Matthias Scheffler, J Mol Biomark Diagn, 3:4
http://dx.doi.org/10.4172/2155-9929.S1.012

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Biomarkers & Clinical Research

July 2-4, 2012 Embassy Suites Las Vegas, USA

Non-invasive microRNA biomarkers for therapy monitoring and drug development

Matthias Scheffler
Comprehensive Biomarker Center GmbH, Heidelberg, Germany

MicroRNAs are small non-coding RNAs that control gene expression either by degradation or translational silencing of mRNA. These small RNAs have been shown to contribute to the control of many biological key processes like cell signaling, proliferation, differentiation, apoptosis. Accordingly, their dysregulation has been linked to the pathogenesis of several diseases. Recently, it has been shown that microRNAs cannot only be detected in tissue samples but also in at least 12 different human body fluids including urine. This qualifies microRNAs as high potential non-invasive biomarkers.

During the past 3 years we have analyzed more than 4000 whole blood samples in hypothesis-free microRNA screenings collaborating with numerous clinical centers of excellence. We have successfully discovered non-invasive microRNA biomarker signatures from more than 40 cancers, inflammatory, immune and infectious diseases. Results of these studies have been published in 18 peer reviewed journal articles (including Nature Methods, Sept 2011, "Toward the blood-borne miRNome of human diseases")

Most of our discovered signatures have diagnostic, differential diagnostic or prognostic value. We will present recent evidence on the high potential of microRNAs as predictive biomarker for non-invasive surveillance of drug responses, therapy monitoring and patient stratification. Preliminary results from a longitudinal and cross-sectional study show that a microRNA signature from blood is correlating with positive therapy response and the signature of treated responding patients correlates well with the signature of an indepedent healthy control group.

Case studies will be presented to demonstrate the potential of microRNA biomarkers as non-invasive biomarkers for diagnosis, therapy monitoring and drug response.

Biography

Dr. Matthias Scheffler | VP Business Development & Sales, Comprehensive Biomarker Center GmbH Heidelberg, Germany. Matthias Scheffler serves as Vice President of Business Development & Sales of the Comprehensive Biomarker Center GmbH. He coordinates all sales activities for Comprehensive Biomarker Center GmbH products and services. In his former position Dr. Scheffler served as VP Sales Europe & Asia for febit biomed GmbH, a biotechnology company offering proprietary microarray products and services. He acquired strong knowledge of febit's products and all manufacturing processes from his previous position as the companies Vice President of Operations, being responsible for instrument manufacturing, production of febit Biochips and related consumables as well as for supply chain management. Dr. Scheffler joined febit in October 1999 as Development Scientist responsible for Biochip Development. He was then promoted to a Team Manager. Upon restructuring in 2005 he stayed with the company as a co-founder. Transitioning to Operations he joined the Senior Management in 2006, before Having successfully ompleted his studies of Chemistry at the Universities of Ulm and Freiburg, Dr. Scheffler received his Ph.D. in the field of nucleic acid chemistry at the University of Bochum.

kathrin.waurich@cbioc.com