



# International Symposium on Tick-Borne Pathogens and Disease

**ITPD 2019 Vienna, Austria  
8 to 11 September 2019**

Under the auspices of the Austrian Society for Hygiene,  
Microbiology and Preventive Medicine (ÖGHMP)

## Organisers

ÖGHMP and ESGBOR

## Venue

Parkhotel Schönbrunn, Vienna, Austria

# Programme



**ÖGHMP**  
Österreichische Gesellschaft  
für Hygiene, Mikrobiologie und  
Präventivmedizin

## ÖGHMP

Austrian Society for Hygiene, Microbiology and  
Preventive Medicine

and



**ESCMID**

## ESGBOR

ESCMID Study Group for Lyme Borreliosis

and



**INSTAND**

## Instand e.V.

Society for promoting  
Quality Assurance in Medical Laboratories e.V.



## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

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## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

### Welcome

It will be a great pleasure to welcome you to the International Symposium on Tick-Borne Pathogens and Disease in Vienna September 8-11, 2019 (ITPD 2019).

The programme will cover a broad spectrum of topics that include ticks, tick-borne pathogens, ecology, epidemiology, immunology, pathogenesis, and laboratory and clinical aspects of the diseases, together with their prevention and therapy. Abstracts have been submitted by researchers and scientists in 29 countries, ranging from Australia via Asia and Europe to North and South America.

Delegates will be offered presentations during plenary and poster sessions. The latter presentations are particularly meant for extensive exchange of knowledge and discussion among the respective research groups.

Your scientific contributions are sure to make this symposium a successful convention of the tick-borne diseases research community. We look forward to experiencing a scientifically rewarding, enjoyable, and personally enriching symposium.

In addition to attending the scientific sessions, we hope that you will also find time to experience the famous atmosphere and cultural flair of Vienna.

On behalf of the Austrian Society for Hygiene, Microbiology and Preventive Medicine as the assisting society, the ESGBOR (ESCMID Study Group on Lyme borreliosis), and on behalf of the organisers we thank all attendees for joining us, and we wish you a very enjoyable and productive stay in Vienna.

Gerold Stanek



## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

### Symposium Committees

#### Organisers

Gerold Stanek, Mateusz Markowicz, Verena Mündler, Michael Reiter,  
Anna-Margarita Schötta, Michiel Wijnveld, Birgit Willinger

#### Scientific Committee

Nathalie Boulanger (FR), Heinz Burgmann (AT), Ram Dessau (DK), Randi Eikeland (NO),  
Volker Fingerle (DE), Joppe Hovius (NL), Klaus-Peter Hunfeld (DE), Benoit Jaulhac (FR),  
Olaf Kahl (DE), Maria Kazimirova (SK), Wolfgang Kristoferitsch (AT),  
Michael Leschnik (AT), Reto Lienhard (CH), Per-Eric Lindgren (SE), Sally Mavin (GB),  
Robert Müllegger (AT), Katharina Ornstein (SE), Tobias Rupprecht (DE),  
Gerold Stanek (AT), Franc Strle (SI), Klemen Strle (USA), Gary P Wormser (USA),  
Alje van Dam (NL)

#### Symposium Secretariat & Registration

##### AZ Med.Info

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#### Exhibition & Sponsorship



MAW Exhibition Management  
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## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

### Venue

#### Austria Trend

#### Parkhotel Schönbrunn

Hietzinger Hauptstrasse 10-14, 1130 Vienna

The hotel is located directly next to Schloss Schönbrunn within the elegant residential area of Hietzing. Directly opposite the hotel, the “Hietzinger Tor” leads into the Schloss Schönbrunn palace gardens, with its wide range of sights and attractions such as the Palm House, the Gloriette monument, the historical fountain and the Vienna zoo, the oldest zoo in the world.

A parking garage (fee per day € 26.50) is available at the hotel.

#### Arrival by public transportation

Underground station U4-Hietzing.

