

# AMP2016 Scientific program

June 6-8, 2016 | Le Corum, Montpellier, France

## Poster Session A (June, 6th)

### Poster A1

**Mohamed Maky, Naoki Ishibashi, Takeshi Zendo, Rodney Perez, Jehan Doud, Mohamed Karmi and Kenji Sonomoto**

Enterocin F4-9, a Novel O-Linked Glycosylated Bacteriocin

### Poster A2

**Joshy Jacob, David Holthausen and Sanil George**

Anuran host defense peptides to combat human influenza viruses

### Poster A3

**Maike Bartholomae, Jakob Viel, Tobias Baumann, Nediljko Budisa and Oscar P. Kuipers**

Non canonical amino acids as tool to further modify the antimicrobial peptide Nisin

### Poster A4

**Ruoyu Mao, Da Teng, Xiumin Wang, Ya Hao, Huixian Chen and Jianhua Wang**

Design, characterization and mechanism of the trypsin-resistant NZ2114 derived peptide

### Poster A5

**Da Teng, Lifeng Zong, Xiumin Wang, Na Yang, Ruoyu Mao, Ya Hao and Jianhua Wang**

A dual mechanism involved in membrane and nucleic acid disruption of MP1102, a variant of NZ2114, against *Clostridium perfringens* Type C

### Poster A6

**Guillaume Tetreau, Richard Galinier, Karim Arafah, Sébastien Voisin, Yannick Moret, Philippe Bulet and Benjamin Gourbal**

Implication of antimicrobial peptides in trans-generational immune priming in the mealworm beetle (*Tenebrio molitor*)

### Poster A7

**Chloé Mollet, Kamel Mabrouk, Marc Maresca, Guillaume Cazals and Valette Gilles**

Therapeutic Peptides: From Venom To Drugs

### Poster A8

**Danubia Batista Martins, Maira Ramos Vieira, Viviane Aparecida Camargo Santana, Mirian Elisa Rodrigues Guerra, Marta Lopes Lima, Valmir Fadel, André G. Tempone, José Roberto Ruggiero and Marcia P. Dos Santos Cabrera**

Anti-Leishmanial Peptides: Design, Structural Determination and Mechanism of Interaction with Mimetic Membranes

### Poster A9

**Jyotsna Singh, Seema Joshi, Sana Mumtaz, Nancy Maurya, Ilora Ghosh and Kasturi Mukhopadhyay**

Enhanced Cationic Charge a Key Factor in Promoting Staphylocidal Activity of  $\alpha$ -Melanocyte Stimulating Hormone via Selective Lipid Affinity

**Poster A10**

**Shuji Shigenobu, Aishwarya Korgaonkar, Nahoko Uchi, Toshiki Uchiumi and David Stern**  
Aphids evolved novel AMP-like genes for symbiosis with bacterial endosymbiont

**Poster A11**

**Kevin Egan, Paula O'Connor, Des Field, Colin Hill and Paul Cotter**  
*Geobacillus stearothermophilus*: A potential source of bacteriocins?

**Poster A12**

**Laetitia Kolypczuk, Frédérique Chevalier, Sandrine Bonnetot, Christine Delbarre-Ladrat, Delphine Passerini and Françoise Leroi**  
Fishing for antibacterial molecules from an original collection of marine bacteria

**Poster A13**

**Sabrina Kobbi, Ali Bougatef, Guillaume Leflem, Pascal Dhulster and Naima Nedjar**  
Antibacterial Activity Of Novel Peptides Isolated From Protein Hydrolysates Of RuBisCO Purified From Green Juice Alfalfa

**Poster A14**

**Gabriela Isabel Contreras Arriagada, Holger Schäfer and Michael Wink**  
Recombinant production of afusinC in *Escherichia coli*, a putative defensin from *Aspergillus fumigatus*

**Poster A15**

**Souhir Sabri, Monique Royer, Alexander Pesic, Daniel Petras, Andi Mainz, Roderich D. Süssmuth and Stéphane Cociancich**  
Genome-based survey of non-ribosomal peptide synthetase genes sharing fascinating features with the albicidin biosynthesis genes

