

FORSYS / JCB
International Workshop
Systems Biology for Industry:
Dynamics and Regulation of the Metabolic Balance
in *Escherichia coli*

7th-8th October 2010, Jena/Germany

Technologie- und Innovationspark TIP Jena, 3rd Floor,
Beutenberg Campus, Wildenbruchstr. 15, D-07745 Jena

Organized by the Leibniz Institute for Natural Product Research and Infection Biology - Hans Knöll Institute - and BioControl Jena GmbH
with Support from the German BMBF Systems Biology Initiative FORSYS Partner and the Jena Centre for Bioinformatics JCB



Programme 7th October 2010

- 13.00 - 13.15** *Registration*
- 13.15 - 13.30** **Welcome, Introduction and Programme Overview**
R. Guthke (Hans Knöll Institute, Jena, Germany)
M. Pfaff (BioControl Jena GmbH, Germany)
- 13.30 - 14.00** **From Systems Biology to Systems Biotechnology – A Modeller's Perspective**
A. Kremling (Technical University Munich, Germany),
K. Bettenbrock, M. Nees (Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany)
- 14.00 - 14.30** **Design of Optimal Expression Vectors using the Stress Response of *E. coli***
U. Horn (Hans Knöll Institute, Jena, Germany)
- 14.30 - 15.00** **Secretion of Antibody Fragments and Target-Binding Proteins by *E. coli***
G. Seidel (Wacker Biotech GmbH, Jena, Germany)
- 15.00 - 15.30** *Coffee Break*
- 15.30 - 16.00** **Protein Production Related Alterations of Central Carbon Metabolism in *E. coli***
U. Rinas, Ö. Kökpınar, Z. Li (Helmholtz Centre for Infection Research GmbH, Braunschweig, Germany)
- 16.00 - 16.30** **Modelling Metabolic Processes during Recombinant Protein Production by *E. coli***
C. Kaleta, F. Wessely (Friedrich Schiller University Jena, Germany)
- 16.30 - 17.00** **Modelling Gene Expression during Recombinant Protein Production by *E. coli***
W. Schmidt-Heck, R. Guthke (Hans Knöll Institute, Jena, Germany)
- 17.00 - 17.30** **Integrative Analysis of Transcriptomic and Proteomic Data from *E. coli***
D. Driesch, D. Woetzel, M. Pfaff (BioControl Jena GmbH, Germany)
- 19.30** *Get-Together*

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Programme 8th October 2010

- 09.00 - 09.30** **Balanced Growth of *E. coli* in Shaken Cultures**
P. Neubauer (Technical University Berlin, Germany)
- 09.30 - 10.00** **Global Transcription and Metabolic Flux Analysis of *E. coli* in Glucose-Limited Fed-Batch Cultivations**
K. Lemuth (Fraunhofer Institute for Interfacial Engineering and Biotechnology, Stuttgart, Germany)
- 10.00 - 10.30** **The Glucose-PTS of *E. coli* as a Key to Metabolic Balance**
K. Jahreis, A. Kosfeld, A. Goehler (University of Osnabrück, Germany)
- 10.30 - 11.00** **Tuning and Control of Recombinant Gene Expression for Optimal Exploitation of Cellular Capacities**
G. Striedner (University of Natural Resources and Applied Life Sciences, Vienna, Austria)
- 11.00 - 11.30** *Coffee Break*
- 11.30 - 12.00** **Modelling *E. coli*'s Response to Acid Stress**
F. Falciani (University of Birmingham, U.K.)
- 12.00 - 12.20** **Describing *E. coli*'s Electron Transport Chain for Different Oxygen Availabilities using a Kinetic Model**
S. Henkel (University of Stuttgart, Germany)
- 12.20 - 12.40** **Metabolic Flux Estimation**
R. Feuer (University of Stuttgart, Germany)
- 12.40 - 13.10** **Biotechnological Relevance of Cooperation and Competition in Exoproduct Secretion by Microorganisms**
S. Schuster, A. Schröter (Friedrich Schiller University Jena, Germany)
- 13.10 - 13.20** **Concluding Remarks**
E. van Someren
(Netherlands Organisation for Applied Scientific Research TNO, The Netherlands)
- 13.20** *Lunch*
- 14.00** *End of Workshop*