



**ABSTRACT  
BOOK**

# **ASVMCONNECT2025**

International Connect on

## **Animal Science and Veterinary Medicine**

**August 28, 2025 | Webinar**



# ANIMAL SCIENCE AND VETERINARY MEDICINE

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## Welcome Message:

Welcome to the International Connect on Animal Science and Veterinary Medicine (ASVMCONNECT2025) Conference 2025!

We are thrilled to invite you to join us for the premier gathering of professionals, researchers, and enthusiasts in the field of animal science. Our conference aims to foster collaboration, innovation, and knowledge exchange to address the most pressing challenges and advancements in animal science and related disciplines.

With a diverse program featuring keynote speakers, panel discussions, presentations, and workshops, our conference offers a platform for sharing cutting-edge research, best practices, and emerging trends in animal husbandry, welfare, nutrition, genetics, behavior, and more.

Whether you're an academic, industry expert, student, or policymaker, this conference provides a unique opportunity to network with peers, engage in interdisciplinary discussions, and gain insights that will shape the future of animal science.

Join us in Warsaw, Poland from August 28-30, 2025 as we explore the latest developments and discoveries in animal science and work together towards a sustainable and prosperous future for animals and humanity.

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## Organization Community Members:

<b>Giuseppe Bee</b>	Agroscope Posieux, Switzerland
<b>Jordi Miro Roig</b>	University of Barcelona, Spain
<b>Manzar Abbas</b>	Institute of Breeding and Reproductive Biotechnology in Domestic Animal, Hohhot, China
<b>Fang-Chia Chang</b>	College of Bioresource and Agriculture, Taiwan
<b>Silviu-Ionut Bors</b>	Research and Development Station for Cattle Breeding Dancu, Romania
<b>Omaima Kandil</b>	Animal Reproduction & A.I. National Research Centre (NRC), Cairo, Egypt
<b>Güler Yenice</b>	Atatürk University, Turkey
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**Juan Felipe Nuñez Espinoza**

**Affiliation: Colegio de Postgraduados , Czech University of  
Life Sciences Prague**

**Title: Structural Paradox in Regional Swine Production Research  
System**

## **Abstract**

Biosafety gaps in agrifood could be one of the most urgently challenge to the current societies not just because for a healthy problem but for it's systematic impact on several organizational levels. One of these could be related with the health and pig production system dynamics: The Pork is the second most consumed and commercialized meat worldwide. Therefore, pig farming has experienced a global exponential commercial growth in terms of the numbers of animals, the size of production units, their yields and degree of specialization and all of this has generated a highly competitive local, regional and worldwide market. To do that the pork production system has developed: a) a global system of massive confinement: b) specific technological innovations about production and animal health and c) scientific structures to generate specific knowledge for a minimum management of such complex system. All of this suggest an underlying social agglomerated technological susceptible to be analyzed as a social ecosystem. The objective of this work was to characterize structural patterns in the research of the swine health sector in different countries (Europe and Latin America) to analyzed their capacities as innovation systems. A mixed methodological proposal was used, focusing in Social Networks Approach. Its was possible identify convergence and influence and a highly centralization of the information.

## **Biography**

Juan Felipe Nuñez Espinoza studied Rural Sociology (Master's studies and degree) at the University Autonomous of Chapingo, from 1995 to 1997, México. He made his PhD. Programme in Sustainability, Technology and Humanism at Polytechnic University of Catalonia, Barcelona, Spain from 2004 to 2008. Since 1998, he has been a researcher and professor at the Postgraduate College in agronomy sciences, México. He has published different scientific papers, book chapters and books in the areas of rural development, socioeconomics, environment and social network analysis, and he has participated in different rural development projects assessment at Latin America. His principal Research lines are: Dynamics systems, Social network analysis, Complex systems in order to understand the structural dynamics in human communities related with the rural development: peasant and indigenous communities,



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technology transfer, knowledge changes, agroecology, scientific and technical groups, etc.). Currently participate as a member in the Latin American Scientific Society of Agroecology (SOCLA), in the International Network for Social Network Analysis (INSNA), and is member of the National Academy of Mexican Evaluators (ACEVAL).

**Linda Suhartati****Affiliation: Universitas Andalas, Indonesia****Title:****Pholimorphism of Myostatin (MSTN) in Kokok Balenggek Chicken as a Local Chicken in Sumatra, Indonesia****Abstract**

This study was conducted to identify the pholimorphism of the myostatin (MSTN) gene in Kokok Balenggek Chicken: KBC-G0 and KBC-G1 using the sequencing method. The samples used in this study were 48 blood samples from KBC-G0 and 47 blood samples from KBC-G1. The extracted blood samples were then amplified by PCR using a pair of forward primers 5'-GTGGCTCTGGATGGCAGTAG-3' and reverse primers 5'-GCTACAGGGCACACACGTTA-3', which produced a fragment of 549 bp. The amplification products were sequenced using the services of 1st BASE Malaysia. The sequencing data were aligned using MEGA 11, and the nucleotide chromatograms were viewed using Finch Tv 1.4.0. The results showed that there were 9 mutations in KBC-G0 and 12 mutations in KBC-G1. The SNP of the myostatin gene exon 1 in KBC-G0 and KBC-G1 was polymorphic. There were 16 haplotype patterns in KBC-G0 and 24 haplotype patterns in KBC-G1. In KBC-G0, H0<He was found, except for mutation g.2373. However, in KBC-G1, H0>He was found. All mutations in the KBC-G0 and KBC-G1 populations are in Hardy-Weinberg equilibrium. Furthermore, SNPs can be associated with KBC growth traits.

**Key words:**

Kokok Balenggek Chicken (KBC), Myostatin Gene (MSTN), Native Chicken, Pholimorphism.



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## Biography

Ir. Linda Suhartati, S.Pt., M.Si., IPM is a dedicated academic and researcher at the Faculty of Animal Science, Universitas Andalas, Indonesia. Her expertise lies in animal breeding and molecular genetics, with a focus on improving local livestock productivity and preserving genetic diversity. She has actively contributed to research on Indonesian indigenous poultry, including Bayang ducks and native chickens, particularly studying the effects of rearing systems and genetic traits on animal performance. Dr. Suhartati earned her Master's degree in Livestock Production (M.Si.) and is known for her scientific rigor and commitment to sustainable animal agriculture. She has published her work in national and international journals and is indexed in major academic platforms including Google Scholar (ID: fI0AAAAJ), ORCID (0000-0003-0735-5480), and Scopus (ID: 57218900072). Her research continues to support the development of effective breeding programs in Indonesia's animal science sector.



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**Dominic Oertly**

**Affiliation: Partner & CEO at Businessincub, Switzerland**

**Title: latest developments in China when it comes to developing the industry of Life Science, based on the concept of “One Health”.**

## **Abstract**

Sanya Yazhou Bay Science and Technology City (YZBSTC), situated within the transformative Hainan Free Trade Port (FTP), PRC, represents a national centerpiece for China’s next-generation life science industry — driven by the integrative “One Health” concept that views human, animal, plant, and environmental health as a unified system.<sup>1</sup> Hainan’s FTP status, initiated by President Xi Jinping in 2018, has attracted strategic attention and policy reform to create an internationally open, business-friendly hub comparable to China’s major cities, with trade and investment policies designed for global competitiveness and high-impact innovation.<sup>2</sup>

## **Life Science and One Health Focus**

YZBSTC has established itself as a leading innovation zone in life sciences by leveraging the One Health paradigm, fostering research and commercialization in biosensors, gene science, brain research, new medical devices, digital medicine, and innovative pharmaceuticals.<sup>3</sup> The city has been hosting already over 100 biotech companies and 17 research platforms, supported by 19 top Chinese universities and 22 leading research institutes, creating an interdisciplinary talent pool and facilitating pioneer projects, including specialized seed breeding and deep-sea biotechnology.<sup>4</sup> The unique Import and Transfer Base of Global Animal and Plant Germplasm Resources accelerates international research and trade in germplasm and molecular testing, reinforcing YZBSTC’s position as Asia’s “Silicon Valley of Seeds”.<sup>5</sup>

## **Policy Support and Ecosystem**

Hainan FTP and YZBSTC offer robust, multi-level policies to incentivize R&D, technology transfer, enterprise formation, and talent recruitment. These are among others:  
- Zero-tariff import policies for eligible industries and companies, streamlined customs approval, and exemption schemes for research equipment and materials.<sup>6</sup>



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## Corporate Income Tax

reduced to 15% for key industries, with simplified tax systems and direct incentives for high-tech enterprises, startups, and international investment.<sup>7</sup>

Sanya Yazhou Bay Science and Technology City (YZBSTC), International Investment Guide, 2024, pp. 42-43.