**Poster A16**

**Clément Offret, Camille Jégou, Patrick Le Chevalier, Jérôme Mounier and Yannick Fleury**  
Hemo-microbiota of bivalves: an untapped reservoir of antimicrobial peptides

**Poster A17**

**Takeshi Zendo, Naoki Ishibashi and Kenji Sonomoto**  
Identification of *Lactococcus*-specific bacteriocins, lactococcins Q and Z produced by lactococcal isolates, and molecular characterization of the biosynthetic genes for lactococcin Q

**Poster A18**

**Natalia Molchanova, Paul Robert Hansen, Peter Damborg and Henrik Franzyk**  
Roles of hydrophobicity, fluorination and distribution of cationic residues in  $\alpha$ -peptide/ $\beta$ -peptoids for antibacterial and hemolytic properties.

**Poster A19**

**Emmanuelle Arias-Roth, Anne Guisolan, Matthias Dreier, Ueli von Ah and Magali Chollet**  
Strain-dependent antilisterial activity of *Marinilactibacillus psychrotolerans* on cheese surface confirmed by in silico analysis

**Poster A20**

**Ibtissem Doghri, Florence Brian-Jaisson, Alexis Bazire, Alain Dufour, Sophie Sablé and Isabelle Lanneluc**  
Anti-biofilm peptide secreted by a marine *Pseudoalteromonas* bacterium

#### Poster A21

**Norma Margarita De La Fuente-Salcido, José Cristobal Catañeda Ramírez, Ruben Salcedo Hernandez and José Eleazar Barboza Corona**

M-Tuba and Tepache, traditional fermented beverages from México: a novel source of lactic acid bacteria capable of producing bacteriocins.

#### Poster A22

**Norma Margarita De La Fuente-Salcido, Ada Patricia Garcia Pérez, Ma Del Socorro Linaje Treviño, Rubén Salcedo Hernández and José Eleazar Barboza Corona**

Cloning, sequencing and characterization of endochitinolytic peptide from *Bacillus thuringiensis* subsp. *tenebrionis* DSM-2803 with antimicrobial effect against *Colletotrichum gloeosporioides*.

#### Poster A23

**Evi Stegmann, Wolfgang Wohlleben and Valentina Goldfinger**

Metabolic engineering as a tool for constructing a glycopeptide overproducer

#### Poster A24

**Sébastien Cardon, Emmanuelle Sachon, Thierry Drujon, Ludovic Carlier, Astrid Walrant, Dominique Guianvarc'H, Rodrigue Marquant, Constance Auvynet and Claire Lacombe**

Two versions of a membrane-active, Gram-positive selective, antimicrobial peptide isolated from *Pachymedusa dactylophora* skin. How peptidoglycan potentiates its membrane disrupting effect

### Poster Session B (June, 6th)

#### Poster B1

**Enrico Forbrig, Alejandra de Miguel Catalina, Thomas Gutschmann, Maria Andrea Mroginski and Peter Hildebrandt**

Human cathelicidin LL-37: experimental and theoretical investigation of the peptide-membrane interaction of its fragments LL-32 and LL-20

#### Poster B2

**Barbara Daiana Gonzalez, Jacek Kozuch, Lennart Richter, Roderich Süßmuth and Peter Hildebrandt**  
Spectroelectrochemical study of the antimicrobial peptide enniatin B

#### Poster B3

**Tanne L. Cools, Kim Vriens, Peta J. Harvey, David J. Craik, Pieter Spincemaille, David Cassiman, Annabel Braem, Jozef Vleugels, Barbara De Coninck, Bruno P. A. Cammue and Karin Thevissen**

Synergistic activity of the plant defensin HsAFP1 and caspofungin against *Candida albicans* biofilms and planktonic cultures

#### Poster B4

**Audrey Gambade, Sami Zreika, Maxime Guéguinou, Igor Chourpa, Gaëlle Fromont, Ana Maria Bouchet, Julien Burlaud-Gaillard, Marie Potier-Cartreau, Sébastien Roger, Vincent Aucagne, Stephan Chevalier, Christophe Vandier, Caroline Goupille and Günther Weber**

Activation of TRPV2 and BKCa channels by the LL-37 enantiomers stimulates calcium entry and migration of cancer cells

