The 9th Annual Meeting of the Central European Society for Anticancer Drug Research (CESAR) took place in Greifswald from June 16 to 18, 2011 and was hosted by the Ernst-Moritz-Arndt University. Participants from Germany, Switzerland, Austria, other European countries and the United States of America attended the meeting where they had the opportunity of exchanging their research experience in both basic and clinical science.

The working groups in CESAR provide a forum for exchanging expertise in drug development. This includes the in vivo and in vitro characterization of pharmacodynamics and pharmacokinetics, the clinical assessment of drugs and the identification of predictive and prognostic markers for drug treatment. The interdisciplinary nature of these groups, which are made up of researchers from preclinical disciplines such as molecular biology, chemistry, pharmacy and pharmacology and clinical investigators from a variety of specialized institutions, mostly located in Germany, Switzerland and Austria, provides a platform for innovative drug research and the creation and introduction of novel therapeutic concepts. It was, therefore, an explicit goal of the meeting to bring together the expertise of the CESAR working groups and the experience of the University of Greifswald in developing strategies for individualized medicine in clinical practice in order to support and extend new approaches in individualized medicine in oncology.

The Meeting was opened by the Meeting’s President Prof. Christoph Ritter. Participants were also addressed by Prof. Ulrich Jaehde, President of CESAR and Prof. Heyo K. Kroemer, Dean of the Faculty of Medicine at the Ernst-Moritz-Arndt University, Greifswald, who expressed a warm welcome. In his keynote lecture, Prof. Jeremy K. Nicholson, London, UK, elucidated systems medicine approaches to phenotyping and modelling the “journey” of the patient during the course of treatment. He provided evidence that metabolic phenotyping offers opportunities for integrated system function analysis. He showed that these can open up new strategies that derive advantage from metabolic modelling used to generate diagnostic and prognostic markers for guiding clinical decision making at the bedside.

The first scientific symposium of the Meeting addressed selected approaches to personalized medicine in oncology used by research groups at the University of Greifswald. Prof. Christian A. Schmidt presented strategies for determining chromosomal breaks used to identify the respective deregulated genes that drive the malignancy and which could be used as potential therapeutic targets. The role of androgen receptor signalling in the progression of prostate cancer was addressed by Prof. Martin Burchardt and Dr. Matthias B. Stope. In a third lecture Prof. Holger N. Lode described personalized immunotherapeutic strategies for paediatric malignancies, particularly neuroblastoma, involving the use of DNA vaccines that encode for genes and minigenes of immunodominant epitopes of target structures identified by state-of-the-art “-omic” technologies.

The second symposium highlighted the possibility of including personalized strati-
Prof. Max E. Scheulen, Essen reviewed the present status of clinical evaluation of new molecular entities for targeted therapy. The necessity for developing intelligent sequences in the clinical testing of these new drugs based on patient selection and guided by molecular profiling was reviewed. These measures should ultimately increase the proportion of patients responding and have a rationalizing effect on pharmacoeconomics. Improved concepts in statistical planning and analysis regarding personalized stratification in clinical research were presented by Prof. Ulrich Mansmann, Munich. The recently initiated EuroTARGET project was presented by Prof. Egbert Oosterwijk, Nijmegen, NL. The project aims to identify and characterize predictive biomarkers of the treatment response to targeted therapy in patients diagnosed with metastatic renal cell carcinoma. In a final lecture, Prof. Wolfgang Hoffmann, Greifswald addressed aspects (evidence, structure and culture) concerning clinical individualized medicine within the GANI_MED project.

The third symposium was devoted to the use of \textit{ex vivo} tumour models when deciding on approaches in personalized medicine. Dr. Iduna Fichtner, Berlin, presented patient-derived cancer xenografts as model systems for the rational clinical development of novel anticancer drugs. These systems reflect the heterogeneity and complexity of cancer lesions, correlate with the clinical measures that need to be applied and are suitable for identifying biomarkers at the gene and protein level. The use of zebrafish, as an \textit{ex vivo} model of pancreatic cancer metastasis, was described by Dr. Frank Ulrich Weiss, Greifswald. The xenotransplantation of primary pancreatic tumours into zebrafish embryos can be used to assess the metastatic behaviour of tumor cells. A concluding contribution by Dr. Dominik Wolf, Innsbruck, Austria, dealt with the clinical relevance of \textit{ex vivo} models of leukaemia including patient-derived leukaemia cell lines, co-culture systems with mesenchymal feeder cells in two and three dimensions and transplant studies in immunodeficient mice for prognostic evaluation of disease control and relapse.

Last of the four symposiums focussed on the impact of biomarkers on personalized medicine approaches. Predictive gene signatures derived from patient tumour xenografts for the therapeutic antibodies bevacizumab and cetuximab were presented by Prof. Heiner H. Fiebig, Freiburg. The gene signatures were validated and proved predictive for increased tumour response rates in xenograft models. They now await further validation in the clinical setting. The use of enzymatically generated, transcriptome-based (ENTRACT) shRNA libraries, derived from cell-lines and tissues of individual patients, was introduced by Dr. Karen A. Boehme, Reutlingen. This approach is thought to be useful in the search for biomarkers as well as new target structures involved in tumourigenesis and drug resistance. A modelling approach involving pharmacokinetics and biomarkers of monoclonal antibodies in advanced carcinoma patients was presented by Prof. Charlotte Kloft, Berlin. Since the pharmacokinetics of monoclonal antibodies is unique and influenced by pharmacodynamics, assessment of pharmacokinetics, pharmacodynamics, biomarkers and patient characteristics should lead to improvements in the risk/benefit ratio of these drugs in the individual patient.

Submitted contributions were presented during the meeting within three oral presentation sessions and one poster session. All of the sessions were well attended and provided a platform for young researchers to present their work to a wide audience. The extended abstracts published in this issue provide an overview of the broad spectrum of preclinical and clinical efforts that are being undertaken by the CESAR network to foster individualized strategies in the treatment of cancer.

The next CESAR annual meeting will take place at the University of Duisburg-Essen, Germany, June 28 to 30, 2012.

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