2 YZBSTC, Investment Guide, 2024, pp. 6, 8.

3 YZBSTC, Investment Guide, 2024, pp. 42-43.

4 YZBSTC, Investment Guide, 2024, pp. 8-9, 36, 38-39, 42-43, 46-47.

5 YZBSTC, Investment Guide, 2024, pp. 36, 46-47.

6 YZBSTC, Investment Guide, 2024, p. 13.

7 YZBSTC, Investment Guide, 2024, p. 28.

R&D subsidies, clinical trial supplements, and rewards for major pharmaceutical and medical device achievements, along with pre-clinical research funding and accelerated product industrialization grants.<sup>8</sup>

- Intellectual property protection centers and courts, fast-track patent processing, and international IP support schemes, enabling both Chinese firms and foreign investors to safeguard technology and enter global markets with confidence.<sup>9</sup>

- Strategic talent policies: housing subsidies, competitive salaries, free registration, spouse employment support, internship rewards, and rent-free property options for high-level tech talent and their families.<sup>10</sup>

## Infrastructure and Collaborative Platforms

The YZBSTC core area (23.54 km<sup>2</sup>) and broader planned area (69.3 km<sup>2</sup>) house a comprehensive ecosystem supporting research, business incubation, and collaboration. Dedicated facilities include:<sup>11</sup>

Nanshan Port, supporting deep-sea science and marine technology research;

- Deep-Sea Science and Technology Town for maritime industries;

- Nanfan Breeding Sci-Tech Town for tropical agriculture and genetics;

- Innovation and Research Valley that brings together academic and industry resources for science convergence.

- The Biological Valley and Deep-Sea Compound Resource Center, equipped for drug discovery, marine biotechnology, medical diagnostics, and cell therapy, enabling high-level innovation and knowledge sharing among over 57 enterprises.



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## Industry Significance and Global Impact

Hainan Free Trade Port and YZBSTC are poised to become Asia's epicenter for life science, sustainable agriculture, marine technology, and digital health, backed by China's commitment to global carbon neutrality, sustainable development, and public health innovation.<sup>12</sup> The open international business climate, visa-free entry for staff from 77 countries, strategic travel routes, and international conference hosting (notably in seed science) put YZBSTC at the forefront of global collaboration and knowledge exchange.<sup>13</sup> By 2035, YZBSTC aims for international recognition and strategic influence, offering transformative economic and societal benefits through scientific discovery, robust industrial chains, and integrated "One Health" solutions for China and beyond.

In summary, YZBSTC and Hainan Free Trade Port together present a uniquely favorable, policy-driven, and globally oriented platform for entrepreneurs, research institutions, and talent, delivering both business opportunity and societal impact in the life sciences, with the "One Health" philosophy as the driving force.

8 YZBSTC, Investment Guide, 2024, p. 57.

9 YZBSTC, Investment Guide, 2024 pp. 16-17.

10 YZBSTC, Investment Guide, 2024 pp. 54–58.

11 YZBSTC, Investment Guide, 2024 p. 46.

12 YZBSTC, Investment Guide, 2024, pp. 14-15.

13 YZBSTC, Investment Guide, 2024, p. 31.

14 YZBSTC, Investment Guide, 2024, pp. 42-43.

## Biography

Dr. Dominic Oertly graduated in Business Law from the University of Zurich, Switzerland. In addition to a PhD in eCommerce law, he co-built and sold two digital companies and was manager at a Big4 Consulting company.

In terms of animal welfare, he was active as COO of a globally oriented NPO and board member of a related German NPO.

With Businessincub, an award-winning company located in Zurich, Switzerland, he supports SMEs and Entrepreneurs. The company is bridging Europe and Asia with a clear focus on China, where he is involved in governmental projects. He was also awarded with the Future Impact Award by Canton Fair, China's No. 1 Fair, co-hosted by Ministry of Commerce, PRC.

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**Antoine F. Goetschel**

**Affiliation: President, Global Animal Law GAL Association  
Founder, Switzerland**

**Title: Animal Welfare as the Basis of One Health: A UN Convention on Animal Welfare, Health, and Protection Poses a Realistic Solution to Improved Animal Welfare and Human Health**

## **Abstract**

Animal welfare is closely linked to animal health and human welfare and health, as the World Organisation for Animal Health (WOAH) emphasizes in its Global Animal Welfare Strategy of 2017. As a result of recent pandemics, the Food and Agriculture Organization of the United Nations (FAO), the UN Environment Programme (UNEP), the World Health Organization (WHO), and the WOAH have created the One Health High Level Expert Panel (OHHLEP), committed to animal health and human health in the One Health Joint Plan of Action (2022–2026) and pledged to “[work] together for the Health of Humans, Animals, Plants and the Environment.” Despite these important acknowledgments and efforts from leading world organizations, including the One Health quadripartite, the latter has so far been reluctant to actively pursue the adoption of a legally binding commitment to improve the protection and welfare of animals globally. Animal welfare remains without relevant provisions.

In the following, it is argued this must be integrated into the OHHLEP in addition to the creation of an “Animal Think and Do Tank” in the form of a technical working group, which would finalize a UN Convention on the issue, as proposed, e.g., in the drafted UN Convention on Animal Health and Protection (UNCAHP) 2018. The “Animal Think and Do Tank,” within its One Health context, must manifest a transdisciplinary approach, since – unlike globally binding legislation – policies, agreements, and declarations of various world organizations do not suffice to bring about a fundamental change in animal welfare. Acknowledging that animal protection is a complex and multifaceted issue involving ethical, cultural, social, religious, political, economic, and scientific dimensions (GAL Association, 2018, Preamble), these aspects must be represented within the decision making process regarding the Convention’s content. Besides veterinarians, experts of further disciplines related to One Health must be consulted – such as lawyers and legal academics specializing in animal, international, and UN law, competent representatives of the animal welfare and animal rights movements, and ethicists and economists.



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Measures must be taken to improve transparency and overall confidence in the dialogue between the actors, including competent and not specifically scientific representatives of the animal protection and animal rights movement as elements of civil society to advocate for the fundamental interests of animals.

## Biography

Dr. h.c. Antoine F. Goetschel has devoted himself to animals in law since 1985, in addition to his law firm in Zurich. As the author of the legal commentary on the Swiss Animal Protection Act (1986) and the comprehensive collection of decrees on animals in Swiss law (1987), he wrote his dissertation on animal protection and fundamental rights, headed the preliminary organization of the Foundation for Animals in Law (1995), which he established and which today has the most comprehensive collection of around 30,000 books and articles on animals in law and ethics and the collection of all of Switzerland's approximately 28,000 criminal decisions on animal protection. Antoine contributed significantly to the introduction of the concept of the “dignity of the creature” into the Swiss Federal Constitution and the Swiss Animal Protection Act and to the establishment of the worldwide unique Office of the Attorney for Animal Protection in Criminal Matters of the Canton of Zurich, of which he was also an officer from 2007 - 2010. Ten years ago, he established the Global Animal Law GAL Association with currently around 130 lawyers and law professors specializing in animal (protection) law and, together with some of them, drafted the “UN Convention on Animal Health and Protection” ([www.uncahp.org](http://www.uncahp.org)). All animal protection laws in the world are also compiled on [www.globalanimallaw.org](http://www.globalanimallaw.org) and a matrix is available for legal policy postulates from local to global, from short-term to visionary, in the areas of legislation, application and education. He has written a total of 13 books (some alone, some as part of a team) on Swiss animal protection law and over fifty articles on UNCAHP, animal-friendly financial investments and animals in global law. He received an honorary doctorate from the University of Bern for his services.