#### Poster B5

**Charlotte Abrial, Régina Geitani, Yongzheng Wu and Lhousseine Touqui**

Regulation of cathelicidin LL-37 expression by *Pseudomonas aeruginosa* in human bronchial Cystic Fibrosis epithelial cells

**Poster B6**

**Jean-Marc Berjeaud, Margot Schlusshuber, Emilie Portier, Clémence Loiseau, Willy Aucher and Julien Verdon**

*L. pneumophila*: the paradox of a highly sensitive opportunistic waterborne pathogen able to persist in the environment

**Poster B7**

**Alejandra de Miguel, Enrico Forbrig, Thomas Gutschmann, Peter Hildebrandt and M. Andrea Mroginski**

Understanding the mechanism of action of human cathelicidin LL-37 through a theoretical and experimental approach

**Poster B8**

**Oxana Krylova, Kathi Scheinpflug, Sebastian Finger, Charley Thurm, Alfred Blume and Margitta Dathe**

Lipid domain formation and reduction in membrane fluidity: Initiating events of bacterial cell death induced by R,W-rich cyclic hexapeptides

**Poster B9**

**Vanessa W Petit, Jean-Luc Rolland, Alain Blond, Chantal Cazevielle, Chakib Djediat, Jean Peduzzi, Christophe Goulard, Evelyne Bachère, Joëlle Dupont, Delphine Destoumieux-Garzón and Sylvie Rebuffat**

A hemocyanin-derived antimicrobial peptide from the penaeid shrimp adopts an alpha-helical structure that specifically permeabilizes fungal membranes

**Poster B10**

**Bie Ekblad, Camilla Oppegård, Per Eugen Kristiansen, Jon Nissen-Meyer, Panagiota Kyriakou and Yiannis Kaznessis**

Structure-Function Analysis of the Two-Peptide Bacteriocin Plantaricin EF

**Poster B11**

**Désirée Yvonne Bäder, Guozhi Yu, Nathanaël Hozé, Jens Rolff and Roland R. Regoes**

Antimicrobial combinations: Bliss independence and Loewe additivity derived from mechanistic multi-hit models

**Poster B12**

**Julien Verdon, Marie-Hélène Corre, Pierre Coutos-Thévenot, Marie-Hélène Rodier, Céline Landon, Ségolène Depayras, Sylvain La Camera, Bouziane Moumen, Pierre Grève, Didier Bouchon, Jean-Marc Berjeaud and Christine Braquart-Varnier**

Glycine-rich armadillidins peptides from the terrestrial crustacean *Armadillidium vulgare* display a wide antimicrobial spectrum with membranolytic activity.

**Poster B13**

**Laura Chapelet, Agnès Delmas, Guillaume Charrière, Hervé Cottet, Frédérique Le Roux and Delphine Destoumieux-Garzón**

Exploring the paradox of holobionts: stable interactions within microbicidal tissues.

**Poster B14**

**Mariana Rosas Olvera, Eric Vives, Virginie Molle, Anne Blanc-Potard and Laila Gannoun-Zaki**

Reduction of bacterial virulence by overexpression or exogenous addition of membrane peptides, KdpF and MgtR.

**Poster B15****Sunithi Gunasekera, Taj Muhammad, Adam A. Strömstedt and Ulf Göransson**

Peptide engineering of LL-37 into backbone-cyclized dimers enhance stability and antimicrobial activity

**Poster B16****Valérie Borrel, Kelly Biaggini, Sabine Szunerits, Rabah Boukherroub, Awa N'diaye, Arthur Zébré, Maryse Bonnin-Jusserand, Guillaume Duflos, Marc Feuilloley, Djamel Drider and Nathalie Connil**Substance P has no antimicrobial activity against *Enterococcus faecalis* V583 and promotes its virulence**Poster B17****Guozhi Yu, Désirée Yvonne Bäder, Roland Robert Regoes and Jens Rolff**

Combination Effects of Antimicrobial Peptides

**Poster B18****Cécile Mangavel, Camille Collin, Allyson Hollander, Hélène Rogniaux, Audrey Gargaros, Anne-Marie Revol and Frédéric Borges**

Involvement of a TDOR on disulfide bond formation and antibacterial activity of a recombinant pediocin

