Abstract book

SURVEILLANCE, PREVENTION, AND THERAPIES AGAINST DIESEASES IN HUMANS AND ANIMALS



15-16 MAY 2025 ALBANIA



COST-action CA21111 (OneHealthdrugs) event, hosted by SECID - Southeast European Center for Surveillance and Control of Infectious Diseases, Albania

WORKSHOP

"SURVEILLANCE, PREVENTION AND THERAPIES AGAINST PARASITIC DISEASES IN HUMANS AND ANIMALS"

15–16 May 2025 Tirana, ALBANIA



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One Health drugs against parasitic vector borne diseases in Europe and beyond **OneHealth***drugs* Cost Action CA21111

WORKSHOP INTRODUCTION

OneHealthdrugs WG2, WG3, WG6 Thematic Workshop: "Surveillance, Prevention and Therapies Against Parasitic Diseases in Humans and Animals"

Workshop Dates: 15–16 May 2025

• Schedule:

Day 1: Thursday, 15 May 2025 | 14:00 – 18:00 CET

Day 2: Friday, 16 May 2025 | 09:00 - 18:00 CET

• Venue: Hilton Garden Inn, Tirana, Albania

Hybrid Format: In-person & Online

This is a COST-action CA21111 (OneHealthdrugs) event, hosted by SECID - Southeast European Center for Surveillance and Control of Infectious Diseases, Albania.

Q Overview

This workshop explores the intersection of human, animal, and environmental health in the context of vector-borne parasitic diseases. It will cover the epidemiology of these diseases, focusing on One Health approaches to understanding transmission. Sessions will highlight advancements in diagnostic tools, therapeutic strategies, and control measures. Drug production for parasitic diseases will also be discussed, alongside challenges in pharmaceutical development. Additionally, the workshop will address toxicology, ecotoxicity, and environmental chemistry, emphasizing their impact on disease management. Drugs for parasitic vector borne diseases are in a new era of production to achieve best control for parasitical diseases. Our workshop intends to bring together scientists, researchers, experts and interested parties (stakeholders) to share their research, experiences, results and recent achievements in drug production for the therapies, surveillance and control against vector borne parasitic diseases in humans and animals. Furthermore, this workshop seeks to address the urgent need for coordinated efforts in the treatment of parasitic diseases, and recognizing the complex links between human and animal health and the environment. The focus of this workshop is aligned with the topics and goals of the COST Action CA2111 and the **One Health Drug Network.** In this context, experts from various fields will collaborate to share insights and innovative solutions for tackling parasitic diseases.

© Workshop Aim

This workshop aims to shed light on the latest research findings and advancements related to parasitic diseases affecting humans, animals, and the environment. Its objective is to foster a shared understanding of epidemiology, pathology, and the challenges associated with drug resistance, ecotoxicity, and chemical compounds-along with their implications for public health-framed within the overarching concept of "One Health."

Objectives

- To assess the current situation of parasitic infections in both humans and animals.
- To examine current and emerging diagnostic methods for detecting parasitic diseases.
- To evaluate existing surveillance and control of parasitic diseases and explore innovative preventive strategies for both human and animals.
- To investigate the latest therapeutic approaches in the management of parasitic infections, applicable drugs and the possibilities of pharmaceutical manufacturing for the treatment and management of parasitic diseases in humans and animals.



• To present evidence on the ecotoxicity and impact of chemical compounds on human, animal, and environmental health within the framework of the One Health approach.

L Key Topics

- Identifying the current status of parasitic infections in humans and animals, as well as the application of diagnostic methods now and in the future.
- Surveillance and control of parasitic diseases, including innovative preventive strategies for both humans and animals.
- Exploring the latest therapeutic approaches in managing parasitic infections, applicable drugs, and pharmaceutical industry prospects for treatment.
- Identifying the effects of ecotoxicity and chemical compounds on human, animal, and environmental health under the **One Health** framework.

Scientific Committee

- 1. Silvia Bino, Institute of Public Health, Albania.
- 2. Maria Paola Costi, Universita degli Studi di Modena and Reggio Emilia, Italy.
- 3. Anabela Cordeiro da Silva, FFUP and i3S, University of Porto, Portugal.
- 4. Erjona Abazaj, Institute of Public Health, Albania.
- 5. Elton Rogozi, Institute of Public Health, Albania.
- 6. Teita Myrseli, Institute of Public Health, Albania.
- 7. Clara Lima, University of Porto, Portugal.
- 8. Najada Como, University Hispital Center "Mother Theresa", Tirana, Albania.
- 9. Andi Koraqi, University Hispital Center "Mother Theresa", Tirana, Albania.
- 10. Jona Boci, Director of Food Safety and Veterinary Institute.
- 11. Erinda Lika, Agricultural University of Albania, Albania.
- 12. Oltjana Petri, University of Sports of Tirana, Tirana, Albania.

P Local Organizing Committee

- 1. Erjona Abazaj, Institute of Public Health, Albania.
- 2. Elton Rogozi, Institute of Public Health, Albania.
- 3. Ledia Agolli, SECID Southeast European Center For Surveillance And Control Of Infectious Diseases, Albania.
- 4. Alfred Ceri, Veterinary and Plant Protection Authority Durres, Albania

Keynote Speakers

- Prof. Dr. Silva Bino (Institute of Public Health, Albania)
- Prof. Dr. Anabella Cordeiro Silva, (University of Porto, Portugal)
- Dr. Clara Lima (University of Porto, Portugal)
- Prof. Dr. Harry de Koning (University of Glasgow, UK)
- Prof. Dr. Erinda Lika (Agricultural University of Tirana)









One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

Agenda

TIME	AGENDA FIRST DAY	AFFILIATION /COUNTRY	NOTE
13:30-14:00	Reception and registration for day 1		Main hotel conference hall
14:00 - 14:30	 Opening Ceremony speeches Introducing to this event by MC member and action chair Speech by Deputy Minister of the Ministry of Social Affairs Speech by Director of IPH, Albania Speech by Deputy Director of ISUV, Albania 	Erjona Abazaj & Maria Paola Costi Entela Ramasaco Eugena Tomini Jonida Boci	Lecture Room
Session 1:	"One health epidemiological aspects of		Lecture Room
14:30-15:55	vector borne parasitic diseases"		
	Session moderator: Elton Rogozi		
	Fatgzim Latifi		
14:30 - 14:50	1st Keynote: One health collaborative surveillance – the past, the present and the future. Prof. Dr. Silva Bino	Institute of Public Health, Albania	
14:50-15:05	Kurtesh Sherifi & Fatgzim Latifi:	Kosovo	
	"One Health approach to Crimean-Congo hemorrhagic fever virus in Kosova: tick surveillance, prevention and control"		
15:05-15:20	Anastasios Tasos: "Decoding the Gut's Enigma: Unravelling the Role of <i>Blastocystis</i> in Health	University of Kent	
15:20 - 15:30	Doloresa Mullaliu: The Albanian findings and global emergence of <i>Helicobacter pylori</i> antibiotic resistance. Statistical review	NJVKSH Durres	
15:30 - 15:45	Irida Goxhaj: Identification of antimicrobial resistance genes and drug resistance analysis of <i>Escherichia coli</i> in the environment	Albania	
15:45 - 15:55	Discussions of the FIRST session presentations		
15:55 – 16:20	Break		Main hotel conference hall
Session 2: 16:20-18:30	"One health current and future diagnostic tools of parasitic disease" Session moderator: Doloroesa Mullaliu Harry de Koning		Lecture Room
16:20 - 16:50	2 nd Keynote: Prof. Dr. Anabella Cordeiro Silva "First Serological, Molecular, and Sociodemographic Characterization of Exposure to Leishmania spp. in the HIV- Infected Population of Northern Portugal"	Portugal	









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16:50 - 17:05	Andi Koraqi: New diagnostic methods used in parasitic infections and tropical medicine	Albania	
17:05- 17:20	Ana Figueiredo: From Zoonoses to Diagnostics: Investigating Enteric Microeukaryotes Transmission and Detection Strategies	Portugal	
17:20-17:35	Maria Paola Costi: Drug resistance prevention and drug target identification through omics approaches. The case of H80	Italy	
17:35-17:50	Rokaya Ahmad: "Nuclear Protein Import in Leishmania: Establishment of a validated in situ assay for antileishmanial drug discovery"	Belgium	
17:50-18:05	Guy Caljon: Tropism of African trypanosomes: rationale for novel diagnostics for surveillance	Belgium	
18:05-18:15	Oltiana Petri: Multiplex molecular assays as diagnostic tools for gastrointestinal parasitic infections	Albania	
18:15-18:30	Discussions of the SECOND session presentations		
18:30	<i>Closing Remarks of the FIRST Day</i> Prof. Dr. Silva Bino		Lecture Room

Second day

TIME	AGENDA SECOND DAY	AFFILIATION	NOTE
09:00 - 09:30	Reception and registration		Main hotel
			conference hall
Session 3:	"Current and perspective therapeutical and		Lecture Room
9:30-11:00	control measures of vector borne parasitic		
	diseases and beyond"		
	Session moderator: Erinda Lika		
	Rokaya Ahmad		
09:30 - 09.50	3 nd Keynote:	Portugal	
	Clara Lima: Epidemiological survey of canine		
	and feline leishmaniosis in Portugal		
09:50 - 10:00	Elona Kureta: Epidemiology and control	Albania	
	measures challenges of Malaria in Albania		
10:00 - 10:10	Edmond Puca: Dilemmas on the treatment of	Albania	
	human Toxoplasmosis		
10:10 - 10:25	Hafidh Akkari: Anthelmintic; anticoccidial	Tunisia	
	and anti-trypanosomal potentials of		
	Rosmarinus officinalis essential oil		
10:25 - 10:40	Adela Vasili: Epidemiology and control of	Albania	
	Leishmaniasis in Albania		
10:40-10:50	Elton Rogozi: "Role of Novel Vector Control	Albania	
	Strategies and New Drugs Production in the		
	Mitigation of Parasitic Vector-Borne Diseases		
	Burden"		









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10:50-11:00	Discussions of the THIRD session		
11:00 - 11:30	Break		Main hotel conference hall
Session 4: 11:30-13:00	"Drug production and pharmaceuticals on parasitic diseases and antiparasitic resistance" Session moderator: Teita Myrseli Narimantas Čėnas		Lecture Room
11:30-11.50	4nd Keynote: Harry de Koning: An investigation into the Mechanisms of Action and Resistance of Quinapyramine in African Trypanosomes	United Kingdom	
11:50-12:05	Elda Jano: Antiparasitic drugs manufactured by Profarma in Albania	Profarma, Albania	
12.05 - 12.20	Entela Haloci: Herbal drugs as antihelmintic agents and their nanoformulations	Albania	
12:20- 12.35	Emi Panariti: Use of Herbal Plants an Alternate Approach against Parasitic Infections	Albania	
12:35-12-50	Lori Doko: Addressing Drug Resistance in Parasitic Diseases: Clinical Strategies and Integrated Therapeutic Approaches	Albania	
12.50 - 15.00			
13:00 - 14:00	Refreshment		Restaurant at Hotel conference
13:00 – 14:00 Session 5: 14:00-17:30	<i>Refreshment</i> "One health toxicology, Ecotoxicity and environmental chemistry and their impact" Session moderator : Oltiana Petri Clara Lima		Restaurant at Hotel conference Lecture Room
13:00 - 14:00 Session 5: 14:00-17:30	Refreshment "One health toxicology, Ecotoxicity and environmental chemistry and their impact" Session moderator: Oltiana Petri Clara Lima 5 nd Keynote: Erinda Lika: Ecotoxicology and Ecopharmacovigilance Role and Prevention in Albania within the One Health Approach	Albania	Restaurant at Hotel conference Lecture Room
13:00 - 14:00 Session 5: 14:00-17:30 14:00 - 14:30 14:30-14:45	Procession Refreshment Refreshment "One health toxicology, Ecotoxicity and environmental chemistry and their impact" Session moderator: Oltiana Petri Clara Lima Session moderator: Oltiana Petri Clara Lima S nd Keynote: Erinda Lika: Ecotoxicology and Ecopharmacovigilance Role and Need in Antimicrobial Environmental Pollution Prevention in Albania within the One Health Approach Narimantas Čėnas; Antiplasmodial in vitro activity of phytocannabinoids: the influence of single-electron oxidation potential and lipophilicity.	Albania Lithuania.	Restaurant at Hotel conference Lecture Room
13:00 - 14:00 Session 5: 14:00-17:30 14:00 - 14:30 14:30-14:45 14:45-15:00	Procession Refreshment Refreshment "One health toxicology, Ecotoxicity and environmental chemistry and their impact" Session moderator: Oltiana Petri Clara Lima Network Colspan="2">Session moderator: Oltiana Petri Clara Lima Narimatoria Colspan="2">Session moderator: Oltiana Petri Pollution Narimatoria Cienas; Antiplasmodial in vitro activity of phytocannabinoids: the influence of single-electron oxidation potential and lipophilicity. Lindita Tafaj: Phasing out	Albania Lithuania.	Restaurant at Hotel conference Lecture Room
13:00 - 14:00 Session 5: 14:00-17:30 14:00 - 14:30 14:30-14:45 14:45-15:00 15:00-15:15	Procession Refreshment Refreshment "One health toxicology, Ecotoxicity and environmental chemistry and their impact" Session moderator: Oltiana Petri Clara Lima Network: Antipication on pollution pollution in Porto-Romano area and its impact on animal and population health	Albania Lithuania. Albania Albania	Restaurant at Hotel conference Lecture Room