The hotel is in close vicinity to Vienna Metro line U4 which connects directly with Station Landstrasse (Wien Mitte/The Mall) where the trains from the airport arrive.





## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

### Registration (on site) / General Information

The symposium registration area is located on the ground floor of the hotel next to the exhibition area. On arrival all delegates, accompanying persons and exhibitors must register for the Symposium.

#### Registration Fees (in EURO)

Regular fee	€ 460.–
MD in training*	€ 360.–
Student*	€ 260.–
Symposium dinner	€ 40.–
Accompanying person**	€ 110.–

\*Please submit proof of training/student status

\*\*includes Reception, Symposium Dinner, Coffee Breaks & Access to Exhibition

#### Payment

Please note that all onsite payments should be made in cash or by credit card (Visa, MasterCard, Amex and Maestro will be accepted). EURO (€) only.

Unfortunately, we cannot accept traveller's cheques, other credit cards, Euro cheques or other currencies.

#### Opening hours – Registration

Sunday, 8 September	12.00 – 18.00
Monday, 9 September	08.00 – 17.30
Tuesday, 10 September	08.00 – 18.00
Wednesday, 11 September	08.00 – 12.00

#### Abstract Book

All delegates will receive an abstract book with their symposium bags as part of the registration fee.

#### Evening Event

Tuesday, 10 September 2019 at 19.00

#### Liability

The symposium organisers cannot accept responsibility for personal accidents and damage to the private property of the symposium and exhibition participants or accompanying persons.

#### Smoking

Symposium participants are requested not to smoke within the venue.



## International Symposium on Tick-Borne Pathogens and Disease ITPD 2019 Vienna, Austria, 8 to 11 September 2019

### Presentations / Posters

#### Presentations

Presentations will be given in the 'Ballsaal' (lecture room) of the hotel.

#### Language

The official language of the symposium is English.

#### Speakers Information

Only PowerPoint presentations – format 4:3 – are accepted.

Speakers should deliver their PowerPoint presentations (USB stick) in the lecture room

#### Poster Presentations

Posters will be on display in room 'Österreich-Ungarn'.

They should be mounted on Monday morning, 9 September 2019, in the numbered spaces indicated in the programme.

Posters may be displayed until 17:30 Tuesday, 10 September 2019.

#### Poster size

Maximum 130 cm height x 90 cm width (portrait DIN A0 format)

#### Poster discussions

During the poster presentation you will be invited by the chairperson(s) to briefly present your work at the poster for 3-5 minutes, and then answer questions (a further 5 minutes).

The date and time of the relevant presentation will be shown with the poster number and is also in the programme.

The posters will be presented in the order in which they are printed in the programme.



**International Symposium on Tick-Borne Pathogens and Disease  
ITPD 2019 Vienna, Austria, 8 to 11 September 2019**

**Sunday, 8 September 2019**

15.30	<b>Welcome and Opening</b>	
	<b>TICKS AND RESERVOIRS</b>	
	Chair: Olaf Kahl, Germany	
16.00	<b>Ticks in Germany - results of flagging studies</b>	A1
	Olaf Kahl, Germany	
16.20	<b>Increase of tick density over a 15-year period on Chaumont Mountain in Switzerland</b>	A2
	Cindy Bregnard, Switzerland	
16.35	<b>Migratory birds, their ticks and pathogens – a new challenge?</b>	A3
	Georg Duscher, Austria	
16.50	<b>Environmental and behavioural impacts on tick infestation of a Borrelia-amplifying, avian host</b>	A4
	Robert E. Rollins, Germany	
17.05	<b>What is the significance of Candidatus Borrelia kalaharica in the cause of febrile illness in Nigeria?</b>	A5
	Sally Cutler, United Kingdom	
17.30	<b>FOYER RECEPTION</b>	