**Poster B19****Alexey Kulikovskiy, Nadezhda Volovich, Nikolay Silakov, Anastasiya Metlitskaya, Marina Serebryakova, Svetlana Dubiley and Konstantin Severinov**

Mechanism of microcin C carboxyaminopropylation

**Poster Session C (June, 7th)****Poster C1****Guangshun Wang**

A Comprehensive Database for Antimicrobial Peptides: Unified Classifications and Expanding Functions

**Poster C2****Roxana Gonzalez, Daniel Oyanedel, Katherina Brokordt, Rafael Diego Rosa, Luis Mercado and Paulina Schmitt**Molecular characterization of a big defensin from the scallop *Argopecten purpuratus*: first insights into its regulation by the Rel/NF- $\kappa$ B pathway**Poster C3****Miray Tonk, Eileen Knorr, Alejandro Cabezas-Cruz, James Valdés, Christian Kollwe and Andreas Vilcinskis***Tribolium castaneum* defensins are primarily active against Gram-positive bacteria**Poster C4****Yago Santana De Oliveira, Poliana Garcia Corrêa, Hebert Ferrarezzi and Nancy Oguiura**Snake  $\beta$ -Defensins: Gene Structure And Antibiotic Activity**Poster C5****Sabrina Thais Broggio Costa and Marcia Perez Dos Santos Cabrera**

Computational Prospecting and Analyzing of Antimicrobial Peptides with Selective Character

**Poster C6****Hirotooshi Sushida, Naoki Ishibashi, Takeshi Zendo and Kenji Sonomoto**

Functional analysis of a bacteriocin transporter, EnkT, possessing a broad substrate specificity

#### **Poster C7**

**Evelyne Bachère, Pascal Alonso, Agnes Vergnes, Delphine Destoumieux-Garzon and Rafaël Da Rosa**  
High polymorphism in big defensin gene expression reveals presence-absence gene variability (PAV) in the oyster *Crassostrea gigas*

#### **Poster C8**

**Alexei Kulikovskiy, Inna Zukher, Olga Mokina, Darya Tsibulskaya, Marina Serebryakova, Konstantin Severinov and Svetlana Dubiley**

Validation of cognate MccA-MccB pairs from diverse bacteria and determination of molecular mechanisms responsible for efficient synthesis of Trojan-horse peptide-nucleotide antibiotic microcin C

### **Poster Session D (June, 7th)**

#### **SESSION D**

##### **Poster D1**

**Mezaini Abdelkader and Dilmi Bouras Abdelkader**

Probiotic properties of bacteriocinogenic Lactic Acid Bacteria isolated from dairy products

##### **Poster D2**

**Jacek Kozuch, Enrico Forbrig and Peter Hildebrandt**

Monitoring the potential-dependent structural changes of Alamethicin in artificial membranes – a combined spectroelectrochemical and theoretical approach

##### **Poster D3**

**Peter Mergaert, Yoshitomo Kikuchi, Shuji Shigenobu and Eva Nowack**

Role of symbiotic antimicrobial peptides

##### **Poster D4**

**Kathi Scheinplflug, Sven Richter and Margitta Dathe**

Cell penetrating properties of the cyclic antimicrobial peptide Cwfw

##### **Poster D5**

**Jianhua Wang, Da Teng, Xiumin Wang, Ruoyu Mao, Yong Zhang, Xintao Cao, Di Xi, Xiaojie Wang, Na Yang, Ya Hao, Yalin Yang, Jun Zhang, Zigang Tian and Xingjun Feng**

Case studies: expression of antimicrobial peptides in bacteria and yeast during past ten years (2006-2015)

##### **Poster D6**

**Niels Geudens, Mehmet Nail Nasir, Jean-Marc Crowet, Krisztina Féher, Laurence Lins, Magali Deleu, Davy Sinnaeve and José C. Martins**

Membrane Interactions of Cyclic Lipodepsipeptides

##### **Poster D7**

**Portier Emilie, Berjeaud Jean Marc, Loiseau Clémence, Schlüsselhuber Margot and Verdon Julien**

Anti-*Legionella* activity of lipopeptides produced by water-borne bacteria.

