



UNIVERSIDAD
COMPLUTENSE
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ApiCOWplexa-APICOMPLEXA IN FARM ANIMALS
4th Edition-San Lorenzo de El Escorial, Madrid, Spain

WEDNESDAY, 11th October 2017 - Euroforum (San Lorenzo de El Escorial, Madrid)

14:00 **Registration**

17:00 - 17:15 **Welcome to Apicowplexa**

Opening Lecture

Session Chairs: **Andrew Hemphill** and **Alexandre Leitão**

17:15 - 18:15 Apicomplexan parasites: Their relevance for livestock production and veterinary public health. **Franz Conraths**, Friederich Loeffler Institute, Germany

18:15 - 19:15 “Prison Break”. The natural egress of *Toxoplasma* from infected cells is a tightly programmed event. **Dominique Soldati**, University of Geneva, Switzerland

20:00 **Welcome reception**

THURSDAY, 12th October 2017 - Euroforum (San Lorenzo de El Escorial, Madrid)

Systems biology, 8:30 - 10:00

Session Chairs: **Dominique Soldati** and **Jeroen Saeij**

Oral communications

8:30 - 8:45 An integrated model of host-parasite interactions in Coccidian parasites, **Dong Xia**

8:45 - 9:00 The three-dimensional ultrastructure of *Eimeria tenella* sporozoites, **Alana Burrell**

9:00 - 9:15 Transcriptome modulation of bovine trophoblast cells *in vitro* by *Neospora caninum*, **Pilar Horcajo**

9:15 - 9:30 Evolution of the micropyle of *Eimeria acervulina* young oocyst and its assumed role, **Jean Michel Répérant**

9:30 - 9:45 Generation of population genomics data for an intracellular parasite of nucleated mammalian cells, **Richard Bishop**

9:45 - 10:00 Differential gene expression in *Neospora caninum*, **John Ellis**

10:00 - 10:30 **Coffee Break**

Host-parasite interactions I, 10:30 - 12:30

Session Chairs: **Jon Boyle** and **Jonathan Wastling**

Invited Speaker

10:30 - 11:15 *Toxoplasma* proteins that modulate the host cell. **Jeroen Saeij**, University of California-Davis, United States of America

Oral communications

11:15 - 11:30 A new class of apically confined, transmembrane micronemal proteins play a pivotal role in host cell invasion by *Toxoplasma gondii* tachyzoites, **Furio Spano**

11:30 - 11:45 *Toxoplasma gondii* aspartyl protease 3: a microneme and rhoptry protein maturase essential for host plasma membrane lysis during egress and rhoptry discharge during invasion, **Sunil Kumar Dogga**

11:45 - 12:00 miR-126-5p by direct targeting of JNK-interacting protein-2 (JIP-2) plays a key role in *Theileria*-transformed macrophage virulence, **Malak Haidar**

12:00 - 12:15 *In vitro* characterization of bovine macrophages infection by *Neospora caninum* isolates of high and low virulence, **Marta García-Sánchez**

12:15 - 12:30 Virulence and attenuation of *Theileria annulata*-infected macrophages are stable parasite-associated traits transferable to fresh macrophages of a different MHC type, **Gordon Langsley**

12:30 - 14:00 **Lunch**

Host-parasite interactions II, 14:00 - 15:00

Session Chairs: **Furio Spano** and **Fiona Tomley**

Oral communications

14:00 - 14:15 Cultivation of *Hammondia hammondi* *in vitro* reveals new insights into the timing of parasite development that can be exploited for genetic manipulation, **Jon Boyle**

14:15 - 14:30 Experimental *Toxoplasma gondii* and *Eimeria tenella* co-infection in chickens, **Lysanne Hiob**

14:30 - 14:45 *Neospora caninum* infection in a pregnant bovine model at mid gestation: comparison of early infection dynamics between high- (Nc-Spain7) and low- (Nc-Spain1H) virulence isolates, **Laura Jiménez-Pelayo**

14:45 - 15:00 Development of the first in vivo bovine experimental model of chronic besnoitiosis, **Carlos Diezma-Díaz**

Epidemiology and diagnostics I, 15:00 - 16:15

Session Chairs: **Luís Gondim** and **Frank Katzer**

Invited Speaker

15:00 - 15:45 Extensive review on potential risk and protective factors for *Toxoplasma gondii* infection in farm animals: What is remaining after excluding all presumably confounding or effect modifying factors? **Gereon Schares**, Friederich Loeffler Institute, Germany

Oral communications

15:45 - 16:00 Analysis of *Toxoplasma gondii* clonal type-specific antibody reactions in experimentally infected turkeys and chickens by peptide microarray, **Pavlo Maksimov**

