



**5<sup>th</sup> INTERNATIONAL  
CONFERENCE OF THE  
EUROPEAN COLLEGE OF  
VETERINARY  
MICROBIOLOGY**

**21-23 September 2023,  
Bled, Slovenia, Rikli Hotel  
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**ABSTRACT BOOK**

EVENT ORGANIZERS



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## ORGANIZING COMMITTEE

### *Matjaž Ocepek (Chair)*

Matjaz Ocepek is a Senior Research Fellow and the Head of the National Veterinary Institute at the Veterinary Faculty. He is engaged in development and implementation of the methods for diagnostics of zoonoses. He is also a Leader of several scientific projects and a Principal Investigator of one of the main research groups at the Veterinary Faculty. He has published more than 100 original scientific papers. He is a Member of the European Society of Mycobacteriology, International Association for Paratuberculosis, International Society for Infectious Diseases and Slovenian Microbiological Society (past-President) and a Board Member of the European College of Veterinary Microbiology. Sr. Res. Fell. Matjaz Ocepek is the Head of the National Veterinary Institute. He is engaged in development and implementation of the methods for diagnostics of zoonoses. He is also a Leader of several scientific projects and one of the main research groups at the Veterinary Faculty.

### *Jana Avberšek*

Dr. Jana Avberšek is a research associate at the Institute of Microbiology and Parasitology at the Veterinary Faculty, University of Ljubljana, and head of the Laboratory for Molecular Bacteriology at the same institute. Her main research interests include molecular methods for detection of various bacterial animal and zoonotic pathogens, genotyping of bacteria by whole-genome sequencing (e.g. *Salmonella* sp., STEC, *Clostridioides difficile*, *Staphylococcus pseudintermedius*) and genetic background of antimicrobial resistance.

### *Filip Boyen*

DVM, PhD, Diplm. ECPHM (non-certified), EBVS® European Specialist in Veterinary Microbiology. Filip Boyen obtained his DVM and PhD at the Faculty of Veterinary Medicine, Ghent University, Belgium. His research addresses different bacterial diseases in various animals species, with a recent focus on the use of MALDI-TOF in diagnostics.

### *Darja Kušar*

Research fellow, BSc Biology, PhD Microbiology, Darja Kušar holds a PhD in microbiology and is a researcher at the Institute of Microbiology and Parasitology, Veterinary Faculty, University of Ljubljana. She works in the Laboratory for Molecular Bacteriology. She is experienced in molecular diagnostics and typing of bacterial pathogens, including dPCR and NGS.

### *Rachel Marschang*

PD Dr. med. vet. Diplomate, European College of Veterinary Microbiology and of the European College of Zoological Medicine in herpetological medicine. Consultant at Laboklin in Bad Kissingen, Germany. Adjunct professor at the University of Hohenheim in Stuttgart. Editor-in-chief of the Journal of Herpetological Medicine and Surgery.

### *Tina Pirš*

Dr. Tina Pirš, DVM, is a specialist at National Veterinary Institute, Veterinary Faculty, University of Ljubljana. She is the head of Institute of Microbiology and Parasitology and quality assurance manager. Her main interest is general bacteriological diagnostics in various animals species and she participates in several scientific projects.

### *Damien Thiry*

Professor, DVM, PhD, Dipl ECVM Damien Thiry is Professor of Veterinary Bacteriology at Liège University, Belgium. He obtained a PhD thesis on the interactions between suids and hepatitis E virus in the Virology unit of the FARAH Research Center (Faculty of Veterinary Medicine, ULiège) in collaboration with the Scientific Institute of Public Health in Brussels (Sciensano). Simultaneously, he performed a master degree in Veterinary Public Health - Emerging Diseases. He is working since 2014 in the Bacteriology team of the veterinary faculty. He performed two post-doctoral research stays: one in Pasteur Institute (Paris) and a second one at KULeuven where he developed a *Galleria mellonella* model of phage therapy against *Klebsiella pneumoniae*. His main research topics are the study of antimicrobial resistance, especially in *Staphylococcus aureus* and Enterobacteriaceae and the study of bacteriophages as potential treatment against bacterial infections.