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15:30-15:45	Discussions of the FIFTH session presentations		
15:45 – 16:15	Break		Main hotel conference hall
16:15-17:15	FLASH POSTERS PRESENTATIONS		Lecture Room
	Session moderator: Erjona Abazaj		
	Guy Caljon		
5 min	1. Fatgzim Latifi: Diagnosis and treatment	Kosovo	
	in adult goats.		
5 min	2. Rokaya Ahmad: "Antileishmanial	Belgium	
	aminopyrazoles: deconvolution of the mode		
	of action by chemical mutagenesis".		
5 min	3. Ani Vodica: Gastrointestinal parasites of	ISUV	
	small ruminants in Korça district in		
	Albania, prevalence and anthelmintic		
5 min	resistance.		
	4. Brunilda Elezi: Intestinal parasitosis	ELBASAN	
5	infections among children with special		
5 min	needs in Elbasan, Albania.	IDU	
E	5. Erjona Abazaj: The utilisation of	IPH	
5 min	serological diagnostic tests during		
5 mm	pregnancy for the detection of Toxoplasma		
5 min	infection.	ICLIV	
5 11111	6. Anila Daçi: Toxoplasmosis in goats in a	15U V	
5 Min	farm in Tirana: case report.	IDLI	
J WIIII	7. Teita Myrseli: A study of intestinal	11 11	
	parasites in preschool children in the		
5 min	urban area of Tirana.	ISUW	
5 11111	8. Arla Juma: Study on Toxoplasma gondii	100 V	
5 min	in cats in Lirana	NJVKSH Tirane	
0 11111	9. Biegina Arapi: Epidemiology of parasitic		
	diseases and the spread of gastrointestinal		
5 min	parasites in Tirana.	UKT	
	10. Adeia Kullaj: Elimination of indicator		
	plant"		
17.15 17.30	Discussions of the FIFTH session		Lecture Room
17.15-17.50	presentations		Letui e Rooili
17.30	Closing Remarks of the SECOND Day		Lecture Room
17.30	Prof Dr. Maria Paola Costi		Lettine Room
L			



ONE HEALTH COLLABORATIVE SURVEILLANCE: PAST, PRESENT, AND FUTURE

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ABSTRACT

One Health collaborative surveillance refers to integrated systems that monitor, detect, and respond to health threats at the intersection of human, animal, and environmental health. This approach related also to mosaic surveillance is recognized as vital to face emerging zoonotic diseases, pandemics, and complex environmental challenges.

The origins of One Health trace back to the 60s, when the concept of "One Medicine" was introduced to highlight the interconnectedness of human and animal health. In the early 2000s, the "One World, One Health" movement gained momentum, especially after outbreaks of H5N1 avian influenza, emphasizing interdisciplinary collaboration to prevent epidemic diseases. Major organizations, including the WHO, FAO, and WOAH, began formalizing frameworks and partnerships to address zoonotic risks and health threats across sectors.

Collaborative surveillance is now defined as the systematic strengthening of capacity and collaboration among diverse stakeholders-across health, veterinary, environmental, and other sectors-to enhance public health intelligence and inform decision-making. Modern One Health surveillance systems integrate data from human healthcare, veterinary medicine, agriculture, wildlife, and ecological studies to enable early detection of zoonotic diseases, antimicrobial resistance, food safety issues, and environmental hazards. Different approaches such as building interoperable systems, data and information sharing across sectors, joint risk assessments and targeted surveillance at the human-animal-environment interface or joint outbreak investigation and studies and joint enhancement of analytical capacities and capabilities are considered as the most important.

Use of mosaic surveillance tools and greater integration of digital tools and real-time data analytics to enhance detection and response capabilities are the most important future plans and will serve to ensure surveillance findings inform timely decision-making at all levels. The expansion of partnerships within collaborative surveillance to address emerging threats and current treatment methods will strengthen health emergency preparedness, response, progress on developing new methods and resilience by embedding collaborative surveillance as a core component of the health security architecture.

Keywords: One health, surveillance, zoonotic diseases

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Short Biography of the presenting author:

Dr Silvia Bino is the Head, Control of Infectious Diseases Department, Institute of Public Health, Tirana, Albania and a Professor of Infectious Diseases at the Faculty of Medicine, Tirana University, Albania. She is coordinating the center for Southeast European network for communicable disease surveillance and response since 2012 which has fostered strengthening of early warning systems, policy development, One health preparedness and response, applied epidemiology training and expert and institutional collaboration.

Dr Bino has devoted her career to novel strategies to control infectious diseases and strengthen surveillance systems in resource poor countries. She has authored articles on infectious diseases published in professional and scientific journals and has participated in the writing of different guidelines, books and reports related to infectious diseases, influenza and public health surveillance.

Dr.Bino has served as consultant to WHO and other UN agencies. Dr Bino was a member of Strategic Advisory Group of Experts on Immunization until April 2009, a member of review committee on the functioning of the international health regulations (2005) and on pandemic influenza A (H1N1) 2009 until 2011 and served as a member of PIP Advisory group until 2014. She also served as a member in Zika Emergency Committee under IHR (2005) and is currently serving in many other expert advisory groups. Until 2024 she was a founding and board member of CORDS - Connecting Organisations for Regional Disease Surveillance.

During COVID -19 pandemic she run the epidemiological surveillance and coordinated the vaccination response in Albania. She also has been a member of WHO Europe regional working group on COVID-19 vaccination and deployment

She earned her medical and doctoral degrees from Tirana University and followed with postgraduate training on infectious diseases, microbiology, epidemiology and public health in Switzerland, Belgium, the United Kingdom and the USA.



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ONE HEALTH APPROACH TO CRIMEAN-CONGO HAEMORRHAGIC FEVER VIRUS IN KOSOVA: TICK SURVEILLANCE, PREVENTION AND CONTROL

Kurtesh Sherifi¹, Fatgzim Latifi², Betim Xhekaj³

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ABSTRACT

Crimean-Congo haemorrhagic fever virus (CCHFV) is causing a severe disease in humans with a high fatality rate up to 40%. The virus belongs to an Orthonairovirus of the Nairoviridae family and it's transmitted to humans through tick bites or smear infection, direct contact of infected ticks, blood or tissue from humans and animals. The virus in animals causes an infection with short viremia and is mostly asymptomatic. Globally, it is estimated that three billion of people are at risk of infection and human cases have been reported in many countries, including Europe in regions were Hyalomma ticks are widespread. In some regions of Kosova CCHF is endemic, up to date 246 human cases are registered, clinically and laboratory confirmed, which 65 have died (case fatality rate 26.4%), mostly of them were farmers or people connected to farming activities. The last outbreak of CCHF in Kosova were occurred in the year 2013 and the public institutions have started with the One Health approach to CCHFV, supported by international projects (German Biosecurity Program) on tick surveillance, prevention and control with the aim objectives: tick surveillance identifying the hot spots, raising of awareness to prevent tick bites in humans, treatment of farm animals with acaricides, increasing the diagnostic capacities and the biosecurity level of CCHFV.

Key words: One health, ticks, CCHF, virus, Kosova.

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Short Biography of the presenting author:

From 2007, Professor at University of Prishtina, Faculty of Agriculture and Veterinary, Department of Veterinary Medicine, in the field of Parasitology and Infectious Diseases. The research topics are the parasitic and viral zoonotic diseases, including vector-borne pathogens. Doctoral studies have finished at the Free University of Berlin, Institute of Parasitology and Tropical Veterinary Medicine. 18 years of experience in the teaching process of Higher Education. 38 publications in peer reviewed international journals. Participation in several international and national conferences. Coordination and participation in several international and national research projects. Participation in mobility programs, trainings and workshops in different scientific institutions in EU countries and USA. Managerial position: Head of the Department of Veterinary Medicine, senator of the University of Prishtina, member of the doctorate council at Faculty/University and vice rector for research.



OneHealth*drugs*

DECODING THE GUT'S ENIGMA: UNRAVELLING THE ROLE OF BLASTOCYSTIS IN HEALTH

Anastasios D. Tsaousis¹, Daisy Shaw², William Edwards³, Eleni Gentekaki⁴

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ABSTRACT

Blastocystis is one of the most common eukaryotic microorganisms found in the human gut, yet its impact on health and disease is still poorly understood. This presentation will explore the complex roles of *Blastocystis*, challenging its traditional classification as a mere pathogen. Utilizing multi-omics approaches, we investigate how Blastocystis interacts within the gut ecosystem and affects host health. Our research employs metagenomics, metabolomics, and transcriptomics to examine the influence of Blastocystis on gut microbiota composition, immune responses, and metabolic functions. We uncover how specific Blastocystis subtypes may support gut homeostasis while others could instigate gastrointestinal issues. This subtype-specific understanding is vital for re-evaluating their clinical impact. Blastocystis showcases significant genetic and metabolic versatility, enabling it to adapt to varied hosts and ecological niches. By revealing its interactions with bacterial communities and metabolic processes, we assess its potential role as a beneficial component or a disruptor within the gut ecosystem. This presentation aims to shift the paradigm from viewing Blastocystis solely as a pathogen to recognising its potential beneficial roles, emphasising the need for nuanced, subtype-based diagnostic and therapeutic strategies.

Keywords: Blastocystis, gut microbiome, health and disease, multi-omics, microbial eukaryotes.

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Short Biography of the presenting author:

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One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

THE ALBANIAN FINDINGS AND GLOBAL EMERGENCE OF *HELICOBACTER PYLORI* ANTIBIOTIC RESISTANCE. STATISTICAL REVIEW

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ABSTRACT

Helicobacter pylori (H. pylori) is one of the most prevalent global pathogens and can lead to gastrointestinal disease including peptic ulcers, gastric marginal zone lymphoma and gastric carcinoma. The aim study was to review recent trends in *H. pylori* antibiotic resistance rates, and to discuss diagnostics and treatment paradigms. The prevalence of bacterial resistance varies in different geographic areas and appears to be increasing with time in many countries. While the overall prevalence of *H. pylori* in the USA has been similar in studies from both 2000 and 2010, the antimicrobial eradication rates for H. pylori have been decreasing over that interval for several reasons; the most likely primary reasons for treatment failure were found to be *H. pylori* resistance to one or more of the antibiotics and patient compliance. The prevalence of bacterial antibiotic resistance is regionally variable and appears to be markedly increasing with time in many countries. Concordantly, the antimicrobial eradication rate of H. *pylori* has been declining globally. In particular, clarithromycin resistance has been rapidly increasing in many countries over the past decade, with rates as high as approximately 30% in Japan and Italy, 50% in China and 40% in Turkey; whereas resistance rates are much lower in Sweden and Taiwan, at approximately 15%; there are limited data in the USA. Other antibiotics show similar trends, although less pronounced. Since the choice of empiric therapies should be predicated on accurate information regarding antibiotic resistance rates, there is a critical need for determination of current rates at a local scale, and perhaps in individual patients. Such information would not only guide selection of appropriate empiric antibiotic therapy but also inform the development of better methods to identify H. pylori antibiotic resistance at diagnosis. Patient-specific tailoring of effective antibiotic treatment strategies may lead to reduced treatment failures and less antibiotic resistance. Non-invasive methods for H. pylori detection with subsequent treatment are: tests include peripheral blood serology, urea breath test and stool antigen test. Serological testing detects immunoglobulin G antibodies to H. pylori infection; however, seroconversion for H. pylori is rare and serologic tests are not recommended by current guidelines. This test is not suitable for monitoring post-eradication because successful treatment does not alter IgG levels immediately. Stool antigen testing detects H. pylori antigen in the stool via monoclonal and polyclonal anti-*H. pylori* antibodies. Like the urea breath test, stool antigen testing is capable of monitoring patients in the posttreatment period. This test is a suitable substitute detection modality in areas where the urea breath test is not available.

Key words: *Helicobacter pylori*, antibiotic resistance, clarithromycin, levofloxacin, metronidazole, prevalence, susceptibility testing.

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Short Biography of the presenting author:

Dr. Doloresa is an alumnus of the Faculty of Medicine at the University of Tirana. Following the completion of her studies, she has been working as a full-time physician since 2007. Dr. Doloresa completed her specialisation in Clinical Microbiology at the Faculty of Medicine in 2014, after which she took up the position of laboratory manager at the Durres Regional Hospital, and currently she is the microbiologist at the Laboratory of Durres Regional Hospital. In addition to this role, she also serves as a lecturer at the WBU, where she delivers lectures on General Microbiology and Research Methods in Microbiology. Dr. Doloresa continues to collaborate on several national and international projects and has co-authored numerous scientific articles with researchers from the country and abroad. Furthermore, she engages in numerous international projects as part of the COST Actions programme.