Monday, 9 September 2019

## EPIDEMIOLOGY OF TICK-BORNE DISEASES

Chair: Per-Eric Lindgren, Sweden

- 08.30 **A one-health perspective on ticks and tick-borne pathogens – experiences on transmission dynamics and epidemiology from Scandinavia**  
Per-Eric Lindgren, Sweden
- 09.00 **Bacterial tick-borne infections in Austria – outcome of tick bites analysed in a prospective study** A6  
Mateusz A. Markowicz, Austria
- 09.15 **Remote sensing of innate killers** A7  
Alexander Platonov, Russia
- 09.30 **The presence of human tick-borne diseases in South America**  
Adriano Pinter, Brazil
- 10.00 **Human babesiosis: molecular characterization of a new etiological agent in the “Babesia divergens species complex”** A8  
Laurence Malandrin, France

10.15 BREAK

## TICK RESEARCH

Chair: Pierre Eduard Fournier, France

- 10.45 **Ticks are rich sources of anti-haemostatics** A9  
Maria Kazimirova, Slovakia
- 11.15 **Artificial feeding of ticks** A10  
Michiel Wijnveld, Austria
- 11.30 **Transmission of Rickettsia raoultii and Rickettsia massiliae DNA by Dermacentor reticulatus and Rhipicephalus sanguineus sensu lato ticks during artificial feeding** A11  
Emanuela Olivieri, Italy
- 11.45 **Tick attachment cement as biomimetic template for a potential tissue glue** A12  
Sylvia Nürnberger, Austria

12.00 LUNCH BREAK



## CLINICAL ASPECTS OF LYME BORRELIOSIS 1

Chair: Wolfgang Kristoferitsch, Austria

- P1 **Clinical manifestations of early European Lyme neuroborreliosis**  
Katarina Ogrinc, Slovenia
- P2 **Lyme neuroborreliosis in children**  
Mojca Rožič, Slovenia
- P3 **Acute facial nerve palsy in children in a Lyme borreliosis-endemic area in the Netherlands**  
Reitze A. Bruinsma, Netherlands
- P4 **A case of cervical myelitis as uncommon manifestation of neuroborreliosis in half-year monitoring**  
Barbara Oczko-Grzesik, Poland
- P5 **Neuroborreliosis: retrospective analysis of hospitalised patients**  
Alena Koščalova, Slovakia
- P6 **Does treatment with corticosteroids influence the outcome of peripheral facial palsy in patients with confirmed Lyme borreliosis?**  
Tereza Rojko, Slovenia
- P7 **A severe case of Lyme neuroborreliosis presenting with myelitis and complete tetraplegia**  
Sigurdur Skarphedinsson, Denmark
- P8 **Can infection with *Borrelia burgdorferi* lead to neuronal loss or dysfunction in the brain?**  
Adam Garkowski, Poland
- P9 **Perceptions, representations and experiences of patients presenting nonspecific symptoms in a context of suspicion of Lyme borreliosis**  
Alice Raffetin, France
- P10 **Lyme borreliosis or not Lyme borreliosis ? A multidisciplinary approach achieves an accurate diagnosis and improves patient-centred medical support**  
Alice Raffetin, France



### TICK-BORNE ENCEPHALITIS

Chairs: Joanna Zajkowska, Poland  
Petra Bogovič, Slovenia

- P11 **Human tick-borne encephalitis and correlation with rodents and big game in Croatia in the period from 2006 to 2017**  
Oktavija Đaković Rode, Croatia
- P12 **The molecular-epidemiological characteristic of tick-borne encephalitis natural foci and other tick-borne infections in the Baikal region of Russia**  
Dmitriy O. Kiselev, Russia, presentation by Irina V. Kozlova
- P13 **Cytokine response in vaccine breakthrough patients with tick-borne encephalitis**  
Miša Pavletič, Slovenia
- P14 **Active surveillance for the incidence of tick-borne encephalitis in Poland on non-endemic areas**  
Joanna Zajkowska, Poland
- P15 **Factors associated with levels of IgG antibodies to tick-borne encephalitis virus during early meningo-encephalitic phase of tick-borne encephalitis**  
Petra Bogovič, Slovenia
- P16 **First human case of tick-borne encephalitis on the Island of Funen, Denmark**  
Nanna Skaarup Andersen, Denmark
- P17 **Significance and value of laboratory data in tick-borne encephalitis virus infection: a north-eastern Italy experience**  
Nicole Barp, Italy
- P18 **Ticks and tick-borne pathogens: emerging health threats on the Italian side of the Western Alps**  
Aitor Garcia-Vozmediano, Italy
- P19 **Diversity and prevalence of tick-borne pathogens in engorged Ixodes ricinus ticks collected from humans in Romania**  
Zsuzsa Kalmár, Romania
- P20 **Ixodes-borne pathogens in the Akfadou forest in Algeria**  
Pierre H. Boyer, France