### *Urška Zajc*

Urška Zajc is a veterinarian and works in the field of veterinary microbiology at the Institute of Microbiology and Parasitology, Veterinary Faculty, University of Ljubljana. She conducts the diagnostics in the Laboratory for especially dangerous bacterial diseases (BSL III). She is experienced in conventional and molecular diagnostics of bacterial pathogens.

## SCIENTIFIC COMMITTEE

### *Prof. Bryan Markey (Chair)*

Professor Bryan Markey MVB, PhD, Dipl. ECVM, MRCVS. Bryan Markey is Professor of Veterinary Microbiology at the Dublin School of Veterinary Medicine in Ireland, where he heads up the Section of Veterinary Pathobiology. He is a founding member and de facto diplomate of the European College of Veterinary Microbiology, currently serving as President of ECVM. His research interests include enzootic abortion of ewes, Johne's disease and MRSA infections in small animals. He has co-authored a number of international books on veterinary microbiology, including Clinical Veterinary Microbiology and Veterinary Microbiology and Microbial Disease.

### *Nicola Decaro*

DVM, PhD, Full Professor of Infectious Diseases of Animals, EBVS® European Specialist in Veterinary Microbiology, Member of European College of Veterinary Microbiology

### *Matjaž Očepek (Chair)*

Matjaz Očepek is a Senior Research Fellow and the Head of the National Veterinary Institute at the Veterinary Faculty. He is engaged in development and implementation of the methods for diagnostics of zoonoses. He is also a Leader of several scientific projects and a Principal Investigator of one of the main research groups at the Veterinary Faculty. He has published more than 100 original scientific papers. He is a Member of the European Society of Mycobacteriology, International Association for Paratuberculosis, International Society for Infectious Diseases and Slovenian Microbiological Society (past-President) and a Board Member of the European College of Veterinary Microbiology. Sr. Res. Fell. Matjaz Očepek is the Head of the National Veterinary Institute. He is engaged in development and implementation of the methods for diagnostics of zoonoses. He is also a Leader of several scientific projects and one of the main research groups at the Veterinary Faculty.

### *Irena Zdovc*

Professor of Veterinary Microbiology at the Veterinary Faculty, University of Ljubljana. She is employed at the Institute of Microbiology and Parasitology where she works as a clinical bacteriologist. Her research interests include methods for isolation of various fungal and bacterial pathogens with an emphasis on the research of multidrug-resistant bacteria (especially MRSA, MRSP and ESBL). At the National veterinary institut she heads up Section on Bacterial Animal Diseases and she is responsible for two National reference laboratories, NRL for *Listeria monocytogenes* and NRL for antimicrobial resistance.

### *Urška Kuhar*

Dr. Urška Kuhar is a Research Fellow with a DVM diploma and a PhD in veterinary medicine at the Institute of Microbiology and Parasitology, Veterinary Faculty, University of Ljubljana. She is the head of the Virology Department, head of the National Reference Laboratory for Capripoxviruses and head of the working group of NRLs at the National Veterinary Institute. She is an expert in laboratory diagnostics of viral diseases in animals and works with cell culture techniques, serology, and molecular virological techniques, with a focus on next-generation sequencing and bioinformatics analysis.

### *Patrícia Alexandra Curado Quintas Dinis Poeta*

Full Professor | Senior Researcher at Veterinary and Animal Research Centre, Associate Laboratory for Animal and Veterinary Science (AL4AnimalS) | Collaborator at LAQV-REQUIMTE, EBVS® European Specialist in Veterinary Microbiology. Head of MicroART- Microbiology and Antibiotic Resistance Team Head of Medical Microbiology Laboratory, President of the Scientific Committee, School of Agrarian and Veterinary Sciences, Veterinary Science Department

## KEYNOTE SPEAKER

### **Anette Loeffler**

Graduated from Munich, Germany, veterinary school in 1994 and subsequently worked in mixed practice in Cumbria. She completed a residency in veterinary dermatology and a PhD on MRSA in companion animals at the Royal Veterinary College. She is Professor in Veterinary Dermatology and Cutaneous Bacteriology at the RVC and divides her time between dermatology referral clinics at the RVC, teaching and research. She has an active role in the referral hospital infection control and antimicrobial guideline activities, co-authored the recent WAVD clinical consensus guidelines on methicillin-resistant staphylococci in small animal practice and is currently Editor-in-Chief of Veterinary Dermatology.