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**Elena Awwad**

**Affiliation: Ministry of Agriculture, Palestine**

**Title: Brucellosis in Middle East (Palestine)**

## **Abstract**

Animal welfare is closely linked to animal health and human welfare and health, as the World Brucellosis is a major zoonotic disease in the Middle East with serious public health and economic. Impacts It is caused by Brucella species, a growing group of pathogens capable of infecting many host animals. Cattle and small ruminants are primary sources of infection, shedding the bacteria through milk and reproductive fluids. Globally, around 2.1 million human cases occur each year, with most infections linked to contact with infected animals or consumption of unpasteurized dairy products.

Despite extensive control and eradication efforts, managing brucellosis remains difficult due to challenges such as political and social instability, limited resources and infrastructure for accurate diagnosis and reporting, inconsistent implementation of control measures, cross-border animal movement, diverse livestock systems mixing with wildlife, and cultural habits like consuming raw dairy. In Palestine, vaccination programs have shown positive results, but logistical issues have led to irregular application.

Effective disease reduction relies on enhanced preventive measures, including public awareness initiatives, regulated animal trade, and strict biosecurity. This presentation highlights Palestine's experience in controlling brucellosis, focusing on seasonal vaccination programs, improving diagnostic capacity, advancing public education, influencing policy, and achieving better health outcomes. Adopting the One Health approach currently offers the most effective strategy for designing and implementing successful control programs.

## **Biography**

Elena Awwad, PhD in Veterinary Medicine from the University of Agriculture Science and Veterinary Medicine, Bucharest, Romania, holds a Master's degree in Medical Laboratory Science from Birzeit University, Palestine, former Director of the Epidemiology department of general directorate of Veterinary Services and Animal Health, Ministry of Agriculture, Palestine, born and study my bachelor degree in Ukraine.

**Giuseppe Bee****Affiliation: Agroscope Posieux, Switzerland****Title: Tannins to the Rescue: A Sustainable Shield Against Post-Weaning Diarrhea in Pigs****Abstract**

Post-weaning diarrhea (PWD) remains a major obstacle in pig production, not only causing considerable economic losses but also compromising piglet welfare. This condition is primarily driven by the physiological, immunological, and microbiological disruptions that occur during weaning, a period marked by stress-induced changes in diet and environment. Conventional management strategies—such as antibiotics and zinc oxide—are increasingly constrained by regulatory pressures and environmental concerns, underscoring the need for innovative and sustainable approaches.

Among the promising alternatives, tannins have gained attention due to their multifaceted biological properties. As plant-derived polyphenols, they possess potent antimicrobial, gut-modulating, and anti-inflammatory capacities. In vitro research highlights tannins' ability to strengthen the intestinal barrier, reduce the adhesion of pathogenic bacteria, and dampen inflammatory signals—actions that collectively target the core drivers of PWD. Furthermore, tannins support a healthier gut microbial balance by favoring beneficial bacteria over harmful strains. This holistic mode of action not only helps alleviate diarrhea but can also enhance overall gut health and potentially reduce reliance on antibiotics.

Although early experimental and mechanistic studies support tannins' efficacy, further investigation is needed to fine-tune their use in swine diets. Factors such as optimal dosage, source of tannins, and the interplay with other feed additives warrant deeper exploration to maximize benefits and minimize variability in outcomes. With continued research and development, tannins offer a sustainable, natural alternative that can improve piglet health, bolster production efficiency, and align with evolving environmental and regulatory demands.



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## Biography

Giuseppe Bee is a distinguished animal scientist based at Agroscope Posieux, Switzerland, with over three decades of expertise in animal nutrition and meat quality research. He holds a Master's (1987) and Ph.D. (1993) in Animal Science from ETH Zurich, where his doctoral work focused on nutrient content and fatty acid patterns in pig carcasses. Dr. Bee has served as a researcher and lecturer at ETH Zurich, and since 2003, he has led the Pig Research Group at Agroscope. His research explores dietary amino acids, growth efficiency, feeding behavior, and prenatal impacts on meat quality. Dr. Bee coordinates international projects like MSCA ETN MonoGutHealth and supervises Ph.D. students while lecturing at ETH Zurich on Pig Science and Non-Ruminant Nutrition. An author of 100+ peer-reviewed articles, he serves as Editor-in-Chief of animal – open space and Vice-President of the Animal Task Force, making significant contributions to sustainable livestock systems worldwide.



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**Hans U. Graber**

**Affiliation: Advisor in Mastitis Research, Agroscope, Federal Department of Economic Affairs, Education and Research (EAER), Switzerland**

**Title: Staphylococcus aureus as Bovine Mastitis Pathogen**

## Abstract

Staphylococcus aureus (*S. aureus*) is a major cause of bovine mastitis, leading to significant economic losses and welfare concerns in dairy herds worldwide. Infections are often subclinical and chronic, reducing milk quality and yield while increasing antibiotic use and culling rates due to ineffective therapies. Recent findings revealed that *S. aureus* is not a pathogen with uniform clinical and epidemiological properties, as previously thought. Instead, it varies significantly by genotype: genotype B (GTB) is highly contagious and adapted to the mammary gland, while GTC is a skin colonizer and causes sporadic quarter infections in individual cows, as is also true for most other genotypes (e.g., GTF, GTR). These key differences demand genotype-specific control strategies: GTC and other GT require individual quarter therapy, whereas GTB necessitates herd sanitation. Traditional sanitation methods including standard bacteriology, however, are frequently ineffective and are restricted to smaller herds.

To overcome this challenge, we developed a highly sensitive, GTB-specific, and cost-effective qPCR assay. It enabled the use of bulk tank milk (BTM) for detection and control of GTB-positive herds and the replacement of aseptic by standard teat cleaning methods simplifying milk collection of individual cows substantially.

Coupled with tailored sanitation and treatment protocols, this approach was validated in a pilot study and then implemented across the Ticino region (168 herds, 3,364 cows). Initial BTM screening identified 62 GTB-positive herds, with cow prevalence ranging from 10% to 100%. Within 20 months, all herds were successfully and sustainably sanitized, achieving a 93.9% treatment success rate among infected cows. BTM somatic cell counts dropped rapidly to levels comparable to GTB-free herds and remained stable post-intervention. Farmers reported high satisfaction with the program's outcomes.

Our results demonstrate that GTB-focused qPCR screening, combined with systematic herd management, enables cost-effective, large-scale mastitis control—a critical advancement for dairy production systems.



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## Biography

Dr. Hans Ulrich Graber is a Swiss veterinary scientist with a distinguished career spanning nearly four decades. Born in Thun, Switzerland in 1958, he earned his veterinary degree and later a PhD (Dr. med. vet.) from the University of Bern. His expertise lies in mastitis research, molecular biology, and clinical veterinary medicine. Dr. Graber led the National Reference Laboratory for Coagulase-Positive Staphylococci and *Staphylococcus aureus* and was head of mastitis research at Agroscope under the Swiss Federal Department of Economic Affairs, Education and Research. He has held key research and academic roles at the University of Bern, Inselspital, and Agroscope. His postdoctoral work and laboratory leadership have contributed significantly to veterinary medicine, particularly in ruminant health. Now retired, he continues as an advisor in mastitis research. Outside of science, Dr. Graber enjoys classical music, piano playing, and history. He is widowed with two adult children and resides in Bern, Switzerland.