## LABORATORY TESTING IN TICK-BORNE DISEASES

Chairs: Mateusz Markowicz, Austria  
Eva Ružič-Sabljić, Slovenia

- P21 **Diagnostic of Lyme borreliosis: comparison of serological assays in twelve clinical laboratories in northern Europe**  
Malin Lager, Sweden
- P22 **Performance of LightMix® Modular Borrelia spp. on samples from official proficiency panels**  
Tjaša Cerar Kišek, Slovenia
- P23 **Development of a novel easy to use protein microarray for Borrelia diagnostics**  
Ingrid Albrecht-Walz, Germany
- P24 **Point-of-care detection of recent Borrelia infections using Sofia Lyme+ as Tier-1 assay**  
Marlies van Lent, Netherlands
- P25 **Sensitivity and specificity of a novel tier 1 Lyme assay in Europe**  
Anja Garritsen, Netherlands
- P26 **Victory: validation of cellular tests for Lyme borreliosis**  
Freek R. van de Schoor, Netherlands
- P27 **The utility of Borrelia-specific T cells as diagnostic biomarkers of Lyme disease**  
Amir Ameri, Denmark
- P28 **A droplet digital PCR assay for direct detection of Borrelia bacteria DNA in cerebrospinal fluid specimens**  
Trine Andreasen, Denmark
- P29 **New application of dried blood spot to the diagnosis of relapsing fevers**  
Nathalie Boulanger, France
- P30 **Unconventional diagnostic tests for Lyme borreliosis: a systematic review**  
Antoine Grillon, France



## IMMUNOLOGICAL ASPECTS

Chairs: Peter Kraiczy, Germany  
Michael Reiter, Austria

- P31 **Inflammatory responses in *Borrelia afzelii* culture positive patients with early disseminated or early localized Lyme borreliosis**  
Daša Stupica, Slovenia
- P32 **Neutrophil extracellular traps (NETs) in the cerebrospinal fluid of children and adults with Lyme neuroborreliosis**  
Johanna Sjöwall, Sweden
- P33 **Cytokine responses in immunocompetent versus immunosuppressed neoehrlichiosis patients**  
Linda Wass, Sweden
- P34 **Toll-like receptors: deciphering their role toward *Borrelia* species**  
Verena Mündler, Austria
- P35 **Determination of the complement-inhibitory activity of different outer surface proteins of *Borrelia recurrentis***  
Florian Röttgerding, Germany
- P36 **Epidemiological, clinical and laboratory characteristics of Slovenian patients with proven human granulocytic anaplasmosis**  
Stanka Lotrič-Furlan, Slovenia
- P37 **Serodiagnosis of Lyme borreliosis – is IgM in serum more harmful than helpful?**  
Henrik Hillerdal, Sweden
- P38 **Alpha-gal allergy after a tick bite: A case report from Austria**  
Franz Allerberger, Austria
- P39 **Finger-Stick Whole Blood Tier 1 Lyme Assay: Method Comparison in a CLIA Setting**  
Ashlee King, USA, presentation by Juergen Becker, Germany