### **THE IMPORTANCE OF STAPHYLOCOCCI AND THE 'VETERINARY BURDEN OF MRSP'**

**Anette Loeffler**

*Royal Veterinary College, University of London, UK*

Staphylococci have long been amongst the best known and most troublesome bacterial pathogens in human and veterinary medicine, particularly due to their ability to become multidrug-resistant and adhere to implants. Three recently published systematic analyses show the burden of antimicrobial resistance (AMR) in bacterial pathogens. They identified *S. aureus* as one of the three leading bacterial pathogens for human deaths attributable to and associated with drug resistance globally, and in the WHO European region during 2019 and *S. aureus* was also found to be the leading bacterial cause of death in 135 countries and globally in individuals over 15 years of age also during 2019 (Global Burden of Disease 2019, Antimicrobial Resistance Collaborators).

Although such data are not currently available for veterinary medicine, staphylococcal infections in animals are consistently amongst the most common bacterial infectious diseases in companion animal and livestock medicine and thus lead to considerable morbidity and antimicrobial prescribing. Multidrug-resistance as e.g. in *S. pseudintermedius* (MRSP) and biofilm formation amongst the coagulase-negative staphylococci in intensive veterinary care settings have become problematic and mirror many of the medical challenges in human medicine. Molecular techniques have provided new insights into the niche adaptations of staphylococci, resistance genes and virulence factors, but management of staphylococcal diseases remains difficult.

The success of MRSP in small animal settings is largely based on the ubiquity and survival capacity of staphylococci on body surfaces and in the environment and its ability to cause opportunistic infections. And while most staphylococcal infections, including MRSP infections, are not life-threatening to the host, many are associated with chronic underlying diseases and therefore require repeated or ongoing treatment. For skin, ear and eye infections, advances on treatment recommendations in recent years have focused largely on topical therapy and with good success. However, for deeper infections that require systemic therapy, treatment options are often substantially limited due to extensive AMR. Antimicrobials associated with higher toxicity and with ethical concerns regarding their use in animals (rifampicin, amikacin, chloramphenicol).

Significant knowledge gaps remain for drug dosages and laboratory breakpoints. And further insights into host-factors of staphylococcal infections and into the potential of harvesting competitive bacterial flora for disease management are needed. However, positive developments of a reduction in MRSP from dogs following prescribing changes have been seen, supporting the value of collaboration between clinicians, microbiologists and other stakeholders in limiting the threat from multidrug-resistant staphylococci while protecting them as valuable surface colonisers.

# POSTER PSD

SATURDAY, SEPTEMBER 23rd 2023

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Canine parvovirus type 2 (CPV-2) is the causative agent of an acute and often fatal viral disease of domestic dogs and wild carnivores. The original CPV-2 type, to date no longer circulating but still present in some vaccines, has been replaced by three antigenic variants, namely CPV-2a, CPV-2b, and CPV-2c. Limited epidemiological data are available for Sicily, southern Italy. To fill this gap, a molecular epidemiological retrospective study was performed, testing for CPV-2 samples collected from domestic dogs in Sicily between 2019 and 2022. Samples from 346 dogs with suspected infectious gastrointestinal disease were tested by PCR for CPV-2 and other enteric viral pathogens. Near complete VP2 sequences were obtained from CPV-2 positive samples by Sanger sequencing. Sequence and phylogenetic analyses were then performed. CPV-2 was detected in 230 (66%) dogs, as a single viral agent (82%) or in co-infection with other viruses (18%). The original CPV-2 type (4%), CPV-2a (9%), CPV-2b (18%), and CPV-2c (69%) were detected. Since 2019, the relative proportion of CPV-2a/CPV-2b variants decreased, while CPV-2c showed a proportional increase in the last two years; the complete replacement of CPV-2 old strains by the Asian CPV-2c genetic mutant was observed, highlighting a possible higher fitness of this clade. Phylogenetic analyses showed the co-circulation of CPV-2 variants and viral transmission across different regions. The diffusion and transmission dynamics observed in an insular Mediterranean area of southern Italy demonstrate the rapidly evolving epidemiological scenario of CPV-2 and show the importance of molecular surveillance to monitor viral spread.

