



4th EuPA MEETING
6th ProCura MEETING

2010
PROTEOMICS
ODYSSEY
TOWARDS NEXT DECADES

EuPA Educational Workshop Workshop I :
- “Pathway Analysis in proteomics” –
10 a.m. 24 October 2010, Estoril Congress Center, Portugal

Chair: Roman Zubarev

Pathway analysis (PA) is a relatively novel and rapidly growing area in proteomics. The term has two meanings: a) deciphering the structure of signaling pathways and protein interaction networks, and b) application of the vast existing knowledge of signaling pathways to high-level interpretation of the proteomics data. It is this second, analytical meaning of PA that the workshop is devoted to. The aim of analytical PA is to convert quantitative data on the expression levels of thousands of proteins into the quantitative signaling status of the cells. By comparing signaling status of a Case and a Control, conclusions can be made as to what processes are being activated and deactivated, which is far more relevant from the biological standpoint than a long list of up- and down-regulated proteins. But the ultimate goal of PA is to provide a working, quantitative model of the process under investigation. In that model, the input is the proteomics data and the output is the quantitative prediction of the process status, which can be assessed independently of proteomics. Being applied to diseases, PA intends to provide predictive models based on the known signaling machinery. Such models should not only give verifiable predictions, e.g. the disease status and outcome, but will also provide the insight into the underlying molecular mechanisms. That vision of the role of PA in biology and medicine is yet to be fully implemented in practice. Where we are now, and how to proceed further – these are the questions that will be debated on the workshop.

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Publications: 147 papers in refereed journals and monographs, six patents and over 100 invited lectures since 2000.

Scientific Awards: Honorary professor, University of Southern Denmark (2004-9); The Distinguished New Technologies Award, RECOMB 2006, Venice, Curt Brunnée Award, International Mass Spectrometry Society “for outstanding contribution to the development of MS instrumentation”, Prague, 2006; Biemann Medal for “a significant achievement in basic or applied mass spectrometry made by an individual early in his or her career” by the American Society of Mass Spectrometry, Indianapolis, 2007.