



Program – version June 2nd, 2014

Wednesday, June 4th

08:00 Check-in and poster setup

09:00 Welcome talks: **Virginie Dupont** (Vice-President of the Université de Bretagne-Sud),
Djamel Drider (President of the French Antimicrobial Peptide Society) and **Alain Dufour**
(AMP2014 chairman)

09:15 **Opening lectures**

Chairmen: R. Hancock and H.G. Sahl

09:15 – 09:40 **Michael Zasloff** (USA) Antimicrobial peptides in human health and disease

09:40 – 10:05 **Sylvie Rebuffat** (France) Bacterial antimicrobial peptides: bioinspired
strategies for antibiotic engineering

10:05 Coffee break

10:35 **Session A: Novel sources of antimicrobial peptides**

Chairmen: M. Zasloff and Y. Fleury

10:35 – 11:00 Lecture **Alessandro Tossi** (Italy) Something old, something new – on the
enduring quest for novel AMPs

11:00 – 11:20 **Klara Stensvåg** (Norway) Exploring the bioactive peptide space of arctic
marine invertebrates

11:20 – 11:40 **Lorena Carro** (France) *Alnus glutinosa* antimicrobial peptides implicated in
actinorhizal symbiosis

11:40 – 11:55 **Dumitrita Iftime** (YR - Germany) Characterization of Streptocollin, the first
isolated type IV lanthipeptide produced by the actinomycete *Streptomyces collinus* Tü 365

11:55 – 12:10 **Auke Van Heel** (YR – The Netherlands) Discovery of Pumilarin, a novel head-
to-tail cyclized peptide by Bagel3

12:10 – 12:25 **Liu Yufang** (YR - Germany) A new approach to identify antimicrobial peptides
in milk

12:30 Lunch

14:00 **Session A: Novel sources of antimicrobial peptides (continued)**

Chairmen: A. Tossi and P. Jacques

14:00 – 14:20 **Nils Metzler-Nolte** (Germany) Conjugation of organometallic complexes to
short AMPs enhances their activity and helps elucidate their mode of action

- 14:20 – 14:40 **Giuseppe Maccari** (Italy) AMP *in silico* design by evolutionary multiobjective optimization
- 14:40 – 15:00 **Michel Treilhou** (France) Bicarinalin, a new broad spectrum antimicrobial peptide from the venom of the ant *Tetramorium bicarinatum*
- 15:00 – 15:15 **Tânia Shishido** (YR, Finland) Antifungal compounds from cyanobacteria
- 15:15 – 15:30 **Alberto Oddo** (YR - Germany) Design and synthesis of flexible cyclic antimicrobial heptapeptides
- 15:30 – 15:45 **K. S. Sruthy** (YR, India) Molecular characterization of an anti-lipopolysaccharide factor from Mantis shrimp, *Oratosquilla nepa*
- 15:45 **V. Leclere** (France) Flash presentation to introduce the poster “Become a curator and participate to the Norine database up-date”
- 15:45 **Poster session 1** and coffee break
- 17:30 **Session B: Biosynthesis, mechanisms of action and resistance**
Chairmen: A.M. Revol-Junelles and J. Verdon
- 17:30 – 17:55 Lecture **Hans-Georg Sahl** (Germany) Molecular activities of AMPs from all kingdoms - Membranes and more
- 17:55 – 18:15 **Burkhard Bechinger** (France) How many models do we need to explain the action of linear cationic antimicrobial peptides?
- 18:15 – 18:30 **Yoshimitsu Masuda** (YR - Netherlands) Leaderless leading: introducing post-translational modifications into leaderless bacteriocins
- 18:30 – 18:45 **Rosemary Isioma Adaba** (YR - UK) Isolation of biosynthetic patellamides
- 19:00 Cocktail ceremony at the City Hall of Lorient

Thursday, June 5th

- 08:30 **Session B: Biosynthesis, mechanisms of action and resistance (continued)**
Chairmen: H.G. Sahl and A.M. Revol-Junelles
- 08:30 – 08:55 Lecture **Takeshi Zendo** (Japan) Characterization of biosynthetic enzymes and antibacterial action of lantibiotic nukacin ISK-1
- 08:55 – 09:15 **Camilla Oppedgård** (Norway) Genome sequencing of lactococci G-resistant strains identified UppP, an enzyme involved in cell wall synthesis, as a putative bacteriocin receptor
- 09:15 – 09:35 **Philippe Jacques** (France) Synthetic biology for the overproduction of antimicrobial lipopeptides in *Bacillus subtilis*
- 09:35 – 09:50 **Roberta Pozzi** (YR - Germany) Self-immunity in the lantibiotic producer strain *Microbispora* ATCC PTA-5024