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IDENTIFICATION OF ANTIMICROBIAL RESISTANCE GENES AND DRUG RESISTANCE ANALYSIS OF *ESCHERICHIA COLI* IN THE ENVIRONMENT

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ABSTRACT

Antibiotic resistance is a global health challenge, involving the transfer of bacteria and genes between humans, animals and the environment. Soil, water, livestock and agriculture are directly exposed to antibiotics due to their agricultural use or contamination. This selective pressure has also acted synergistically on bacteria which, in order to survive in nature, have evolved into bacteria resistant to these antibiotics. Within this project we aim to study the presence and quantify the amount of antibiotic resistance genes that were recently found significant in Escherichia coli in manure and investigate the effect of manure when added in soil. This study will possibly reveal the actual situation of the antimicrobial resistance in soil and in manure in Albania. Ultimately, we wish to shed light on how animal manure application impacts the antibiotic resistance pool in the environment in our country.

Keywords: microbiology, biochemistry, *Escherichia coli*, antibiotic resistance genes, PCR, Gel electrophoresis, QuantSudio5, qtRT-PCR

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Short Biography of the presenting author:

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She graduated with honors in Health Sciences from Paris Descartes/Paris Diderot Universities in Paris. Previously, she contributed to a research project at the Pasteur Institute in Paris, focusing on the role of DD-endopeptidases MepS, MepM, and MepH (formerly known as Spr, YebA, and YdhO) in *Escherichia coli*. These enzymes were recently found to be redundantly essential for cell-wall expansion during cell elongation. Additionally, she has worked as a DNA expert for the DNA laboratory at the Ministry of Interior Affairs. Her research interests include microbiology, water quality, and antimicrobial resistance, with a special focus on emerging pathogens and their environmental impact.







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One Health drugs against parasitic vector borne diseases in Europe and beyond **OneHealth***drugs*

FIRST SEROLOGICAL, MOLECULAR, AND SOCIODEMOGRAPHIC CHARACTERIZATION OF EXPOSURE TO LEISHMANIA SPP IN THE HIV-INFECTED POPULATION OF NORTHERN PORTUGAL

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ABSTRACT

Leishmaniasis comprises a group of diseases caused by Leishmania protozoa, with Visceral Leishmaniasis (VL) being the most severe form in humans. The annual incidence ranges from 202,000-389,100 cases, with 20,000-40,000 associated deaths. Currently, no vaccine is available for humans, thus early detection and management are crucial for controlling transmission^{1,2}. HIV-VL co-infection accelerates AIDS and reduces treatment efficacy (up to 60% relapse rates), fostering drug resistance. Symptom overlap with other HIV-related illnesses delays diagnosis, complicating treatment³. VL is endemic in Europe, where its spread is driven by migration, immunosuppression, and climate change2. Despite its expansion, VL remains under-recognized, with asymptomatic carriers accounting for 0.5%-58% of cases in endemic areas. we conducted a serological screening in 807 HIV-infected patients in northern Portugal. The antigens used included the Soluble Leishmania Promastigote Antigens (SPLA) concurrently with the Leishmania associated recombinant antigens rK28 and Leishmania infantum cytosolic peroxiredoxin (LicTXNPx) in an enzymelinked immunosorbent assay format ⁴. Seroreactivity rates were 3% for SPLA, 2.2% for rK28, and 2.1% for LicTXNPx. However, our approach revealed a combined Leishmania seropositivity of 6.8%, underscoring the value of multiparametric strategies for identifying individuals at risk for VL. This high rate highlights the need for targeted screening-andmonitoring, for immunocompromised.

Key words: Visceral Leishmaniasis (VL); HIV-VL co-infection; Serological screening



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Short Biography of the presenting author:

Anabela Cordeiro da Silva is a full Professor of Immunology at FFUP, University of Porto. Began researching Trypanosoma cruzi during her Ph.D. at Pasteur Institute (1993), later expanding to Leishmania, T. brucei, and Plasmodium. Published 170+ papers, supervised 21 Ph.D. students, and mentors' postdocs. Teaches Clinical Immunology and contributes to Ph.D. programs. Holds a Ph.D. in Immunology (1997), M.Sc. (1992), and Pharmaceutical Sciences degree (1990) from the University of Porto. Completed a business program at Porto Business School (2014), leading to VitaControl's launch (2015). Her team collaborates on European consortia for vaccine development and drug discovery, focusing on preclinical research, toxicology, drug delivery, diagnostics for Leishmaniasis, and Plasmodium liver infection studies for vaccine targets.



NEW DIAGNOSTIC METHODS USED IN PARASITIC INFECTIONS AND TROPICAL MEDICINE

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ABSTRACT

The methodologies employed for diagnosis of infectious diseases have remained static for the last 20-30 years. Since the inception of PCR-based testing methods, there has been a paucity of advancement in the domain of laboratory diagnostics, notably within parasitology. Parasitic diseases represent a substantial group of chronic infectious diseases in both humans and animals, thus endangering human health in a dual manner. The development of effective treatment and control strategies for these diseases is contingent upon the timely and accurate diagnosis of the infection. The current approach relies on symptoms, clinical history, travel history, geographical location, and diagnostic procedures that include the examination of feces, blood, lymph node biopsy, and other methods. However, the identification of the infectious agent remains clinically challenging. The principal diagnostic tests routinely employed to identify numerous parasitic maladies have remained largely unverified and unaltered since the advent of the microscope in the 15th century, as pioneered by Antonie van Leeuwenhoek. Furthermore, the prevailing tests have not evolved significantly since the 15th century and thus lack the capacity to distinguish between a past, latent, acute or even a newly reactivated infection. Consequently, they are of no use when monitoring response to therapy or prognosis. Accurate diagnoses, which form the foundation for effective treatment and disease management, have thus remained challenging. The rapid development of resistance to antiparasitic pharmaceuticals further underscores the imperative for the expeditious development of alternative diagnostic techniques. A significant proportion of the assays that constitute the foundation of a contemporary microbiology laboratory are contingent upon antiquated and laborious technologies, such as microscopy. There is an urgent need for faster diagnostic tests that aim to increase sensitivity and specificity. In recent years, research has focused on alternative methods, including immunoassays, molecular-based approaches, and protein-based approaches using mass spectrometry technology. The focus of this paper is to summarise the various diagnostic techniques for the detection of parasitic infections that are currently in use and those that may be used in the future (and those that are under development).

Key words: Parasitic infection, tropical medicine, diagnostic techniques

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Short Biography of the presenting author:

Professor Andi Koraqi graduated from the University of Tirana Faculty of Medicine in 1993; at which institution he earned the title of General Practitioner. In 2008, he was awarded the degree of Doctor of Medical Sciences. For a period of several years, he was employed as a microbiologist at the Institute of Public Health, and for a duration exceeding two decades, he has been engaged in full-time lecturer roles at the University of Medicine, Tirana. For a period of almost four years, he has fulfilled the role of deputy dean of the Faculty of Medicine. He is currently employed as a lecturer at the University of Tirana, Faculty of Medicine, Department of Microbiology, and is a microbiologist at the Clinical Microbiology Laboratory at QSUT "Nene Tereza", Tirana.







One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealth*drugs* Cost Action CA21111

FROM ZOONOSES TO DIAGNOSTICS: INVESTIGATING ENTERIC MICROEUKARYOTES TRANSMISSION AND DETECTION STRATEGIES

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ABSTRACT

Enteric microeukaryotes Giardia duodenalis, Cryptosporidium spp., Blastocystis, and E. bieneusi are responsible for gastrointestinal disorders in humans and animals worldwide. However, their epidemiology in wildlife remains largely unexplored. In Portugal, wildlife synanthropic habits, exacerbated by climate change and landscape transformation, increase the likelihood of disease transmission to humans. In this study, we collected 747 faecal samples from various wild carnivores (n = 288), wild ungulates (n = 233), and domestic animals (n = 226) to investigate the occurrence, genetic diversity, and zoonotic potential of these enteric microeukaryotes using a combination of molecular-detection methods, including next-generation sequencing. Giardia duodenalis was more frequently found in wild carnivores (21.5%), while Blastocystis was more prevalent in domestic (40.6%) and wild ungulates (36.5%). Cryptosporidium (2.7%) and E. bieneusi (1.1%) were less commonly detected. Sequence analysis revealed the presence of several zoonotic genetic variants, including G. duodenalis assemblage A, nine Blastocystis STs (ST1-ST3, ST5-ST7, ST10, ST14, ST23), five Cryptosporidium species (C. canis, C. felis, C. occultus, C. scrofarum, C. ubiquitum), and three E. bieneusi genotypes (BEB6, Type IV, Wildboar3)^{1,2,3,4}. These findings underscore the necessity of implementing disease surveillance programmes using these sentinel species to prevent future outbreaks and mitigate their overall public health impact.

Key words: Epidemiology, Parasites, Public Health, Wildlife

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Short Biography of the presenting author:

Ana M. Figueiredo is a postdoctoral researcher at CESAM, University of Aveiro. She completed her bachelor's degree in Biology at the University of Aveiro (2016), followed by an MSc in Applied Ecology (2018) and a joint PhD programme in Biology and Ecology of Global Change with the University of Oslo (2024). Her research focuses on protists (Giardia, Cryptosporidium, Blastocystis, Enterocytozoon bieneusi) and helminth (Toxoplasma, Ancylostoma) parasites, with a particular interest in the transmission dynamics between wild and domestic species, their zoonotic potential, and entailed risks for public and animal health. Her academic background in Biology has enabled her to participate in various ecological, conservation, and human-dimension projects, providing a strong foundation for understanding ecosystem interactions in parasite transmission. Through collaborations with national and international researchers from Spain, Norway, Cyprus, and the USA, she has gained deeper insights into parasite epidemiology and life cycles, expanding her knowledge in this field. Ana has published 26 papers [h index = 9, SCOPUS] and presented over 30 communications at national/international meetings and outreach events. She has also participated in national and international projects, including three LIFE+ projects and the COST Action CA21105 Blastocystis under One Health, where she is currently a WG1 ECR co-leader.



OneHealth*drugs*

DRUG RESISTANCE PREVENTION AND DRUG TARGET IDENTIFICATION THROUGH OMICS APPROACHES. THE CASE OF H80

Cost Action CA21111

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ABSTRACT

Drug resistance represents a major problem for antiparasitic treatments in both human and animal diseases. Drug efficacy reduction causes a huge loss in therapeutic agents' availability and health care expenditure; therefore, a more systematic prevention approach would be necessary. We developed a drug discovery project in which early measures have been applied to obtain a drug lead with a safe, low drug resistance perspective profile in the research of new therapeutics against Leishmaniasis. Leishmania infantum is a parasite responsible for zoonotic leishmaniasis, affecting mainly humans and dogs, particularly in the Mediterranean Basin, the Middle East, and Central Asia. The disease manifests as cutaneous or visceral Leishmaniasis, which is fatal if untreated. Current treatments include amphotericin B, miltefosine, and antimonials, though these options are limited by toxicity, cost, and increasing drug resistance [1]. To address these challenges, a novel benzothiophene-flavonol derivative, H80, has been identified from medium-throughput phenotypic screening [2]. It exhibits broad-spectrum anti-leishmanial activity, comparable to miltefosine but with lower toxicity [3], no drug resistance against *L. infantum* amastigotes, and no cross-resistance with the currently used drugs. It showed no toxicity in vivo; however, efficacy was limited, and the target is unknown. With the aim to overcome these issues, we developed a study for target identification fluorescence spectroscopy, fractional Mass Spectroscopy (MS) proteomics (cytosol, mitochondria, membranes), and metabolomics. While miltefosine acts in the membranous compartment, H80 affects in the cytosol the energy metabolism and the TCA cycle. Fluorescence internalization assays on THP-1 cells infected with L. i. promastigotes revealed that uptake occurs via endocytosis and accumulation in the cytosolic compartment. Untargeted MS metabolomics data, currently under analysis, will help to further elucidate H80's targets/off-target effects, providing a target engagement analysis for lead optimization studies.

Keywords: Drug development, anti-Leishmania agents, drug resistance, mass spectrometry, fluorescence spectroscopy

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Short Biography of the presenting author:

Prof. Maria Paola Costi, after her Ph.D in Medicinal chemistry from the University of Modena and Reggio Emilia she was a visiting scientist at the University of California San Francisco (UCSF) in 1991. MPC is a Professor of Medicinal Chemistry at the Department of Life Science, and the leader of the Drug discovery and biotechnology team. Her main field of research is the discovery and development of new antiparasitic drugs against enzymes involved in the folate pathway and anticancer folate dependent enzymes. More recently, she focused on TEAD transcription factor, a relevant anticancer target of the Hippo pathway. She has published 185 papers in international journals, 7 book chapters, 20 patents, and she is serving as an editorial board member of some international journals (ACS Medicinal Chemistry Letters and others). Coordinator of several collaborative European projects and research Programme: COST Action Chair OneHealthdrugs, CA21111 (www.onehealthdrugs.com) and several more projects on antiparsitic drug discovery (NMTrypI, European Lead Factory -ELF - QHL Programme Plan); scientific manager (Optobacteria, EUTransbio) or participant (MM4TB) and coordinator of LIGHTS and three AIRC projects (Associazione Italiana per la Ricerca sul Cancro). She contributed to the discovery of a new drug lead in the field of anti-Leishmania agents. She is a co-founder of two SMEs TydockPharma srl and QuadrEL srl.