16:00 - 16:15 Serotyping of *Toxoplasma gondii* infections using strain-specific peptides, **David Arranz**

16:15 - 16:45 **Coffee Break**

Epidemiology and diagnostics II, 16:45 - 18:15

Session Chairs: **Franz Conraths** and **Michael Reichel**

Invited Speaker

16:45 – 17:15 Advances in the diagnosis of bovine besnoitiosis: current options and applications for control. **Gema Álvarez-García**, Complutense University of Madrid, Spain

Oral communications

17:15 - 17:30 Deciphering 'cryptic' *Eimeria* isolated from the domestic chicken, **Fiona Tomley**

17:30 - 17:45 Multigenome sequence based genotyping of *Eimeria* species causing coccidiosis in Ontario sheep and goats, **Evelin Rejman**

Invited Speaker

17:45 - 18:15 An overview on Theileriosis: new diagnostic tools and their limits
Alessandra Torina, Istituto Zooprofilattico Sperimentale della Sicilia "A. Mirri", Italy

18:15 - 19:30 **Poster session**

20:00 **Dinner**

FRIDAY, 13th October 2017 - Euroforum (San Lorenzo de El Escorial, Madrid)

Vaccination and immune responses, 8:30 - 10:00

Session Chairs: **John Ellis** and **Ivan Morrison**

Invited Speaker

8:30 - 9:15 DC-complexa: species-specific adaptation of dendritic cells to pathogen diversity. **Artur Summerfield**, University of Berne, Switzerland

Oral communications

9:15 - 9:30 Analysis of local and peripheral immune response developed in sheep experimentally infected with *Toxoplasma gondii* at different times of gestation, **Julio Benavides**

9:30 - 9:45 CD103+CD11b- intestinal dendritic cells are critical players for controlling the different steps of *C. parvum* infection, **Fabrice Laurent**

9:45 - 10:00 Coccidiosis in poultry: development of *Eimeria* as vaccine vectors to streamline anticoccidial vaccination, **Iván Pastor Fernández**

10:00 - 10:30 **Coffee Break**

Biosafety and treatment, 10:30 - 12:30

Session Chairs: **Kayode Ojo** and **Ronald Kaminsky**

Invited Speaker

10:30 - 11:00 Drugs and drug targets in pregnant models for *Toxoplasma* and *Neospora* infection. **Andrew Hemphill**, University of Berne, Switzerland

Oral communications

- 11:00 - 11:15** Bumped kinase inhibitors and their effects on the host-parasite relationship during experimental *N. caninum* infection *in vitro* and in mice, **Pablo Winzer**
- 11:15 - 11:30** Characterisation of drug-resistance to buparvaquone in *Theileria annulata* populations in Turkey, **Tulin Karagenc**
- 11:30 - 11:45** *In vitro* screening of commercially available anti-coccidials identifies diclazuril and decoquinate as potential therapeutic candidates against *Besnoitia besnoiti* infection, **Alejandro Jiménez-Meléndez**
- 11:45 - 12:00** Variations in anticoccidial efficacy on different *Eimeria* spp. in lambs based on oocyst excretion, **Ane Odden**

Invited Speaker

- 12:00 - 12:30** Advances in bumped-kinase inhibitors for human and animal therapy of cryptosporidiosis. **Wes VanVoorhis**, University of Washington, United States of America

12:30 - 14:00 Lunch

Food and waterborne zoonosis, 14:00 - 15:45

Session Chairs: **Gereon Schares** and **Lee Innes**

Invited Speaker

- 14:00 - 14:45** Food and Waterborne Protozoa: a veterinary and public health perspective, **Frank Katzer**, Moredun Research Institute, United Kingdom

Oral communications

- 14:45 - 15:00** The impact of vegetation on the environmental transfer of *Cryptosporidium* oocysts from faeces to soil, **Claire E. Paton**
- 15:00 - 15:15** *In vitro* host cell viability as putative correlate of virulence of *Cryptosporidium parvum* field isolates in Eastern Germany, **Ivette Holzhausen**
- 15:15 - 15:30** Impact of confinement housing on study end-points in the calf model of cryptosporidiosis, **Jennifer Zambriski**
- 15:30 - 15:45** Host-pathogen interactions in neonatal calves naturally and experimentally infected with *Cryptosporidium parvum*, **Sarah Thomson**