##### **Poster D8**

**Quentin Barrière, Ibtissem Guefrachi, Benoît Alunni, Eric Giraud, Peter Mergaert, Tatiana Timchenko, Solange Morera and Armelle Vigouroux**

Molecular analysis of BclA, an antimicrobial peptide transporter involved in bacteroid differentiation during *Aeschynomene/Bradyrhizobium* symbiosis.

**Poster D9**

**Galina Aleshina, Irina Yankelevich and Vladimir Kokryakov**

Defensin RatNP3 as an immunomodulator and a corticostatin

**Poster D10**

**Khaddouj Benmoussa, H  l  ne Authier, Lise Lef  vre, J  r  me Leprince, Bernard Pipy, Michel Treilhou and Agn  s Coste**

A new peptide enhances phagocytosis and candidicidal activity of human monocyte-derived macrophages mediated by dectin-1 and mannose receptors

**Poster D11**

**Ekaterina Umnyakova, Tatiana Leonova, Galina Aleshina, Tatiana Ovchinnikova, Vladimir Kokryakov and Mikhail Berlov**

The interaction of arenicin-1 and protegrin-1 with complement protein C1q

**Poster D12**

**R  gina Geitani, Carole Ayoub Moubareck, Charlotte Abrial, Dolla Karam Sarkis and Lhousseine Touqui**

Antimicrobial and pro-inflammatory activities of cationic antimicrobial peptides in pulmonary epithelial cells

**Poster D13**

**Philippe Jacques and Val  rie Lecl  re**

Bacterial lipopeptides : continuous discovery of novel compounds and new functionalities

**Poster D14**

**Francois Bedard, Riadh Hammami, Ahmed Gomaa, Muriel Subirade, Ismail Fliess and Eric Biron**

Design and synthesis of lasso-inspired peptides with distinct antibacterial mechanisms

**Poster D15**

**Matthias Buhmann, Qun Ren and Katharina Maniura**

The *in vivo* Relevance of Antimicrobial Activity Testing Systems: Towards a Model for Catheter-Associated Urinary Tract Infections

**Poster D16**

**Olga Shamova, Pavel Kopeykin, Aleksandr Artamonov, Tatyana Pazina, Sergey Balandin, Pavel Panteleev, Tatyana Ovchinnikova and Dmitriy Orlov**

Caprine batenecin ChBac3.4 – an untypical mammalian proline-rich AMP with cytotoxic effects towards host cells

**Poster D17**

**Susann Kocadinc, Agnieszka Bera, Christoph Schall and Wolfgang Wohlleben**

Optimization of the amino acid precursor supply for an improved production of the PKS-NRPS hybrid tacrolimus in *Streptomyces tsukubaensis*

**Poster D18**

**Alexandre Cr  pin, Alexis Bazire, Xavier Latour, C  line Hamon and Alain Dufour**

Isolation of bacterial strains displaying antimicrobial activities against *Agrobacterium rhizogenes* to prevent hairy-root disease

**Poster D19**

**Christelle Simon-Colin, Yannick Gueguen, Evelyne Bachère, Achraf Kouzayha, Denis Saulnier, Nicolas Gayet and Jean Guezennec**

Use of Natural Antimicrobial Peptides and Bacterial Biopolymers for Cultured Pearl Production

**Poster D20**

**Rebecca K Mbuayama, Dona Mwiria, Helena Taute, Megan J Bester, Albert W Neitz and Anabella R Gaspar**

Antifungal properties of the antimicrobial peptides Os and Os-C derived from a defensin of the tick *Ornithodoros savignyi*

**Poster D21**

**Lamis Karaki, Francine Rizk, Christophe Chouabe, Nathalie Chantret, Vanessa Eyraud, Frédéric Gressent, Catherine Sivignon, Isabelle Rahioui, Daniel Kahn, Céline Brochiet-Armanet, Yvan Rahbé, Corinne Royer and Pedro Da Silva**

Genome-wide analysis identifies gain and loss/change of function within the small multigenic insecticidal Albumin 1 family of *Medicago truncatula*

**Poster D22**

**Kamel Mabrouk, Chloe Mollet, Didier Gignes, Harold De Pomyers, Josette Perrier and Marc Maresca**  
Screening for selective anti-proliferative activity in raw venoms: searching for new venom AMPs with potential anti-tumor applications.