## TICKS AND MICROBES 1

Chairs: Gábor Földvári, Hungary  
Michiel Wijnveld, Austria

- P40 **Population structure of *Borrelia turcica* from Greece and Turkey**  
Sabrina Hepner, Germany
- P41 **First detection of *Amblyomma variegatum* and molecular finding of *Rickettsia africae* in Sardinia, Italy**  
Elisabetta Pintore, Italy
- P42 **Could a bacterial symbiont be a potential serological marker for the tick bite? The case of *Midichloria mitochondrii* in *Ixodes ricinus***  
Alessandra Cafiso, Italy
- P43 **Urbanization of ticks: underestimated risk of getting a tick-borne disease in popular recreational areas in Tallinn, Estonia.**  
Julia Geller, Estonia
- P44 **Electrophoretic identification of allozyme variability of tick populations *Ixodes persulcatus* in suburban anthropogenic zones of the city of Irkutsk**  
Irina V. Kozlova, Russia
- P45 **Prevalence of pathogens in ticks collected from humans in Belgium**  
Tinne Lernout, Belgium
- P46 **Detection and characterisation of *Borrelia* and other pathogens found in ticks**  
Daniel Carter, United Kingdom
- P47 **Detection of pathogens in UK ticks using molecular inversion probes**  
Mia White, United Kingdom
- P48 **First case of imported *Borrelia miyamotoi* infection in Austria**  
Selma Tobudic, Austria
- P49 **Tick-borne pathogens detected in blood of immunosuppressed Norwegian patients living in an endemic area**  
Hanne Quarsten, Norway



Monday, 9 September 2019

## ASPECTS OF TICK-BORNE DISEASES

Chair: Benoit Jaulhac, France

- 15.15 **Adaptive immune responses in Lyme borreliosis - relation to pathogenesis and clinical disease course**  
Anna J. Henningsson, Sweden
- 15.45 **Association of statin use and microbiological and clinical characteristics of early Lyme borreliosis** A13  
Daša Stupica, Slovenia
- 16.00 **Candidatus Neoehrlichia mikurensis in febrile patients and ticks in the Alsace region of France** A14  
Pierre H. Boyer, France
- 16.15 BREAK
- 16.30 **Immune-mediated versus infective polyarthritits in dogs – do tick-borne pathogens play a role?** A15  
Katalina Staufer, Austria
- 16.45 **Informing or scaring: predictors of tick bite anxiety and avoidance of green spaces** A16  
Cees C. van den Wijngaard, Netherlands
- 17.00 **From zero to 100: practical aspects in the management of dermatoborreliaes**  
Robert R. Müllegger, Austria
- 17.15 **Borrelia miyamotoi meningitis in one immunocompetent and one immunocompromised individual – report of two cases diagnosed in Sweden** A17  
Anna J. Henningsson, Sweden
- 17.30 GET TOGETHER



Tuesday, 10 September 2019

## RESEARCH ON ARTHROPOD-BORNE PATHOGENS

Chair: Maarten J. Voordouw, Canada

- 08.30 **Structural dynamics of tick-borne encephalitis virus and its biological implications**  
Karin Stiasny, Austria
- 09.00 **Experimental infection with the Lyme disease pathogen in the rodent host dramatically changes the microbial community in blood-feeding ticks** A18  
Maarten J. Voordouw, Canada
- 09.15 **The search for Borrelia and other tick-borne pathogens down under** A19  
Charlotte Oskam, Australia
- 09.30 **Tick eggs as a source for the whole genome sequencing of transovarially transmitted Borrelia miyamotoi** A20  
Markéta Nováková, Czech Republic
- 09.45 **Molecular analysis of variability among Borrelia miyamotoi strains from the Czech Republic** A21  
Jan Janeček, Czech Republic
- 10.00 **Spirochaetal bacteria isolated from mosquitoes constitute a novel genus Entomospira genus novum within the order Spirochaetales** A22  
Gabriele Margos, Germany
- 10.15 BREAK





