BioRN Annual Conference

NEW THERAPEUTIC MODALITIES IN PERSONALISED MEDICINE

October 9, Heidelberg Congress Center

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09:30	**KEYNOTE 1:** "*Heidelberg Pharma: ADCs with cutting-edge payload technologies*" **Andreas Pahl, Heidelberg Pharma** "*The evolution of the "magic bullet" concept*" **Christoph Antz, VERAXA Biotech**
10:30	Coffee & Exhibition
11:30	"*NECVAX-NEO1 personalised neoantigen-targeting treatment in solid tumors*" **Heinz Lubenau, NEC Bio Therapeutics** "*DARPin induced reactivation of p53 in HPV-positive and in tumor cells*" **Volker Dötsch, Goethe University Frankfurt** "*mRNA degradation as a regulatory principle and potential therapeutic target*" **Georg Stoecklin, Medical Faculty Mannheim, Heidelberg University**
12:30 – 14:15	Lunch & Exhibition

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14:15		**Young Scientists Pitch Competition** moderated by **Adelheid Cerwenka**, Medical Faculty Mannheim, Heidelberg University *Selected projects for "New Therapeutic Modalities in Personalised Medicine" will be presented by PhD Students, Postdoctoral fellows and Junior PIs competing for the price sponsored by Evotec.*
15:15		Coffee
15:30		**KEYNOTE 2:** "*Next-generation Radiotheranostics in Modern Cancer Management*" **Martina Benešová-Schäfer, German Cancer Research Center (DKFZ)** "*The Heidelberg Epignostics Brain Classifier – revolutionizing precision oncology*" **Helge Lubenow, Heidelberg Epignostix**
16:30		Young Scientists Pitch Competition: **Award Ceremony** Closing Remarks: **Michael Boutros**, Vice Chair of the executive board, BioRN
17:00		Happy Hour & Networking sponsored by PROGEN

Welcome

Dear BioRN members and friends,

On behalf of the BioRN Life Science Cluster, we would like to welcome you to the BioRN Annual Conference 2024: “New Therapeutic Modalities in Personalised Medicine”.

Understanding the uniqueness of patients fully and individually - this guiding vision is old as mankind itself, but recent breakthroughs in technology have enabled radiopharmaceuticals and antibody drug conjugates (ADCs) to offer remarkable opportunities for clinical development.

In addition, new discoveries in epigenetics, RNA biology and precision molecular diagnostics have opened avenues for additional therapeutic modalities that will shape the healthcare of the future.

The unique combination of world-class research institutes, clinical excellence in oncology, advanced genomics, bioinformatics expertise and interdisciplinary collaboration makes the life science ecosystem Rhine-Neckar one of the leading centres for personalised medicine.

We are therefore very proud to be able to present to you today some of the outstanding research and development achievements of scientists and companies all of which originate from the region around Heidelberg.

The program, curated by the BioRN scientific advisory board, focuses in particular on radiotherapy and ADCs and represents the region's pioneering role in the field of personalised medicine. We are excited to have such renowned speakers from the field who will share with us their latest results and are at the heart of the meeting. Congratulations as well to the scientists who applied for the ‘Young Scientists’ Pitch Competition’ and can present their cutting-edge research at the conference.

We also would like to thank our sponsors for their dedication and financial support which allowed us to organise an outstanding program.

At the interface of academia and industry, where innovation happens - BioRN facilitates cooperations and successful development of ideas into application. Let’s jointly make life science matter and innovation happens.

Connect, bridge, and exchange ideas!
We wish you all an inspiring conference day.

Gitte Neubauer	**Michael Boutros**	**Julia Schaft**
Chair	Vice Chair	Managing Director
BioRN	BioRN	BioRN

Greetings – City of Heidelberg

Congratulations on the 15th anniversary of the BioRN Annual Conference! Every year since 2009, the BioRN Annual Conference has been a valuable platform for knowledge transfer and lively discussions as well as networking opportunities with international experts from various fields of life sciences.

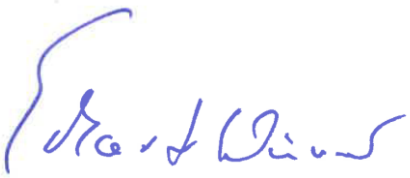
As Mayor of Heidelberg, I am honored to celebrate the growth and achievements of this remarkable network organization. At this year's conference “New Therapeutic Modalities in Personalised Medicine”, scientists and companies from the Heidelberg region will present their impressive innovations.

Thanks to the strong anchoring of personalised medicine and the high density of academic and industrial excellence in the healthcare sector, the region has developed into one of the strongest life science regions in Germany with international appeal - this makes me particularly proud.

I wish you all a successful conference day with valuable discussions!

Prof. Dr. Eckart Würzner

Mayor, City of Heidelberg



Moderation

Julia Schaft

Managing Director
BioRN Network e.V., Germany

After completing her PhD in molecular and developmental biology at the University of Giessen and the European Molecular Biology Laboratory in Heidelberg (Germany) in 2002, Julia continued her scientific research on the differentiation of human embryonic stem cells at Genea Ltd in Sydney Australia, an IVF clinic with a strong focus on research and innovation in the IVF and human stem cell field. Julia then took over leadership responsibilities in scientific project management and the supervision of all of Genea's embryo research licences. In 2014 Julia relocated back to Germany and took on an administrative role at the European Molecular Biology Laboratory in Heidelberg (Germany) building up the philanthropic fundraising program, the Friends of EMBL. She then joined BioRN as a project manager for international R&D and translational initiatives in the life sciences sector. Since October 2018 Julia is Managing Director of BioRN where she is also taking on BioRN strategic business development and partnering responsibilities.

Adelheid Cerwenka

Executive Board Member
BioRN Network e.V., Germany

Prof. Dr. Adelheid Cerwenka studied pharmacy in Vienna, Austria followed by a PhD in Immunology. After a post-doc at the Trudeau Institute, NY, USA (Mentors: Prof. Richard Dutton and Suzy Swain), she joined the Laboratory of Prof. Lewis Lanier at DNAX and UCSF, SF, USA, where she identified tumor expressed ligands for activating Natural Killer cell receptors. After 2 years as group leader at Novartis, Austria, she was recruited as junior group leader to the German Cancer Center in Heidelberg, Germany. Since 2017 she is full professor and chair of Immunobiochemistry at Heidelberg University, Medical Faculty Mannheim, where she serves as Vice Dean of Research and as director of the Mannheim Institute for Innate Immunoscience. She was president of the "Society of Natural Immunity", SNI, she previously coordinated the focus group "NK cells" of the German Society of Immunology and is the speaker of

the Research Training Group GRK2727 “Incheck”. She is author of over 130 publications and her lab is funded by prestigious grants from local, national and international funding agencies. Her research is focused on gaining insight into basic NK cell biology with the goal of exploiting NK cell effector function in cancer and viral infections.

Welcome and Closing

Gitte Neubauer

Chair
BioRN Network e.V., Germany

Gitte Neubauer is a scientific founder of Cellzome. She graduated from Imperial College, London in Biochemistry and completed her PhD thesis with Matthias Mann at the European Molecular Biology Laboratory. After the acquisition of Cellzome by GSK in May 2012, Gitte Neubauer took over leadership of the company. She is director of the board of BioPro Baden-Württemberg, director of the board of the Centre for European Economic Research (Mannheim), a member of the industrial advisory board of the Biotechnology faculty of the University of Applied Sciences in Mannheim and member of the BioRN board since 2014 and chair of the BioRN executive board since 2018.

Michael Boutros

Vice Chair
BioRN Network e.V., Germany

Michael Boutros is the Head of the Division Signaling and Functional Genomics and Coordinator of the Functional and Structural Genomics Program at the German Cancer Research Center (DKFZ). He is also Professor for Cell and Molecular Biology at Heidelberg University. Since October 2023 he is Dean of Medical Faculty Heidelberg, University Heidelberg. Michael Boutros studied biology at RWTH Aachen University and biochemistry at Witten/Herdecke University with study and research periods in New York (USA). His doctoral dissertation arose at the European Molecular Biology Laboratory (EMBL) in Heidelberg. He then completed a Master in Public Administration at the Harvard Kennedy School of Government in

Cambridge, Boston, supported by the McCloy Fellowship Programme, and was a Research Fellow in the Department of Genetics at Harvard Medical School. In 2003, the scientist moved to the German Cancer Research Center, at which he established an Emmy Noether research group. He has been head of the cooperational Division of Signaling and Functional Genomics at the DKFZ since 2008, and Deputy Scientific Director of the DKFZ since 2019. Appointed professor at the Medical Faculty Mannheim of Heidelberg University, he now belongs to the Medical Faculty Heidelberg, to which he was already coopted. In 2020, Prof. Boutros joined the two-person directorate of the Marsilius Kolleg. Elected in 2022 to the Leopoldina and to the Heidelberg Academy of Sciences and Humanities, Michael Boutros is also one of the two Scientific Directors of the Health + Life Science Alliance Heidelberg Mannheim. He is a member of the BioRN executive board since 2018.

