



# 3rd International Conference on Post-Translational Modifications in Bacteria

December 3<sup>th</sup> – 4<sup>th</sup> 2018

Tübingen, Germany

University of Tübingen, Alte Aula

## Organizing Committee

Boris Macek, Karl Forchhammer

Christophe Grangeasse, Julie Hardouin, Eilika Weber-Ban, Ivan Mijakovic

**PROGRAM**

**Monday, December 3<sup>rd</sup>**

**08:30 - 08:50      Registration**

**08:50 - 09:00      Opening remarks**  
Boris Maček • University of Tübingen

**09:00 - 10:45      Session 1 - Protein Degradation and Recycling**

Chair: Boris Maček • University of Tübingen

09:00 - 09:45      **Keynote lecture: Tim Clausen • IMP Vienna**  
The phospho-kiss of death: Revealing a specific phospho-signal that serves as degradation tag

09:45 - 10:00      **Eilika Weber-Ban • ETH Zurich**  
Pupylation, a ubiquitin-like post-translational modification in actinobacteria

10:00 - 10:15      **Andreas U. Müller • ETH Zurich**  
The mycobacterial LexA/RecA-independent DNA damage response is controlled by PafBC and the Pup-proteasome system

10:15 - 10:30      **Philipp Spät • University of Tübingen**  
Chlorosis as a developmental program in cyanobacteria: Protein O-phosphorylation controls stress-induced phycobilisome turnover

10:30 - 10:45      **Maja Semanjski • University of Tübingen**  
Application of dynamic SILAC to determine protein turnover during toxin-induced persistence and resuscitation in *E. coli*

**10:45 - 11:15      Coffee**

**11:15 - 12:45      Session 2 - Protein Phosphorylation in Cell Division and Cell Wall Biology**

Chair: Ivan Mijakovic • Technical University of Denmark and Chalmers

11:15 - 11:45      **Short keynote lecture : Vinay Kumar Nandicoori • NII New Delhi**  
Interaction of LipidII with specific residues of its extracellular domain governs appropriate localization and optimal activation of *M. tuberculosis* PknB

11:45 - 12:00      **Sathya Narayanan Nagarajan • CNRS Lyon**  
Role of FtsZ Phosphorylation in modulating the pneumococcal cell division

12:00 - 12:15      **Anaïs Pelletier • CNRS Lyon**  
A new tyrosine-kinase of *Streptococcus pneumoniae* is involved in cell-growth and morphogenesis

12:15 - 12:30      **Isabelle Martin-Verstraete • Pasteur Institute Paris**  
Role of the Ser/Thr kinases in the physiology of *Clostridium difficile*

12:30 - 12:45      **Bernd Vollmer • University of Tübingen**  
Effect of Eukaryotic-Type Serine/Threonine Protein Kinases (eSTPKs) on Differentiation and Spore Wall Synthesis of *Streptomyces Coelicolor* A3

**12:45 - 14:00      Lunch**

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| <b>14:00 - 15:45</b> | <b>Session 3 - Protein Acetylation and Acylation</b><br>Chair: Julie Hardouin • University of Rouen   |
| 14:00 - 14:45        | <b>Keynote lecture: Chunaram Choudhary</b> • University of Copenhagen<br>The scope, mechanisms, and regulation of lysine acetylation in <i>E. coli</i>  |
| 14:45 - 15:00        | <b>Carsten Jers</b> • Technical University of Denmark<br>The global acetylome of the human pathogen <i>Vibrio cholerae</i> V52 reveals lysine acetylation of major transcriptional regulators |
| 15:00 - 15:15        | <b>Charlotte Gaviard</b> • University Rouen<br>Lysine modifications in <i>Pseudomonas aeruginosa</i> PA14   |
| 15:15 - 15:30        | <b>Nienke Buddelmeijer</b> • Pasteur Institute Paris<br>Functional conservation of Apolipoprotein N-acyltransferase in proteobacteria   |
| 15:30 - 15:45        | <b>Laure Béven</b> • INRA Bordeaux<br>Pathogenicity-related, acylated membrane proteins and sterols develop privileged interactions in the membrane of spiroplasmas                           |
| <b>15:45 - 18:00</b> | <b>Poster Session &amp; Coffee</b>  |
| <b>18:00 - 19:30</b> | <b>City Tour</b>  |
| <b>19:30 - 22:00</b> | <b>Dinner Neckarmüller</b>  |