**Poster D23**

**Céline Chessa, Magali Garcia, Nicolas Lévêque and Charles Bodet**

Antimicrobial peptides secreted by human keratinocytes stimulate innate immune antiviral response against West-Nile virus infection

**Poster D24**

**Jenna-Claire Ellis, Colin Hill and Paul Ross**

Bacteriocins to kill skin pathogens?

**Poster D25**

**Geoffrey Bailleul, Rodrigo Guabiraba, Isabelle Lantier, Agnès Wiedemann, Jérôme Trotureau, Isabelle Payant, Angéline Trotureau, Catherine Schouler and Anne-Christine Lalmanach**

Assessment of avian beta-defensin 7 interactions with immune cells in vivo and in vitro.

**Poster D26**

**Jimmy Mevaere, Andrea Diaz, Christophe Goulard, Jean-Baptiste Rioux, Sylvie Rebuffat, Séverine Zirah and Yanyan Li**

Insight into the ecological role of svuceucin, a lasso peptide from *Streptomyces svuceus*

**Poster D27**

**Kenji Sonomoto, Kohei Nagatoshi, Emi Sumida, Takeshi Zendo, Miki Kawada-Matsuo and Hitoshi Komatsuzawa**

Oral care application of a safe edible antimicrobial peptide produced by lactic acid bacteria



#### Poster D28

**Norma Margarita De La Fuente-Salcido, Miguel Angel Díaz León, Celso Manuel Valencia Castro, Fernando Hernández Terán, Ma Del Socorro Linaje Treviño, Ruben Salcedo Hernández and José Eleazar Barboza Corona**

Synergism of binary systems of bacteriocins from *Bacillus thuringiensis* and Nisin as new strategy to control bacterial antibiotic resistance

#### Poster D29

**Ahmed K. Al Atya, Yanath Belguesmia, Florie Desriac, Gabrielle Chataigne, Rozenn Ravallec, Anne Vachée, Sabine Szunerits, Rabah Boukherroub and Djamel Drider**

Anti-MRSA activities of Enterocins DD28 and DD93 and evidences on their role in the inhibition of biofilm formation

#### Poster D30

**Vanesa Nahirñak, Martin Gonzalez de Urreta, Pilar Barrios Barón, Maximo Rivarola, Norma Paniago, Esteban Hopp, Natalia Almasia and Cecilia Vazquez-Rovere**

Analysis of the biological role of potato Snakin/GASA peptides

#### Poster D31

**Alaa Al-Seraih, Yanath Belguesmia, Florie Desriac and Djamel Drider**

Enterocin B3 from infant origin helps nisin to control growth of the foodborne pathogen *Listeria monocytogenes*

#### Poster D32

**Delphine Caly, Mickael Chevalier, Florie Desriac, Christophe Flahaut, Benoit Cudennec, Ahmed K. Al Atya, Romain D'Inca, Eric Auclair and Djamel Drider**

Characterisation of DD14, an enterocin produced by *Enterococcus faecalis* with anti-*Clostridium perfringens* activity

#### Poster D33

**Wen-Chi Cheng, Yi-Ru Chang, Yu-Shan Wei, Ming-Sun Liu and Hong-Lin Chan**

Efficacy evaluation of mouthwash containing P-113 antimicrobial peptide for protecting against periodontal disease by molecular diagnosing: a clinical setting trial

#### Poster D34

**David Francisco Lafuente-Rincón, Deyanira Quistián Martínez, Alberto Valadez Lira, José Eleazar Barboza-Corona and Norma Margarita De La Fuente-Salcido**

Identification of phytopathogenic fungi in strawberry through the universal barcodes (ITS, TEF-1 $\alpha$ ) region and their biocontrol with bacteriocins from Mexican *Bacillus thuringiensis*

#### Poster D35

**Didier Cheng, Claire Lacombe and Sandrine Sagan**

Comparative studies between Antimicrobial Peptides and Cell-Penetrating Peptides

#### Poster D36

**Lucinda Furci, Massimiliano Secchi, Rossella Baldan, Cristina Ossi, Paola Cichero and Daniela Maria Cirillo**

Exploiting an endogenous antimicrobial peptide to fight *Clostridium difficile* infection