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FIND OUT MORE

Life forward

Keynote 1

Andreas Pahl

Managing Director
Heidelberg Pharma

Professor Andreas Pahl has been Chief Executive Officer of Heidelberg Pharma AG and Managing Director of the subsidiary Heidelberg Pharma Research GmbH since February 2024. Before, he had been Chief Scientific Officer since 2016. Professor Pahl looks back on 25 years of experience in research and higher education. Prior to his position at Heidelberg Pharma, he was Head of Late Pharmacology at Nycomed and Takeda Pharmaceuticals.
After graduating in chemistry from the University of Berlin, he spent several years lecturing at TU Berlin. He is Associate Professor at the Institute of Experimental and Clinical Pharmacology and Toxicology at the Friedrich-Alexander University Erlangen-Nuremberg (FAU).

Heidelberg Pharma: ADCs with cutting-edge payload technologies

As a biopharmaceutical company we work on a new treatment approach in oncology. We develop novel drugs based on our ADC technologies, in which selected antibodies are loaded with cytotoxic payloads, that are transported into diseased cells. Inside the cells, the toxins then unleash their effect and kill the diseased cells.
We use several compounds and have built up an ADC toolbox that overcomes tumor resistance and addresses different types of cancer using various antibodies. The goal is to develop targeted and highly effective ADCs for the treatment of a variety of malignant hematologic and solid tumors.
We are the first company to use the compound Amanitin from the green death cap mushroom in cancer therapy. The biological mechanism of action of the toxin represents a new therapeutic modality and is used as a compound in the Amanitin-based ADC technology, the so-called ATAC technology. Amanitin is cross-linked to different antibodies designed to transport the compound to the cancer cell, where it is absorbed. There, the Amanitin is released and inhibits RNA polymerase II, which results in programmed cell death, or apoptosis. RNA polymerase inhibition is a novel principle in cancer therapy and offers the possibility of breaking through drug resistance and destroying dormant tumor cells, which could lead to significant advances in cancer therapy - even for patients who no longer respond to any other treatment. The Amanitin-based ADC development

candidates are called ATACs. The most advanced product candidate HDP-101 is a BCMA-ATAC for the indication multiple myeloma, which is currently in clinical development.
The first candidate that we are developing with a toxin other than Amanitin is HDP-201, an exatecan-based ADC. It differs in its mode of action from that of Amanitin and thus expands the company's range of compounds. HDP-201, targets guanylyl cyclase-C (GCC), a receptor that is expressed on the surface of intestinal cells and cancer cells in various gastrointestinal tumors.

Keynote 2

Martina Benešová-Schäfer

Junior Research Group Leader
German Cancer Research Center (DKFZ)

Currently, I am the head of the Junior Research Group Translational Radiotheranostics at the German Cancer Research Center (DKFZ) in Hei delberg. Before becoming a group leader, I pursued Postdoctoral research at two scientific institutions in Switzerland, namely, at the Paul Scherrer Institute (PSI) in Villigen and at the Swiss Federal Institute of Technology (ETH) in Zürich. My Doctoral study was performed in the Division of Radiopharmaceutical Chemistry at the DKFZ in Heidelberg. During my studies and research, I obtained a broad knowledge basically covering all pillars of nuclear chemistry and radio¬pharmaceutical sciences. I was actively involved in the routine and experimental production of a variety of radionuclides and in the development and characterization of novel chelator systems. Furthermore, I focussed on the design and synthesis of novel radiotracers and radiopharmaceuticals targeting various biological targets. My specialization was further diversified with an extensive in vitro, in vivo and ex vivo preclinical evaluations. This complex effort was awarded with several prizes inclusive the SNMMI Image of the Year Award 2015, the Alavi-Mandell Award 2016, the Wilma Moser Award 2017 and the Czech National Invention Award 2022. The findings of my pre-clinical research resulted in a number of scientific publications, patent applications, clinical translations and clinical trials as well as drug approvals and marketing authorizations of radiotheranostic drugs.

Next-generation Radiotheranostics in Modern Cancer Management

Cancer is one of the most complex and challenging human diseases, with incidences and cancer-related deaths continuing to rise. Sodium [131I]iodide became the first FDA-approved radiopharmaceutical in 1951 and can still be found in the guidelines for treatment of differentiated thyroid cancer. Chelated radiometals like lutetium-177 have further expanded the toolbox available for targeted radionuclide therapy (TRNT), a treatment strategy that uses delivery vectors to selectively transport ionizing radiation to tumor cells expressing the desired target molecule. Initially, TRNT was used as a last-line resort for patients that had either not responded to or progressed after the state-of-the-art treatment. The remarkable successes of [177Lu]Lu-DOTA-TATE in neuroendocrine tumors and [177Lu]Lu-PSMA-617 in prostate cancer promoted to start the integration of TRNT into standard-of-care practices for more cancer types and patients. These days, various radiotherapeutic compounds and delivery strategies, including small molecules, peptides, peptidomimetics, antibodies, nanoparticles, and pre-targeting vectors are being developed. Notwithstanding the diversity of radiotherapeutic sizes, targets, and pharmacokinetics, the application of these compounds to treat cancer share some common features that define TRNT. By analogy to chemotherapy or biologically targeted therapy, radiotherapeutics are administered systemically and accumulate in the targeted tissue of interest. A resulting advantage is the opportunity to treat heavily metastasized disease that is inaccessible to external-beam radiotherapy or any other local intervention. However, in contrast to other systemically administered therapies, the amount of substance is miniscule limiting the toxicity of TRNT to radiobiological effects alone. Tuning the targeting of radiotherapeutics according to tumor properties positions TRNT to effectively satisfying the growing demand for a personalized treatment of cancer patients.

Plenary

Christoph Antz

Managing Director
VERAXA Biotech

Christoph is an experienced company executive and former venture capital manager in the fields of life sciences with special focus on drug development (small molecules and biologicals), diagnostics and instrumentation. Prior to VERAXA, he was Managing Director at Acousia Therapeutics (inner ear drug development) and Luxendo (light sheet microscopy).

The evolution of the "magic bullet" concept

The emergence of therapeutic strategies such as ADCs, radiopharmaceuticals and other innovative payloads, bi- and multi-specifics, and smart antibody design choices keep driving the evolution of the "magic bullet" concept.
VERAXA Biotech is a clinical-stage biopharmaceutical company focused on developing such innovative antibody-based therapeutics to combat cancer. Despite significant progress in the field, most potent therapeutic options are still limited due to their severe collateral toxicities.
VERAXA Biotech leverages proprietary transformative innovations to develop therapeutic programs that demonstrate superior efficacy and fewer side effects for cancer patients. The company has established a powerful combination of proprietary technologies, including a high-throughput antibody discovery platform, a click-chemistry-based conjugation technology, genetic code expansion technology, and a unique antibody format to generate superior therapeutic antibody-based programs. We aim to unlock the full potential and efficacy of modern biological treatment options for cancer patients suffering from diseases with unmet needs, making previously untreatable cancers treatable.

Heinz Lubenau

Managing Director
NEC Bio Therapeutics

Heinz Lubenau is currently Chief Executive Officer and co-founder of NEC Bio Therapeutics where he is leading the AI-empowered personalized neoantigen drug development which includes the proprietary product NECVAX-NEO1 and the clinical collaboration with Transgene's MyVac product. He has been serving as Chief Drug Development Officer of NEC OncoImmunity leading the development activities of the therapeutic neoantigen-targeting activities in cancer patients since April 2022. From 2021 to 2024 he served as Director Clinical Development for Aelix Therapeutics developing HIV vaccines. Up to November 2022 he was Chief Executive Officer of VAXIMM which he co-founded in 2008. Since then, Heinz has been responsible for all activities on the most advanced product VXM01 and the pipeline products including the personalized neoantigen approach, based on an oral, bacteria-based DNA vaccination platform. Prior to this, 2003-2008, he was Global Project Manager Biosimilar G-CSF and Head of Preclinical and Clinical Development at the German ratiopharm company BioGeneriX, where he led the development work of the first biosimilar G-CSF Ratiograstim® and of the 2nd generation G-CSF Lonquex. In 1994 he joined Servier as became Clinical Research Manager and Project Director Internal Medicine in 2001. Heinz Lubenau gained his PhD in pharmacy from Johannes-Gutenberg-University, Mainz.

NECVAX-NEO1 personalised neoantigen-targeting treatment in solid tumors

NECVAX-NEO1 is a clinical-stage personalised oral tumour vaccine consisting of live, strongly attenuated bacterium carrying a plasmid DNA encoding for a polyepitope peptide consisting of tumour-specific neoantigens. The neoantigens are identified by Next Generation Sequencing (NGS) of patient-specific tumour biopsies and subsequent identification and ranking of potential tumour-specific neo-epitopes using the proprietary NEC Immune Profiler software. NECVAX-NEO1 is being developed in a series of clinical trials in various indications of solid tumours, covering the spectrum of different stages from early treatment in the neoadjuvant setting up to treatment of metastatic patients, including standard of care immune checkpoint inhibitor therapy. NECVAX-NEO1 is based on a clinically validated plug&play platform technology which is self-adjuvanted through the bacterial carrier. The turnaround time is short due to the straight-forward small scale manufacturing process, enabling treatment of patients with metastatic disease. The technology enables targeting of a large number of neoantigens of any size and is applicable to personalised as well as shared neoantigen-targeting approaches. Besides safety the currently conducted clinical trial program in

solid tumor patients focuses on signal-finding including clinical responses, neoantigen-specific immune responses, immune biomarker changes as well as gut microbiome analyses.