Tuesday, 10 September 2019

## **PATHOGENESIS AND IMMUNOLOGY**

Chair: Hannes Stockinger, Austria

- 10.45      **Microbial genetic variation in Lyme disease pathogenesis**  
Klemen Strle, United States of America
- 11.15      **Borrelia-induced inhibition of antigen presentation**      A23  
Michelle A. E. Brouwer, France
- 11.30      **Profiling the early interaction between human dendritic cells and the causative agent of Lyme disease *Borrelia burgdorferi***      A24  
Maria G. Gutierrez-Hoffmann, United States of America
- 11.45      ***Borrelia mayonii* resists complement-mediated killing by inhibiting activation of the alternative and terminal pathway**      A25  
Peter Kraiczy, Germany
- 12.00      LUNCH BREAK



## CLINICAL ASPECTS OF LYME BORRELIOSIS 2

Chairs: Tobias Rupprecht, Germany  
Katharina Ornstein, Sweden

- P50 **Neuroborreliosis in north-eastern Poland - tips for the practitioners**  
Joanna Zajkowska, Poland
- P51 **The LymeProspect KIDS study into long-term effects of Lyme borreliosis in children**  
Anna D. Tulen, Netherlands
- P52 **Lyme borreliosis – a scientific approach to reduce diagnostic and therapeutic uncertainties (BorrSci). An update**  
Harald Reiso, Norway
- P53 **Non-specific symptoms in children referred to a Lyme center**  
Tizza P. Zomer, Netherlands
- P54 **Erythema migrans: course and outcome in patients treated with inhibitors of Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ )**  
Vera Maraspin, Slovenia
- P55 **Hospitalizations for Lyme borreliosis in Belgium, 2008-2016**  
Laurence Geebelen, Belgium
- P56 **CXCL13 in laboratory diagnosis of Lyme neuroborreliosis – evaluation of the ReaScan CXCL13 assay on fresh, frozen and cold-stored CSF samples**  
Anna J. Henningsson, Sweden
- P57 **Retrospective comparison of two chemokine CXCL13 assays for the diagnosis of Lyme neuroborreliosis on a representative sample from a Dutch hospital**  
Tamara van Gorkom, Netherlands
- P58 **Tick-Borne Encephalitis Virus and Lyme Borrelia Causing Coinfection or Coincidence: Dilemma in Clinical Practice**  
Maša Velušček, Slovenia
- P59 **Complex CSF Diagnostics of Tick-borne Neuroinfections**  
Ondřej Sobek, Czech Republic



## TICKS AND MICROBES 2

Chairs: Gabriele Margos, Germany

Anna-Margarita Schötta, Austria

- P60 **Update on *Borrelia* taxonomy**  
Gabriele Margos, Germany
- P61 **Detection and Multi-Locus Sequence Typing (MLST) of *Borrelia burgdorferi sensu lato* strains in ticks collected in Vienna, Austria**  
Theresa Stelzer, Austria
- P62 **Multilocus sequence typing of *Borrelia burgdorferi sensu lato* strains detected in clinical samples**  
Anna-Margarita Schötta, Austria
- P63 **Optimized fixation of actin filaments for indirect immunofluorescence staining of rickettsiae**  
Zuzana Sekeyova, Slovakia
- P64 **Identification and genetic characterization of the etiological agent of horse piroplasmidosis in Eastern Siberia**  
Irina V. Kozlova, Russia
- P65 **Study of the genetic variability of *Babesia* in the territory of the Irkutsk region**  
Irina V. Kozlova, Russia
- P66 ***Babesia crassa*-like infection in Slovenia**  
Katja Strašek Smrdel, Slovenia
- P67 **Molecular survey of piroplasm ( *Babesia* spp., *Hepatozoon* spp.) in micromammals in Romania**  
Andra Toma-Naic, Romania
- P68 **Genetic diversity of representatives of the species *Rickettsia* in natural foci of the Irkutsk region (Russia)**  
Irina V. Kozlova, Russia
- P69 **Laboratory diagnosis of Human Granulocytic Anaplasmosis in South Korea**  
Kyu Jam Hwang, South Korea



