

# PLASMID BIOLOGY 2000 SYMPOSIUM

19 – 25 September 2000, Praha , Czech Republic

Suggested time schedule

**Tuesday 19. 9.** Arrival of participants, registration, accommodation and welcome reception in TOP HOTEL PRAHA, Blazimska 1781/4, CZ-149 00 Praha 4 ([www.tophotel.cz](http://www.tophotel.cz))

## **Wednesday 20. 9.**

**7.30 - 8.30** Breakfast in hotel

**8.30** Transport to the Congress Center IKEM by 3 buses (cca 15 min)

**9.00 - 9.30** Opening talks

### **REPLICATION** (chairs: M. Espinosa, C. M. Thomas)

**9.30 - 10.30** Biochemistry and Cytology of Plasmid Behavior.  
Donald R. Helinski, Ron Caspi, Joe Pogliano, Marcin Pacek, Zhenping Zhong, Thanh Ho, Giac Consiglieri, Yong Jiang, Aresa Toukdarian, and Igor Konieczny

**10.30 - 11.00** Chaperone Activities during Plasmid RK2 DNA Replication.  
Igor Konieczny, Marcin Pacek, Anna Saari and Krzysztof Liberek

**11.00 - 11.30** The Plasmid RK2 Replicon: Submembrane Localization in *E. coli*, Interaction of the Initiator Protein TrfA with a New Host Component, and Distribution in the Membrane of other Gram Negative Species.  
W. Firshein, P.D. Kim and T. Banack

**11.30 – 12.15** Coffee and installation of posters

**12.15 – 12.45** On the Structure of the CopA-CopT Complex Involved in Regulation of Plasmid R1 Replication, its Pathway and Kinetics of Formation.  
E.G.H. Wagner, F. Kolb, H.M. Engdahl, C. Slagter-Jäger and P. Romb

**12.45 – 13.15** Structural and Functional Similarities between the Initiator Proteins from Bacterial Plasmids (RepA) and Eukaryotes (Orc4p)  
Rafael Giraldo

**13.15 – 13.45** Yeast Forward and Reverse Two Hybrid Approachs to Analyze Protein-Protein Interactions during Initiation and Termination of Replication.  
Deepak Bastia, Aardra Potnis, Rahul Sharma and Sashidhar Mulugu

**13.45 – 15.00** Lunch (Congress Center)

**15.00 – 15.30** Control of DNA Strand Opening at the  $\gamma$  Origin of the Plasmid R6K.  
R. Krüger and M. Filutowicz

**15.30 – 15.50** Initiation of DNA Replication and its Regulation in Plasmid ColE2.  
T. Itoh, M. Yagura, S. Nishio, M. Han, T. Nagase and K. Ogiwara

**15.50 – 16.20** Plasmid pIP501 Encoded Transcriptional Repressor CopR: the Structured Acidic C-terminus is not Required for DNA-Binding or Dimerization, but for Protein Stability.  
Kornelia Kuhn, Katrin Steinmetzer and Sabine Brantl

**16.20 – 16.50** Characterisation of the *Streptococcus pyogenes* Plasmid pSM19035-encoded  $\omega$  Transcriptional Repressor.  
Ana B. de la Hoz, Rolf Misselwitz, Silvia Ayora, Karin Welfle, Silvia Fernández, Christian Speck, Heinz Welfle, Wolfram Saenger and Juan C. Alonso

**16.50 – 17.10** Coffee

**17.10 – 18.10** The pT181 Replicon after 21 Years of Study: Rolling Circle Plasmid Replication Comes of Age.  
Christopher D. Thomas, Fotios Papadopoulos & Kelly Smith

**18.10 – 18.40** Initiator Protein-Origin Interactions during the Initiation and Termination of Plasmid pT181 Rolling-Circle Replication.  
Tseh-Ling Chang, M. Gabriela Kramer and Saleem A. Khan