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NUCLEAR PROTEIN IMPORT IN LEISHMANIA: ESTABLISHMENT OF A VALIDATED IN SITU ASSAY FOR ANTILEISHMANIAL DRUG DISCOVERY

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ABSTRACT

Compound screening in cell- or target-based assays represents a cornerstone in antileishmanial drug discovery. Nuclear-cytoplasmic transport of cargo molecules carrying a nuclear localization signal (NLS) is crucial for cell survival and is selectively regulated by numerous nuclear pore complexes, specific transport receptors and a Ran GTPase cycle. This study developed a cell-based assay for in situ nuclear protein import (NPI) to discover novel antileishmanial compounds and concomitantly elucidate the mode-of-action. To visualize nuclear transport, L. infantum was engineered to express the mCherry fluorescent protein with a C-terminal NLS. Confocal fluorescence microscopy demonstrated extracellular and intracellular parasite stages with a nuclear localisation of mCherry. A specific inhibitor of importin- β , importazole, exhibited a dose-dependent inhibition of NPI and a broad antiprotozoal activity. Lead compounds with different modes-of-action exerted an antiparasitic activity independent of NPI impairment. Collectively, we demonstrated that the leishmanial NPI assay can provide an in-situ read-out of nuclear protein transport. In addition to offering opportunities for mechanistically informed drug discovery, it also provides an innovative research tool for understanding the dynamics of nuclear-cytoplasmic transport.

Key words: Leishmania, Nucleocytoplasmic transport, Importazole, drug discovery

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Short Biography of the presenting author:

I studied veterinary medicine in Egypt and obtained a master's degree in Parasitology, where I conducted a surveillance study on intestinal protozoa in chicken. I received a fully funded scholarship from the Egyptian Missions Program, enabling me to pursue my PhD in Belgium. Currently, I am conducting my PhD research at the University of Antwerp under the supervision of Prof. Guy Caljon. My research focuses on the mode of action of antileishmanial aminopyrazoles and the development of drug discovery assays. I have a strong interest in protozoan parasites, particularly those with complex life cycles, as they are often neglected in both scientific and industrial research. During my PhD, I gained expertise in genetic engineering tools and applied them in drug discovery. In the future, I aim to explore host-parasite immunopathogenesis.



OneHealth*drugs*

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TROPISM OF AFRICAN TRYPANOSOMES: RATIONALE FOR NOVEL DIAGNOSTICS FOR SURVEILLANCE

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ABSTRACT

Despite major control efforts and a roadmap to reach elimination of the gambiense form of sleeping sickness by 2030, asymptomatic individuals may hamper interruption of the transmission cycle. The mechanisms underlying efficient trypanosome transmission and asymptomatic infection remain poorly understood. Making use of the tsetse fly vector, parasite reporter lines for fluorescent and bioluminescent imaging, and immune-deficient mouse models, we explored infection establishment and systemic colonization. Despite the armory of recruited immune cells, parasites escape elimination and distribute to tissues such as skin, adipose, spleen and lungs. Within the lungs, Trypanosoma brucei inhabits extracellular spaces surrounding the blood vessels of the alveoli and bronchi. Notably, a concurrent depletion of immune cell populations such as B cells, eosinophils and natural killer cells may increase host susceptibility to secondary infections, as shown in co-infection experiments with respiratory syncytial virus. The discovery of asymptomatic lung colonization as a persistent tissue reservoir not only presents new challenges for disease control, but also opens avenues for the development of novel non-invasive diagnostic strategies. We are currently investigating organic volatiles in exhaled air as "breathomics" diagnostic biomarkers, using in vitro models, naturally infected mice, and clinical samples from patients with trypanosome infections in Guinea.

Key words: Sleeping sickness, tropism, asymptomatic infection, surveillance

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Short Biography of the presenting author:

Guy Caljon obtained a master's degree in Biology from the Vrije Universiteit Brussel in 1999, and continued with a PhD and postdoctoral appointment at VUB and the Flemish Institute for Biotechnology (VIB). He later became a senior staff scientist in an ERC Starting Grant project at the Institute of Tropical Medicine in Antwerp. International mobility included short research stays at the University of Cape Town and the University of Utah. Since February 2016, he has been a professor at the University of Antwerp, where he leads the parasitology team of approximately 20 employees at the Laboratory for Microbiology, Parasitology and Hygiene (LMPH). Since January 2022 he serves as LMPH laboratory director. He is a working group leader and management committee member of the EU-COST network Onehealthdrugs. His main interests are in parasitic infections (sleeping sickness and leishmaniasis), disease-carrying insects (tsetse flies and sand flies), immunology and drug discovery. For his research, he received the BENELUX Merial / Boehringer-Ingelheim Award in 2017 as well as the triennial Dubois-Brigué Prize for Tropical Pathology in 2020.



One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

MULTIPLEX MOLECULAR ASSAYS AS DIAGNOSTIC TOOLS FOR GASTROINTESTINAL PARASITIC INFECTIONS

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ABSTRACT

Gastrointestinal (GI) parasitic infections are common worldwide, with significant implications for public health. Among them Entamoeba histolytica, Giardia lamblia, and Cryptosporidium spp. are prominent causes of diarrhea. Traditional diagnostic methods like microscopy and immuno-chromatographic antigen tests have limitations in sensitivity and specificity. The advent of multiplex molecular assays and syndromic testing panels offers a transformative approach in clinical parasitology diagnostics for a wide array of pathogens causing similar symptoms. Stool samples collected from patients with gastrointestinal symptoms and processed via zinc sulphate centrifugal flotation technique, immunochromatographic antigenic test and multiplex PCR. Among 152 patients, 9.2% (14 out of 152) showed intestinal protozoa via Microscopy;7.8% (12 out of 152) 13,8% (21 out of 152) with multiplex PCR. The highest parasite positivity was observed in travel-related patients with GI syndromic testing panels. We had miscorrelation of Cryptosporidium spp. that have positivity with multiplex PCR and negativity with Microscopy and antigenic testing. The correlation was for all techniques for Entamoeba spp. Multiplex molecular assays and syndromic panels have revolutionized the diagnosis of gastrointestinal parasitic infections by offering high-throughput, sensitive, and rapid detection. While they cannot fully replace traditional methods yet, its adoption could revolutionize parasitic infection management in routine diagnostics. and public health.

Keywords: multiplex molecular assays; syndromic testing; gastrointestinal (GI) parasitic infections

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Short Biography of the presenting author:

Prof. Asc Dr. Oltiana Petri completed her undergraduate education at the Faculty of Medicine in Tirana, being awarded the degree of "General Physician" in 2000. The subject under discussion completed a course of study of the Greek language at the Philological University of Athens in Greece in 2000-2001. Dr. Oltiana successfully completed her Specialization in "Microbiology" at the University Hospital Center "Mother Teresa" Tirana in 2006. In 2016, she successfully defended her doctoral thesis, thus attaining the title of "Doctor of Medical Sciences" at the Department of Laboratories, Faculty of Medicine, University of Tirana. In 2023, Dr. Oltiana was awarded the title of Associate Professor at the University of Sports in Tirana. The subject has accumulated more than 17 years of professional experience in the field of medical, water and food microbiology. She has acquired a high level of proficiency in a range of microbiological techniques and terminology, as well as familiarity with the operation of relevant laboratory equipment. The possession of practical experience in the identification of diagnostic issues pertaining to the determination of causative agents and the subsequent management of diseases, including those of a dietary and hydric origin. Dr. Oltiana has demonstrated effective communication skills, including the preparation of technical reports, the review of technical documents and procedures, the development and dissemination of new standard operating procedures, and the monitoring of water quality reports. Dr. Oltiana has been the leader and coordinator of various projects, as well as the representative of Albania in European projects. Following a 15-year period of professional experience at the Institute of Public Health and the Faculties of Medicine, Dentistry, Nursing and Public Health, and in addition to her role as Head of private laboratories, Dr. Oltiana was recruited to the full-time academic staff at FSHR-UST. Dr. Oltiana has participated in a series of specialisations and training programmes both domestically and in numerous countries worldwide, including England, Scotland, Germany, Greece, Italy, Croatia, and Singapore. Participation as a moderator, organizer, or with publications and references in many national and international conferences and activities. Very good knowledge of English and Greek. Good knowledge of Italian.



EPIDEMIOLOGICAL SURVEY OF CANINE AND FELINE LEISHMANIOSIS IN PORTUGAL

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ABSTRACT

Zoonotic Leishmania infantum and its phlebotomine sand fly vectors, mainly Phlebotomus perniciosus, are endemic in Portugal. Animal leishmaniosis is a serious veterinary concern and a public health risk. Nevertheless, integrated surveillance and prevention measures to control infection remain suboptimal. Understanding the prevalence of infection and its risk of transmission requires surveillance of both owned, unowned and sylvatic dogs and cats. While owned dogs are often the subjects of active surveillance there is insufficient evidence regarding the role of unowned dogs and cats as reservoirs for this parasite in Portugal. To address this, we sampled and analyzed 1200 canine and 467 feline serum samples, collected between the years of 2020 and 2024, from animals admitted at municipal shelters (n = 41)located in six out of the seven NUT III regions of continental Portugal. Animals were clinically evaluated, sampled and tested for the presence of antibodies against L. infantum and *P. perniciosus* salivary proteins by enzyme linked immunosorbent assay (ELISA) using L. infantum promastigote soluble antigens (SPLA), recombinant K39 protein (rK39), L. infantum cytosolic peroxiredoxins (LicTXNPx)^{1,2,3} and the recombinant SP03B⁴. The overall seroprevalence of canine leishmaniosis (CanL) varied from 8% for rK39 to 10% for SPLA and LicTXNPx. The overall feline leishmaniosis (FeL) seroprevalence varied from 8% for SPLA, to 10% for LicTXNPx and to 11% for rK39. Antibodies against P. perniciosus salivary proteins were identified in 19% of the dogs and 15% of the cats. The highest overall CanL seroprevalence was found in the Greater Lisbon Metropolitan Area (13% to rK39, 14% to SPLA and 17% to LicTXNPx) and the West and Tagus River Valley (10% to rK39, 14% to SPLA and 15% to LicTXNPx). However, Alto Alentejo registered the highest exposure of dogs to sand flies (19% of SP03B seropositivity). In the North of Portugal, FeL seroprevalence surpassed CanL (11% seroprevalence to SPLA and LicTXNPx in cats vs. 5% seroprevalence to SPLA and LicTXNPx in dogs; 14% to rK39 in cats, compared with 5% in dogs). Additionally, in this region, cats presented higher SP03B seropositivity, compared to dogs (22% vs 15%). Overall, this integrated approach using anti-Leishmania serology for rK39, SPLA and LicTXNPx in conjunction with serology to vector recombinant protein SP03B enable not only to evaluate seroprevalence but also to localize potential regional transmission hotspots.

Key words: Canine leishmaniosis, feline leishmaniosis, Portugal, serological survey



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Short Biography of the presenting author:

I am a veterinarian with clinical experience in small animal medicine. My keen interest in zoonotic parasitic diseases and laboratory diagnosis led me to a PhD program at the Faculty of Pharmacy, University of Porto. Currently, I am working on field and laboratory epidemiological approaches to update the prevalence of leishmaniosis in my country and estimate the burden of disease in animals. Following a strong believe that this planet is home to all, I am a One Health (OH) advocate seeking for research strategies that employ OH framework and multidisciplinary collaborations to solve current threats to human, animals and their shared environment.


EPIDEMIOLOGY AND CONTROL MEASURES CHALLENGES OF MALARIA IN ALBANIA

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ABSTRACT

Malaria, caused by *Plasmodium* parasites and transmitted by *Anopheles* mosquitoes, was historically a significant public health issue in Albania. Although the country was declared malaria-free in the mid-20th century, recent decades have seen sporadic, primarily imported, cases. The risk of reintroduction persists due to factors such as climate change, globalization, and population mobility. This review explores the current epidemiological situation of malaria in Albania, highlighting the historical burden, recent imported cases, and ongoing risk factors. While Albania has not reported endemic transmission since the 1970s, the presence of *Anopheles* mosquitoes and occasional imported cases continue to pose a threat. Control measures, including surveillance, case management, vector control programs, and public awareness campaigns, have been implemented, but challenges remain, including underreporting, delayed diagnosis, inadequate vector surveillance, and insufficient public education. Recommendations for strengthening malaria control efforts focus on enhancing surveillance, expanding vector control, improving pre-travel advisory services, and increasing public education. Given the changing global and environmental landscape, sustained vigilance is essential to maintain Albania's malaria-free status and prevent reintroduction.

Key words: Malaria, epidemiology, endemic, vector borne disease

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Short Biography of the presenting author:

Ms. Elona Kureta has a distinguished career in public health, particularly in epidemiology and infectious disease control. She works at the Department of Epidemiology and Infectious Disease Control within the Epidemic Intelligence sector at the Institute of Public Health. Her educational journey began with a degree in medicine from the University of Tirana in 2001, followed by specialization in Public Health in 2010. Further advancing her expertise, she completed her master's degree in Applied Field Epidemiology in 2016.



In 2021, Ms. Kureta earned the title of "Doctor of Science" in Public Health from the Faculty of Medicine, focusing her dissertation on the "Epidemiology of Viral Hepatitis in Albania." This reflects her deep commitment to understanding and addressing key public health issues, particularly in the realm of infectious diseases.