15:45 - 16:15

Coffee Break

3 minutes oral poster presentations, 16:15 – 17:15

Session Chairs: **Alexandre Leitão** and **Tulin Karagenc**

1. Comparative study between pregnant mouse interference test and zebrafish embryo acute toxicity test: a possible replacement in anti-parasitic chemotherapy trials?, **Nicoleta Anghel**
2. Investigating the virulence of *Toxoplasma gondii* isolates from Brazil and Saint Kitts in mice, **Lauren E. Black**
3. Retrospective molecular diagnosis of *Neospora caninum* in bovine aborted fetus in Uruguay: Preliminary results, **Briano Carolina**
4. Isolation of a *Neospora caninum* goat strain from Southern Minas Gerais, Brazil, **Rafael C. Costa**
5. A component of the core kinase module of MEN and Hippo pathways, Mob1 is a critical factor in *Toxoplasma gondii* replication, **Inês Delgado**
6. Cytokine response to *Cystoisospora suis* infections in immune competent pigs, **Barbara Freudenschuss**
7. Transcriptional analysis of bovine monocyte-derived macrophages infected with high and low virulent isolates of *Neospora caninum*, **Marta García-Sánchez**
8. Phylogenetic diversity of *Eimeria* spp. in different genotypes of house mice (*Mus musculus*) from the European Hybrid Zone using a multiple marker approach, **Víctor Hugo Jarquín-Díaz**
9. Host-parasite interactions of *N. caninum* isolates of different virulence in bovine fetal and maternal placental cell lines, **Laura Jiménez-Pelayo**
10. HSP81.2 from *Arabidopsis thaliana* enhances the immune response against NcSAG1 from *Neospora caninum* protein and partially protects mice from congenital neosporosis, **Sofia A. Bengoa-Luoni**
11. Effects of *Eimeria tenella* infection on chicken caecal microbiome diversity, exploring variation associated with severity of pathology, **Sarah Macdonald**
12. Dose-titration of virulent *Neospora caninum* isolate Nc-Spain7 in pregnant sheep at 90 days of gestation, **Roberto Sánchez**
13. A reduction in weight gain in beef calves with clinical cryptosporidiosis, **Hannah Jade Shaw**

Public engagement and knowledge exchange, 17:15 – until finishing the discussion

How to raise awareness for ruminant apicomplexan (open round table)

Chairman: **Ronald Kaminsky**, Consulting for Parasitology and Drug Discovery

Participants: **Fiona Tomley**, RVC, **Wes VanVoorhis**, U-Washington, **Peter Opdam**, MSD and others

20:00

Conference dinner (previous payment in the registration form is needed)

Poster session

14. Microgametes – just motile nuclei or pivotal stages of the life cycle of *Cystoisospora suis*?, **Anja Joachim**
15. Demonstration of the presence of *T. gondii* in bio pigs intended for human consumption in Belgium, **Ignacio Gisbert-Algaba**
16. Analysis of allelic diversity of two immunodominant antigen genes of *T. annulata* and *T. lestoquardi* in Oman, **Salama Al-Hamidhi**
17. Genetics differentiation of *T. lestoquardi* in Africa and Asia, **Hamza Babiker**
18. Role of wildlife in the transmission of *Cryptosporidium parvum* to humans and livestock, **Ross Bacchetti**
19. Anti-cancer drugs affecting apicomplexan parasites: characterization of novel ruthenium-based compounds and their effects on *Toxoplasma gondii*, **Vreni Balmer**
20. Semi-high throughput screening of the Pathogen Box for inhibitors with dual efficacy against *Giardia lamblia* and *Cryptosporidium parvum*, **Lynn Barrett**
21. Evaluating the impact of pregnancy-associated immunomodulation on specific immune mechanisms against *Neospora caninum* infection in mice, **Afonso P. Basto**
22. Can multi-copy genes be an alternative for the diagnosis of TBDs in cattle? **Huseyin Bilgiç**
23. Differential modulation of the Golgi and endosomal system in host cells infected with *Besnoitia besnoiti*, *Toxoplasma gondii* and *Neospora caninum*, **Rita Cardoso**
24. A new indirect ELISA for the detection of *Besnoitia besnoiti* antibodies in individual and bulk milk samples, **Loic Comtet**
25. The IDScreen® *Besnoitia* indirect 2.0 serum ELISA perfectly correlates with confirmatory techniques, **Loic Comtet**
26. Experimental infection with *Besnoitia besnoiti* tachyzoites in calves and young bulls, **Carlos Diezma-Díaz**
27. A new ELISA test to diagnose *Besnoitia* spp. infection in bovids and wild ruminants with improved specificity avoiding the use of a confirmatory test, **Gema Álvarez-García**
28. Development and characterization of monoclonal antibodies against *Besnoitia besnoiti* tachyzoites, **Gema Álvarez-García**
29. Serological and molecular epidemiology of *Toxoplasma gondii* infection in intensive pig farms in Northern Italy, **Alessia Libera Gazzonis**
30. *Sarcocystis neurona* and *Neospora caninum* in Brazilian opossums (*Didelphis* spp.): Molecular investigation and *in vitro* isolation of *Sarcocystis* spp., **Luís Gondim**
31. Development of an alternative assay to study the infectivity of *T. gondii*, **Tina Goroll**
32. Integrative transcriptome and proteome analyses define marked differences between *N. caninum* isolates throughout the tachyzoite lytic cycle, **Javier Regidor-Cerrillo**
33. *Toxoplasma gondii* infections in stranded marine mammals in France and Romania, **Radu Blaga**
34. Immune response induced by the Mic1-3 Knockout *Toxoplasma gondii* vaccine strain in the parasite definitive feline host, **Radu Blaga**
35. Genus-specific antibodies for the diagnosis of *Neospora caninum* and *Toxoplasma gondii* using Immunohistochemistry in abortion cases of ruminants, **A.I. Macrae**
36. Characterization of *Theileria equi* antigen infecting Donkeys in Egypt, **Olfat A. Mahdy**