**18.40 – 19.00** Features of the CopG Regulatory Protein Encoded by Plasmid pMV158  
Ana M. Hernández-Arriaga, F.Xavier Gomis-Rüth, Manuel Espinosa, Miquel Coll and Gloria del Solar

**19.00 – 19.20** Discoveries within the Seven Plasmid Array of *Bacillus megaterium* QM B1551.  
M. Kunnimalaiyaan, Y. Zhou, M. Scholle, G. Baisa and P.S. Vary

**19.20 – 20.15** Dinner in Congress Center

**20.15 – 22.00** Poster Session

**22.00** Transport to hotel by 3 buses

## **Thursday 21. 9**

**7.30 - 8.30** Breakfast in hotel

**8.30** Transport to the Congress Center IKEM by 3 buses

### **REPLICATION** (chairs: M. Espinosa, C.M. Thomas)

**9.00 – 9.30** Replication-Induced Transcription of an Autorepressed Gene: the Replication Initiator Gene of Plasmid P1.

Suman Mukhopadhyay and Dhruba K. Chattoraj

**9.30 – 9.50** The Protelomerase of Temperate *Escherichia coli* Phage N15 Has Cleaving-Joining Activity.

Erich Lanka, Guenter Ziegelin, Jan Deneke and Rudi Lurz

**9.50 – 10.10** Structure-Function Relationship of Plasmid RSF1010 Helicase RepA.

Günter Ziegelin, Timo Niedenzu, Wolfram Saenger, Rudi Lurz, and Erich Lanka

**10.10 – 10.30** Single-copy/High-copy (SC/HC) pBAC/oriV Novel Vectors for Genomics and Gene Expression.

Jadwiga Wild, Zdenka Hradecna and Waclaw Szybalski

**10.30 – 10.50** Coffee

### **HORIZONTAL GENE POOL** (Chairs: K. Smalla, H. Richards)

**10.50 – 11.50** Plasmid Mediated Multidrug Resistance.

Ronald A. Skurray and Melissa H. Brown

**11.50 – 12.20** Does Dental Amalgam Select for Mercury and Antibiotic Resistant Bacteria?

Hilary Richards

**12.20 – 12.50** PCR-based Detection of BHR-plasmids and Gentamicin Resistance Genes in Community DNA.

Kornelia Smalla, Renata Krasowiak, Holger Heuer, Ellen Krögerrecklenfort, and Christopher Thomas

**12.50 – 13.10** Combining Plasmids and Bacterial Diversity Studies in Soil Microbial Communities.

K. Drønen, E. de Faveri, G. Rist, E. Top, V. Torsvik and L. Øvreås

**13.45 – 15.00** Lunch in Congress center

**15.00 – 18.30** Facultative guided tour of Prague

20.00 – 21.30 Concert of classical music in the baroque church of St. Nicholas

**Friday 22. 9**

7.30 – 8.30 Breakfast in hotel

8.30 Transport to the Congress Center IKEM by 3 buses

**TRANSFER** (Chairs: R. Skurray, S. Farrand)

9.00 – 10.00 The Role of VirB Proteins in T-pilin and T-pilus Biogenesis in Relation to Flagellation of *Agrobacterium tumefaciens*.  
Erh-Min Lai , Olga Chesnokova, Lois M. Banta, and Clarence I. Kado

10.00 – 10.30 Maturation of IncP Prepilin.  
Erich Lanka, Ralf Eisenbrandt, Markus Kalkum and Rudi Lurz

10.30 – 11.00 Binding of the Essential DNA Transfer Protein TraM to the *oriT* of the Conjugative Resistance Plasmid R1.  
Günther Koraimann

11.00 – 11.20 Coffee

11.20 – 11.50 The IncF Relaxosome Protein TraM Performs a Transfer Function that Is Essential at a Stage Following *oriT* Cleavage.  
Martina Bamberger, Heimo Strohmaier, Günther Koraimann and Ellen L. Zechner