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**Jingsu Yu**

**Affiliation: Guangxi University, China**

## **Title: Translatomics Reveals the Role of Dietary Calcium Addition in Regulating Muscle Fat Deposition in Pigs**

### **Abstract**

Intramuscular fat (IMF) in pork holds significant importance for economic performance within the pig industry and dietary calcium supplementation enhances the accumulation of intramuscular fat. Additionally, calcium ions inhibit translation and reduce protein synthesis. However, the mechanism by which calcium regulates IMF deposition in muscle through translation remains largely unknown. In this study, we compared the ribosome profiles of the longissimus dorsi muscles of Duroc × Landrace × Large white pigs from the normal calcium (NC) group or calcium supplement (HC) group by Ribo-seq, and RNA-seq. By integrating multiple-omics analysis, we further discovered 437 genes that were transcriptionally unchanged but translationally altered and these genes were significantly enriched in the oxidative phosphorylation signaling pathway. Furthermore, experimental data showed that inhibiting the expression of COX10 and mtND4L increased triglyceride accumulation in C2C12 cells, providing new targets for intramuscular fat deposition. Finally, this work links dietary calcium, translation regulation and IMF deposition, providing a new strategy for both meat quality and economic performance within the pig industry.

### **Biography**

Yu Jingsu, a Ph.D. candidate in Animal Science at Guangxi University, specializes in metabolic regulation and targeted therapeutics. His research spans fatty liver diseases, diabetes mellitus, bioinformatics, and drug targeting. He has authored a JCR Q2 SCI-indexed paper as first author and co-authored a Q3 publication as co-first author, with four additional manuscripts under peer review. He has contributed to eight collaborative publications and filed five invention patents currently under examination. His conference presentations include award-winning work, notably securing Second Prize at the Cell Symposia: Molecular Mechanisms of Obesity & Integrative Physiology.

**Xiangling Li****Affiliation: Guangxi University, China****Title: Betaine ameliorates MASLD via translation regulation mediated by N6-methyladenosine RNA methylation****Abstract**

Metabolic dysfunction-associated steatotic liver disease (MASLD) is one of the most common liver diseases globally. It can progress to severe conditions such as non-alcoholic steatohepatitis, liver cirrhosis, and hepatocellular carcinoma. Recent studies have shown that translational regulation is a key mechanism in the progression of MASLD, and N6-methyladenosine (m6A) RNA methylation plays an important role in this process. Betaine, a natural methyl donor, has been proven to significantly improve fatty liver. However, it is unclear whether betaine improves MASLD through m6A-regulated translation. This study explored betaine's effect on high-fat-diet-induced mouse hepatic steatosis and its regulatory mechanism of translation via m6A methylation, combining animal/cell experiments with multi-omics (m6A-seq, RNC-seq, RNA-seq) analysis.

Results showed that betaine significantly improves hepatic lipid accumulation and reduces hepatocyte injury. m6A-seq reveals significant differences in m6A-modified genes between the high-fat diet (HFD) and high-fat diet with betaine (HBD) groups, with these genes enriched in lipid metabolism pathways. The translation rate (TR) of transcripts with m6A modification is significantly increased, and there is a positive correlation between m6A modification levels and translation efficiency, particularly with CDS region modification playing a crucial role. Through PPI network analysis, ANKHD1 is identified as a key gene in betaine's m6A modification regulation of hepatic steatosis. In vitro experiments confirm the abnormal expression of ANKHD1 at the translational level and show that betaine reduces lipid accumulation by enhancing ANKHD1's translation efficiency.

This study comprehensively maps the impact of m6A methylation in betaine's improvement of hepatic steatosis. Betaine reduces liver fat accumulation by modulating m6A methylation to enhance mRNA translation. Additionally, ANKHD1 is found to be a novel potential therapeutic target gene for MASLD.



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## **Biography**

Li Xiangling is a Ph.D. in Animal Science at Guangxi University, specializing in metabolic regulation. Her research focuses on the intersections of Diabetes mellitus, Ageing, Ferroptosis, and Immunity. She has authored a first-author publication in a JCR Q2 SCI-indexed journal and has three additional manuscripts currently under peer review. Demonstrating strong collaborative skills, she has contributed to five co-authored publications. Furthermore, Li has filed three invention patents, which are currently pending examination, highlighting her innovative research with translational potential.

## **Maíse Macário**

**Affiliation: Maurício de Nassau University Center, Brazil**

### **Title: Turmeric Essential Oil Improves Intestinal Integrity, Immunological Parameters, and Performance of Broiler Chickens under Cyclic Heat Stress**

#### **Abstract**

This study aimed to examine whether dietary supplementation of broiler chickens with turmeric essential oil could mitigate the effects of cyclic heat stress conditions. Intestinal and immunological parameters and gene expression were evaluated during the grower phase. A total of 320 21-day-old male Cobb 500 broilers were distributed according to a completely randomized design with a 4 (diet) × 2 (environment) factorial arrangement and eight replications of five birds each. Dietary treatments consisted of a basal diet without essential oil (EO, negative control) and three diets containing low (100 mg kg<sup>-1</sup>), intermediate (200 mg kg<sup>-1</sup>), or high (300 mg kg<sup>-1</sup>) levels of turmeric EO. In the heat stress group, dietary supplementation with turmeric EO at 100 and 200 mg kg<sup>-1</sup> improved body weight, feed conversion, breast yield, and relative liver weight. These supplementation levels reduced villus width, increased villus/crypt ratio, reduced the H/L ratio, and improved hepatic (HSP70 and SREBP1) and intestinal (OCLN) gene expression in birds under heat stress. These findings support the hypothesis that turmeric EO can be used to improve or restore intestinal integrity, modulate inflammation parameters, and, consequently, enhance the performance of broilers challenged by cyclic heat stress.

#### **Keywords:**

Curcumin, intestinal inflammation, morphometry, nutrigenomics, turmeric, volatile extract

#### **Biography**

Maíse Macário holds a Ph.D. in Sciences (2024) from the Federal University of Sergipe, with a background in Animal Science (B.Sc. and M.Sc., 2016). She is a faculty member in the Veterinary Medicine program at UNINASSAU Aracaju, where she teaches courses such as Animal Nutrition, Animal Production, and Biostatistics. She also coordinates academic mentoring and research activities focused on animal welfare, nutrigenomics, and livestock nutrition. Additionally, she contributes to the professional training of young people through vocational courses in a national program aimed at strengthening the Brazilian agricultural sector.

**Silviu-Ionuț Borș****Affiliation: Research and Development Station for Cattle  
Breeding, Romania****Title: PRP therapy in mammalian reproduction****Abstract**

Platelet-rich plasma (PRP) is a preparation of autologous plasma enriched with a platelet level above the baseline, which was shown to play an essential role in the tissue regenerative process. The attention to PRP as an unconventional therapy has steadily increased in the last decade, particularly in human medicine. Platelets secrete growth factors and active metabolites that support the three phases of wound healing and repair cascade (inflammation, proliferation, remodeling). Applications of PRP with various degrees of success have been reported in a wide array of medical problems, from musculoskeletal injuries to ovarian insufficiency. Therapies with PRP in farm animals are still scarce. Still, the promising results offered by several studies will probably trigger an increased interest in its application by both veterinarians and farmers. In this paper, we summarize some efforts made in the field of reproductive medicine of dairy cows regarding the use of activated PRP to potentiate mastitis conventional therapy, to treat endometritis, and to improve the follicular development, oocyte competence, and uterine environment for increasing the embryos implantation rate.