Volker Dötsch

Professor of Biophysical Chemistry and member of the Magnetic Resonance Center Frankfurt
Goethe University Frankfurt

Volker Dötsch is Professor of Biophysical Chemistry at Goethe University and a member of the Magnetic Resonance Center Frankfurt. He studied chemistry at the University of Göttingen and obtained a PhD from the ETH in Zürich. As a postdoctoral fellow he used NMR to determine the structure of protein-DNA complexes at the Harvard Medical School. In 1998 he moved as assistant professor to the University of California San Francisco (UCSF). In 2003 he was appointed professor at the Institute of Biophysical Chemistry of Goethe University in Frankfurt. His research interests focus on the structural and functional characterization of members of the p53 protein family, in particular p63 and its involvement in genetic quality control in germ cells. In addition, his laboratory uses a combination of NMR spectroscopy and cell-free protein expression to investigate the structure and function of membrane proteins and studies molecular interactions regulating autophagy. His lab uses a wide variety of biophysical methods including NMR spectroscopy and combines these studies with investigations in cell culture experiments and mouse models. Volker Dötsch is an elected EMBO member.

DARPin induced reactivation of p53 in HPV-positive and in tumor cells

Infection of cells with high-risk strains of the human papillomavirus causes cancer in various types of epithelial tissue. HPV infections are responsible for ~4.5% of all cancers worldwide. Tumorigenesis is based on the inactivation of key cellular control mechanisms by the viral proteins E6 and E7. The HPV E6 protein interacts with the cellular E3 ligase E6AP, and this complex binds to the p53 DNA-binding domain, which results in the ubiquitin-dependent degradation of p53. Inhibition of this interaction has the potential to reactivate p53, thus preventing oncogenic transformation. We describe the characterization of a designed ankyrin repeat protein (DARPin) that binds to the same site as the HPV E6 protein, thereby displacing the E3 ligase and stabilizing p53. As the DARPin binds to p53, it inhibits E6 binding for all HPV strains. Interaction with the DARPin does not affect DNA binding but reactivates a p53-dependent transcriptional program in HeLa (HPV18 positive) and SiHa (HPV16 positive) cells, which results in reduced cell viability. We further show that binding of this DARPin stabilizes many structural p53 mutants. Binding results in transcriptional reactivation of up

to 70% of the transcriptional activity of wild type p53. In combination with an mRNA/lipid nanoparticle delivery this DARPin has therapeutic potential for the treatment of certain cancer types.

Georg Stoecklin

Head of Biochemistry Department
Mannheim Institute of Innate Immunoscience (MI3), Medical Faculty Mannheim, Heidelberg University

Georg Stoecklin is professor for biochemistry at Heidelberg University, Germany. He earned an MD and PhD in Biology at the University of Basel, Switzerland. Following postdoctoral training at the Brigham and Women's Hospital / Harvard Medical School in Boston, USA, he became junior group leader at the German Cancer Research Center in Heidelberg. Since 2016, he heads the Department of Biochemistry at the Medical Faculty Mannheim of Heidelberg University. He is also co-director of the Faculty Core Technology Platform and of the Mannheim Institute of Innate Immunoscience.

mRNA degradation as a regulatory principle and potential therapeutic target

TNF is a major pro-inflammatory cytokine that drives both physiological and pathological immune reactions. Thus, the expression of TNF in immune cells such a macrophages is subject to tight control mechanisms, which includes potent elements that drive rapid degradation of TNF mRNA. In contrast to the transcriptional regulation of RNA synthesis, rather little is known about the mechanisms controlling the degradation of RNAs. We previously described an RNA stem-loop motif as a decay element in the 3' untranslated region of TNF mRNA, and thereby defined a novel class of mammalian mRNA destabilizing elements. We further identified Roquin as a stem-loop specific RNA-binding protein, and demonstrated that Roquin promotes mRNA degradation by recruiting the Ccr4-Caf1-Not deadenylase complex. Using TNF as a model case, I will discuss the principles, regulation and importance of RNA turnover in immune cells, and present our newest approach to interfere with mRNA degradation using immune-modulatory RNAs.

Helge Lubenow

Managing Director
Heidelberg Epignostix

Dr. Helge Lubenow has studied Biology and holds a PhD in Genetics from the University Cologne and the Max-Planck-Institute for Plant Breeding, Cologne, Germany. She joined QIAGEN GmbH in 1997 and held a number of management positions during her tenure, most recently Senior Vice President Molecular Diagnostics, Head of the global diagnostics business. In 2015 she founded AGOS-Consulting, chairs the supervisory board of Epigenomics AG, is the Vice Chair of the supervisory board of Biofontera AG and is a member of the board of Neracare GmbH, Avelo AG and Human Gesellschaft für Diagnostika. She represents Heidelberg Epignostix GmbH since June 2024 as CEO.

The Heidelberg Epignostics Brain Classifier – revolutionizing precision oncology

We are passionate about improving diagnostic accuracy - Our mission is to revolutionize precision oncology.

Accurate and precise diagnosis is crucial for optimal management of patients with cancer. Our vision is to help create a world in which all cancer patients are treated appropriately and as individuals, by providing innovative solutions for precision molecular diagnostics. Our team reflects the interdisciplinary collaboration required to solve this challenge in oncology, from statistics and data science to genetics, pathology and healthcare.

Utilizing AI-based machine learning we have developed a powerful algorithm used for tumor classification. The algorithm analyses the unique methylation patterns in tumor samples and uses this information to distinguish different types of tumors enabling the selection of the optimal treatment scheme for each patient.

By training the algorithm on a dataset with known tumor subtypes, it can learn to identify specific methylation patterns associated with each tumor type. Today the Heidelberg Brain Tumor Classifier covers over 150 types of CNS tumors. It has been widely used in clinical research since 2017 and recognized by all major tumor centers globally. To-date the database has had >120,000 uploads from across the world and methylation-based tumor classification is already referenced by WHO guidelines.

Heidelberg Epignostix, a spin-off from the DKFZ (German Cancer Center, Heidelberg), has exclusively licensed the algorithm and corresponding patient database. We will bring the brain classifier to market in 2025 and subsequently launch classifiers for other tumor indications.

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Lunch talks

Ina Oehme

Group Leader and Deputy Head of Department; Head KiTZ Translational Drug Screening Unit – TDSU; CCU Pediatric Oncology Hopp Children's Cancer Center Heidelberg (KiTZ); German Cancer Research Center (DKFZ)

PD Dr. Ina Oehme is a researcher who has been involved in the field of functional pediatric precision oncology. Her work has focused on drug sensitivity profiling of 3D tumor tissue cultures, long-term culture, and patient-derived xenograft (PDX) models. She is part of the INFORM program, a multinational precision oncology initiative, and has established with her team the personalized drug sensitivity profiling pipeline for relapsed pediatric cancer patients. Additionally, she has been involved in projects targeting HDACs in several preclinical models, as well as the validation of therapeutic targets using pediatric zebrafish xenograft models. Her work has contributed to the identification of new therapeutic approaches for pediatric cancers. Ina Oehme is the deputy head of the Clinical Cooperation Unit Pediatric Oncology at the Cancer Research Center (DKFZ) and group leader of the group "functional pediatric precision oncology" at the Hopp Children's Cancer Center (KiTZ) in Heidelberg, Germany. Ina is a passionate cell biologist and cell death expert, holding a PhD in biochemistry. She recently qualified as a professor for medical cell biology at the Heidelberg medical faculty.

Drug sensitivity profiling in the pediatric precision oncology program INFORM

The international precision oncology program INFORM enrolls relapsed pediatric cancer patients for comprehensive molecular analysis. We recently implemented functional ex vivo drug sensitivity profiling (DSP) in this international multicenter precision oncology program. We received more than 350 viable tumor samples from 35 pediatric oncology centers in seven countries. DSP was conducted on multicellular fresh tumor tissue spheroid cultures; hits were reported within three weeks. The DSP results matched the identified molecular targets. Unexpected drug vulnerabilities were identified in 80% of cases lacking actionable clinically relevant molecular events, demonstrating the added value of DSP. Striking parallels between clinical courses and the DSP results were observed in selected patients, pointing toward potential predictivity of DSP.

Christian Schmees & Markus Templin

Christian Schmees: Group Leader Tumour Biology
Markus Templin: Group Leader Assay Development
NMI Natural and Medical Sciences Institute at the University of Tübingen

Christian Schmees received his PhD in cancer immunology from the Technical University of Munich. His thesis resulted in the identification of gamma-glutamyl-transpeptidase as a major factor during T-cell specific immune evasion of Helicobacter pylori. As a postdoctoral fellow he joined the Ludwig Institute for Cancer Research in Uppsala and the Max-Planck Institute of Molecular Physiology in Dortmund, where he studied the differential regulation of intracellular growth factor receptor trafficking in cancer. He started at NMI as a senior scientist in 2011 and became head of the Tumour Biology group in 2014. His team is focused on the development and characterization of patient-derived ex-vivo microtumour models, which are applied in preclinical drug development and precision oncology studies.

Markus Templin received his PhD from Eberhard Karls University of Tübingen for his work on prokaryotic cell division. Following postdoctoral research at the Institute for Cell Biology at the University of Edinburgh and at the Max Planck Institute for Developmental Biology in Tübingen, he joined the NMI in 2000 as the head of the Assay Development group. His team focuses on the development of advanced protein detection systems, an area in which he holds several patents. These highly multiplexed assays are utilized in proteomics and cancer research and are capable of characterizing the status of intracellular signalling pathways in complex cellular systems as well as in primary tissues. His group's primary interests lie in preclinical drug development and precision oncology.

