

PROTEIN BIOCHIPS AS NEW TOOLS IN PROTEOMICS

[P.Wagner](#)

Zyomyx, Inc. Hayward, California, USA

INTRODUCTION: Novel high-throughput biomolecular analysis in genomics, proteomics, drug discovery, disease diagnosis and the development and application of patient-specific medicines require highly parallel, ultra sensitive, miniaturized device technologies. While technological innovation in form of DNA micro arrays (gene chips) and other formats have adapted the analysis of genetic material to a miniaturized format, the more delicate nature and diversity of proteins in terms of function, structure, stability and abundance have precluded the development of analogous tools for proteomics. In addition, a comprehensive proteomic analysis would require measurement and characterization of protein abundance and chemical modifications as well as discovery of unknown proteins, new pathways and functional linkages. Protein biochips have started to emerge recently based on new developments and integration efforts in advanced materials, protein engineering and detection physics. Recent developments and selected examples will be presented with an emphasis on the technical challenges in surface and assay methodologies.