**Keywords:**

dairy cow, reproductive medicine, platelet-rich plasma, alternative therapy

**Biography**

Following graduation from the U.S.A.M.V. Iași, Faculty of Veterinary Medicine, Dr. Silviu-Ionuț Borș applied to be accepted to the same institution's PhD program. In 2007, he was accepted into the full-time doctoral program at the Faculty of Veterinary Medicine Iași, where he focused on obstetrics and veterinary andrology. He applied for the post of Scientific Veterinarian Researcher at the Research and Development Station for Cattle Breeding, Dancu, Romania after completing the Ph.D. program. Since his initial start in 2011, he had stayed in this role. He has worked as a farm veterinarian at this institution, actively participating in the current treatments of farm animals and conducting monthly gynecological surveys in addition to approaching a variety of dairy cow-specific research problems. At the moment, Dr. Borș Silviu-Ionuț is in charge of research activities as the Scientific Director of the Research and Development Station for Cattle Breeding in Dancu, Iași, Romania.



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**Wen Chi Lin**

**Affiliation: University of Michigan, Taiwan**

## **Title: Effects of Pre-Visit Trazodone Administration on Thyroid Function Test Results in Dog**

### **Abstract**

#### **Purpose/Objectives:**

Oral anxiolytics are frequently prescribed to reduce stress and aggression in dogs before veterinary visits. Several drugs have been reported to interfere with thyroid function testing, but the effect of trazodone has not been evaluated. This study aimed to prospectively assess whether a single oral dose of trazodone alters thyroid function test results in healthy dogs.

#### **Materials/Methods:**

Twenty-one clinically healthy dogs were prospectively enrolled at National Pingtung University of Science and Technology veterinary teaching hospital. Each dog received a single oral dose of trazodone (6.25-8.6 mg/kg). Serum total thyroxine (TT4) and free thyroxine (fT4) concentrations were measured at baseline and two hours post-administration. After a minimum two-week washout period, five of the dogs underwent a control study without drug administration, with TT4 and fT4 measured at the same time points.

#### **Results:**

In the trazodone-administered group, both TT4 and fT4 increased significantly ( $p = 0.006$  and  $p = 0.0003$ , respectively). No significant differences were observed in controls ( $p = 0.5$  and  $p = 0.625$ ).

#### **Conclusions:**

A single oral dose of trazodone significantly increased TT4 and fT4 concentrations in healthy dogs. Further studies evaluating thyroid-stimulating hormone, sedation scores, and blood pressure are warranted to clarify the mechanism and clinical significance. These findings may influence decisions regarding pre-visit medication in dogs undergoing thyroid function testing.

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## **Biography:**

Dr. Wen-Chi Lin is a Project Lecturer in the Department of Veterinary Medicine at National Pingtung University of Science and Technology. Her research focuses on companion animal internal medicine, with a particular interest in renal biomarkers and feline metabolic health. She regularly speaks at international veterinary conferences. Her current work involves addressing diagnostic challenges in endocrinology and exploring early diagnostic strategies for chronic kidney disease in cats and dogs.

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**Wessely-Szponder Joanna**

**Affiliation: University of Life Sciences in Lublin**

**Title: In Vivo and in Vitro Models for Assessing of Usefulness of Neutrophil-Derived Products in the Treatment of Musculoskeletal Disorders in Medicine and Veterinary Medicine**

## **Abstract Purpose:**

Blood derived products, like platelet rich plasma (PRP) and other platelet concentrates are used for medical purposes for many years. However, new options such as antimicrobial peptides (AMPs) are of growing interest due to their properties and potential for clinical applications. AMPs of neutrophil origin are an important and effective component of innate immunity and possible alternative to conventional antibiotics. In addition to the main antimicrobial activity, AMPs have also immunomodulatory effect, regulating the course and severity of the inflammatory process. Other neutrophil derived products are also of interest, especially neutrophil-derived microvesicles (MV) and neutrophil degranulation products (DGP) as the promising modifiers of inflammation to enhance healing, and to improve osseointegration.

Some metallic biomaterials are widely used as bone implants to improve healing and restore tissue integrity in many orthopedic disorders. These implants may however cause an excessive immune response, leading to high failure rates up to immune rejection. A better understanding of the interactions between the material and the organism is strongly needed to develop solutions to overcome the adverse effects after using of biomaterials. Neutrophils appeared to be key signaling cell in the further stages of tissue repair process. Their interactions with macrophages could be essential for enhance tissue repair.

## **Materials/Methods:**

To provide a comprehensive study of host/biomaterial interactions, we created experimental systems including in vitro and in vivo models. For this purpose we prepared the in vivo animal model which includes titanium implant insertion into ovine tibia and in vitro model for study of the response of some components of white blood cells system from different species (human, sheep, pig, horse, rabbit) after contact with biomaterial. The neutrophil response was assessed on the basis of enzymatic response and reactive oxygen/nitrogen (RONS) generation. Mononuclear cells were evaluated on the basis of RONS generation,

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Mononuclear cells were evaluated on the basis of RONS generation, arginase activity and morphological changes.

## Results:

Conducted experiments proved that dependently on origin of neutrophil derived products autologous or heterologous they can stimulate or suppress neutrophil inflammatory response. Whereas, macrophages after stimulation with AMPs acquire the partially pro-inflammatory and partially anti-inflammatory phenotype with release of selected inflammatory mediators. On the other hand, such neutrophil derived products as MV or DGP are also potential source of important components to tissue repair. Only initial results are currently available and clinical trials will be necessary to further study, however results obtained to date are promising and indicated possible application in modulation of inflammatory reaction during surgery.

## Conclusion:

The obtained results may be useful for modulation of the inflammatory response during surgery and obtained neutrophil derived products may find application in regenerative medicine.

## Biography:

Dr. Joanna Wessely-Szponder is an Associate Professor at the Faculty of Veterinary Medicine, University of Life Sciences in Lublin, Poland, with nearly three decades of academic and research experience. She earned her DVM in 1993 and went on to complete her PhD in 2006 and ScD in 2018, focusing on cytokines, neutrophil peptides, and immune responses in veterinary pathology. Her research specializes in antimicrobial peptides (AMPs) derived from natural sources, particularly neutrophil extracts, and their role in immunomodulation, inflammation, and regenerative medicine. She has extensively studied the interaction of AMPs with leukocytes, biomaterials, and their application in surgical healing. Dr. Wessely-Szponder has published widely on topics including osteoarthritis, wound healing, oxidative stress, and biomaterial biocompatibility. Her work continues to influence advances in veterinary immunology and tissue repair.



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**Prof. Dr. Ahmed Sabry S. Abdoon**

**Affiliation: National Research Centre of Egypt**

**Title: Applications of Gold Nanorods in Treatment of Mammary Tumor and Skin Cancer in Pet Animals and Melanoma in Pure Arabian Horses**

**Abstract:**

Gold nanoparticles (AuNPs) have emerged as promising nanomaterials in veterinary oncology and reproductive health due to their unique physicochemical, optical, and biocompatible properties. In the mammary gland, AuNPs have been investigated for their potential role in the diagnosis and treatment of mammary tumors, particularly in companion animals such as dogs and cats, where mammary carcinoma remains a leading cause of mortality. Their ability to serve as drug delivery vehicles, radiosensitizers, and photothermal agents enhances therapeutic precision while minimizing systemic side effects. Similarly, in skin cancers of pet animals, including squamous cell carcinoma and mast cell tumors, AuNPs enable targeted delivery of chemotherapeutics and facilitate photothermal therapy through localized hyperthermia, offering a minimally invasive treatment strategy with high selectivity for neoplastic tissues. In equine medicine, melanoma especially prevalent in gray horses, represents a major clinical challenge due to its aggressive and recurrent nature. AuNP-based approaches, including photothermal therapy and immunomodulatory nanoconjugates, have demonstrated potential in reducing tumor burden and enhancing host antitumor immunity. Collectively, these applications highlight the versatility of AuNPs as diagnostic and therapeutic tools in veterinary oncology, opening new avenues for translational nanomedicine to improve health and welfare in companion and equine species.