11.50 – 12.20 Recognition of OriT by MobA, the Strand Cleaving-Rejoining Protein for Conjugal Transfer of R1162.  
Eric Becker, Shuyu Zhang and Richard Meyer

12.20 – 12.50 DNA Recognition of F Factor TraI and TraY: TraI Is the Major Determinant of Relaxosome Specificity.  
Joel F. Schildbach, Jennifer C. Stern, Pamela L. Lum, Lara M. Street and Matthew J. Harley

12.50 – 13.20 Architecture of the R388 DNA Mobilization Machine.  
Gabriel Moncalián, Mikel Hernando, María Lucas, Itsaso Hormaeche, Itziar Alcorta, Félix Goñi, Xabier Gomis, Miquel Coll and Fernando de la Cruz

13.45 – 15.00 Lunch in Congress center

15.00 – 15.30 Conjugal Transfer of Plasmid pMV158: Features of the Plasmid –Encoded MobM Protein and its *oriT* Target DNA.  
María Eugenia Farías and Manuel Espinosa

- 15.30 – 16.00** Plasmid Conjugation in Bacilli and Kinetics of Transfer.  
Gert B. Jensen, Lars Andrup, Lasse Smidt, Andrea Wilcks and Yuan Zhiming
- 16.00 – 16.30** pSAM2, an Integrative Mobile Genetic Element from *Streptomyces*.  
J.-L. Pernodet, C. Possoz, A. Raynal, A. Friedmann, J. Gagnat and M. Guérineau
- 16.30 – 16.50** Transfer of the Integrative Element, pSAM2, of *Streptomyces ambofaciens*.  
Christophe Possoz, Josette Gagnat, Michel Guérineau and Jean-Luc Pernodet.
- 16.50 – 17.10** Coffee, then free time (possible free discussion at posters)

## **Saturday 23. 9**

**7.30 – 8.30** Breakfast in hotel

**8.30** Transport to the Congress Center IKEM by 3 buses

### **MAINTENANCE AND STABILITY**

(Chairs: R. Diaz, J. Mahillon)

- 9.00 – 10.00** Partitioning and Maintenance of Bacterial Plasmids.  
Christopher M Thomas, Colin Bignell, Lewis Bingle, Anthony Haines, Kalliope Kostelidou, Richard Lewis, Wei Zeng and Malgorzata Zatyka
- 10.00 – 10.30** Domain Mapping of KorB of RK2 Plasmid: KorB-IncC Interaction Region.  
M. Lukaszewicz, K. Kostelidou, C.M. Thomas and G. Jagura-Burdzy
- 10.30 - 10.50** A Protein-Protein Interaction Domain Shared by the KorA, TrbA, and KlcB Proteins of Promiscuous Plasmids of Incompatibility Group P.  
Anuradha Bhattacharyya and David H. Figurski
- 10.50 – 11.10** Coffee
- 11.10 – 11.40** The ParF Subgroup of the ParA Superfamily of ATPases: a Widespread Mechanism by which Genome Segregational Stability Is Achieved?  
Finbarr Hayes
- 11.40 – 12.10** Segregation Dynamics of the *E. coli* Chromosome and the P1 Plasmid.  
Therese Brendler, James Sawitzke, Yongfang Li and Stuart Austin
- 12.10 – 12.40** P1 Plasmid Partitioning: Pairing by Centromere-Binding Protein ParB.  
Michael Yarmolinsky, Oleg Rodionov and Rotem Edgar

**12.40 – 13.45** Poster session

**13.45 – 15.00** Lunch in Congress center

**15.00 – 16.00** Programmed Cell Death Takes a Turn.

Jakob Møller-Jensen, Thomas Franch, Kim Pedersen, Marie Mikkelsen, Susanne Christensen, and Kenn Gerdes

