Preface

When the expression Proteom had been coined more than a decade ago many scientists looked at the new field very critically and didn’t consider it as a “real” science. And it turned out that some of the criticism was justified, since some early papers in the field overdid the methods and ended in mere speculation rather than in scientific insight.

This attitude however is seen in every new emerging methodology - remember the colorful front page illustrations in the early eras of force filed microscopy or computer-aided molecular design - but it helps in its somewhat naïve enthusiasm to establish a new field of research.

Proteomics has grown up and has very well established itself among the essential tools in life science research. But several pre-condition had to be fulfilled in order to give the methodology trust and efficiency. The present volume reflects exactly this, in showing the unprecedented interdisciplinarity of the young field of research.

It is not only doing the experiment. It is as always, doing it at the right time, at the right place, by the right means. Having living cells, tissues or organisms serving as the objects of study, does not facilitate the task. To retrieve interpretable, reliable and sustainable data a variety of experts is needed. As it is nicely depicted in the pearl necklet of papers this volume comprises kind of a handbook, all the necessities to perform good proteomics.

It starts with administrative optimization and ends up with the question for the innovation process itself. In between, methodology, development and its application is addressed. Among that, important future challenges are raised. Proteomics might be the appropriate tool for a much deeper insight into systems, be it on cellular or organismic level. Systems biology is one of the most exciting fields to be established and proteomics one of the most important methods to study biological systems at molecular level. Still, there is a long way to go. Time resolution remains to be a major challenge and the data management of and the simulation of cellular networks is still in its infancy.

It is without doubt that, beyond basic research, the whole field is driven by a vision of fundamental amelioration in the finding and creating of new therapeutics. Individualized treatment at manageable costs will be the future challenge of health care. Everything that makes us understand better individual response to drugs, xenobiotics and different kinds of inputs from the context, will improve both, personal health and cost structures of the health care systems.
Preface

Authors come from a broad variety of affiliations, be it big industries, small and half-way grown up start-ups, clinics and academia. All of them integrate and focus on the question how proteomics methodology can be improved and serves best in their field of expertise.

The series editors are indebted to the authors and the editors who made this comprehensive issue possible. We are convinced that the book represents an important contribution to the body of knowledge in the field of proteomics.

We also want to express our gratitude to Renate Doetzer and Frank Weinreich from Wiley-VCH for their invaluable support in this project.

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