**Title:**

## **The Biological Differences between Camels and Other Mammals: A Comparative Overview**

**Abstract:**

Camels (*Camelus dromedarius* and *Camelus bactrianus*) exhibit a unique set of biological adaptations that distinguish them from most other mammalian species. Camels are unique in their morphology, anatomy, physiology, reproductive, and immunology than other mammals. These differences are primarily driven by their evolutionary specialization for survival in arid and extreme desert environments. Unlike other mammals, camels possess remarkable water conservation mechanisms, including the ability to tolerate severe dehydration, produce highly concentrated urine, and reabsorb water from feces. Their red blood cells are oval-shaped, allowing them to withstand osmotic stress during fluctuations in hydration status. Thermoregulatory adaptations, such as a wide tolerance of body temperature fluctuations and specialized sweat gland regulation, enable camels to conserve water while maintaining homeostasis under high heat loads. In terms of metabolism, camels rely on unique lipid storage in their humps, which provides both energy and metabolic water. Anatomically and physiologically, camels also demonstrate specialized renal, gastrointestinal, and hematological features not typically observed in other mammals. In camels, maternal recognition of pregnancy. is very early by day 10 of pregnancy, and it depends on E2 expression. Also, camels are 100% left-horn pregnancy, which is not recorded in other species. Unlike other mammals, camels possess only heavy-chain IgG, in addition to the presence of the unique camel nanobodies. Also, camels are an environmentally friendly species. They emit less methane per unit of body weight or per Liter of milk production compared to cattle. These distinct biological traits highlight the camel as a model of evolutionary resilience and an invaluable species for studying adaptation to climate change and resource-scarce environments.



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## **Biography:**

Professor Abdoon is the Deputy Dean of the Veterinary Research Institute, National Research Centre of Egypt. He is expert in Animal Biotechnology and Molecular Biology. He is the team leader working on the applications of Plasmon Photothermal Therapy (PPTT) using gold nanorods in cancer. He got the National Award for the Promotion of Agricultural Sciences in 2002, National Research Centre for Excellence in Medical Sciences in 2012 and the award of the NATO Science Program in 2002. Supervisor on 37 master and Ph.D. thesis and published more than 128 articles in international and peer reviewed journals. Prof Abdoon published 45 gene sequences related to this work in Genbank. Principal investigator for many International projects with Italy, Germany, USA, France, Spain, China and Japan. Member of editorial board and reviewer in many International Journals.



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**Gerald Fritz Schusser**

**Affiliation:**

**University Leipzig, Martin Luther University-Halle-  
Wittenberg Germany**

**Title: Equine Gastric Ulcer Syndrome in Horses Fed Hay, Hay Plus Different Amounts of Oats, or With Pasture Turnout**

**Purpose:**

Based on Luthersson et al. (2009) high-starch feeding is a risk factor for inducing equine gastric ulcer syndrome (EGUS).

**Objectives:**

The effect of feeding different amounts of starch from oat grains with hay and straw ad libitum in comparison with only hay and straw ad libitum or on pasture turnout on gastric mucosa under experimental conditions was studied.

**Methods:**

24 horses (13/11 m/f; age  $11 \pm 6.0$  yrs.; bwt  $471 \pm 63.4$  kg, BCS  $5.1 \pm 0.67/9$ ): 8 horses with hay ad lib. (HAY); morning meal of oat grains at either 1 g (OS1, 6 horses) or 2 g (OS2, 5 horses) starch/kg bwt/meal with hay ad lib., or pasture turnout (PST; 4 horses; 0.5 ha/horse). The horses had ad lib. access to tap water and a salt lick, and with HAY, OS1 and OS2 also to straw from the bedding. In four periods (PST in period 4 only), diets were fed for at least six weeks with HAY used to rule out period effects. With HAY, OS1 and OS2 the horses had daily paddock turnout. Initial (gastroscopy) and final (postmortem examination) equine squamous gastric disease (ESGD) and equine glandular gastric disease (EGGD) scores (0-4 scale) were obtained (Sykes et al. 2015, Banse and Andrews 2019). For ESGD the subareas saccus caecus, lesser and greater curvature, and for EGGD the subareas corpus ventriculi, antrum and pylorus were individually examined. The worst scores of squamous (ESGD) and glandular (EGGD)

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mucosa area were taken. Samples for histopathological examination were taken from macroscopically inconspicuous squamous and glandular mucosa and macroscopically conspicuous areas. Paraffin-embedded and HE-stained slices were examined for severity of gastritis. Statistical analysis was performed with mean and s.d. of ESGD and EGGD scores using SAS 9.4 (SAS Institute Inc., USA). Frequency of gastritis severity, type and progression was analysed using Fisher's exact test including regular samples from inconspicuous areas and those taken from conspicuous ones. Spearman correlation was calculated between macroscopic and histopathological scores. Differences with  $p < 0.05$  were significant.

## Results:

Score in squamous mucosa: horses that received HAY decreased in scores from  $1.37 \pm 1.06$  to  $0.75 \pm 1.16$ , on OS1 from  $1.0 \pm 0.89$  to  $0.33 \pm 0.81$  and in PST from  $2.25 \pm 1.70$  to  $0 \pm 0$ ; on OS2, the score increased from  $1.20 \pm 1.30$  to  $2.20 \pm 2.04$ . Score in glandular mucosa: horses on HAY, OS1 and PST decreased from  $2.0 \pm 1.30$  to  $1.25 \pm 1.28$ ,  $2.16 \pm 0.98$  to  $1.50 \pm 1.37$  and from  $1.75 \pm 1.50$  to  $0.25 \pm 0.50$  respectively; those on OS2 increased from  $2.0 \pm 0.70$  to  $2.4 \pm 0.89$ . For OS1, however, the score of EGGD in the region antrum increased significantly ( $0.66 \pm 1.21$  to  $1.5 \pm 1.37$ ;  $p < 0.05$ ). On HAY or PST, horses had the highest probability to recover ( $P = 0.88$  and  $P = 0.96$ ), while horses fed OS2 had the highest risk for EGUS ( $P = 0.47$ ;  $p < 0.05$ ). In terms of gastritis, 48% had normal mucosa, 39 and 22% had mild, 9 and 22% moderate and 4 and 9% severe or massive gastritis of the squamous and glandular mucosa, respectively. Correlation between macroscopic and histopathological severity was  $r_s = 0.68$  and  $r_s = 0.70$  for squamous and glandular mucosa, respectively ( $p < 0.001$ ). In the squamous mucosa, 50% of gastritis was chronic in HAY and 100% in PST; acute cases occurred 50% in HAY, 40% in OS1 and 67% in OS2 ( $p < 0.05$ ). In the glandular mucosa, chronic inflammation dominated; acute cases were found in OS1 (25%) and OS2 (13%) and not in HAY or PST. Chronic gastritis was mostly lympho plasma cytic, acute gastritis granulocytic with mostly ulcerative outcome.

## Conclusion:

Highest benefit clearly had horses kept on pasture, with spontaneous healing also of EGUS with high severity, followed by adlib.hay. Highest arch feeding seems to be detrimental regarding ESGD, but also EGGD. Even low starch doses seems to pose a risk for EGUS, especially in the gastric region antrum.