- 09:50 – 10:05 **Aurélie Nogues** (YR - France) The *arn* operon is essential to the development of stable AMP resistance in *Pseudomonas aeruginosa*
- 10:05 Coffee break and poster changes
- 10:45 **Session B: Biosynthesis, mechanisms of action and resistance (continued)**
Chairmen: S. Rebuffat and J. Verdon
- 10:45 – 11:05 **Roderich Süßmuth** (Germany) Ribosomal peptide synthesis of lantibiotics - nature's inventory for synthesis of bioactive molecules
- 11:05 – 11:25 **Jean-Marc Berjeaud** (France) Effect of amino acid substitution in the staphylococcal peptides warnericin RK and PSMalpha on their anti-*Legionella* and hemolytic activities
- 11:25 – 11:45 **Benoît Odaert** (France) Mechanism of action on membrane models of Clausin, a lantibiotic peptide from *Bacillus clausii*
- 11:45 – 12:00 **Kathi Scheinpflug** (YR - Germany) The X marks the spot: investigations on the site of action of a cyclic antimicrobial peptide
- 12:00 Lunch
- 13:45 **Session C: Multifunctionality of antimicrobial peptides**
Chairmen: C. Landon, M. Amiche and R. Hancock
- 13:45 – 14:10 Lecture **Robert Hancock** (Canada) New host defence peptide therapies for antibiotic resistant infections
- 14:10 – 14:30 **Laurence Marquès** (France) Outside/inside roles of a multifunctional plant defensin
- 14:30 – 14:45 **Maarten Coorens** (YR – The Netherlands) Chicken Cathelicidin-2 (CATH2) amplifies CpG-DNA-induced macrophage activation
- 14:45 – 15:00 **Pierre-Marie Andraut** (YR - France) The Janus face of LL-37: both an inhibitor and a substrate of cysteine cathepsins
- 15:00 – 15:15 **Fany Reffuveille** (YR - Canada) Broad spectrum synergistic interactions between an anti-biofilm peptide and conventional antibiotics
- 15:15 **Poster session 2** and coffee break
- 17:00 **Session C: Multifunctionality of antimicrobial peptides (continued)**
Chairmen: R. Hancock and M. Amiche
- 17:00 – 17:20 **Oscar Kuipers** (The Netherlands) Potentiating lantibiotics, either against Gram-negatives or against pathogens with different membrane thicknesses, by modular engineering
- 17:20 – 17:40 **Peter Nielsen** (Denmark) Antimicrobial peptide nucleic acids (PNA). Genetic antibiotics, synergy of two worlds

Session D: Antimicrobial peptides in microbial ecology, microbiome shaping and biofilm formation

Chairmen: M. Polz and D. Destoumieux-Garzon

17:40 – 18:00 **Delphine Debois** (Belgium) MALDI Mass Spectrometry Imaging: a new tool to decipher the antibiome of *Bacillus amyloliquefaciens*

18:00 – 18:20 **Emmanuelle Arias-Roth** (Switzerland) Study of interaction between *Marinilactibacillus psychrotolerans* and *Listeria* spp. *in situ* on cheese surface

18:20 – 18:35 **Marjolaine Simon** (YR - France) A marine antibiofilm peptide to fight against *Pseudomonas aeruginosa* chronic infections?

19:00 Boat cruise and gala dinner – Quai Ouest restaurant

Friday, June 6th

08:30 **Session D: Antimicrobial peptides in microbial ecology, microbiome shaping and biofilm formation (continued)**

Chairmen: D. Destoumieux-Garzon and A. Dufour

08:30 – 08:55 Lecture **Martin Polz** (USA) The secret social life of bacteria in the wild

08:55 – 09:10 **Florie Desriac** (YR - France) Cyclolipopeptides produced by the marine bacterium *Pseudoalteromonas* hCg-6

Session E: Current and future applications

Chairmen: E. de Pauw and T. Jouenne

09:10 – 09:25 **Wael Housen** (YR - UK) An efficient method for the *in vitro* production of azole-based cyclic peptides

09:25 – 09:40 **Ghosh Chandradhish** (YR - India) Development of simplest small-molecular mimics of antimicrobial peptides

09:40 – 09:55 **Alexandre Back** (YR - France) Export optimization by N-terminus functionalization of recombinant pediocin expressed in *Lactococcus lactis*

09:55 – 10:10 **Margot Schlüsselhuber** (YR - France) Anti-*Legionella* activity of surfactin, a lipopeptide from *Bacillus subtilis* AM1

10:10 Coffee break

10:45 **Session E: Current and future applications (continued)**

Chairmen: J.M. Berjeaud, D. Drider and T. Jouenne

10:45 – 11:05 Lecture **Edwin de Pauw** (Belgium) Combined activation methods coupled to Ion Mobility Mass for the structural analysis of constrained peptides

11:05 – 11:25 Lecture **Thierry Jouenne** (France) Surface functionalization by antimicrobial peptides: an original bio-inspired strategy to elaborate antimicrobial materials

11:25 – 11:45 **Kamaljit Kaur** (Canada) Antimicrobial peptide-based platforms as biosensors for pathogenic bacteria

11:45 – 12:05 **Jeanna Klinth** (Sweden) Impairment of the biomechanical compliance of bacterial adhesion organelles

12:05 – 12:25 Lecture **Djamel Drider** (France) Nisin-colistin: a promising combination for applications in veterinary medicine

12:25 Young researcher awards: best posters and oral communications

12:45 Lunch

14:00 End of the Symposium