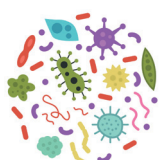
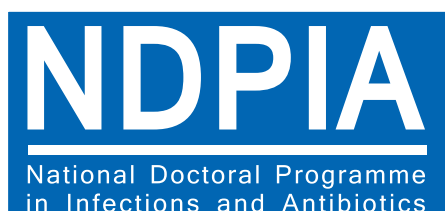


Antibiotics and Antibiotic Resistance

- NDPIA/IBA course -

26-30 November 2018

Hjortviken Konferens, Gothenburg, Sweden



IBA

National Graduate School
in Infection Biology and
Antimicrobials

Program

Monday 26 November

- 10.00 - Registration and poster mounting**
- 12.15 - 13.15 Lunch**
- 13.15 - 14.15 Welcome and one-minute introductions by course participants**
Åke Forsberg, NDPIA, MIMS, UCMR, Umeå University
Chair person: Åke Forsberg
- 14.15 - 15.15 An introduction to the evolution, spread, and management of antibiotic resistance**
Diarmaid Hughes, Uppsala University, Sweden / Joakim Larsson, CArE, University of Gothenburg, Sweden / Arnfinn Sundsfjord, University of Tromsø, Norway
- 15.15 - 15.45 Coffee break**
Chair person: Michael Koomey
- 15.45 - 17.15 Introductory lectures continued**
Antibiotic resistance in *Neisseria gonorrhoeae*
Yonatan Grad, Harvard TH Chan School of Public Health, USA
***M. tuberculosis* resistance**
Tone Tønjum, Oslo University, Oslo University Hospital, Norway
- 17.15 - 18.30 Presentations of NDPIA/IBA and research centres followed by predinner mingle**
Michael Koomey, University of Oslo, Norway (IBA)
Åke Forsberg, Umeå University, Sweden (UCMR/MIMS/NDPIA)
Carl-Fredrik Flach, University of Gothenburg, Sweden (CArE)
Diarmaid Hughes, Uppsala University, Sweden (UAC)
Arnfinn Sundsfjord, University of Tromsø, Norway (CANS)
- 18.30 - 20.00 Dinner**
Chair person: Michael Koomey
- 20.15 - Evening talk**
Ethics in antibiotic resistance management
Christian Munthe, CArE, University of Gothenburg
Gothenburg, Sweden

Program

Tuesday 27 November

Modes of action and mechanisms of resistance of existing classes: Ribosomes

Chair persons: Örjan Samuelsen and Michael Koomey

08.30 - 09.15 Ribosome structure and function

Nora Vázquez-Laslop, Center for Biomolecular Sciences, University of Illinois at Chicago, Chicago, USA

09.15 - 10.00 Development of next generation tetracyclines

Patricia Bradford, Antimicrobial Development Specialists, LLC, Nyack, NY, USA

10.00 - 10.20 Coffee break

10.20 - 11.05 Macrolides-Lincosamides-Streptogramins, pleuromutilins, oxazolidinones

Nora Vázquez-Laslop, University of Illinois at Chicago, USA

Modes of action and mechanisms of resistance of existing classes: Cell wall

Chair persons: Nora Vázquez-Laslop and Raimonda Viburiene

11.05 - 11.50 Cell wall structure, biosynthesis, and targets

Felipe Cava, MIMS, UCMR, Umeå University, Sweden

11.50 - 12.45 Lunch

12.45 - 13.45 Poster session I - no. 1-14

3 poster walks in groups (5 min presentation + 5 min questions) in parallel: 1-5, 6-10, 11-14 - see "Poster Sessions" (page 82-85)

13.45 - 14.30 Free poster viewing of "posters of the day"

14.30 - 14.45 Coffee break

14.45 - 15.30 β -lactams and β -lactamases

Örjan Samuelsen, University of Tromsø, Norway

15.30 - 16.15 Overview of new beta-lactam/beta-lactam inhibitor combinations

Patricia Bradford, Antimicrobial Development Specialists, LLC, US

16.15 - 16.30 Break

Chair persons: Patricia Bradford and Åke Forsberg

16.30 - 17.15 Resistance inhibitors

Pål Rongved, University of Oslo, Norway

17.15 - 18.00 Glycopeptides, lipopeptides, lipoglycopeptides

Gerry Wright, McMaster University, Canada

18.15 - 20.00 Dinner

Chair person: Åke Forsberg

**20.00 - Evening talk:
EU Joint Programming Initiative on Antimicrobial Resistance (JPIAMR)
and Swedish Research Council (VR) programme for funding AMR re-
search 2019-2028**

Patrik Fagerstedt, Swedish Research Council (VR), Sweden

Program

Wednesday 28 November

Modes of action and mechanisms of resistance of existing classes: Nucleic acid synthesis, replication, transcription