The Application of Patient-derived Microtumours and DigiWest® Protein Profiling in Preclinical Drug Development and Personalized Oncology

A significant aspect of preclinical drug development and the application of personalized cancer treatment is the integration of clinical data with molecular analyses, including multi-omics and functional phenotyping. This integration allows for the assessment of individual signalling perturbations, which serves as a basis for deciphering drug mode of action and, ultimately, identifying tumor-specific vulnerabilities for tailored therapy.
Patient-derived ex vivo models enable the implementation of this concept within a clinically relevant timeframe. Moreover, advanced protein profiling technologies facilitate comprehensive pathway activity analyses, which are crucial for drug development and biomarker discovery.
We will present data from case studies on DigWest® high content protein profiling to elucidate drug mode-of-action, identify drug response biomarkers and detect treatment-resistance in translational oncology. Furthermore, we will introduce the application of patient-derived microtumours in combination with histology, protein profiling and immunophenotyping for personalised efficacy testing of chemo-, immuno- and cell-based cancer treatment approaches.

Rastislav Horos

Chief Technology Officer
Hummingbird Diagnostics

Dr. Rastislav Horos is the Chief Technology Officer at Hummingbird Diagnostics GmbH. He has a proven track record in designing and delivering successful innovative approaches to better understanding fundamental biology and disease pathogenesis. His area of expertise lies in next-generation sequencing, small RNA biochemistry, assay development and biomarker discovery from liquid biopsies. Rastislav applies his molecular biology expertise to developing and implementing novel technologies while leading Hummingbird's laboratory team. Prior to joining Hummingbird, Rastislav worked as a postdoctoral fellow then staff scientist at the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany, where he specialized in autophagy, metabolism, small RNA biology and RNA-protein complexes biochemistry. His work resulted in a patent covering autophagy modulation by small RNA. Rastislav earned his D.V.M. degree from the University of Veterinary Medicine and Pharmacy in Kosice, Slovakia and completed his Ph.D. in molecular hematology at the Erasmus University Medical Center in Rotterdam, Netherlands.

Early lung cancer detection using RNA biomarker methylation

In addition to the canonical RNA bases A, C, U, and G, there exist several hundred different modified bases including many of functional relevance. 2'-O-Methylation (Nm) is a common modification found on both coding and non-coding RNAs. Ribosomal RNAs show dynamic Nm patterns and variable sites have been shown to be altered in certain cancers. We previously described a 22 nt fragment of the 28S rRNA that is released into the blood from lung cancer and is a diagnostic biomarker (Sikosek et al, 2023). Here we present a method to capture this biomarker in a targeted library for Oxford Nanopore sequencing to reveal Nm modification patterns at a single molecule resolution with an accuracy of 93%. We validated the method in cell culture models and found differential Nm patterns between lung cancer patients and controls in liquid biopsy samples, which yielded a diagnostic test performance ROC AUC above 0.84.

Dominik Schreiber

Laboratory Leader Biopharma Solutions
BASF

Dominik Schreiber is a scientist with a profound background in Biotechnology, Chemistry and Process Technology. He currently works as the Lab Leader Biopharma at BASF's Pharma division in Ludwigshafen, where he develops and optimizes excipients for the formulation of active pharmaceutical ingredients as well as for mammalian and microbial bioprocesses.

Dominik received a PhD in Biotechnology from Technical University Kaiserslautern where he worked on the characterization and production of active compound with anti-inflammatory effects. After his Postdoc time at the University of Applied Science Kaiserslautern and Technical University Kaiserslautern he worked as a project engineer at Triplan AG, where he focused on process technology and bioprocesses for the next two years. From 2019 to 2024 he worked at AGC Biologics as a scientist in the Production department on microbial cGMP production, technology transfers as well as manufacturing science and technology where he supervised and optimized bioprocesses from fermentation to filling.

Application benefits of new poloxamer variants for the formulation of antibodies

Novel therapeutic modalities and personalized medicine with antibody-derived products provide new challenges to formulators in the pharmaceutical industry. Today, only three surfactants are

commonly used for the formulation of biologics: Polysorbate 20, Polysorbate 80 and Poloxamer 188. There is an unmet need for new and improved surfactant grades.

This presentation gives an insight in poloxamer chemistry and how new poloxamer variants can provide application benefits in the formulation of antibodies. Therapeutic antibodies and ADCs for a variety of indications including immunology and oncology can benefit from new formulations that improve efficacy by reducing particle formulation and degradation of antibody formulations.

The Poloxamers were characterized with SE-HPLC and their stability was assessed in aqueous solutions at accelerated degradation conditions. Subvisible particle formation in monoclonal and polyclonal antibody formulations with different Poloxamer variants was assessed with micro-flow imaging. The new variant showed significant benefits over standard Poloxamer 188 which are used in commercial biotherapeutic products. The stability of the new variant was comparable to that of standard poloxamer 188.

Young Scientists' Pitch Competition

Look forward to an interesting and challenging session for Young Scientists presenting their research live in a short pitch. Together with a jury the onsite audience selects the best research pitch, through live voting. Watch out for the QR code or go to slido.com and include the code #3071657 for your access the live voting system. Voting starts with the session and closes around 4pm. The winner will be announced during the award ceremony after the last session.

#1 Drug-Induced Differential Gene Expression Analysis on Nanoliter Droplet Microarrays: Enabling Tool for Functional Precision Oncology

Razan El Khaled EL Faraj, [1] Shraddha Chakraborty, [1,2] Meijun Zhou, [1] Morgan Sobol, [3] David Thiele, [3] Lilly ShatfordAdams, [4] Maximiano Correa Cassal, [3] Anne-Kristin Kaster, [3] Sascha Dietrich, [5] Pavel A. Levkin[1] and Anna A. Popova[1]

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Drug-induced differential gene expression analysis (DGEA) is an important tool for uncovering the molecular basis of phenotypic changes in cells after exposure to drug treatment and for understanding individual tumour responses to anticancer drugs. However, high throughput post-treatment DGEA is challenging due to high costs and labour-intensive, multi-step sample preparation protocols. This is particularly difficult when dealing with cancer cells from patient biopsies due to the limited availability of cells.
We introduce a novel, miniaturizing method for drug-induced DGEA at nanoliter scale. This innovative approach has the potential to enable high-throughput and parallel analysis of drug responses in patient-derived cells, as it can effectively overcome the limitations of traditional protocols related to sample scarcity and labour intensity.

We demonstrate proof of concept for our method using the Droplet Microarray (DMA) platform, a microscope glass slide patterned with hydrophilic spots separated by a superhydrophobic background, which allows the formation of nanoliter droplets suitable for testing as few as 100 cells in a 150-nanoliter volume with a wide variety of compounds. The DMA platform facilitates phenotypic analysis via microscopy, followed by cDNA synthesis from treated cells and subsequent DGEA. The procedure involves cell lysis for mRNA isolation and cDNA conversion on the DMA, followed by pooling of droplets for qPCR and ultimately RNA sequencing analysis. We will be able to track individual conditions by introducing a unique molecular identifier (UMI) to each droplet, using barcoded oligo-dT primers that contain a 6 bp UMI.
We demonstrate this protocol for drug-induced DGEA on the DMA platform using both cell lines and primary patient-derived chronic lymphocytic leukaemia (CLL) cells. We provide evidence for the efficacy of our platform by identifying the upregulation of genes involved in the cellular response to stress and damage, SYK and GADD45β, following doxorubicin treatment of patient derived CLL cells. These results demonstrate the utility of our optimized protocol in revealing molecular changes associated with drug response, advancing our understanding of cancer biology, and facilitating personalized therapeutic strategies in precision oncology. Our methodology is critical for performing DGEA on a limited number of cells and has potential applications in functional precision oncology. By enabling molecular profiling of unique patient-derived samples after drug treatment in vitro, this method can provide essential insights into individual tumour responses to anticancer drugs.

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#2 Epigenetic Therapies Induced Antigens – A new class of immunotherapy targets

Ashish Goyal[1,*], Jens Bauer[2,3,4,*], Joschka Hey[1,5,6,*], Dimitris N Papageorgiou[7,8], Ekaterina Stepanova[9], Michael Daskalakis[1,10], Jonas Scheid[2,3,4,11], Marissa Dubbelaar[2,3,4,11], Boris Klimovich[4,12], Dominic Schwarz[7], Melanie Märklin[4,12], Malte Roerden[2,4], Yu-Yu Lin[1], Tobias Ma[13], Oliver Mücke[1], Hans-Georg Rammensee[3,4,14], Michael Lübbert[13], Fabricio Loayza-Puch[9], Jeroen Krijgsveld[7,8], Juliane S. Walz[2,3,4,12,#], Christoph Plass[1,6,14,#]

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Immunotherapies targeting cancer-specific neoantigens have revolutionized the treatment of cancer patients. Recent evidence from our lab suggests that epigenetic therapies synergize with immunotherapies, mediated by the de-repression of endogenous retroviral element (ERV) - encoded promoters (Brocks et al, Nature Genetics, 2017). Now, using deep RNA sequencing from cancer cell lines treated with DNA methyltransferase inhibitor (DNMTi) and/or Histone deacetylase inhibitor (HDACi), we assemble a de novo transcriptome and identify several thousand ERV-derived, treatment-induced novel polyadenylated transcripts (TINPATs). Using immunopeptidomics, we demonstrate the human leukocyte antigen (HLA) presentation of several treatment-induced neopeptides (t-neopeptides) arising from TINPATs. We illustrate the potential of the identified t-neopeptides to elicit a T-cell response to effectively target cancer cells. We further verify the presence of t-neopeptides in AML patient samples after in vivo treatment with the DNMT inhibitor Decitabine. Our findings highlight the potential of ERV-derived antigens in epigenetic and immune therapies directed against cancer (Goyal et al, Nature communications, 2023). These antigens hold the promise to treat to any type of cancer and offer the possibility to generate off the shelf immunotherapeutic approaches.