**16.00 – 16.30** Regions Involved in Functional Interactions Between the Bacterial Toxin Kid and the DnaB Helicase.

Ramón Díaz-Orejas

**16.30 – 16.50** coffee

**16.50 – 17.20** Autoregulation of the *ccd* Poison/Antidote System

Hassan Afif, Martine Couturier and Laurence van Melderen

**17.20 – 17.50** The post-Segregational Killing System of the Streptococcal Plasmid pSM19035.

Urszula Zielenkiewicz, Izabela Sitkiewicz, Izabella Kern-Zdanowicz and Piotr Ceglowski

**17.50 – 18.20** Plasmid Stabilization Via post-Segregational Killing: a Gram Positive Perspective.

Keith E. Weaver, Tony Greenfield, Erik Ehli, Todd Kirschenmann, Mark Heine, and Kristi Walz

**19.00 – 20.00** Dinner in Congress center

**20.00 – 22.00** Poster Session

**22.00** Transport to the hotel by 3 buses

## **Sunday 24. 9**

**7.30 – 8.30** Breakfast in hotel

**8.30** Transport to the Congress Center IKEM by 3 buses

### **EVOLUTION AND DIVERSITY**

(Chairs: C. Kado, W. Szybalski )

**9.00 – 10.00** Evolution of the ‘Mobilome’: Commonality and Diversity of Structure and Function within Mobile Genomes.

A. Mark Osborn

- 10.00 – 10.30** Prokaryotic Insertion Sequences: New Trends in the Collection „2000“. Jacques Mahillon, Catherine Léonard, Céline Vermeiren and Mick Chandler
- 10.30 – 11.00** DNA Restriction-Modification: Selfish Mobile Elements that Have Maintained and Rearranged Bacterial Genomes. Ichizo Kobayashi
- 11.00 – 11.20** Coffee
- 11.20 – 11.50** Comparison and Evolution of IncQ and IncQ-Like Plasmids. Douglas E. Rawlings and Murray N. Gardner
- 11.50 – 12.10** Molecular Evolution/Adaptation in the Initiation Apparatus of Drug Resistance Plasmid R6K DNA Replication. Manabu Inuzuka, Yukie Matsui, Yuko Nakamura and Seiichi Yasuda
- 12.10 – 12.40** Development of Environment-Specific Replicon Probes to Determine Prevalence and Diversity of Marine Plasmids. Patricia Sobecky, Marisa Cook and Deana Erdner
- 12.40 – 13.45** Poster Session
- 13.45 – 15.00** Lunch in the Congress center
- 15.00 – 16.00** Complete Nucleotide Sequence and Analysis of pTiBo542: What Genomics Tells us about Structure and Evolution of Plasmids in the Family *Rhizobiaceae*. Philippe Oger, Claudia Reich, Gary J. Olsen, and Stephen K. Farrand
- 16.00 – 16.30** At the Crossroads between Replication and Recombination: Region-Specific Hyperrecombination in the Symbiotic Plasmids of *Rhizobium*. Edgar Valencia-Morales, Araceli Dávalos and David Romero
- 16.30 – 16.50** Inter-Plasmid Recombination Leads to the Generation of New Symbiotic Plasmids. Susana Brom, Lourdes Girard, Cristina Tun-Garrido and David Romero
- 16.50 – 17.10** Coffee
- 17.10 – 17.30** Isolation and Molecular Analysis of the Conjugative Broad-Host-Range Mercury Resistance Plasmid pS2. Susanne Schneiker, Alfred Pühler and Werner Selbitschka
- 17.30 – 17.50** Molecular Diversity of Plasmids Bearing Genes for Toluene and Xylene Metabolism in *Pseudomonas* Strains Isolated from Different Contaminated Sites in Belarus. Vladimir S. Sentschilo, Alexander J. B. Zehnder and Jan Roelof van der Meer
- 17.50 – 19.00** Conclusion of Symposium

**19.15** Transport to the center of Prague by 3 buses

**20.00 – 23.00** Farewell dinner in brewery „U Fleku“

**23.00** Transport by 3 buses to the hotel

**Monday 25.9.**

Departures of participants