Her career highlights her as a dedicated professional working to improve public health outcomes through surveillance, research, and training.



DILEMMAS ON THE TREATMENT OF HUMAN TOXOPLASMOSIS

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ABSTRACT

Toxoplasmosis, caused by the intracellular protozoan Toxoplasma gondii, is a globally prevalent zoonotic infection with a wide clinical spectrum ranging from asymptomatic disease to severe, life-threatening manifestations. The therapeutic approach to toxoplasmosis presents several clinical dilemmas, particularly in immunocompetent patients with mild symptoms, pregnant women, and immunocompromised individuals such as those with HIV/AIDS or undergoing immunosuppressive therapy. The standard treatment regimentypically a combination of pyrimethamine, sulfadiazine, and folinic acid—can be limited by toxicity, availability, and resistance. In cases of ocular toxoplasmosis or congenital infection, the timing and duration of therapy remain controversial, as does the indication for treatment in asymptomatic seropositive pregnant women. Furthermore, the management of latent infection and its reactivation in immunosuppressed hosts requires individualized consideration, balancing prophylactic strategies with potential side effects. Recent studies have explored alternative therapies, including azithromycin, atovaquone, clindamycin, and trimethoprim-sulfamethoxazole, with varying degrees of success. Yet, the lack of large-scale, randomized controlled trials continues to challenge evidence-based decision-making. The emergence of drug-resistant strains and the parasite's ability to persist in tissue cysts further complicate eradication efforts. This review discusses the current therapeutic options, unresolved clinical questions, and emerging strategies in the treatment of human toxoplasmosis, highlighting the need for personalized treatment plans based on patient risk factors, clinical presentation, and resource availability. Greater emphasis on diagnostic accuracy, public health awareness, and further clinical research are essential to improve outcomes in this neglected but potentially serious parasitic infection.

Keywords: human toxoplasmosis, immunocompetent, immunocompromised, treatment

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Short Biography of the presenting author:

Im a specialist in infectious diseases with over two decades of experience in clinical practice, research, and academic teaching. I have completed my medical education and specialization in Infectious Diseases at the University of Medicine in Tirana and holds a Ph.D. focused on sepsis. Im serving as a consultant at the University Hospital Center "Mother Teresa" and contributes as a lecturer at LOGOS University and the Faculty of Technical Medical Sciences. My scientific interests include emerging infectious diseases, zoonoses, and antimicrobial resistance, and he has authored numerous international publications. I am actively participated in regional and European research initiatives, including COST Actions, and has played a significant role in Albania's public health response to epidemics such as COVID-19.



ANTHELMINTIC; ANTICOCCIDIAL AND ANTITRYPANOSOMAL POTENTIALS OF *ROSMARINUS OFFICINALIS* ESSENTIAL OIL

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ABSTRACT

Antipathogenic properties of plants' essential oils have been investigated to substitute for drugs hence overcome drug resistance. This study investigated the anthelmintic; anticoccidial and antitrypanosomal potentials of R. officinalis essential oil. Chemical composition of tested oil was determined by GC/MS. In vitro anthelmintic effects against Haemonchus contortus (gastrointestinal nematode from sheep) were ascertained by egg hatching and worm motility inhibitions essays compared with a reference drug (albendazole). The anticoccidial activity was estimated by the inhibition percentage of the oocyte sporulation in addition to the unsporulated and degenerated Eimeria oocysts using a haemocytometer. For the antitrypanosomal, Drug Incubation Infectivity Test with Wet and thick blood films method was used to detect any motile trypanosomes. The main compounds of the R. officinalis essential oil identified by GC/MS were three monoterpenes: 1,8-cineole (52.06%), α -pinene (15.35%) and camphor (7.69%). The essential oil was active against Eimeria spp. oocysts of sheep at IC50 = 1.82 ug/ml. At all tested concentrations (0.125, 0.25, 0.5 and 1 mg/mL), rosemary essential oil showed higher anthelmintic effects on eggs hatching activity ($IC_{50} =$ 0.145 mg/mL). After 6 h and 8 h of exposure, the tested oil at 1 mg/mL induced 33.3 and 87.5% inhibition worm's motility, respectively. The EO was evaluated in vitro for activity against Trypanosoma brucei and Trypanosoma evansi. It was found to possess antitrypanosomal activity in a dose-dependent pattern in a short period of time. The drop-in number of parasite over time was achieved doses of 0.2g/ml, 0.4g/mL, and 0.8g/mL. The concentration of 0.4g/mL was more potent at 3 minutes and 2 minutes for Tbb and T. evansi, respectively. The overall findings of the current study indicated that R. officinalis oil has a potential anthelmintic; anticoccidial and antitrypanosomal benefit and further in vitro and in vivo trials against different species and stages are required to make use of this plant for the control of parasitic infections in Humans and Animals.

Key words: Anthelmintic; anticoccidial antitrypanosomal Rosmarinus officinalis.

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Short Biography of the presenting author:

Im an assistant-professor. My work in the Laboratory of Parasitology, National Veterinary School of Sidi Thabet, Tunisia focuses on effectiveness of Natural compounds such as Plant extract; Animal extract, Yeast extracts against parasite infections. My research area could be very helpful especially when studying drug- resistant parasites and identifying potential sources of new drugs.



EPIDEMIOLOGY AND CONTROL OF LEISHMANIASIS IN ALBANIA

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ABSTRACT

Leishmaniasis is a vector-borne parasitic disease caused by protozoa of the genus Leishmania, transmitted to humans through the bite of infected phlebotomine sandflies. In Albania, the disease is endemic, particularly in its visceral form (VL), caused by *Leishmania infantum*. Cases are reported throughout the country, with higher incidence in central and southern regions, including Tirana, Elbasan, and Berat. Rural and peri-urban areas are especially affected due to favorable environmental conditions for both sandfly vectors and animal reservoirs. *Visceral Leishmaniasis* primarily affects children under the age of five, while Cutaneous Leishmaniasis is rare, with only sporadic cases documented.

The main animal reservoirs are domestic dogs, and the primary vector species is *Phlebotomus perfiliewi*, which thrives in warm and humid environments. Transmission peaks during the warmer months, typically from May to October, when sandfly activity is highest. Leishmaniasis is a notifiable disease in Albania, and the Institute of Public Health plays a central role in surveillance, monitoring, and the implementation of national control strategies.

Control measures include indoor and peri-domestic insecticide spraying to reduce sandfly populations, improvement of diagnostic capacity in healthcare facilities, public awareness campaigns in endemic areas, and management of animal reservoirs through testing and preventive measures. Despite ongoing efforts, Leishmaniasis remains a public health concern in Albania, particularly in vulnerable populations. An integrated, multisectoral approach involving veterinary services, public health authorities, and community participation is essential for effective prevention and long-term control of the disease.

Key words: Leishmaniasis, surveillance, control

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Dr. Adela Vasili (Llagami) is a medical doctor and public health specialist with over two decades of experience in infectious disease epidemiology and health surveillance. She earned her MD from the University of Tirana in 1997 and later specialized in Public Health, including advanced training in France, where she completed a Master in Epidemiology at the Université "Victor Segalen" Bordeaux 2. Since 2001, Dr. Vasili has worked at the Institute of Public Health (ISHP) in Albania, where she has led national surveillance programs for sexually transmitted infections, Legionella, healthcare-associated infections, and most recently, COVID-19. She has served as Albania's national coordinator for several European studies and surveillance platforms, including ECDC's TESSy and the COVE-AL vaccine effectiveness cohort. Dr. Vasili is also an experienced academic, having lectured in Public Health, Epidemiology, and Biostatistics at Aldent University. She has participated in numerous international scientific conferences and has authored or co-authored multiple peerreviewed publications in infectious disease and epidemiological research. Her work reflects a strong commitment to evidence-based health policy, integrated surveillance, and cross-sectoral collaboration for disease prevention and control.



Cost Action CA21111

ROLE OF NOVEL VECTOR CONTROL STRATEGIES AND NEW DRUGS PRODUCTION IN THE MITIGATION OF PARASITIC VECTOR-BORNE DISEASES BURDEN

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ABSTRACT

Vector-borne diseases caused by parasites pose a significant threat worldwide. Their cases are rising and increasing resistance to existing control measures and strategies. This review highlights the critical role of novel vector control strategies and new drug production in mitigating the burden of these infectious diseases. We discuss the latest advancements in vector control, including gene drive technology, Wolbachia-infected mosquitoes, SIT (sterile male/insect techniques), biological control, spatial repellents and other optional controlling methods of vector of parasites. Additionally, we examine the development of new drugs, such as antimalarial compounds, antiparasitic agents, and transmission-blocking vaccines. The production of drugs against parasitic diseases in human and animals are in anew area, to reach benefit and control of the diseases. We analysed the potential of these innovative approaches to reduce disease transmission, prevent resistance, and improve treatment outcomes. We also discuss the importance of collaborative research, policy support, and public-private partnerships in accelerating the development and deployment of these novel strategies. As a conclusion we mentioned that the development of new strategies for the control of vector of parasites, as well as the production of new drugs to fight these diseases in human and animals, should be strengthen the simultaneous development to fight the control of disease spread in general. We recommend that new studies to be focused in the combination of new technologies for the vector control tools and usage of drugs against the parasitic diseases in human and animals.

Keywords: Parasitic vector-borne diseases, novel vector control strategies, new drug production, disease mitigation, global health.

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Short Biography of the presenting author:

Dr. Elton Rogozi is a Senior Medical Entomologist in the Institute of Public Health, Tirana, Albania since 2005. He is graduated in Special Biology in 2005), and did his Master of Science in Zoology (2008). In 2010 he graduated with Diploma in Applied Parasitology and Entomology from the Institute for Medical Research, Kuala Lumpur, Malaysia and got his PhD in 2013 in the Medical Entomology. His main research includes the studies on the ecology, taxonomy and control of mosquitoes and rodents in Albania. He studies the Anopheles malaria vectors, Aedes invasive species and Culex mosquitoes and their capacity and competency as vectors of pathogens in humans.



AN INVESTIGATION INTO THE MECHANISMS OF ACTION AND RESISTANCE **OF QUINAPYRAMINE IN AFRICAN TRYPANOSOMES**

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ABSTRACT

Quinapyramine is a veterinary trypanocide and prophylactic, introduced in the 1940s. Discontinued in the 1970s because it appeared to induce cross-resistance with isometamidium, ethidium, diminazene, it was reintroduced in 1984 for the treatment of surra and dourine, especially in camels and horses. It is still in use today particularly in South America and India. These non-tsetse-transmitted trypanosomiases continue to spread, requiring vigilance in surveillance. Quinapyramine's mechanism of action and the mechanism of (cross)-resistance remain unknown. We induced resistance in Trypanosoma equiperdum and T. evansi. Higher levels of resistance were associate with loss of the kinetoplast, as well as cross-resistance with ethidium, isometamidium and diminazene but dependent on species and resistance level. T. brucei and T. congolense strains selected for diminazene and isometamidium resistance were in turn cross-resistant with quinapyramine.

Quinapyramine uptake was investigated using its innate fluorescence, and found to be inhibited by adenosine; it accumulates in the mitochondrion. Likewise, adenosine uptake through the TbAT1/P2 adenosine transporter was inhibited by quinapyramine. Treatment of T. brucei with quinapyramine did not appear to impact DNA synthesis, nor kinetoplast or nuclear division, but did greatly affect cytokinesis, leading to multi-nucleated cells. Genomic investigations of the mode of action and of resistance are ongoing.

Key words: Animal trypanosomiasis; quinapyramine; drug resistance; drug transporter

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I studied Chemistry at the Free University in Amsterdam, The Netherlands, from 1980, culminating in a double master's degree in Biochemistry and Organic Chemistry. Obtained a PhD in Biology from Radboud University in Nijmegen, The Netherlands. I have been working on transporters of protozoa since 1994, first as postdoc at the University of Kent, England, and since 1999, after the award of a Welcome Trust Fellowship, at the University of Glasgow, Scotland. This evolved into a permanent Faculty position and he is currently Professor of Parasite Biochemistry and Pharmacology at the Institute of Infection and Immunity. Research interests include drug discovery against protozoal infections; drug resistance in protozoan pathogens; transport/uptake/efflux mechanisms of protozoa.



ANTIPARASITIC DRUGS MANUFACTURED BY PROFARMA IN ALBANIA

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ABSTRACT

Profarma j.s.c.is a pharmaceutical manufacturing company, which for the majority of its products is the only manufacturer in Albania. Profarma is present in market since 1948. Profarma's products are sold in Albania as well as in 13 other countries. Antiparasitic drugs products manufactured by Profarma are piperazine tablets, benzyl benzoate emulsion and metronidazole tablets. The products containing piperazine and metronidazole have been manufactured by Profarma for more than 40 years; benzyl benzoate emulsion for 30 years. Manufacturing of these products is a strictly controlled process, starting with the control of the pharmaceutical ingredients used in the manufacturing process. The controls of the ingredients are done according the European Pharmacopoeia, the book of standards for pharmaceutical substances. Once a product is manufactured, it undergoes testing according to criteria established in reference books for pharmaceutical products such as British Pharmacopeia and Unites States Pharmacopoeia. The products are controlled for characteristics such as appearance, content, impurities, and in case of tablets, tablet performance characteristics such as disintegration, dissolution, etc. One important challenge in drug manufacturing is the product stability during its shelf life, most importantly the degradation in time of the active ingredient. Profarma's antiparasitic products have shown a good stability, with acceptable results regarding content of active ingredients and impurities.