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#3 Paclitaxel-induced cryptic mRNA translation: Expanding the HLA-I cancer immune landscape

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Oncogenomics (Agami Lab), Netherlands Cancer Institute Amsterdam, https://www.nki.nl/research/research-groups/reuven-agami/

Paclitaxel (PTX) is one of the most commonly used chemotherapeutic agents against cancer. The drug alters microtubule dynamics and induces mitotic arrest, which activates apoptotic pathways. Despite its well-studied cellular effects, systemic adverse effects such as painful neuropathies during chemotherapy are very common and reduce patient`s quality of life. Additionally, Paclitaxel's anti-cancer efficacy is limited to certain cancer types, and many patients relapse with resistant malignancies. Therefore, further investigation into the cellular effects of Paclitaxel is essential. Translatomic studies (RiboSeq) performed in the department of 'Translational Control and Metabolism' (AG Loazya-Puch) support the hypothesis, that PTX induces aberrant mRNA translation at 5'untranslated regions (UTRs) and 5' ends of global coding sequences. We bioinformatically predicted upstream and upstream-overlapping open reading frames (uORFs/ uoORFs) in the 5'UTR to give rise to non-canonical protein biosynthesis peptides (ncPeptides). Based on recent findings, we investigated whether these ncPeptides can be presented in HLA-I complexes on the cell surface

to serve as neo-antigens. In collaboration with the Riemer lab (DKFZ) and Agami lab (NKI, Amsterdam), we discovered a PTX-associated increase in certain ncPeptides presentation levels using immunopeptidomics. The next step of the project will involve immunogenicity screening of our detected lead peptide targets to determine an effective immune response that can be exploited for improved cancer therapy. The field of drug-induced neo-antigen presentation is growing. The findings of this collaboration could pave new therapeutic avenues where patients are vaccinated against cancer-specific, PTX-associated peptides before the actual chemotherapy. This immune priming approach could potentially reduce PTX regimen concentrations, still enabling efficient cancer killing but with potentially lower adverse effects in patients.

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#4 Pro-resolving macrophages hold potential for cell-based therapy in immune-mediated inflammatory diseases

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Cell-based therapies have recently transformed the therapeutic space of human disease, particularly cancer, but also immune-mediated inflammatory diseases (IMIDs). IMIDs are a significant cause of lifelong disability and premature mortality worldwide [1]. Unresolved chronic inflammation is the core feature of IMIDs, resulting in progressive organ damage. Pro-resolution mechanisms, which effectively resolve inflammation in healthy individuals, are deficient or outbalanced by pro-inflammatory processes in IMIDs. Furthermore, therapies promoting pro-resolution in these patients are lacking. Human single cell omics data proposed tissue-resident macrophages as key drivers of pro-resolution processes. Specifically, the predominance of tissue-resident macrophages over infiltrating macrophages favored the probability for long-term remission maintenance [2]. Therefore, engineering human macrophages with enhanced pro-resolution characteristics could be a novel personalized cell-based therapeutic approach closing the pro-resolution therapeutic gap in IMIDs. To engineer such cells, it is crucial to uncover which macrophage functions promote pro-resolution in inflamed human tissues. In our project, we study primary macrophages isolated from human tissues affected by IMIDs. We utilized multi-dimensional omics technologies with incorporated pro-resolution functional readouts at single-cell resolution. Our data uncover extensive transcriptomic, proteomic, and functional macrophage complexity in IMID tissues and infer macrophage subsets with pro-resolution functions. Our studies set the first steps for developing engineered pro-resolution macrophages as a novel cell therapy for remission maintenance and tissue protection in patients with IMIDs.

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#5

Spotlight your immune response – CD4+ T cell and SIRPα+ macrophage PET tracers to guide immunotherapy

Teresa R. Wagner[1], Bjoern Traenkle[1], Simone Blaeß[1], Philipp D. Kaiser[1], Dominik Sonanini[1], Ulrich Rothbauer[2], Manfred Kneilling[3], Bernd J. Pichler[3]

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Current methods for assessing cancer immunotherapy responses often take several months, delaying critical treatment adjustments. Given the wide variability in patient response and generally low success rates, such delays often result in missed opportunities for effective treatment. Consequently, there is a pressing need for new approaches to assess individual responses early in the treatment process.

Recent data suggests that the redistribution of specific immune cells within the tumor microenvironment serves as an early indicator of treatment success, observable within days of initiating effective immunotherapy. However, monitoring this dynamic process necessitates a comprehensive diagnostic approach.

Positron emission tomography (PET) is a non-invasive, high-resolution imaging technique that enables repeated visualization of biological markers. However, this method requires specific radiotracers to track the targets of interest. To address this need, we are developing single-domain antibody (sdAb)-based Immune Cell Tracers (ICE-Ts) specifically designed to target CD4+ T cells and SIRPα+ myeloid cells, which are critical for the response and resistance to immunotherapy.

In humanized mouse models, our ICE-Ts have successfully visualized the infiltration of these immune cells into tumors. The high-resolution PET images distinctly identified immune cell-infiltrated (hot) tumors, immune cell-excluded tumors, and immune cell-free (cold) tumors, with these patterns correlating directly with therapy outcomes. Currently, we are progressing towards clinical application with GMP production and toxicological safety validations underway.

Immunotherapies offer considerable promise for the treatment of advanced tumors. However, current diagnostic methods frequently result in ineffective and toxic treatments. Our ICE-Ts will

offer a breakthrough by enabling early and precise assessment of immunotherapy responses, allowing for more effective and personalized treatment adjustments.

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#6 Ultra-high scale mapping of cellular interaction for the development, prioritization and personalized application of immune-based therapies

Schayan Yousefian[1,2], Dominik Vonficht[2], Lea Jopp-Saile[2], Viktoria Flore[1], Daniel Hübschmann[2,3], Simon Haas[1]

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Immunotherapies have revolutionized cancer medicine by harnessing the patient's own immune system and empowering it to fight the disease. Most immunotherapies work by either modulating, enhancing or blocking different types of cellular interactions that usually occur naturally in the body. Among the most promising treatments are bispecific antibodies and chimeric antigen receptor (CAR) T-cell therapies, both of which have shown remarkable efficacy in treating certain cancers and in recent years a variety of autoimmune disorders. However, their full potential is often limited by challenges in unraveling the specific cell-cell interactions they enforce and the unintended off-target effects they may cause. This limitation highlights the necessity for innovative tools that can precisely

characterize and quantify cellular interactions in complex cellular ecosystems both in health and disease.

To overcome this, we have developed a technological framework that enables an unbiased and comprehensive mapping of cellular interactions at ultra-high scale, high specificity and low cost. As a result, we have unlocked an understudied field and have opened up a new therapeutic modality that utilizes cell-cell interactions as a novel approach for drug discovery, prediction of therapy response, and personalized application of immunotherapies.

This method not only provides insight into the mode of action and specificity of current immunotherapies, but can also evaluate potential off-target effects, thereby enabling safer and more effective therapeutic strategies. Furthermore, our findings suggest that by deciphering these interactions, we can not only improve the design and efficacy of bispecific antibodies and therapeutic T cells, but also identify novel treatment approaches that target disease-specific vulnerabilities that have not yet been explored. The implications of this technology are vast and offer a way to more personalized and precise immunotherapies.