## BIOLOGY OF BORRELIA

Chair: Natalie Rudenko, Czech Republic

- P70 **Detection of persistent forms of *Borrelia burgdorferi* sensu stricto in infected mice after antibiotic treatment: cultivation of viable spirochetes from the sites of secondary infection**  
Natalie Rudenko, Czech Republic
- P71 **Interaction of *Borrelia burgdorferi* with cultured tick cells**  
Eva Špitalská, Slovakia
- P72 **Interaction of *Borrelia burgdorferi* with cultured Vero cells**  
Eva Špitalská, Slovakia
- P73 **Reinfection with *Borrelia burgdorferi* sensu lato – comparison of isolates obtained from erythema migrans**  
Eva Ružič-Sabljić, Slovenia
- P74 **LC-MS/MS based metabolomics of *Borrelia* infection in mouse model**  
Otto Glader, Finland
- P75 **Complement-mediated serum susceptibility of *Borrelia burgdorferi* sensu lato strains from Serbia**  
Gorana Veinović, Serbia
- P76 **Co-infection and competition between strains of *Borrelia afzelii* in immature *Ixodes ricinus* ticks**  
Dolores Genné, Switzerland
- P77 **Subtypes of *Borrelia burgdorferi* sensu lato strains from Serbia characterized by pulsed-field gel electrophoresis after MluI restriction of genomic DNA**  
Sanja Čakić, Serbia
- P78 **Cruising for bruising?**  
Ulrich Schwab, United Kingdom



## RESERVOIRS, VETERINARY ASPECTS, EPIDEMIOLOGY

Chairs: Pierre Eduard Fournier, France  
Reto Lienhard, Switzerland

- P79 **Molecular detection of vector-borne pathogens in keds and ticks from deer from the Krkonoše Mountains National Park in the Czech Republic**  
Katerina Kybicová, Czech Republic
- P80 **The borrelial myocarditis in dog – 1<sup>st</sup> case report**  
Pavel Schánilec, Czech Republic
- P81 **Study of animal-attached ticks for Rickettsia spp. presence and first evidence of Siberian Rickettsia species in Europe**  
Maria Vikentjeva, Estonia
- P82 **Molecular investigation of pathogenic and symbiotic bacteria in African hard ticks infesting wild and domestic animals**  
Emanuela Olivieri, Italy
- P83 **Lyme borreliosis spirochaetes in red foxes (*Vulpes vulpes*) from Serbia**  
Snežana Tomanović, Serbia
- P84 **Rickettsiae and haemosporidians in migratory and non-migratory birds in Slovakia**  
Eva Špitalská, Slovakia
- P85 **Survey of tick-borne severe fever with thrombocytopenia syndrome (SFTS) Phlebovirus in animals**  
Chae Joon-Seok, South Korea
- P86 **First detection and molecular identification of the zoonotic *Anaplasma capra* in captive deer in France**  
Laurence Malandrin, France
- P87 **Epidemiology of Lyme borreliosis in Scotland**  
Chin Lim, United Kingdom
- P88 **Human seroprevalence of antibodies to tick-borne microbes in southern Norway**  
Erik Thomas Thortveit, Norway
- P89 **Historical Perspective on the Seroprevalence of Lyme Borreliosis in Finland**  
Julia Cuellar, Finland