### PSD10 EMERGING VIRUSES IN DOGS ILLEGALLY IMPORTED TO ITALY

**WITHDRAWN**

### PSD11 DETECTION OF PANTROPIC CANINE CORONAVIRUS IN AUTOCHTHONOUS ITALIAN ADULT DOGS

**WITHDRAWN**

### PSD12 SEROEPIDEMIOLOGICAL STUDY OF HEPATITIS E VIRUS (HEV) INFECTION IN LARGE GAME ANIMALS IN THE CENTRE OF PORTUGAL

**Pires H.<sup>1</sup>, Matos M.<sup>2</sup>, Cardoso L.<sup>3</sup>, Lopes A.P.<sup>3</sup>, Fontes M.C.<sup>3</sup>, Pintado C.<sup>1,4,5</sup>, Figueira L.<sup>6</sup>, Matos A.C.<sup>1,4,5</sup>, Mesquita J.R.<sup>4,7,8</sup>, Coelho A.C.<sup>9</sup>**

<sup>1</sup>*Polytechnic Institute of Castelo Branco (IPCB), Castelo Branco, Portugal*

<sup>2</sup>*Centre for the Research and Technology of Agro-Environmental and Biological Sciences (CITAB), University of Trás-os-Montes e Alto Douro (UTAD), Vila Real, Portugal*

<sup>3</sup>*Animal and Veterinary Research Centre (CECAV), UTAD, Vila Real, Portugal; Associate Laboratory for Animal and Veterinary Sciences (AL4Animals), Portugal*

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<sup>5</sup>*Researcher at Q-RURAL - Quality of Life in the Rural World, IPCB, Castelo Branco, Portugal*

<sup>6</sup>*ICBAS—School of Medicine and Biomedical Sciences, Porto University, Porto, Portugal*

<sup>7</sup>*Epidemiology Research Unit (EPIUnit), Instituto de Saúde Pública da Universidade do Porto, Porto, Portugal*

<sup>8</sup>*Laboratório para a Investigação Integrativa e Translacional em Saúde Populacional (ITR), Porto, Portugal*

To better understand the epidemiology of the Hepatitis E virus (HEV) infection in large game animals of Central Portugal, a cross-sectional study was conducted from 2016 to 2023 in red deer and wild boar. The seroprevalence and risk factors for HEV seropositivity were evaluated. Antibodies against HEV were determined by a commercial ELISA. Risk factors associated with seropositivity to HEV were investigated by comparing the proportion between two risk groups using the Chi-square statistical test. In sera tested from 650 game animals (298 wild red deer and 352 wild boar), 9.1% red deer (95% CI: 6.3-12.9%) and 1.7% wild boar (95% CI: 0.6-3.3%) were positive. Regarding age, the seropositivity in juveniles was 1.3% (95% CI: 0.27-3.72), and in adults was 7.2% (95% CI: 4.9-10.11%). The odds of being seropositive was 5.3 higher in red deer than in wild boar (95% CI: 2.2-12.7%) ( $p < 0.000$ ) and the risk was 5.9 higher in adults than in juveniles (95% CI: 1.72-18.11) ( $p = 0.001$ ). Both wild ungulates were exposed to HEV. The higher seroprevalence in red deer suggests that this species may have a major contribution to the ecology of HEV in the Centre of Portugal.

### PSD13 MORE THAN A THOUSAND CATTLE HERDS HAVE ALREADY STARTED THE VOLUNTARY PROGRAM FOR OBTAINING THE BOVINE VIRAL DIARRHEA VIRUS (BYDV) FREE STATUS IN SLOVENIA IN 2023

**Toplak L.<sup>1</sup>, Hostnik P.<sup>1</sup>, Černe D.<sup>1</sup>, Starč J.<sup>2</sup>, Hrovatn B.<sup>3</sup>, Maurer-Wernig J.<sup>1</sup>**

<sup>1</sup>*Institute for Microbiology and Parasitology, Virology Unit, Veterinary Faculty, University of Ljubljana, Slovenia*

<sup>2</sup>*Clinic for Reproduction and Large Animals-Clinic for reproduction, Veterinary Faculty, University of Ljubljana, Slovenia*

<sup>3</sup>*Administration of the Republic of Slovenia for food safety, veterinary and plant protection, Slovenia*