Key words: antiparasitic, pharmaceutical ingredient, pharmacopoeia, shelf life.

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Short Biography of the presenting author:

The author is a pharmacist with a master's degree in Pharmacy Administration from the University of Houston. She has a more than five-year experience as a university lecturer, and has joined Profarma since 2014, where she has initially worked as regulatory affairs manager and for the last eight years she has worked in the Quality Control Department as an analyst for the validation of analytical methods.



HERBAL DRUGS AS ANTIHELMINTIC AGENTS AND THEIR NANOFORMULATIONS

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ABSTRACT

Parasitic infections remain a global health concern, particularly in low- and middle-income countries where access to conventional treatments is limited. In light of rising drug resistance and treatment failures, there is a growing interest in the development of novel, plant-based antiparasitic therapies. Herbal agents, part of traditional medicine, are now being revisited with modern scientific tools to validate and enhance their efficacy. Among these, Artemisia annua, Nigella sativa, Azadirachta indica (neem), and Carica papaya seeds have demonstrated promising antiparasitic activity against a range of pathogens including helminths, protozoa, and ectoparasites. Recent research has focused on the use of essential oils, such as those derived from oregano, clove, tea tree, and thyme, which exhibit broad-spectrum antiparasitic effects. These oils contain bioactive compounds like carvacrol, thymol, and eugenol that disrupt parasite membranes, inhibit metabolic pathways, and modulate host immune responses. Their lipophilic nature allows for rapid penetration of parasite cell walls, though volatility and stability remain challenges. To overcome such limitations, nanoparticle delivery systems are being employed to improve the bioavailability, stability, and targeted release of herbal compounds. Nanocarriers such as liposomes, solid lipid nanoparticles, and polymer-based systems have been used to encapsulate essential oils and phytochemicals, leading to enhanced therapeutic efficacy with reduced toxicity. Berberine-loaded nanoparticles, for example, have shown increased activity against Giardia lamblia and Leishmania species. The integration of traditional herbal knowledge with advanced technologies like nanomedicine holds promise for safer, more accessible, and effective antiparasitic treatments in both human and veterinary medicine. Further clinical studies are necessary to validate efficacy, optimize formulations, and ensure regulatory compliance for widespread adoption.

Key words: Antihelmintic, herbal drug, essential oils, nanoformulations

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Professor Enetela Haloci successfully completed her higher studies at the University of Medicine, Faculty of Pharmacy. In 2014, she was awarded her Doctor of Science degree in Pharmacy from Ferrara University in Italy. Since 2016, she has been in possession of the title of Associate Professor. Since 2004, she has been employed as a lecturer at the Faculty of Pharmacy. Professor Haloci has held numerous leadership positions, including deanship and rectorcy, at the university, in addition to serving as a director and member of numerous international projects.



USE OF HERBAL PLANTS AN ALTERNATE APPROACH AGAINST PARASITIC INFECTIONS

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ABSTRACT

Parasitic infections represent a major public health threat, particularly in regions with limited access to conventional healthcare. The increasing prevalence of drug resistance, high treatment costs, and adverse side effects associated with synthetic medications have led to growing interest in alternative therapies, including the use of herbal plants. Many herbal plants contain bioactive compounds with demonstrated antiparasitic properties, offering a promising natural solution for combating a variety of parasitic diseases. This review explores the role of herbal plants in the treatment of parasitic infections, focusing on key species such as Artemisia annua, Lavandula angustifolia, Thymus vulgaris, Mentha piperita, Allium sativum, Origanum vulgare and Cinchona officinalis. These plants have demonstrated efficacy against various parasitic pathogens, including protozoa, helminths, and ectoparasites, through diverse mechanisms such as inhibition of parasite growth, immune modulation, and direct toxicity to the parasite. The article also discusses the advantages of herbal treatments, including their lower cost, reduced side effects, and sustainability, while acknowledging challenges such as plant variability, lack of standardized formulations, and the need for further clinical research. In conclusion, herbal plants offer a viable complementary or alternative strategy for the management of parasitic infections, with further investigation required to establish their clinical effectiveness and safety.

Key words: Herbal plants, parasitic diseases, public health.

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Short Biography of the presenting author:

Emi Panariti hold a master's degree in Pharmacy from the University of Tirana and am currently pursuing a Ph.D. in Agricultural Sciences, focusing on plant protection, at the Agricultural University of Tirana.Since 2009, I have been serving as an internal lecturer in Organic Chemistry, Pharmacognosy, Phytotherapy, Toxicology, and Legislation at the Department of Pharmacy, Albanian University (UFO), where I am mentoring students in their research projects and thesis development. In addition to my academic role, I possess extensive experience in the pharmaceutical industry. Currently, I serve as the Regulatory Affairs and Pharmacovigilance Manager at TRIMED-Shpk, a pharmaceutical importer and distributor, where I oversee regulatory submissions, ensure compliance with pharmaceutical legislation, and maintain the pharmacovigilance system to safeguard public health. My research interests primarily focus on herbal medicine, phytotherapy, and the integration of plant-based therapeutics into contemporary pharmaceutical practices. I have published several studies on the pharmacological properties of herbal plants, as well as the safety and efficacy of food supplements. Through my research, I aim to bridge the gap between traditional medicine and modern pharmaceutical practices, improve public health through better regulatory practices.



Cost Action CA21111

ADDRESSING DRUG RESISTANCE IN PARASITIC DISEASES: CLINICAL STRATEGIES AND INTEGRATED THERAPEUTIC APPROACHES

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ABSTRACT

Parasitic diseases induce a considerable threat to the public health of every country in the globe. All over the world, millions of people and animals are parasitized, and adequate surveillance systems are beneficial in monitoring disease outbreaks, distinguishing new threats, and taking actions on time. An effective public health attention that encompasses vector, vaccination, sanitation, as well as awareness campaign control helps reduce transmission. The use novel antiparasitic drugs as well as other advanced therapeutics like combination therapies and repurposed pharmaceuticals have noticeably improved the treatment outcome. Unfortunately, drug resistance has remained a challenge which requires innovation, such as genomic and precision medicine and developing new approaches to treatment. In addition, healthcare workers, scientists, and policymakers need to work together in interdisciplinary research in order to deal with parasitic diseases. Using artificial intelligence and big data analytics for modeling diseases has provided opportunities to better predict outbreaks and allocate resources optimally. This report outlines the advances made in the surveillance, prevention, and treatment of parasitic diseases while endorsing an integrated approach aimed at addressing the gap which exists between research, policy, and practice towards the control of these diseases.

Key words: Parasitic Diseases, Surveillance Systems, Prevention, Treatment, Drug Resistance

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Lori Doko is a student of biological sciences and a young researcher working in the field of pharmacology. She is affiliated with the eCampus university. Her research focuses on innovative therapeutic strategies for vector-borne diseases, emphasizing pharmacological interventions and disease surveillance. She has attended various workshops and internships to enhance her expertis.



One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

ECOPHARMACOVIGILANCE ROLE AND NEED IN ANTIMICROBIAL ENVIRONMENTAL POLLUTION PREVENTION IN ALBANIA IN ONE HEALTH APPROACH

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ABSTRACT

Pharmaceutical products are chemical substances that negatively impact the environment. Pharmaceutical pollutants are monitored through surveillance systems in Eco pharmacovigilance which is related to the detection, assessment and prevention of negative effects of pharmaceuticals present in the environment endangering ecosystems and public health. The consumption of pharmaceutical preparations by both humans and animals is at a progressive pace. One of the groups of pharmaceuticals that are widely used in Albania in the pharmaceutical market are Antimicrobials, including mainly antibiotics, antiparasitics and antifungals. The consumption of human and veterinary pharmaceutical drugs ends with their excretion in the wastewater system which ends up in the environment. The use of antimicrobials in livestock and agriculture can lead to the entry of active pharmaceutical ingredients into various environmental compartments such as soil, water and consequently also plants and vegetables consumed by humans and animals. Industrial discharges of antimicrobial pharmaceuticals also constitute a potential source of persistence and virulence of active pharmaceutical ingredients that impact Public Health. In Albania today, there are pharmacovigilance surveillance systems for the safety of medicines to patients in human and veterinary medicine, but a surveillance strategy for the impact of antimicrobials in the environment on a healthy person has not yet been developed.

Key words: ecopharmacovigilance; antimicrobial, environment

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Short Biography of the presenting author:

Prof. Dr. Erinda Lika is the Vice Rector for Scientific Research and Projects at the Agricultural University of Tirana (AUT), where she also serves as the Institutional Erasmus Coordinator and National Focal Point (NCP) for the Horizon Europe Program in the fields of Food, Bioeconomy, Natural Resources, Agriculture, and Environment. With over 20 years of academic experience, Prof. Lika holds a Ph.D. in Veterinary Medicine and has completed postdoctoral studies in Ecotoxicology, Pharmacology, and Pharmacovigilance across leading European institutions (Vienna, Zagreb, Perugia, Milano, Budapest, Estonia).



She has specialized in microbiome research and the surveillance of infectious pathogens through wastewater monitoring, collaborating with international institutions such as Michigan State University (USA), TZW-DVGW Karlsruhe (Germany), and BOKU Vienna (Austria).

Prof. Lika's expertise spans pharmaceutical and ecotoxicology sciences, EU environmental policies, food safety standards, and circular economy practices. She has held leadership positions, including Deputy Dean and Dean of the Faculty of Veterinary Medicine at AUT, and has coordinated several EU-funded projects as National Expert and Project Coordinator. Her work focuses on advancing scientific research, enhancing academic cooperation, and promoting sustainable development through a One Health approach.







One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

ANTIPLASMODIAL IN VITRO ACTIVITY OF PHYTOCANNABINOIDS: THE INFLUENCE OF SINGLE-ELECTRON OXIDATION POTENTIAL AND LIPOPHILICITY

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ABSTRACT

The data on the activity of phytocannabinoids (PCNs) against the malaria parasite Plasmodium falciparum are sparse, and their action mechanisms are unclear [1,2]. Since PCNs contain redox active resorcinol, chroman- or chromen-1-ol moieties, they could exhibit the prooxidant action against mammalian cells and parasites [3,4]. In that case, their activity should increase with the ease of their oxidation (lower redox potential of phenoxyl radical/phenol couple, E_{7}^{2}), and with the increase of their lipophilicity. In this context, the activity of PCNs (n = 10) against the chloroquine-resistant P. falciparum FcB1 strain is described in a following way: i) the calculated heats of formation and energies of lowest unoccupied molecular orbitals of radicals of PCNs are consistent with their $E_{7}^2 = 0.6-0.7$ V, which are lower than that of resorcinol, $E_{7}^{2} = 0.81$ V. This is confirmed by electrochemical studies, which show that PCNs are oxidized at potentials 0.08-0.15 V lower than resorcinol; ii) the concentrations of PCNs for 50% parasite growth inhibition (IC₅₀ = 0.50-100 μ M) decrease with the increase in their lipophilicity (log D(calc.) = 2.32-7.4), and iii) The IC₅₀ of PCNs are in line with those of model polyphenols with similar values of E_7^2 and log D(calc.) [4], which points to the possibility of their prooxidant action. We thank Sanobiotech UAB (Vilnius, Lithuania) for their generous gift of phytocannabinoids. This research was in part supported by the COST Action CA21111.

Key words: phytocannabinoids; aniplasmodial action; redox activity.

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Narimantas Čenas (1957), PhD (1982, Biochemistry, Institute of Biochemistry, Vilnius), DrSci (1991, Chemical Kinetics and Catalysis, Biochemistry, Moscow University). Areas of interest: flavoenzyme-catalyzed single- and two-electron reduction of prooxidant drugs, xenobiotics and environmental pollutants, and its impact on their cytotoxic/therapeutic action; prooxidant action of polyphenolic compounds.



PHASING OUT MERCURY MEASURING DEVICES FROM THE HEALTHCARE

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ABSTRACT

Mercury is highly toxic to humans and ecosystems and is considered by WHO as one of the top ten chemicals or groups of chemicals of major public health concern. Exposure to mercury can result in adverse impacts on the nervous, digestive and immune systems, lungs and kidneys. Children are especially vulnerable to mercury exposure. Important applications of mercury in the health sector include mercury use in thermometers and blood pressure measuring devices (sphygmomanometers). Releases in healthcare settings are primarily associated with damaged equipment and poor waste management practices.

The Minamata Convention on Mercury¹ entered into force in 2017. The Convention covers a range of issues associated with mercury production, use, waste and disposal, providing a list of uses in which the manufacture, import and export are restricted, and applicable phase-out dates or reduction targets. Albania has adopted its own legislation on mercury based on Minamata Convention and the relevant European legislation².