Chair persons: Didier Mazel and Disa Larsson Hammarlöf

- 08.30 - 09.15** **Aminoglycosides: Mode of action and resistance**
Gerry Wright, McMaster University, Canada
- 09.15 - 10.00** **Rifampicin**
Gerry Wright, McMaster University, Canada
- 10.00 - 10.45** **Quinolones**
Diarmaid Hughes, UAC, Uppsala University, Sweden
- 10.45 - 11.05** **Coffee break**
- 11.05 - 11.50** **Targeting bacterial membranes**
Klaas Martinus Pos, Goethe University Frankfurt, Germany
- 11.50 - 12.45** **Lunch**
- 12.45 - 13.45** **Poster session II - no. 15-27**
3 poster walks in groups (5 min presentation + 5 min questions) in parallel:
15-19, 20-23, 24-27 - see "Poster Sessions" (page 82-85)
- 13.45 - 14.30** **Free poster viewing of "posters of the day"**
- 14.30 - 14.45** **Coffee break**
- Chair persons: Diarmaid Hughes and Carl-Fredrik Flach*
- 14.45 - 15.30** **Detection of resistance mechanisms**
Christian Giske, Karolinska Institutet, Stockholm, Sweden
- 15.30 - 16.15** **Rapid diagnostics - Antibiotic susceptibility testing**
Johan Elf, Uppsala University, Sweden
- 16.15 - 16.30** **Break**
- 16.30 - 17.15** **Structure-function of efflux systems and inhibitors**
Klaas Martinus Pos, Goethe University Frankfurt, Germany
- 17.15 - 18.00** **Genetics behind antibiotic resistance**
Didier Mazel, Pasteur Institute, Paris, France
- 18.15 - 20.00** **Dinner**
- Chair person: Michael Koomey*
- 20.00 -** **Evening talk**
Public awareness of antibiotic resistance and how media influence understanding and engagement
Adam Shehata, CARE, University of Gothenburg, Sweden

Program

Thursday 29 November

Chair persons: Christina Stallings and Michael Koomey

08.30 - 09.15

Omics in diagnostics/detection of novel resistance genes

Erik Kristiansson, CARE, Chalmers University of Technology, Gothenburg, Sweden

Origins of resistance genes, selection, biological cost and compensation

09.15 - 09.45

The environment as a source for resistance genes

Joakim Larsson, CARE, University of Gothenburg, Sweden

09.45 - 10.05

Coffee break

10.05 - 11.05

Mutations, selection (including co-selection), biological cost, compensation

Diarmaid Hughes, UAC, Uppsala University, Sweden
Pål Johnsen, University of Tromsø, Norway

11.05 - 11.50

Epistatic interactions/mutations that confer resistance to commonly used antibiotics

Isabel Gordo, Instituto Gulbenkian de Ciência, Oeiras, Portugal

11.50 - 12.45

Lunch

12.45 - 13.45

Poster session III - no. 28-40

3 poster walks in groups (5 min presentation + 5 min questions) in parallel: 28-32, 33-36, 37-40 - see "Poster Sessions" (page 82-85)

13.45 - 14.30

Free poster viewing of "posters of the day"

14.30 - 14.45

Coffee break

Chair persons: Michael Koomey and Raimonda Viburiene

14.45 - 15.30

The challenges of discovering new antibiotics active on Gram-negative bacteria

Eric Bacque, Evotec ID Lyon, France

15.30 - 16.15

Natural products

Mark Brönstrup, Department of Chemical Biology, Helmholtz Centre for Infection Research, Braunschweig; Germany

16.15 - 16.30

Break

Chair persons: Isabel Gordo and Åke Forsberg

16.30 - 17.00

Biofilm and targeting biofilm

Ute Römling, Karolinska Institutet, Stockholm, Sweden

17.00 - 17.30

Targeting virulence

Fredrik Almqvist, UCMR, Umeå University, Sweden

17.30 - 18.15

Development of novel antimicrobials acting in synergy with antibiotics

Christina Stallings, Washington University, St Louis, USA

18.30 - 20.30

Course dinner

20.30 -

Free time

Program

Friday 30 November

Antibiotic development and approval, key elements and optimizing leads

Chair persons: Sanna Koskiniemi and Carl-Fredrik Flach

08.30 - 09.30 Antibiotic development at small and average sized companies

Ursula Theuretzbacher, Center for Anti-Infective Agents, Vienna, Austria (CE-FAIA,) and Sven Bergström, QureTechBio, Umeå, Sweden

09.30 - 10.00 Developing pharmacokinetic and pharmacodynamic models for novel antibiotics

Lena Friberg, Uppsala University, Sweden

10.00 - 10.30 National infrastructures for screening and drug development in Sweden

Erik Chorell, CBCS/LCBU, SciLifeLab, Umeå University, Sweden

10.30 - 11.00 Coffee break

Chair persons: Sven Bergström and Michael Koomey

11.00 - 11.30 Persisters/microbial antagonism

Sanna Koskiniemi, Uppsala University, Sweden

11.30 - 12.00 *In vivo* studies of transcriptional reprogramming during persistent infection-implications for resistance

Maria Fällman, MIMS, UCMR, Umeå University, Sweden

12.00 - 12.45 Panel discussion on persistence/resistance

Sanna Koskiniemi and Maria Fällman

12.45 - 13.45 Lunch

Chair persons : Maria Fällman and Raimonda Viburiene

13.45 - 14.30 Microbiome based strategies for decolonization of multidrug resistance and infection prevention

Reetta Satokari, University of Helsinki, Finland

14.30 - 15.15 Future perspectives on infection prevention and alternatives to antibiotics

Marc Bonten, University Medical Centre Utrecht, The Netherlands

15.15 - 15.45 Concluding remarks and on-line evaluation

Åke Forsberg, NDPIA, Michael Koomey, IBA

16.15 Departure, bus to Landvetter airport

(ca 15 minutes)