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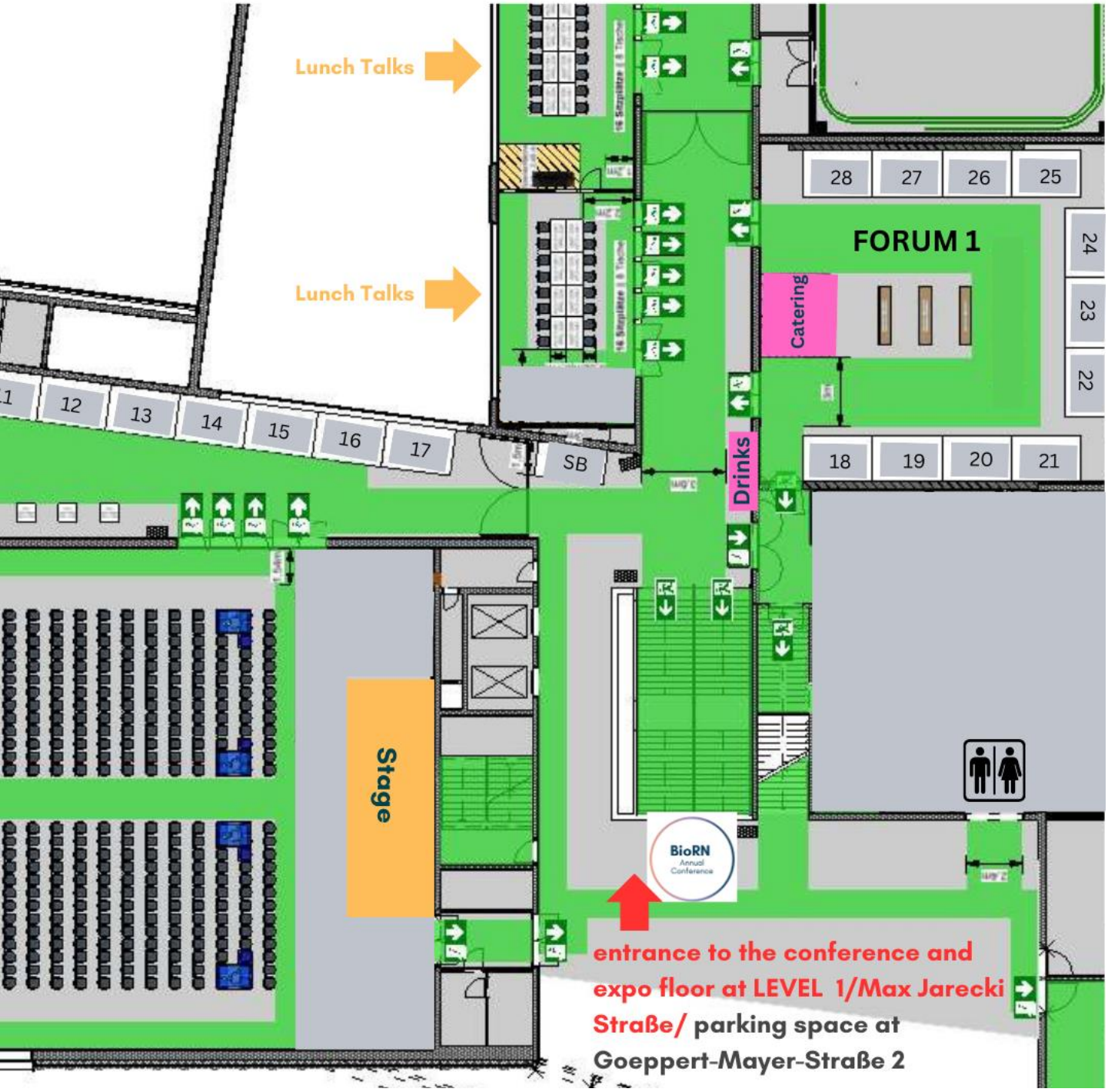
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Booth no. 5

ABclonal is a dynamic and growing provider of biology research reagents and services. The company aims to provide professional, reliable and market-oriented high-quality products and services for basic research, transformation research, precision medicine and frontier field of biomedicine. Our main business includes scientific research antibodies, molecular enzyme products, NGS library preparation kits, active recombinant proteins, matched antibody pairs, ELISA kits and customized service.
ABclonal has a comprehensive prokaryotic and eukaryotic protein expression system, advanced mouse monoclonal antibody production system, and a fourth-generation rabbit monoclonal antibody technology. Our advanced technology allows the development of therapeutic antibodies and raw materials for diagnostic purposes. Our clients span across the globe, including internationally renowned corporations and universities.

Booth no. 6

KyooBe Tech focuses on the development and commercialization of innovative production technologies for biopharmaceuticals, combining state-of-the-art robotics, automation and biotechnological expertise to create sustainable and integrated process solutions. The key areas of activity involve pathogen inactivation and the automated production of personalized cell and gene therapies. KyooBe Tech has a strong affiliation with Bausch+Ströbel SE + Co. KG, a globally trusted partner for supply in Fill&Finish.
eFIT, the first product line entering the market in 2024, aims to inactivate pathogens with low-energy electron irradiation. The main applications are vaccine production, virus depletion in process media, and irradiation of cells in cell therapy production. Since 2022, KyooBe Tech has successfully been operating a test platform to optimize the process parameters for individual applications.
KyooBe Tech's MOSAIC system is designed to address the commercialization challenges of personalized cell therapy production. It offers a novel manufacturing approach that uses separate aseptic boxes for simultaneous batch production. This design particularly supports scale-out strategies, reducing production costs and increasing efficiency. By improving the manufacturing process, MOSAIC helps bridging the gap between early clinical trials and large-scale production, facilitating broader market access and commercial viability.

Booth no. 7

PEPperPRINT is the leading provider of high-density peptide microarrays and related antibody and protein services. From pre-designed off-the-shelf peptide microarrays, to customized contract research solutions, PEPperPRINT offers a wide range of products and services for a variety of research applications. Based on its proprietary laser-printing technology, PEPperPRINT can synthesize tens of thousands of peptides directly on the chip with a unique flexibility in terms of custom peptide content, a high spot density, and reduced material consumption. The product and service portfolio was recently complemented by T cell epitope mapping and monitoring, making PEPperPRINT a one-stop solution provider for the fingerprint analysis of immune responses e.g. for epitope mapping, antibody biomarker discovery or the analysis of adverse immune effects.
PEPperPRINT's peptide microarrays and screening services have been used by researchers around the world with over 250 peer-reviewed publications.

Booth no. 8

Heidelberg Pharma works on a new treatment approach in oncology and develops novel drugs based on its ADC technologies. ADCs are antibody-drug conjugates that combine the specificity of antibodies with the efficacy of toxins: Selected antibodies are loaded with cytotoxic compounds that are transported into diseased cells, where the toxins then unleash their effect and kill the diseased cells.
The company uses several compounds and has built up an ADC toolbox that overcomes tumor resistance and addresses different types of cancer using various antibodies. Heidelberg Pharma is the first company to use the compound Amanitin in cancer therapy. The biological mechanism of action of the toxin from the death cap mushroom represents a new therapeutic modality. It offers the opportunity to break through therapy resistance and also eliminate dormant tumor cells, which could lead to significant progress in cancer therapy - even for patients who no longer respond to other treatment. The Amanitin-based ADC development candidates are called ATACs. The most advanced product candidate HDP-101 is a BCMA-ATAC for the indication multiple myeloma, which is currently in clinical development. The first candidate that Heidelberg Pharma is developing with a toxin other than Amanitin is HDP-201, an exatecan-based ADC.

Booth no. 9

Mannheim University of Applied Sciences (MUAS) is a modern university with a 125-year-tradition. CeMOS - Research and Transfer Center, the largest research center at Universities of Applied Sciences in Germany, is an important part of MUAS. CeMOS focuses on offering innovative solutions for industry and academia. It operates leading laboratories for mass spectrometry (imaging), mass spectrometry-based compound screening, biomarker discovery, 4D microscopy, 3D cell cultures and 3D bioprinting.

The industry consortium M²Aind, led by CeMOS, manages multiple industry projects involving innovative digital technologies for the health industry. Since 2017, M2Aind has been collaborating with 32 partner companies from various areas of the pharmaceutical and chemical industries, biotechnology, medical technology and information technology. The aim of the consortium is to support development of safe and effective drugs and of their production in a resource-efficient and CO2-neutral processes with a focus on digital solutions and multimodal analytics. For this purpose, M2Aind works on high-tech solutions and develops technology platforms in areas such as chemical process development, 3D cell models, spatial metabolomics, cell-based phenotyping, data integration/-analysis and bioprocess control using Machine Learning and process modelling. The combination of experts and an excellent IT infrastructure make M2Aind a unique partner for the health industry.

Booth no. 10

TRANS DUODENAL CONCEPT developed and manufactures an endoscopic implant to simulate a bypass and to treat diabetes Typ 2, Obesity and fatty liver diseases. Conservative therapies (dietary advice, medication) have only a very limited effect on their own. In between, there is a large gap in care that could affect up to 1 billion people in the future, depending on the indication.

The transduodenal barrier (TD barrier) implements the principle of action of surgical bypass surgery with a reversible endoscopic procedure. It is inserted into the gastric outlet and the upper small intestine as part of an outpatient gastroscopy with a "sleeping injection" and removed again after 6-12 months. The TD-Barrier is the patented property of TDC GmbH. In contrast to competitors (not yet available on the market), the balloon-reinforced implant combines the two main mechanisms of bariatric surgery (restriction and malabsorption) by endoscopic means, is therefore similarly effective but reversible and is characterized by unique, atraumatic fixation and high tolerability.

Booth no. 11

Enamine has established a new site located in Frankfurt am Main, Germany. Enamine is a leading provider of high-quality products and services for Drug Discovery. Enamine Germany will expand Enamine's reach in Europe and provide local access to its renowned services. Enamine globally provides Screening Compounds, Building Blocks, and Fragments for supporting a wide range of research programs conducted by Pharmaceutical and Biotech companies, Drug Discovery Centers, Academic Institutions, and other research organizations worldwide. At Enamine Germany we have an international team of scientists experienced in different chemical disciplines. We offer cutting-edge chemistry support to any life science-related projects including synthesis of sophisticated individual compounds and unchallenged parallel synthesis of small, focused libraries besides conventional wet chemistry. Our high-level scientists become your fully dedicated collaborators and sparring partners to tackle challenging projects. Our partnership offers direct interaction with our chemists, always securing the highest level of confidentiality. We offer FTE chemistry support, Custom Synthesis, Medicinal Chemistry Support, including Hit-to-Lead, SAR, Route Scouting and much more to support each aspect of the early drug discovery process.