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## **Title: Hearing deficit and severe complications of external otitis in horses**

### **Abstract**

#### **Purpose:**

**Hearing is an important sensory ability of horses. Hearing is important for recognition within in a group of horses which is an important part of social behavior. Hearing with seeing and the sense of touch are very important for cooperation between human beings and horses.**

#### **Objectives:**

The aim of this clinical study was to investigate the hearing deficit in horses with ear discharge and painful ear basis, skittish horses with eye disease, head tilt with facial nerve paralysis, head shaking or acute head trauma. One horse with tinnitus and 8 American Paint Horses were investigated too. Based on the neurological examination including otoscopy and endoscopy of the guttural pouches the complications were analyzed.

#### **Methods:**

Neurological examination was performed and endoscopy of the external ear canal was done in all sedated standing horses. The debris and exudate of the cartilaginous and osseous part of the external ear canal including tympanic membrane were graded. The guttural pouches were examined endoscopically to check the temporotympanohyoideum and stylohyoideum. The brainstem auditory evoked response (BAER) of all horses was done. Group 1: Ten horses with an age of 6 - 24 years with ear discharge and painful ear basis had a history with these problems of 2 weeks to 18 months. Group 2: 10 skittish horses with chronic eye disease with an age of 3 – 34 years and a history of 1 month to 4 years. Group 3: 4 horses with head tilt and facial nerve paralysis with an age of 7 – 16 years and a history of 6 to 13 months. Group 4: 10 horses plus one donkey with head shaking with an age of 5 – 16 years and a history 3 weeks to 5 months. Group 5: 3 horses with an acute head trauma, one horse with a head trauma 4 weeks before admission and one horse with othematoma on both sides induced by a head trauma one year before (age 1 – 12 years). Group 6: One 8 years old Quarter Horse mare with a tinnitus over 3 months and 8 American Paint Horses (age 2 – 12 years) with no reaction during calling were investigated. Mares, geldings and stallions of Warmbloods, Quarter Horses, Tinkers, American Paint Horses, Ponies, Island Horses and Haflinger were involved.

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## Results:

Group 1: Based on the otoscopic appearance with cell debris and exudate in the cartilaginous and osseous part of the external ear canal and without visible tympanic membrane otitis externa was diagnosed. The grading of appearance in the involved part of the external ear canal was III/III (cartilaginous part: massive ceruminous debris formations, osseous part: completely obstructed with ceruminous cell debris and exudate). Horses with right sided or bilateral external otitis had moderate to severe conductive hearing loss (hearing deficit)(right or bilateral significantly prolonged latencies of I, III, V and interpeak latencies I-III, I-V, III-V; thresholds of hearing levels 60 to 80 dB). Horses with left sided external otitis had a severe conductive hearing loss (left: no correct identification of BAER peaks, latencies not measurable, 80 dB). The tympanostylohyoideum in the guttural pouch had ipsilateral or on both sides a mild to severe hypertrophy in horses with external otitis. Group 2: The moderate to severe skittish horses with mostly left sided equine recurrent uveitis had moderate sensorineural hearing loss on both sides (left: significantly prolonged latencies and interpeak latencies; right: significantly prolonged interpeak latencies I-V, III-V; 60 dB; I/III normal otoscopic and guttural pouch findings). Group 3: The horses with head tilt had on the side of the dropped ear: ptosis of the upper eyelid, reduction in the tear production with Keratitis sicca, muzzle deviation to opposite side and poor mastication. The otoscopic findings of the side of dropped ear were grade III/III with exudate in the cartilaginous and osseous part without visible tympanic membrane in the external ear canal. Diagnosis: severe Otitis externa exsudativa with severe conductive hearing loss (no correct identification of BAER peaks, latencies not measurable, 80 dB). The temporotympanohyoideum and stylohyoideum were severe inflamed or hypertrophic. Group 4: Horses with head shaking had much keratin scales all around the junction between cartilaginous and osseous part (grade II/III: junction surrounded by a rim of cell debris, several free ceruminous cell debris formations in osseous part) with visible tympanic membrane. The donkey had parasites (*Werneckiella equi asini*) in the cartilaginous and osseous part of the external ear canal which induced head shaking. The tympanohyoideums and stylohyoideums on both sides were normal. A mild sensorineural hearing loss characterized by significantly prolonged V, I-III, I-V and a threshold of hearing level 40 dB was diagnosed. Group 5: The otoscopic findings on the side of head trauma were blood and exudate in the hole external ear canal (grade III/III, in horses with othematoma in both sides) without visible tympanic membrane. Blood was seen too in the guttural pouch of the involved side. A severe conductive hearing loss of the traumatic involved ear and in both ears of the horse with othematoma was diagnosed (no correct identification of BAER peaks, latencies not measurable, 80 dB). Group 6: The horse with objective chronic tinnitus on both sides had normal otoscopic and guttural pouch findings. This horse had a mild sensorineural hearing loss on both sides with prolonged V, I-III, I-V, III-V and a threshold of hearing level 40 dB. The prolonged latency and interpeak latencies were induced by a pathology of auditory nerve, cochlear nucleus and above the level of this nucleus in the brainstem. The diagnosis of all American Paint Horses was sensorineural deafness with a threshold of hearing level 80 dB on both sides (BAER: isoelectric line on both sides). Otosopic and guttural pouch findings were normal.

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## Conclusion:

**The external otitis induces conductive hearing loss (hearing deficit). The complications of Otitis externa exsudativa are Otitis media et interna with labyrinthitis on the involved side which induces external vestibular syndrome with head tilt, ataxia, nystagmus and facial nerve paralysis (dropped ear and upper eye lid, reduced tear production with following Keratitis sicca, deviation of the upper lip to the normal side, drooped lower lip). The facial nerve paralysis is caused by a neuritis induced by Otitis externa, media et interna. The facial nerve in the Canalis facialis is only separated from the Meatus acusticus externus et internus with a thin bone lamella. The N. petrosus major from N. facialis is involved too and the Glandula lacrimalis produces less tear fluid and Keratitis sicca will be developed. The inflamed or hypertrophic temperotympanohyoideum and stylohyoideum caused by the Otitis externa induce painful mastication with reduced food intake.**

## Clinical relevance:

Otoscopy and BAER in these horses are important for treatment of the external otitis and for the prepurchase exam.

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## **Biography**

Dr. Gerald Fritz Schusser is a distinguished equine internal medicine expert. After earning his veterinary degree from the University of Veterinary Medicine, Vienna, Austria, he conducted pioneering research on equine rotavirus, asthma, and colic. At Virginia State University, USA, he studied myenteric plexus neurons and gastric ulceration in racehorses. In 1994, Dr. Schusser became Professor of Equine Internal Medicine at the University of Leipzig, Germany, where he led groundbreaking research on gastric ulcers, renal failure, and equine auditory disorders. Since 2018, he has been a Professor Emeritus and visiting scientist at Martin Luther University Halle-Wittenberg, Germany.



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**Melissa Shyan-Norwalt**

**Affiliation: University of Cincinnati , US**

## **Title: Assessing Psychological Welfare in Laboratory Dogs and Cats**

### **Abstract:**

For dogs and cats in research environments, kennels or catteries, or with longer-term stays in veterinary hospitals, current understanding recognizes that these animals are entitled to “happy lives” as much as possible, with concomitant increasing socialization and enrichment practices. The Kennel Behavior Assessment for Dogs and the Cattery Behavior Assessment for Cats are evaluations that measure these animals’ socialization, cooperativeness, and anxiety levels when interacting with known human caretakers in research, veterinary, or kennel/cattery settings. Unlike temperament tests, these evaluations specifically target practical and useful behaviors that relate to animal welfare and enrichment needs. These objective evaluation technique takes approximately 7-15 minutes per animal, using standardized operational definitions for scoring criteria. They have been used successfully to evaluate dogs, and cats, determine which dogs or cats would benefit from extra socialization/enrichment, to track improvements, and changes in socialization and cooperativeness. These validated evaluations can be used in developing remedial programs for individual animals to increase welfare, cooperation with husbandry or procedures training, and enrichment activities. They also help track a dog’s or cat’s increasing readiness for adoption after its research life is complete. Animals fall into three tiers or levels: Low (scores 18-79.5), Moderate (scores 80-95.5), and High (scores 96-115). Low scoring animals require immediate remedial intervention, moderate require some increases in intervention, high are doing well. The evaluations will be made available to conference attendees.