## EPIDEMIOLOGY

Chairs: Volker Fingerle, Germany  
Adriano Pinter, Brazil

- P90 **Epidemiology of Lyme borreliosis through two surveillance systems: general practitioners and hospitalizations, France, 2005-2017**  
Alexandra Septfons, France
- P91 **Serological study Lyme disease for high-risk group of tick-borne diseases in South Korea**  
Seon Do Hwang, South Korea
- P92 **Pathogen prevalence in ticks parasitizing humans; a citizens science application**  
Werner Tischhauser, Switzerland
- P93 **Risk mapping and classification for identifying local tick prevention needs in Flemish municipalities**  
Katrien Tersago, Belgium
- P94 **Annual serological testing for Lyme in a population with high occupational tick bite exposure**  
Marlies van Lent, Netherlands
- P95 **Abiotic and biotic drivers of tick distribution, abundance, and seasonality in urban environments**  
Silvia-Diana Borşan, Romania
- P96 **Ixodes ricinus, Borrelia afzelii and massive analysis of cDNA ends (MACE), the perfect recipe for an antidote?**  
Jos J. A. Trentelman, Netherlands
- P97 **Glycerophosphoryl diester phosphodiesterase does not support indirect diagnosis of Borrelia miyamotoi infection**  
Michael Reiter, Austria
- P98 **Prevalence and evolution of Borrelia bavariensis and B. garinii in Eurasia**  
Noémie S. Becker, Germany
- P99 **Sero-survey for scrub typhus and murine typhus among forestry workers in South Korea**  
Seon Do Hwang, South Korea



Tuesday, 10 September 2019

## TICK-BORNE DISEASES

Chair: Franc Strle, Slovenia

- 15.15      **Research investigation on Crimean Congo haemorrhagic fever (CCHF) in a European endemic area**  
Tatjana Avšič-Županc, Slovenia
- 15.45      **An overview of multiple studies on the emerging tick-borne pathogen *Borrelia miyamotoi* in Russia: 2009-2019**      A26  
Alexander Platonov, Russia
- 16.05      **Chronic and “chronic” Lyme borreliosis**  
Franc Strle, Slovenia
- 16.25      BREAK
- 16.40      **Multidisciplinary management of patients with presumed Lyme borreliosis in a reference center in France**  
Kevin Bouiller and Benoit Jaulhac, France
- 17.00      **Medical assessment and follow-up of patients with chronic complaints and suspected tick-borne diseases**      A27  
Randi Eikeland, Norway
- 17.20      END OF SESSION
- 19.00      NETWORKING DINNER



Wednesday, 11 September 2019

## DIAGNOSTIC ASPECTS OF TICK-BORNE DISEASES

Chair: Ram B. Dessau, Denmark

- |       |   |     |
|-------|---|-----|
| 08.30 | <b>Development of proteomics for the direct diagnosis of Lyme borreliosis</b><br>Nathalie Boulanger, France   | A28 |
| 09.00 | <b>Standardization and quality control of antibody detection for Lyme borreliosis. One assay for all - one ring to rule them all?</b><br>Ram B. Dessau, Denmark | A29 |
| 09.15 | <b>Serologic risk-stratification by a novel C6-peptide IgG1 subclass antibody test</b><br>Dag Nyman, Finland  | A30 |
| 09.45 | <b>Validity of the LTT as diagnostic and follow-up marker for Lyme neuroborreliosis</b><br>Gert Summer, Germany   | A31 |
| 10.00 | BREAK   |     |





Wednesday, 11 September 2019

## PREVENTION OF TICK-BORNE DISEASES

Chair: Joppe Hovius, Netherlands

- |       |  |     |
|-------|--|-----|
| 10.30 | <b>Tick global, act local. Emergence and elimination of a <i>Rickettsia massiliae</i>-infected <i>Rhipicephalus sanguineus</i> population in Central-Europe</b><br>Gábor Földvári, Hungary       | A32 |
| 10.45 | <b>A Phase 1 study assessing the safety, immunogenicity and dose-response of VLA15, a multivalent recombinant OspA based vaccine candidate against Lyme borreliosis</b><br>Nicole Bézay, Austria | A33 |
| 11.00 | <b>Feeding-induced salivary gland genes of <i>Ixodes ricinus</i> ticks as targets for anti-tick vaccines</b><br>Abhijeet Nayak, Netherlands  | A34 |
| 11.15 | <b>Identification of novel <i>Ixodes</i> vaccine candidates using Yeast Surface Display technology; going down the rabbit hole?</b><br>Jos J. A. Trentelman, Netherlands                         | A35 |
| 11.30 | <b>Prevention of Early Summer Meningoencephalitis also known as TBE</b><br>Michael Kunze, Austria  |     |
| 12.00 | CLOSING OF THE SYMPOSIUM   |     |



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