, co-funding of large competence centers and services for expats, demonstrate the strategic importance of life sciences in Vienna. For many years, the Vienna Business Agency has run the LISAvienna platform together with aws to contribute to the advancement of Life Sciences in Vienna. Consulting, marketing, qualification, networking and the generation of strategic know-how are the five cornerstones required to achieve this task.

66 Biotechnology, pharma and medical engineering have a strong track record in Vienna. Numerous success stories prove this. Our city offers tremendous opportunities for people who put their business ideas into practice in Vienna. We offer key consulting services, financial support, and real estate as the basis for success."

> Gerhard Hirczi, Managing Director of the Vienna Business Agency

Meet LISAvienna

- BIO-Europe 2014 Frankfurt, November 3 – 5, 2014
- Medica and Compamed
 Düsseldorf, November 12 –15, 2014
- Arab Health 2015 Dubai, January 26-29, 2015
- BIO-Europe Spring 2015 Paris, March 9-11, 2015
- HIMSS15 Chicago, April 12-16, 2015
- conhIT Connecting Healthcare IT Berlin, April 14-16, 2015
- LISAvienna goes Asia
 Profit from our biotech/pharma
 partnering trip and join 2 events:
 - WKO Austrian Showcase Singapore, April 19-22, 2015
 - ChinaBio Partnering Forum Shanghai, April 22-23, 2015
- CMEF Spring 2015 Shanghai, May 15-18, 2015
- BioEquity Europe 2015 Vienna, May 19-20, 2015
- 2015 BIO International Convention Philadelphia, June 15-18, 2015

* in cooperation with:



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Austria Wirtschaftsservice GmbH (aws) is the Austrian government promotional bank. aws offers Austrian companies financial assistance in the form of loans, guarantees, grants and/or equity as well as consultancy services from the start-up to the expansion phase. We facilitate the financing of company founders as well as small and medium-sized enterprises in an economically challenging environment. aws initiatives secure investments, growth and employment in Austria. In view of the higher regulatory capital requirements for banks, aws-instruments – in particular aws-guarantees and equity instruments – are gaining more and more in importance".

Bernhard Sagmeister, Managing Director of aws As an example aws – on behalf of the Federal Ministry of Science, Research and Economy (BMWFW) - offers:

- aws Growth Capital Fund: Growth capital for mid-sized companies
- **aws Founders Fund:** Venture capital for young companies with a high growth potential
- Business Angel Fonds: Doubling up business angel investments in young SMEs
- equityfinder.at: Online marketplace for alternative private equity investors looking for new business ideas and investment opportunities
- i2 the business angels matching service:
 i2 is part of ABAN, the Austrian business angel network

www.awsg.at



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Innovation in Vienna: **SEMPERIT** (5) **Semperit's Gloves**

With the Sempermed segment, Semperit is one of the leading providers of surgical, examination and protective gloves worldwide. The headquarters of this long-standing global player are located in Vienna



Semperit AG Holding has been a worldwide leading supplier of natural rubber and plastic products for 190 years. Semperit products and services capitalize on global trends such as increasing health and hygiene requirements. Between 2000 and 2013, the Semperit group has more than doubled its revenue to 906 Million Euros.

Sempermed is the largest segment of the Semperit Group and is ranked among the leading international manufacturers of medical and industrial gloves. Semperit runs a two-tier strategy to cover the global market for surgical, examination and protective gloves: Well-known Sempermed brands are combined with the flexible production of customer brands.

Market driven innovation

An important goal of Semperit's R&D is the development of innovative solutions to fulfill specific market and customer requirements. Market segmentation and detailed analyses of users' needs are carried out in Vienna and feed into extensive R&D at Sempermed's research center in Wimpassing, Lower Austria. Up to now, some 50 glove types have been developed to target more than 10 different user groups. These include various health care fields, laboratory users, the food and catering industry, professional cleaning, beauty and individual users at home. Further important R&D tasks include minimizing production costs by material savings and optimizing existing production processes or establishing of new manufacturing processes. The reduction of material use and the substitution by alternative materials are also top **R&D** priorities.

Award-winning surgical glove

A special highlight in Semperit's product portfolio is the Sempermed® Syntegra UV glove. Thanks to this innovation, Sempermed became the first manufacturer in the world to develop a surgical glove using the material polyisoprene, which is similar to natural latex, and that is interlinked by UV light instead of chemical accelerators that trigger allergies. The unique feature of Sempermed® Syntegra UV is that it is completely free of latex and accelerators yet offers the high wearing comfort of a latex glove. The patented production process is carried out in Wimpassing - the only production site for latex and polyisoprene gloves in Europe. Latex and nitrile gloves are manufactured in Thailand and Malaysia, vinyl gloves in China.

Customers around the globe

The high standard of Semperit's gloves impresses all over the world and demand is on the rise. Long-standing know-how, environmentally aware high-tech production and comprehensive quality management guarantee maximum safety and reliability. In Vienna, customers include hospitals such as the Vienna General Hospital which is one of the largest hospitals in Europe, universities, outstanding research institutes such as CeMM and IMBA, numerous biotech firms and global players in the pharmaceutical industry.

www.semperitgroup.com

Semperit in Austria

- More than 50 products in the Sempermed branch
- - **11,200** employees worldwide, of which about **120** are located in the Semperit Headquarters in Vienna

 - 906 Million Euros sales in 2013

Why Vienna?



Vienna is a perfect, central location to manage a worldwide business. As a company with a high export ratio we benefit from the proximity to Europe's economic booster and our most important market Germany as well as to the dynamic "new" EU member states. Moreover, we can communicate with all our customers around the world within one day from Europe to the US and Asia. Further reasons for Vienna are its excellent infrastructure, the high productivity in international comparison and the well-trained workforce. The high level of research and development combined with stable political and economic conditions account for another plus.'

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LISAvienna is the joint life science platform operated by austria wirtschaftsservice and the Vienna Business Agency. On behalf of the Austrian Federal Ministry of Science, Research and Economics and the city of Vienna, LISAvienna contributes to the advancement of life sciences in Vienna.