

Press Release



DigiWest® multiplex protein profiling technology published in *Nature Communications*

Reutlingen, Germany, September 26, 2016 – The Natural and Medical Sciences Institute at the University of Tübingen (NMI), a private research foundation, and its contract research provider NMI TT Pharmaservices today announced the publication of their proprietary DigiWest® protein profiling method in the peer-reviewed scientific journal *Nature Communications*.

The study led by NMI researchers Dr. Fridolin Treindl and Dr. Markus Templin, in collaboration with scientists from the University of Tübingen, the Technical University of Munich, and the University of Düsseldorf, describes the establishment and validation of a novel approach for highly parallelized analyses of hundreds of proteins and post-translational protein modifications. The innovative methodology relies on a combination of classical Western blotting – the gold standard in protein detection – with the multiplexing power of the Luminex® bead technology. As a result, currently up to 600 total proteins and protein modifications can be detected from one sample of cultured cells or *in vivo*-derived tissue, based on an ever-growing list of >1,000 validated high-quality antibodies. As such, DigiWest® boosts the output of a Western blot by a factor of up to 300. At the same time, the required sample amount is minimal, which allows for quantifications from precious limited samples.

After successful technical benchmarking of the DigiWest® method, the authors of the paper applied their approach in two case studies, to elucidate mechanisms of resistance to cancer drug Lapatinib in a cell-based experiment, and to classify different forms of mammary carcinoma from primary tumor sections. In both cases, they identified a number of promising candidate marker proteins, some of which were phosphorylated, thus convincingly demonstrating the superiority of protein profiling as compared to classical DNA- and RNA-based biomarker discovery.

Dr. Markus Templin, Head of Assay Development at the NMI and senior author of the publication, commented “After a decade of genomics-driven research, scientists crave for novel technologies to analyze the complexity of cellular signal transduction on the level of protein activation, which has all too often been the intrinsic shortcoming of genomics. Our DigiWest® methodology overcomes this limitation and provides a powerful and versatile proteomic-scale platform for a wide range of applications, most prominently including lead compound profiling, pathway mapping, biomarker research and precision medicine development”.

NMI TT Pharmaservices, the contract research arm of the NMI, has established dedicated laboratory capacities to offer fully customizable DigiWest® studies on a fee-for-service basis to the industrial and academic life science community. Further information is available at the DigiWest® website: www.digiwest.de

The full-text version of the DigiWest® publication is accessible via *Nature Communications*' website: www.nature.com/ncomms/2016/160923/ncomms12852/full/ncomms12852.html

Contacts

NMI:

Dr. Markus Templin
templin@nmi.de

NMI TT Pharmaservices:

Dr. Christoph Sachse
sachse@nmi-tt.de

This work was funded by the German Federal Ministry of Education and Research (BMBF) grants FKZ 0315742 (Virtual Liver) and FKZ 03V798 (VIP Validation of Innovative Potential), and the Innovative Medicine Initiative Joint Undertaking IMI-JU grant 115001 (MARCAR).