The project "Phasing out mercury measuring devices from the healthcare" is a multi-country project, where are involved Albania, Burkina Faso, India, Montenegro and Uganda. WHO is the Executing Agency for this UNEP implemented project funded by the Global Environment Facility (GEF). The project aims to remove equipment containing mercury from the health sector to reduce mercury emissions and contribute to the protection of human health and the environment from its negative impacts. In this way, the project will provide assistance for the fulfilment of the Albanian Government's obligations arising from the Minamata Convention on Mercury, ratified by Albania in 2020 with Law No. 7/2020 as well as for the implementation of the Biannual Cooperation Agreement between the Ministry of Health and the Regional Office for Europe of the World Health Organization 2024-2025, dt. 28.05.2024. The project comprises of 3 main components: Component 1: Development and implementation of national health-system wide strategies for phasing out the import, export and manufacture of mercury thermometers and sphygmomanometers in line with WHO Recommendations and related provisions of the Minamata Convention; Component 2: Implementation of national strategies to phase out manufacture, import and export in all project countries, and demonstrations of substitution in use and Component 3: Knowledge management.

Key words: Mercury, medical measuring devices, Minamata Convention

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¹https://minamataconvention.org/en

²LIGJ Nr. 7/2020 për ratifikimin e Konventës së Minamatës "Për Merkurin"



Lindita Tafaj, Dr. Sc. has graduated as Industrial Chemist from the University of Tirana in 1987. She has undergone several trainings; in 2004 she has obtained the Degree Doctor of Sciences from Faculty of Natural Sciences of the University of Tirana.

Since her graduation in 1987, she has worked in Institute of Public Health in the Department of Environmental Health. For 9 years (2015 - 2024) Dr. Tafaj has been Head of Sector of Laboratories for Health and Environment. Her duties as specialist of public health have covered also the chemicals management, being the National Focal Point for Strategic Approach for International Chemicals Management (SAICM) during the period 2008-2023 and member of the Committee for the Authorization of the Biocidal Products for many years.

She has coordinated 2 national projects related to chemicals management and has acted as national and international expert in several projects.

Since July 2024, Dr. Tafaj is working at World Health Organization in Albania, as Project Coordinator.



AN OVERVIEW ON PESTICIDE POLLUTION IN PORTO-ROMANO AREA, ADRIATIC SEA

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ABSTRACT

This study presented data about concentrations of some organochlorine pesticides and their residues in marine water and sediment samples from Porto-Romano area, located in Adriatic Sea, 5 km from Durres city. This is one of the most polluted areas of Albania classified as Hot-spot due to the former Lindane production plant. This plant produced Lindane for more than 20 years for agricultural purposes in our country. Its waste was discharge directly into the sea for this period. Also, after the 90s when the plant was destroyed, its products were spread in its territory and beyond. In this study, HCHs, Aldrines, DDTs and Endosulfans were analysed in nine seawater and sediment samples from Porto-Romano area from 2022 to 2024. The analysis of pesticides and their residues was performed by using GC/ECD technique. Pesticides were detected in more than 70% of seawater samples and for all sediment samples. Degradation products of pesticides were found in higher level because of their previous uses in this area. Discharges from the Lindane plant for a long time and the storage of pesticides in warehouses near it are the main factors. Pesticide levels were lower than allowed values according EU norms but monitoring of this area must be performed frequently by the responsible institutions.

Key words: Porto-Romano, HCHs, Aldrines, DDTs, Endosulfanes, GC/ECD, Water analyze.

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Aurel Nuro was born on Albania (1977). He was graduated in Chemistry branch (2002) in Faculty of Natural Sciences, Tirana University. He finished PhD studies (2008) in Tirana University, followed by "Docent" (2010), Associated Professor (2012) and Professor (2021). From 2002 to date he works as Lecturer & Researcher in the working group of Organic Chemistry near Department of Chemistry, FNS, UT. The main research areas are: Organic Chemistry; Instrumental Analyzes, Gas chromatography, Environment Pollution (Pesticides, PCB, PAH, BTEX, Phenols, etc), Ecotoxicology, Medicinal and Aromatic Plants, Essential oil, etc. He has been coordinator, expert and participant in national and international projects. He supervised more than 220 Master theses in Environmental Chemistry, Food Chemistry, Pharmacy, etc. He has participated in more than 110 international and national scientific activities (Conference, Congress, etc.) in which are presented more than 170 different works. His publication includes articles, books, conference proceedings (altogether more than 200). He is cited in the scientific literature.



SEROEPIDEMIOLOGICAL STUDY OF *TOXOPLASMA GONDII* IN EQUINES IN NORTHERN EGYPT

Cost Action CA21111

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ABSTRACT

Toxoplasmosis, caused by *Toxoplasma gondii*, remains a significant zoonotic disease worldwide. However, its seroepidemiology in Egyptian equids is poorly studied. This study assessed *T. gondii* seroprevalence in equines from Northern Egypt. A total of 360 serum samples from horses (n=157) and donkeys (n=203) were collected in 2023 and tested using the Modified Agglutination Test (MAT, cut-off 1:25). The overall seroprevalence was 41.11% (95% CI: 36.03–46.19). Using a Generalized Estimating Equation (GEE), seropositivity was significantly higher in donkeys (51.23%) than in horses (28.03%) (p < 0.001; OR = 2.99, 95% CI: 2.35–3.81). These findings indicate high *T. gondii* exposure in equines, particularly in donkeys. Periodic surveillance and management strategies are essential to mitigate potential risks to animal and public health.

Key words: Toxoplasma gondii; Modified Agglutination Test (MAT); Horse; Donkeys; Egypt.



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Short Biography of the presenting author:

Started his career as parasitologist, but he was involved in a diverse range of field and research projects, gaining comprehensive knowledge in *microbiology*, *Parasitology*, *zoonotic* diseases, infectious diseases and pharmacology, inspired by the "One Health approach". His main expertise and activities included: 1) research on *epidemiology, diagnosis, and seeking* novel drug targets for bacterial and parasitic diseases; 2) teaching and supervising of students on zoonotic diseases and infectious subjects at Sohag University (Egypt) and the University of Córdoba (Spain), respectively, in addition to organizing conferences, besides organizing conferences. During some years, he worked as assistant/associate professor of zoonoses at Sohag Univ., whereas he established with his colleagues a unit for diagnosis and treatment of zoonoses. In May 2017, he served as a Visiting Researcher at the Univ. of León. In October 2018, he worked as a Research Fellow at the Univ. of Glasgow, then from April 2019, he worked as a Senior Scientist at the Univ. of Liege. In January 2022, he worked as a post-doc at Instituto de Salud Carlos III. Throughout this trajectory, his research interests included field and laboratory-based investigations of zoonoses, seeking novel drugs, pathogen persistence in multi-host communities and limit zoonotic cross-species transmission to protects people from threats.



DIAGNOSIS AND TREATMENT IN ADULT GOATS

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ABSTRACT

Non-toxic goiter is a simple goiter is an enlargement of thyroid gland, which developed without causing hypothyroidism or hyperthyroidism. Little is known about this type of goiter in ruminants, particularly in alpine goats. The aim of this study was to report some interesting cases of non-toxic goiter in adult goats, as well as the diagnosis and treatment. Three adults (18- 36 months: age), female goats, with goiter, were investigated. For diagnosis, the case history and clinical signs were considered, and the goiter grade was determined. Chemical analysis of thyroid hormones of blood samples was estimated. All cases had a history of failed and dead births, with ratio 2:1 per birth, and births living and dead were born with a large sized goiter. The goiter in adult goats was ranged between grade I to II, which was simple, slightly visible and requires palpation. The thyroid hormones including, triiodothyronine (T3); Tetraiodothyronine (T4), and Thyroid stimulating hormone (TSH) were of normal level in the blood of these cases. The treatment used in this study, including iodine supplement, selenium, and vitamin B12 was beneficial and the animal health was improved, especially with conserving supplement of iodine as food additive.

Keywords: Hypothyroidism; non-toxic goiter; thyroid hormone; thyroid gland

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He is author and co-author of 32 scientific papers published in peer reviewed international journals; Presenter and participation in several international and national conferences; Coordination and participation in several international and national research projects; - Participation in mobility programs, trainings and workshops in different scientific institutions in EU countries; Managerial position: Vice Dean of the Veterinary Medicine, Member of the Scientific Council at the Ministry of Education, Science and Technology.

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One Health drugs against parasitic vector borne diseases in Europe and beyond Cost Action CA21111

ANTILEISHMANIAL AMINOPYRAZOLES: DECONVOLUTION OF THE MODE **OF ACTION BY CHEMICAL MUTAGENESIS**

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ABSTRACT

Aminopyrazoles have emerged as a promising series of antileishmanial compounds. Molecular target deconvolution has been a major challenge because successive drug exposure failed to select for resistance. Chemical mutagenesis combined with aminopyrazole selective pressure and whole genome sequencing was used as an alternative approach. From the obtained panel of 28 resistant lines, an association was discovered between >10-49-fold resistance and multiple independent heterozygous mutations in the C-terminal FYVE zinc finger domain of LINF 180011100. LINF 180011100 gene overexpression and CRISPR-Cas9 gene editing has independently confirmed the association with 10-30-fold aminopyrazole resistance. Genetic fusion with an N-terminal green fluorescent protein tag demonstrated that the functional protein primarily localizes in endocytic vesicles. Proteomic analysis confirmed the protein interacting with recycling endosomes that are associated with the ribosomal translation machinery and mitochondria. This work validates LINF 180011100 as a drug target and resistance determinant for several aminopyrazole leads and provides insights into the mechanism of action.

Key words: Aminopyrazole, Mut-Seq, FYVE domain, Endosomes.

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Short Biography of the presenting author:

I studied veterinary medicine in Egypt and obtained a master's degree in Parasitology, where I conducted a surveillance study on intestinal protozoa in chicken. I received a fully funded scholarship from the Egyptian Missions Program, enabling me to pursue my PhD in Belgium. Currently, I am conducting my PhD research at the University of Antwerp under the supervision of Prof. Guy Caljon. My research focuses on the mode of action of antileishmanial aminopyrazoles and the development of drug discovery assays. I have a strong interest in protozoan parasites, particularly those with complex life cycles, as they are often neglected in both scientific and industrial research. During my PhD, I gained expertise in genetic engineering tools and applied them in drug discovery. In the future, I aim to explore host-parasite immunopathogenesis.



Cost Action CA21111

GASTROINTESTINAL PARASITES OF SMALL RUMINANTS IN KORÇA DISTRICT IN ALBANIA, PREVALENCE AND ANTHELMINTIC RESISTANCE

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ABSTRACT

Gastrointestinal infections are widespread among grazing ruminants and cause significant economic losses due to reduced production. Additionally, the increasing prevalence of anthelmintic resistance across Europe poses a serious challenge to the sustainability of ruminant livestock farming. This study aimed to assess the prevalence of gastrointestinal parasites and evaluate anthelmintic resistance in sheep and goats from 40 farms in the Korça district, southeastern Albania.

A total of 121 fecal samples from adult sheep and goats were analyzed. The most prevalent parasite identified was Strongyloides papillosus, found in 55 samples (45.4%). Ostertagia spp. eggs were detected in 49 samples (40.9%), followed by Monezia expansa eggs in 33 samples (27.2%) and Dictyocaulus filaria in 27 samples (22.3%). Other parasites identified included Nematodirus spathiger eggs in 16 samples (13.2%), Haemonchus contortus eggs in 16 samples (13.3%), Cooperia spp. eggs in 11 samples (9%), Trichostrongylus axei in 11 samples (9%), coccidian oocysts in 5 samples (4.1%), and Trichuris ovis in 2 samples (1.6%).

These findings highlight the prevalence of gastrointestinal parasites in small ruminants and the need for effective parasite control strategies, particularly from increasing anthelmintic resistance.

Keywords: small ruminants, gastrointestinal parasites, anthelmintic resistance

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Dr. Ani Vodica is a veterinary parasitologist who has accrued more than 17 years of professional experience in the diagnosis and research of parasitic diseases in animals. She currently occupies the position of Head of the Diagnosis Section at the Food Safety and Veterinary Institute (FSVI) in Tirana, Albania. Dr. Vodica hold the grade Doctor of Science in Veterinary Medicine, Agricultural University of Tirana since the year 2017.

Current role is Parasitologist Food Safety and Veterinary Institute. Her Scientific and Professional Contributions are present as - Author and co-author of 27 scientific articles, - Participant in over 50 training and conferences at home and abroad and -Member of 7 working groups of various international projects in the field of animal health and food safety.



INTESTINAL PARASITOSIS INFECTIONS AMONG CHILDREN WITH SPECIAL NEEDS IN ELBASAN, ALBANIA

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ABSTRACT

Parasite infection still strongly influences the lives of humans. Their major impact is seen in developing countries, and especially frequent among children, and those with special needs present higher vulnerability. The purpose of this study was to determine how the prevalence of intestinal parasite infections occurred in children with special needs and importance in increasing psychiatric symptoms. In this descriptive cross-sectional study conducted in 2022 in Elbasan, Albania, 216 children from three special needs centers were analyzed. The study focused on the examination of stool samples for parasitic infection, where each participant provided triplicate fecal specimens subjected to various analytical methods, including direct wet mount, sedimentation concentration, and permanent staining techniques. The data collected from questionnaires were evaluated using the statistical software SPSS version 23.0, with a significance threshold set at p < 0.05. A statistically significant relationship is evident between diagnosis and both gender and age, with a value of p <0.005 observed in both instances. Approximately 61% of the female subjects (90/146) and 45% of the male subjects (32/70) exhibited signs of intestinal parasite infection, thereby underscoring the need for further investigation. The most prevalent parasites identified in this study were protozoan infections (25%), followed by helminthiasis (18%). Ascaris lumbricoides and Enterobius vermicularis (10%) respectively were identified as the most prevalent parasites, followed by Giardia lamblia (9%) and Entamoeba coli (7%). Symptoms associated with parasite infection in children include agitation, aggression, hyperactivity, and diminished attention.