## **Tuesday, December 4<sup>th</sup>**

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| <b>09:00 - 10:30</b> | <b>Session 4 - Pathogenesis and Persistence</b><br>Chair: Christophe Grangeasse • CNRS Lyon  |
| 09:00 - 09:45        | <b>Keynote lecture: Kenn Gerdes</b> • University of Copenhagen<br>Serine-Threonine Kinases and Bacterial Multidrug Tolerance: Comparison of hipBA of <i>E. coli</i> K-12 with hipBST of <i>E. coli</i> O127 Encoding a Split hipA gene |
| 09:45 - 10:00        | <b>Kathleen Ryan</b> • UC Berkeley<br>Diverse functions of HipA serine/threonine kinases in <i>Caulobacter crescentus</i>  |
| 10:00 - 10:15        | <b>Sandrine Poncet</b> • INRA Jouy-en-Josas<br>Hanks-kinases dependent phosphorylation of <i>Bacillus cereus</i> global gene regulator CodY deeply impacts physiology and virulence  |
| 10:15 - 10:30        | <b>Nelson Soares</b> • University of Cape Town<br>Characterization of the Macrophage Ser/Thr/Tyr protein phosphorylation network perturbed by mycobacterial Protein Kinase (PknG)  |
| <b>10:30 - 11:00</b> | <b>Coffee</b>  |

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| <b>11:00 - 12:15</b> | <b>Session 5 - Metabolism and Protein Biosynthesis</b><br>Chair: Eilika Weber-Ban • ETH Zurich  |
| 11:00 - 11:30        | <b>Short keynote lecture: Karl Forchhammer • University of Tübingen</b><br>Chlorosis as a Developmental Program in Cyanobacteria: The (Phospho)proteomic Fundament for Survival and Awakening |
| 11:30 - 11:45        | <b>Magdalena Gil • Pasteur Institute Paris</b><br>New substrates and interactors of the mycobacterial Serine/Threonine protein kinase PknG identified by a tailored interactomic approach     |
| 11:45 - 12:00        | <b>Abida Sultan • Technical University of Denmark</b><br>Quantitative assessment of the phosphoproteomes of kinase-deficient <i>Escherichia coli</i> strains                                  |
| 12:00 - 12:15        | <b>Anna L. Vagstad • ETH Zurich</b><br>Mechanistic insights into peptidyl $\alpha$ -keto- $\beta$ -amino acid biosynthesis by a radical splicease enzyme                                      |
| <b>12:15 - 13:30</b> | <b>Lunch</b>  |
| <b>13:30 - 15:00</b> | <b>Session 6 - Protein Glycosylation</b><br>Chair: Karl Forchhammer • University of Tübingen  |
| 13:30 - 14:15        | <b>Keynote lecture: Markus Aebi • ETH Zurich</b><br>The making of N-glycoproteins: The evolution of a prokaryotic PTM into a complex eukaryotic pathway                                       |
| 14:15 - 14:30        | <b>Timothy G. Keys • ETH Zurich</b><br>Exploring and exploiting cytoplasmic N-glycosylation of proteins in bacteria   |
| 14:30 - 14:45        | <b>Petra Mikolčević • Ruđer Bošković Institute Zagreb</b><br>Ins and Outs of ADP-ribosylation in <i>Streptomyces coelicolor</i>   |
| 14:45 - 15:00        | <b>Ralph Krafczyk • LMU Munich</b><br>An odd couple? Rhamnose and arginine form a new bacterial glycoconjugate  |
| <b>15:00 - 15:30</b> | <b>Coffee</b>   |
| <b>15:30 - 16:30</b> | <b>Closing lecture</b><br>Chair: Karl Forchhammer • University of Tübingen  |
| 15:30 - 16:15        | <b>Closing lecture: Haike Antelmann • FU Berlin</b><br>Thiol-based switches and redox-regulation in <i>Staphylococcus aureus</i> under infection conditions                                   |
| 16:15 - 16:30        | <b>Closing remarks and presentation award: The Organizing Committee</b>   |