Booth no. 12

Gyros Protein Technologies provides enabling peptide synthesis and bioanalytical solutions helping scientists increase biomolecule performance and productivity in pre-clinical/clinical development and bioprocess applications. The automated Gyrolab® immunoassay platforms and expanding portfolio of kits are used by scientists in leading pharmaceutical, biotech and CRO/CMO companies in the development and manufacturing of biotherapies including cell and gene therapies. Gyrolab immunoassays provide key workflow advantages of speed, automation, and low sample and reagent usage with a wide dynamic range in applications including PK/PD, immunogenicity, titer determination, and analysis of bioprocess-related impurities. Gyros Protein Technologies is a division of Mesa Laboratories.

Booth no. 13

FGK, an owner-driven Clinical Research Organization, provides full service for clinical studies to biotechnology, medical device and pharmaceutical companies.
FGK has the right size to handle international multi-center studies with hundreds of patients or single country studies with a few patients, but is still small enough to guarantee a personal service to the sponsor. Founded in Munich in 2002, we now have 240 highly qualified medical, scientific and regulatory experts in the EU and the UK with all knowledge and experience necessary to succeed in Europe.
We can provide full service or only partial support from study start-up to final report (for a full list of services see fgk-cro.com).

Booth no. 14

KnowledgeAgent is a leading specialist for market intelligence. Our areas of expertise include business research, strategic analysis & studies, data analytics and integrated market intelligence solutions. We utilize a broad range of primary and secondary sources to support our customers in all market intelligence-related questions.
Our offering covers the life sciences sector along the entire value chain – from (pre-)clinical development through product approval to the production and distribution of medications, medical devices or digital solutions. We primarily work with companies in the fields of biotechnology, pharmaceuticals, CRO/CDMO, medical technology, and financial investors with a focus on life sciences.
KnowledgeAgent is a trusted partner of global strategy and management consultants, multinational corporations and mid-market companies. We have been supplying companies and organizations with bespoke intelligence solutions for over 20 years.

Lilly catalyze360™

Lilly ExploR&D
R&D solutions delivered with quality, speed and flexibility

Lilly Gateway Labs
Best-in-class lab facilities and scientific engagement

Lilly Ventures
Capital deployment, counsel and network

Benefit from our comprehensive suite of capabilities - venture capital, space, expertise, and talent - to meet you where you are, enabling your innovation in collaboration with our therapeutic expertise

TWO WAYS TO PARTNER WITH LILLY

Lilly

Diabetes, Obesity, Cardiometabolic Diseases

Immunology

Oncology

Neuroscience

Platforms, Incl. Genetic Medicines

Engage the Lilly team for strategic collaborations and partnerships in our scientific areas of interest, leveraging novel science driven by our industry-leading expertise and resources

Corporate Business Development

Booth no. 15

Intavis Peptide Services has about 30 years of experience in peptide synthesis. As part of Intavis Instruments, initially, peptides were synthesized exclusively for the validation of analytical instruments. With the growing success of peptide drugs, Intavis also expanded and now offers custom peptide synthesis, peptide libraries, and peptide arrays for R&D. In addition, Intavis is currently establishing its GMP production and filling capacities and will offer an end-to-end solution for clinical trials from 2025: from the active pharmaceutical ingredient to the finished medical product.

To date, Intavis has contributed to many research projects and formed partnerships with global companies, with Intavis peptides being used in vaccine development and personalized cancer therapy, among other applications. Intavis combines practical experience, scientific expertise, and dedicated employees into a unique service offering. The experienced leadership team has decades of experience in biotechnology and biosciences, and the partner network supports with their knowledge and contacts. Through reliability, effectiveness, and customer orientation, Intavis has earned an excellent reputation in the field of custom peptide synthesis.

Booth no. 16

With a portfolio of more than 4,000 products covering the fields of genomics, protein analysis and expression, cellular analysis, drug discovery and genetic identity, Promega is a global leader in providing innovative solutions and technical support to life scientists in academic, industrial and government settings. Promega products are used by life scientists who are asking fundamental questions about biological processes as well as by scientists who are applying scientific knowledge to diagnose and treat diseases, discover new therapeutics, and use genetics and DNA testing for human identification. Since its founding in 1978, Promega has consistently integrated the values of corporate responsibility and sustainable business practices into all aspects of its corporate culture and activity. Promega realizes that its success depends upon the connections the company forges among its customers, community and employees.

Since 1997 and with about 100 employees, Promega GmbH, as a subsidiary of the Promega Corp. is responsible for the distribution of Promega products in Germany, Austria, Poland and Eastern Europe.

Booth no. 17

The German Cancer Research Center (DKFZ) is one of the world's leading cancer research centers, located in Heidelberg, Germany, with more than 3,000 employees. The center's research focuses on all aspects of cancer such as the biology of cancer cells, tumor immunology, cancer genetics, epigenetics, and cancer epidemiology.

The Innovation Management department is responsible for identifying, developing, and commercializing innovative technologies and products arising from this research. With the primary goal to bridge the gap between basic research and practical applications, the Innovation Management team works closely with scientists, clinicians, and industry partners to identify promising research results and develop them into market-ready solutions. This includes patenting, licensing, and spin-off creation, as well as establishing collaborations and partnerships to advance the translation of research findings into clinical practice. By doing so, DKFZ Innovation Management is continuously aiming to foster the development of new cancer therapies, diagnostic tools, and personalized medicine approaches that benefit patients and the medical community.

Booth no. 18

Quality Assistance is a leading European Contract Research Organisation providing the pharmaceutical industry with all the analytical services required by EMA and FDA regulations for the development and marketing of innovative human medicinal products.

The company holds a unique place on the market with all of its laboratories on one site, 250 highly-qualified professionals and more than 40 years' expertise at the forefront of analytical sciences.

They assist their clients from candidate selection, through non-clinical and clinical studies, to marketing authorisation, using our state-of-the-art, product-dedicated expertise in analytical sciences. For each customer and each project, they design customised solutions, define analytical protocols, develop and validate specific new analytical methods and perform characterisation, stability, pharmacokinetic, biomarker and immunogenicity studies as well as batch release testing, in order to evaluate the Quality, Safety and Efficacy of the given drugs.

Booth no. 19

AbbVie is a global, research and development-based biopharmaceutical company committed to developing innovative advanced therapies for some of the world's most complex and critical conditions. The company's mission is to use its expertise, dedicated people and unique approach to innovation to markedly improve treatments across four primary therapeutic areas: immunology, oncology, virology and neuroscience. In more than 75 countries, AbbVie employees are working every day to advance health solutions for people around the world.

Booth no. 20

Screening Hub is a deep learning-based platform for a wide range of cell screening applications. The modular structure allows a high degree of adaptability to different technical tasks and specific medical fields.

Booth no. 21

Croda Pharma is a leading partner for the development of excipients and the supply of high purity materials for pharmaceutical formulations. The company is focused on empowering biologics drug delivery, through its adjuvant systems, small molecule, protein, and nucleic acid delivery platforms. With a wide range of solutions for both human and animal health markets, the pharmaceutical portfolio is unsurpassed in its excellence. Croda Pharma's products, along with its in-house formulation and regulatory expertise, allows the company to meet its customers' most demanding formulation needs. The company is committed to enabling the next generation of drug delivery systems.

Booth no. 22

WuXi Biologics is a leading contract research, development and manufacturing organization (CRDMO) that provides end-to-end capabilities to healthcare organizations worldwide. With operations in the United States, Ireland, Germany, Singapore and China, they enable their partners to effectively and efficiently bring biologics and vaccines to patients through their comprehensive and high-quality drug development model.

WuXi Biologics are currently conducting for their clients and partners (as of December 31, 2023) a total of 698 integrated projects, including 339 in pre-clinical development; 284 in early-phase (phase I and II) clinical development; 51 in late-phase (phase III) development; and 24 in commercial manufacturing. With a total estimated capacity of 580,000 L for biopharmaceutical production planned after 2026, WuXi Biologics provides its clients a robust and premier-quality global supply chain network.

Their single-source technology platforms cover a range of biotherapeutics and vaccines produced from either microbial fermentation or mammalian cell culture including monoclonal and bispecific antibodies, ADCs, fusion proteins and other recombinant protein therapeutics and viral-based vaccines. They offer 6 discovery platforms, complete in-house CMC development capabilities and over 262,000 L of single-use bioreactor capacity using their "scale-out" manufacturing paradigm. Multiple drug product facilities support clinical and commercial product fills for liquid or lyophilized formulations in vials, and pre-filled syringes.

Booth no. 23

VectorBuilder is a revolutionary platform that provides researchers with one-stop solutions for all their vector design, custom cloning and virus packaging needs. VectorBuilder also offers many other molecular biology services such as stable cell line generation, library construction, BAC modification (recombineering), mutagenesis, and more. The easy to use web-based platform, VectorBuilder.com, serves as both a design tool and ordering portal, allowing researchers from around the globe to design and order construction of their custom vectors and viruses in a matter of minutes. Furthermore, our expansive database of components allows us to minimize gene synthesis thereby decreasing cost and turnaround time. The combination of VectorBuilder's intuitive interface, extensive experience and

competitive prices has helped us become a favorite among academic and industry leaders with thousands of custom vectors and viruses already delivered. Remember, vectors are just complex reagents, so let VectorBuilder work on developing these while you focus on the more important downstream experiments, theory generation and data analysis steps.