37. Coccidian in *Oryctolagus cuniculus* from Tenerife, Canary Islands, Spain, **Natalia Martín Carrillo**
38. Carotenoid-enriched corn protects poultry against coccidiosis, **Beatriz Serrano-Pérez**
39. Toxoplasma inhibitor of STAT1 transcription effector protein IST and its relevance in virulence for closely related *Neospora caninum* and *Hammondia hammondi*, **Philipp Olias**
40. Anticoccidial effect of naringenin and grape fruit peel extract in growing lambs naturally-infected with *Eimeria* spp, **María Cristina Guerrero Molina**
41. Microsatellite analysis reveals high diversity among geographically close isolates of *Cystoisospora suis*, **Baerbel Ruttkowski**
42. Chicken line-dependent mortality after experimental infection with three type IIxIII recombinant *Toxoplasma gondii* clones, **Gereon Schares**
43. Immune-endocrine patterns in dairy cattle experimentally infected with *N. caninum* in the second trimester of gestation, **Beatriz Serrano**
44. Development of a recombinant protein based indirect ELISA for the detection of serum antibodies against *Cystoisospora suis* in swine, **Aruna Shrestha**
45. Deciphering the host cues responsive circadian transcriptome of apicomplexan parasite *Plasmodium chabaudi*, **Amit Kumar Subudhi**
46. Analysis of *Babesia bigemina* Ap+C7:C67ical Membrane Antigen-1 immunogenicity and its characterization in Apicomplexa, **Alessandra Torina**
47. Distribution of cattle babesiosis in Palermo province (Sicily), **Alessandra Torina**
48. Serological study of *Toxoplasma gondii* and *Neospora caninum* in a wildlife conservation area in southern Portugal, **Alexandre Leitão**
49. Evaluation of *Eimeria* sp. infection and predictors of oocysts excretion in newly introduced beef cattle in northern Italy, **Maria Teresa Manfredi**
50. Mutual influences of the apicomplexan parasites *Toxoplasma gondii* and *Eimeria tenella* in poultry macrophages, **Runhui Zhang**
51. Efficacy of VFO-IS-01, a live attenuated immunostimulant against *Salmonella enteritidis*, *Eimeria acervulina* and *Influenza* H7N1 infections in chicks, **Mehdi Ellouze**
52. Effects of challenge dose and inoculation route of virulent *Neospora caninum* Nc-Spain7 isolate in pregnant cattle at mid gestation, **Patricia Vazquez**
53. Significant reduction of *Neospora caninum* vertical transmission and postnatal mortality by a toll-like-receptor 2-targeting vaccine formulation in the pregnant mouse model of neosporosis, **Adriana Aguado**
54. Evidence that transfer of *Theileria annulata* parasites from infected to uninfected leukocytes occurs by spontaneous cell fusion, **Ivan Morrison**
55. Placental lesions associated with abortions and stillbirths in goats naturally infected with *Neospora caninum* from Southern Minas Gerais, Brazil, **Rafael C. Costa**
56. *Toxoplasma gondii* tubulin-binding cofactor B a polarity factor required for host cell invasion and replication, **Inês Delgado**
57. Pharmacokinetics, safety and efficacy of Bumped Kinase Inhibitor (BKI) 1553 in a pregnant sheep model of neosporosis, **Roberto Sánchez**
58. *Cryptosporidium* infections among animals and humans in Greece, **Smaragda Sotiraki**
59. *Cryptosporidium parvum* increases intestinal permeability through interaction with epithelial cells and IL-1 β and TNF α released by inflammatory monocytes, **Fabrice Laurent**

60. Investigation of tick-borne disease in Indian bovines: breed resistance and transmission blocking as strategies for improved productivity, **Stephen Larcombe**
61. The relationship between presence of antibodies and direct detection of *Toxoplasma gondii* in slaughtered cattle from four European countries, **M. Opsteegh**