### **Biography**

Dr. Melissa Shyan-Norwalt is an Educator Professor of Psychology at the University of Cincinnati. She received her Doctorate in Experimental Psychology at the University of Hawaii. She teaches experimental methods, learning theory, cognition, and advanced comparative cognition. She has been a laboratory animal behaviorist/researcher, zoo researcher, animal shelter manager, and board-certified animal behaviorist in private practice. She has numerous scientific publications in the fields of animal welfare/enrichment, animal cognition, and related areas. She has given over 30 international workshops and presentations to laboratories, zoos, animal shelter, laboratory, and scientific conferences, and other venues. Topics included dog, cat, primate, elephant, dolphin and zoo animal welfare, enrichment, and cognition.

**Cheng Ming Chu****Affiliation:****National Pingtung University of Science & Technology, Taiwan****Title: Trifolium Pratense as a Novel Phytogetic Supplement, is an Anticoccidial agent in chicken****Abstract**

Coccidiosis, caused by a protozoan parasite of the genus *Eimeria*, is one of the most severe contagious parasite diseases affecting the poultry industry worldwide. Using phytogenics to prevent chicken coccidiosis is a strategy aimed at combating the increasing issue of drug-resistant strains of *Eimeria* spp. This study demonstrates the anticoccidial activities of a medicinal herb, *Trifolium pratense* (TP) powder, and its ethanolic extract (designated TPE) against *Eimeria* spp. TPE exhibited significant suppressive activity against *E. maxima* oocyst sporulation and *E. tenella* sporozoite invasion and reproduction in Madin-Darby bovine kidney cells. Furthermore, administration of basal chicken diets containing TP powder or TPE to *Eimeria*-infected chickens significantly reduced the output of oocysts and severity of intestinal lesions. Dietary supplementation with TP significantly improved relative weight gain in *E. tenella*- and *E. acervulina*-infected chickens, while there was no significant improvement in *E. maxima*-infected chickens. The anticoccidial activities of TP and TPE on *E. acervulina*, *E. tenella* and *E. maxima* were further supported by anticoccidial index scores, which showed greater efficacy than those of amprolium, a commercial coccidiostat used in poultry. TP supplementation positively impacted the primary metabolism of chickens challenged with *E. tenella* or *E. acervulina*. The chemical fingerprints of TPE were established using liquid column chromatography; TPE contained four major compounds: ononin, sissotrin, formononetin, and biochanin A. In addition, various spectrometric methods were used to ensure the batch-to-batch consistency of TP/TPE. In conclusion, *T. pratense* is demonstrated to be a novel phytogetic supplement that can be used to control *Eimeria*-induced coccidiosis in chickens.



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## Biography

Ming-Chu Cheng, DVM, PhD, Professor of National Pingtung University of Science & Technology, Department of Veterinary Medicine.

**Education:** Doctoral of Veterinary Medicine, National Taiwan University.

## Working Experience:

2017/8 – 2025/1 Associate Professor of Department of Veterinary Medicine, National Pingtung University of Science & Technology (NPUST)

2019/8 – Present Director of Animal Disease Diagnosis Center, NPUST

2009 -2017/7 Researcher of Epidemiology Division, Animal Health Research Institute Council of Agriculture, Executive Yuan, Taiwan.

## Duties:

Head of Poultry Disease Laboratory and Pathological Diagnosis in Southern Taiwan (2017-present)

One of the laboratory leaders of Taiwan Southern District Poultry Health Center (2017- present)

Responsible for the National Diagnostic Laboratory of Avian Influenza (1998 – 2013)

Study on avian influenza multi-subtypes and virological surveillance in Taiwan's migratory birds for 10 years. (1998 – 2008)



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**Iuliia Dakhno**

**Affiliation: Institute of Veterinary Medicine, National Academy of Agrarian Sciences of Ukraine.**

**Title: Enzyme-linked immunosorbent assay (ELISA)**

## **Abstract**

This study presents the results of applying the enzyme-linked immunosorbent assay (ELISA) to detect *Dirofilaria repens* antigens in blood serum from naturally infected dogs in Ukraine. A total of 66 dogs were examined, including both infected and clinically healthy individuals from endemic areas. Commercial ELISA kits were used to detect circulating *D. repens* antigens.

The results demonstrated that ELISA had a diagnostic sensitivity of 76.5% and a specificity of 80.6%. Elevated optical density values were observed in dogs with confirmed infections, even in the absence of circulating microfilariae. These findings highlight the value of ELISA in detecting both clinical and occult infections.

In conclusion, ELISA is a highly sensitive and specific method for early diagnosis of subclinical and clinical dirofilariasis in dogs. These results support its use as a reliable and practical diagnostic tool for veterinarians in endemic regions.

## **Biography**

Dr. Iuliia Dakhno holds a PhD in Veterinary Parasitology from the National University of Life and Environmental Sciences of Ukraine in Kyiv, where she also taught practical parasitology courses. She graduated with honors from Sumy National Agrarian University and began her veterinary career at the Sumy State Veterinary Clinic. Her doctoral research focused on ELISA-based diagnosis of *Dirofilaria repens* in dogs and was recognized as a significant contribution to veterinary science in Ukraine. Dr. Dakhno is the author of several scientific publications and continues to conduct research on diagnostic methods for parasitic diseases.



# ANIMAL SCIENCE AND VETERINARY MEDICINE

August 28, 2025 | Webinar

**Jie Bai**

**Affiliation: Kunming University of Science and Technology,  
China**

**Title: Thioredoxin 1 Protects Dopamine Neurons from MPTP  
by Regulating the D2R Signaling Pathway through RGS6 and  
Pitx3**

## **Abstract**

The primary pathogenesis of Parkinson's disease (PD) is characterized by the loss and degeneration of dopamine (DA) neurons in the substantia nigra pars compacta (SNpc). The dopamine D2 receptor (D2R) is G protein coupled receptor and induces  $G\alpha_{i/o}$  signaling pathway. Regulators of G protein signaling 6 (RGS6) has been identified as a key inhibitory regulator of D2R- $G\alpha_{i/o}$  in the SNpc DA neurons, promoting neuronal survival. Thioredoxin 1 (Trx-1) is a redox regulatory protein that plays an important role in the protection of dopaminergic neurons. However, the mechanism by which Trx-1 regulates the D2R and RGS6 signaling pathway remains to be elucidated. We established 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)-induced PD mouse model combined with high and knockdown of Trx-1. Our results showed that MPTP decreased the expression of Trx-1 and TH, which was restored in Trx-1 overexpressing mice and decreased further in Trx-1 down regulation mice. Consequently, movement disorders induced by MPTP were suppressed in Trx-1 overexpression mice or enhanced in Trx-1 knockdown mice. Importantly, D2R was increased by MPTP, as same time RGS6 was decreased in nuclear, which was blocked in Trx-1 overexpression and enhanced in Trx-1 downregulation. Furthermore, paired like homeodomain transcription factor 3 (Pitx3) and dopamine transporters (DAT) expression was decreased by MPTP, which was restored in Trx-1 overexpression mice and enhanced in Trx-1 downregulation mice. We have verified that Trx-1 regulates the D2R signalling pathway by regulating RGS6 and Pitx3.

## **Biography**

Jie Bai, Professor, Medical School, Kunming University of Science and Technology, Yunan, China. Jie Bai got her PhD from Kyoto University, Japan in 2003 and did Post Doc in Virginia University, USA in 2003-2005. Her major research area is neurodegeneration disease and drug abuse.



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