Booth no. 24

ERBC: We choose the right options for your product, early.

More than a leading independent non-clinical CRO (Contract Research Organization), ERBC Group enables the evaluation of drug candidates on behalf of the pharmaceutical industry and biotechnology companies, providing all services from preclinical proof-of-concept to market. Chemicals, medical devices, cosmetics are also products that we can help you develop with a full suite of innovative models and translational services.

With a family size group of >400 employees, ERBC offers a connected and agile environment of translational solutions and models to bridge the gap between preclinical and clinical research by better predicting the efficacy and safety of new compounds.

As a leading player delivering GLP services with AAALAC high-quality standards, ERBC Group actively contributes to the development of innovative therapies in various field of research such as oncology and immuno-oncology, neurodegenerative studies, infectious diseases.

Why you should choose ERBC?

- Team of experts and alliance managers to guide you through the strategic choice of the right translational models and services
- Broad range of discovery capabilities including short term and cost-effective translational approaches
- Innovative technologies: 3D imaging platform, BSL2/3, Digital-PCR, large-scale analysis
- Translational models from in vitro, through embryo innovative PDX to GEM and humanized models
- Personalized medicine and patient stratification at discovery stages
- Competitive turn-around time to start your studies

Booth no. 25

BIMOVIS

Structural biology is a powerful enabler in areas such as drug development, protein engineering, or understanding of structure-function relationships in protein sciences. Companies often lack the capacity to perform or interpret structural biology studies, which require highly specialized equipment, trained personnel, and a good understanding of the involved sciences.

At BIMOVIS, our mission is to empower life science businesses by providing easy access to structural biology. We offer tailored services, partnerships, and trainings, not only in structural biology but also in molecular visualization. We believe that this unique combination opens new routes in protein sciences and structure-based drug design, and fosters engagement of non-science stakeholders. Through individual consultations and professional project management our expert team guides each client through scientific collaboration.

Our core services are:

- Experimental structure determination (X-ray crystallography and cryo-EM, including gene-to-structure services)
- Computational analysis (protein engineering, structure interpretation)
- High-end molecule visualization for communication & marketing (2D graphics, 3D animations, 3D models and print-outs)

BIMOVIS is part of Heidelberg's innovative BioLabs, member of the BioRN cluster, and partners with world-class scientific institutions in the region to provide the best solutions and networks for our clients.

Booth no. 26

MANNHEIM 2

We connect companies, research and clinics.

The Mannheim Medical Technology Cluster brings together all parties involved in the healthcare industry with the aim of smoothing the way for good ideas to enter the market.

To that end, we connect companies of all sizes with clinics and research facilities. The Mannheim Medical Technology Cluster was set up as part of the 2011 Economic and Structural Development Plan and currently comprises around 300 players.

Booth no. 27

Actome GmbH, a high-potential startup recognized by the European Innovation Council (EIC), is advancing protein analysis. Based in Freiburg, Actome has developed an innovative method called PICO (Protein Interaction Coupling) Technology, which allows scientists worldwide to analyze and quantify proteins, protein-protein interactions, and post-translational modifications with high throughput. This advanced technology significantly enhances research efficiency. Imagine completing 96 Western Blots or Co-Immunoprecipitations in just one day—transforming the pace of scientific discovery.

Recently, Actome has expanded its product portfolio to include advanced tools for the quantification and characterization of extracellular vesicles. With the financial support of the EIC, Actome is now developing a method for the absolute quantification of proteins in single cells, pushing the boundaries of cellular analysis.

Booth no. 28

Recherche und Beratung, Henrik Schreiber is a professional information search service in the area of patents, design, trademarks and literature.

Recherche und Beratung is a team of Information Professionals with deep knowledge in chemistry, life sciences, technology and patents.

The company's service includes novelty, state of the art, opposition and freedom to operate searches. Also alerts on competitors or topics can be performed on a regular basis. In the area of chemistry and life sciences chemical structure searches and biosequence searches are offered in addition to keyword / classification searches.

Recherche und Beratung, Henrik Schreiber was founded in 2005 and is located in the center of Heidelberg.

Smoothie Bike (SB)

Founding is a great thing! Everyone improves our world a little bit in their own way.
In doing so, you need full attention for your innovation.
But especially during the growth phase, questions like the following often get in your way:

- What's happening with my insurance when I'm self-employed?
- Who can help with my questions all about social insurance?
- What do I need to consider when hiring new employees?
- My employees demand benefits, but I have no budget for that, what should I do?

We have the right answer to all of these questions, of course tailored to your individual situation!

Janssen Cilag GmbH EM-161114 Bei den abgebildeten Personen handelt es sich um Models, nicht um reale Ärzt:innen.

Bis hier. Und weiter.

In der Onkologie haben wir schon viel erreicht. Menschen mit Krebs überleben heute dank moderner Therapien oft länger. Doch Leben ist mehr als Überleben. Leben braucht Perspektiven und Qualität. In jeder Indikation. In jedem Stadium. Dafür arbeiten wir. Jeden Tag. Mit Sprunginnovationen, die Grenzen verschieben. Mit beschleunigten Zulassungsverfahren und mit neuen Partnerschaften und Kooperationen. **Unser Anspruch ist Leben.**

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About the Organiser

BioRN is a science and industry innovation cluster with a unique combination of all relevant innovation stakeholders in the life sciences around Heidelberg at the border between Baden-Württemberg, Rhineland-Palatinate and Hesse, and connected by the rivers Rhine, Main and Neckar.

BioRN is a non-profit network counting more than 150 members. It includes top universities, research institutions and Technology Parks. Ten global pharmaceutical companies have R&D sites or are active in the BioRN network. The ecosystem is completed by a large range of small and medium-sized enterprises as well as local government organizations and interest groups.

With the vision to make life science matter and innovation happen, the cluster management established a clear strategy to become the leading European life science cluster, attracting global investment and talent.

BioRN was instrumental in the conception and successful application of PRECISEU, a European flagship project funded with tens of millions of euros, which aims to enable personalized medicine through the use of health data and the development of advanced therapy medicinal products (ATMPs). Thanks to the strong anchoring of personalized medicine in the region and the high density of academic and industrial excellence in the healthcare sector, BioRN will play a key role as Innovation Lead within the consortium and thus profile the region internationally as a leading location for the healthcare industry.

Furthermore, BioRN supported the establishment of the Evotec's BRIDGE beLAB2122, a public-private partnership to fund and execute novel disease modifying therapeutic projects in the region. BioRN is also initiator, project manager and Founding Partner of Biolabs Heidelberg, part of the global BioLabs network of co-working space for startups.

General Information

Social Media

We strongly encourage the use of social media in and around the conference.
Follow the conference on LinkedIn (@BioRNCluster) and use the hashtag **#BioRNConference** for this conference.
You are welcome to discuss the conference and what you are hearing and seeing, but please refrain from sharing raw data presented, as this may preclude subsequent publication of the data in a scholarly journal.

Young Scientists' Pitch Competition

The onsite audience can select the best research pitch, through live voting: go to slido.com and type: #3071 657

Photo and Video Recording

You are participating in an event during which the organizers will be taking photographs and videos that may contain your recognizable image. We will use these photographic and video recordings online, internally or externally (e.g. in press releases, on the BioRN websites, and in the LinkedIn and X -formerly Twitter- social networks) for a period of 10 years. The recordings will be deleted after 10 years. For more information about our privacy policy, please go to the BioRN websites (www.biorn.org). You may, of course, object to the use of the photographic and video recordings at any time during the event by talking to the photo/video team, or after the event by contacting

BioRN Cluster Management GmbH
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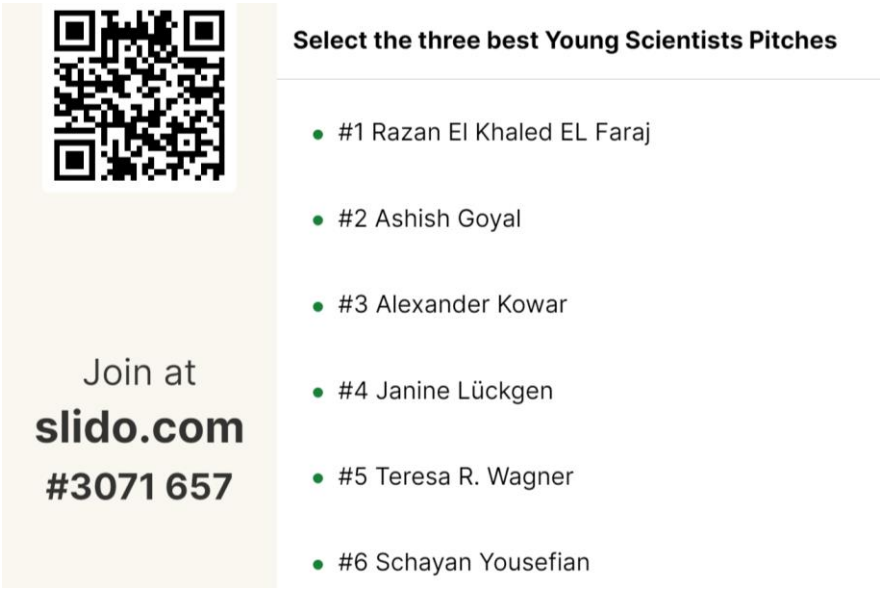
Email: info@biorn.org

Notes



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