The high incidence of intestinal protozoan infections can be attributed to a combination of environmental factors and inadequate personal hygiene practices among children. Consequently, there is a necessity for additional public health measures to be implemented for children with special needs attending special schools and centres. The promotion of best practice sanitation and the importance of uncontaminated water and food sources for children can be achieved through educational initiatives for families. Such initiatives have the potential to reduce the risk of infection and to promote better health outcomes for children and communities.

Keywords: intestinal parasitic infections, special needs child, prevalence, Elbasan, Albania.

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Short Biography of the presenting author:

Dr. Brunilda Elezi, MD, Associate Professor, and researcher, brings nearly a decade of expertise in Geriatrics and Patient Management education. She has been the lead lecturer in Geriatrics at the University of Elbasan since 2012. In May 2024, she was appointed Associate Professor, and in September 2024, she became the Dean of the Faculty of Medical Technical Sciences at the University of Elbasan "Aleksander Xhuvani". As a dedicated academic, Dr. Elezi excels in teaching, organizing scientific conferences, and advancing research. In addition to her academic role, she practices part-time as a general practitioner, catering to a wide range of patients, including people with special needs. Recently, she specialized in Child and Adolescent Psychiatry, offering support to families and children in specialized care centers. Dr. Elezi earned her Ph.D. in Preclinical Sciences from the University of Tirana (2011-2016) and her degree in General Medicine from the same institution (2000-2006). She has been a member of the Order of Doctors of Albania and is registered with the Regional Council of Elbasan (since March 28, 2011). She holds a license for the individual practice of medicine. With a strong background in research and teaching, Dr. Elezi is committed to advancing contemporary scientific developments through collaboration and the organization of research-based conferences. She is known for her excellent communication and organizational skills in academic and clinical settings.

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Location: Elbasan, Albania



One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealthdrugs Cost Action CA21111

THE UTILISATION OF SEROLOGICAL DIAGNOSTIC TESTS DURING PREGNANCY FOR THE DETECTION OF TOXOPLASMA INFECTION

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ABSTRACT

Toxoplasmosis, an infection caused by the parasite Toxoplasma gondii, poses significant risks during pregnancy, particularly concerning fetal development. Consequently, the employment of precise and opportune serological diagnostic tests is imperative in the management of this infection during pregnancy. This study underscores the prevalence of T. gondii among pregnant women, accentuating the significance of serological tests and the influence of socio-demographic, risk, and behavioural factors on the rate of infection. In this study, ELISA (Enzyme-Linked Immunosorbent Assay) serological methods were employed for the purpose of identifying antibodies against T. gondii. IgG and IgM antibodies have been utilised to differentiate between acute and chronic infection, while the assessment of IgG avidity is imperative to ascertain the infectious status and for managing the potential for congenital transmission. In a study conducted over a two-year period, anti-IgG was detected in 25% of 108 pregnant women, while anti-IgM was identified in 5.5% of the cohort. For acute cases of infection, IgG Avidity testing was low in 3.3% of cases, indicating that a new infection may have occurred in a small percentage of women, increasing the risk of congenital transmission. The average age of the subjects was 28.3 years (± 2.11 StD), with the most common age group being 25-30 years. A significant proportion of the women were in their second pregnancy at the time of testing. Furthermore, it was observed that approximately 50% of the subjects resided in private residences. The analysis of risk factors identified from the anamnesis revealed that the presence of cats in the subjects' homes or the consumption of undercooked products from restaurants or fast-food establishments could be potential routes of infection. The assessment of IgM, IgG, and IgG avidity antibodies is imperative for the effective management and comprehension of T. gondii infection in pregnant women. This assessment facilitates the prevention of congenital transmission and the provision of enhanced care for maternal and infant health. It is imperative to implement these tests meticulously, whilst also being cognizant of their limitations, to ensure optimal management of the risks associated with toxoplasmosis in pregnant patients. Ongoing research and development in the field of serology and molecular diagnostics hold great promise for improving outcomes and further informing clinical practice. In addition, effective management of cases with positive IgM antibodies and low avidity levels involves ongoing monitoring and, in certain cases, therapeutic interventions to prevent complications in the fetus.

Keywords: infection, pregnant women, antibodies, serology

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Short Biography of the presenting author:

Erjona Abazaj completed her undergraduate studies at the Faculty of Natural Sciences, Department of Biology, in 2002, at which point she was awarded the title of "Biologist". Following her graduation, she was employed at the Institute of Public Health in Tirana, where she held the position of biologist in the Laboratory of Parasitology. This laboratory specialises in the analysis of gastrointestinal and blood parasites. She completed a master's degree in 2005 and subsequently completed her PhD in 2009. The focus of her research was the recognition of *Toxoplasma gondii* in the Albanian population by using immunological and molecular methods. She gained valuable research experience at the Institute of Medical Research in Kuala Lumpur, Malaysia, where she obtained a post-graduate diploma in Parasitology and Entomology. From 2007 until the present, she has held a variety of lecturer positions at multiple faculties and universities in Albania. In December 2021, she was awarded the title of Associate Professor at the University of Medicine in Tirana. Since 2022, she has been involved in two European projects, Ca21105 and Ca21111, in a management committee capacity. In addition, she serves as an evaluator of projects funded by National Agency for Scientific Research and Innovation, assuming the role of expert.



TOXOPLASMOSIS IN GOATS IN A FARM IN TIRANA: CASE REPORT

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ABSTRACT

This report describes an outbreak of Toxoplasmosis in a goat farm in Berxull, Tirana. During March 2025, abortions in goats were observed in the stage three of pregnancy. After 21 days of abortion, blood from 4 goats was collected. Based on the protocol for abortion cases, indirect ELISA test was performed to exam serum for detection of anti-*Chlamydia* antibodies. The four goats resulted negative. Then indirect ELISA test multi-species from IDvet was performed to exam serum for detection of anti-*Chlamydia* four goats resulted positive. Lab investigation revealed very high values of S/P in % for all tested blood samples. For each sample optical density was respectively; 290%, 284.6%, 268.8%, 243.8%. (S/P %>50 % Positive, following Kit Instructions). Toxoplasmosis is a parasitic zoonosis of veterinary importance, with implications for public health that has the highest human incidence among the parasitic zoonosis. *Toxoplasma gondii* infection causes abortion or congenital disease in small ruminants. Our case presented the presence of *Toxoplasma gondii* infection in goats after abortions. In conclusion it is very important to carry out extensive diagnostic research in the population of small ruminants in Albania after abortions.

Key words: Outbreak, Toxoplasma gondii, goat, abortion, public health.

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Short Biography of the presenting author:

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A SURVEY OF INTESTINAL PARASITES IN PRE-SCHOOLER CHILDREN IN URBAN AREA OF TIRANA

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ABSTRACT

In retrospective, this survey aims to evaluate the presence of intestinal parasites in preschooler children, in an urban area of Tirana. A total of 23 pre-schooler children was enrolled; 10 (43,5%) female and 13 (56.5%) males, during 2006. All children are at the same pre-schooler class at the age of 4 years old. The formalin-ether concentration technique (FECT) was performed to exam the collected formaldehyde-preserve stool samples. A total of 13 (56.5%) out of 23 preschool children tested positive for intestinal parasites, with a 95% confidence interval (CI) of 1.22 - 1.25. Among them, *Giardia lamblia* was the most prevalent, with 10 (76.9%) positive cases, followed by *Entamoeba histolytica* with 7 (53.8%) and only 1 (4.3%) case of *Trichuris trichiura*. Most of the cases (9, 69.2%) were infected with one parasite, followed by 3 (23%) cases with two parasites, and only 1 (4.3%) case was infected with three parasites. The results of our survey reveal that intestinal parasites represents a public health problem for pre-schooler children, in urban areas.

Key words: Intestinal parasites, pre-schooler children, public health.

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Short Biography of the presenting author:

Dr. Luljeta Alla is actually working at the Institute of Public Health, Tirana, Albania, at the Department of Infectious Diseases and Control. She has over 20 years' experience in public health in the study and research of zoonotic diseases as Brucellosis, Anthrax, Leptospirosis Leishmaniasis with the main focus in surveillance, prevention and control of zoonotic diseases. She has published papers in national and international journals and participated in national and international health conferences and events regarding One Health. She participates in several meetings of WHO, ECDC as an expert for zoonotic diseases. She is a member of the National Centre for Avian Influenza as a representative of Public Health Institute.



A SURVEY OF TOXOPLASMA GONDII IN CATS IN TIRANA

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ABSTRACT

This survey aims to evaluate the presence of *Toxoplasma gondii* infection in household cats in the urban area of Tirana. Blood collection from the 46 household cats, 25 (54.3%) male and 21 (45.6%) female, was conducted in the period of April – October, during 2018. Cats were presented at the Veterinary Clinic for the routine assessment of health. The cats are at the age group of 1 - 8 years old. For each case, a detailed questionnaire was completed. The serology, indirect ELISA test was performed to exam sera of cats for detection of anti-*Toxoplasma gondii* antibodies. Out of 46 cat sera, 11 (23.9%) resulted positive, of them 7 (63.6%) male and 4 (36.3%) are female. According to living conditions, 32 (70%) of household's cats live in house conditions only and 2 of them resulted positive; other 14 (30%) live in house conditions, but they go out into the yard or public areas and 9 of them resulted positive showing the impact of outside conditions in positivity. The results of our survey reveal the presence of *Toxoplasma gondii* infection not only in cats that live in-house conditions and go out into the yard or public areas, but also in cats that live in-house conditions only.

Key words: Survey, Toxoplasma gondii, cat, serology, Albania

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Short Biography of the presenting author:

Dr Arla Juma is actually working at the Food Safety and Veterinary Institute in Tirana, Albania as Head of Serology Section at the Department of Animal Health. The Serology Section carries out critical missions for Albania characterised by its strength as Reference Laboratory.



She also did studies and researches as author and co-author in diagnosis, surveillance and control of several infectious diseases, VBD and zoonosis with the main focus on Brucellosis, Chlamydiosis, Q Fever, Leptospirosis. She holds a PhD in Veterinary Medicine, from Faculty of Veterinary Medicine, Tirana, Albania. She participates as a participant and expert in several national and international meetings and national and international projects.



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EPIDEMIOLOGY OF PARASITIC DISEASES AND THE SPREAD OF INTESTINAL PARASITES IN TIRANA

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ABSTRACT

Parasitic diseases, particularly those affecting the gastrointestinal tract, remain a significant public health challenge in humans and animals. This cross-sectional study was conducted in Tirana, enrolling 5,761 patients with suspected parasitic infections or those referred by clinicians. The mean age was 20.8 (\pm 23.4) years, with a median of 9 years and an interquartile range of 3–34 years. Among children, 814 (14.1%) tested positive for parasites (95% CI: 13.2–15.0), including 13% of females (95% CI: 11.9–14.2) and 15.6% of males (95% CI: 8.49–8.67). The highest positivity rate was observed in the 6–10-year age group, with a significant decline as age increased. Common clinical manifestations included abdominal pain, diarrhoea, pruritus, urticaria, and general weakness. *Giardia lamblia* emerged as the most frequently identified parasite, found in 12.5% of the total pediatric population. Further screening in 753 children revealed a positivity rate of 11.3% (95% CI: 9.23–13.76), peaking (24.6%) at age two. These findings highlight the importance of consistent surveillance, targeted prevention strategies, and effective therapeutic approaches to reduce the burden of parasitic diseases in both humans and animals.

Key words: Parasitic infections, surveillance, Giardia lamblia, prevention

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Short Biography of the presenting author:

Blegina Arapi is an Albanian microbiologist and lecturer with extensive experience in clinical microbiology and parasitology. She has been a Microbiologist Doctor at Intermedica Center and the Local Health Care Unit in Tirana since 2004, as well as a part-time lecturer at the Faculty of Medicine, University of Tirana since 2009.

She holds a Doctor of Sciences in Parasitology, specializing in the epidemiology of parasitic diseases, and has completed postgraduate studies in general microbiology.



Dr. Arapi has been an active participant in numerous international conferences and has published extensively in microbiology, parasitology, and infectious diseases. She is a member of the Albanian Association of Laboratories and has contributed to various research projects on antimicrobial resistance, parasitic infections, and microbiological diagnostics. Fluent in multiple languages, she has collaborated with researchers across Europe and the Balkans.



ELIMINATION OF INDICATOR BACTERIA IN A DRINKING WATER TREATMENT PLANT

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ABSTRACT

Most waterborne diseases are closely related to the incorrect way of water treatment processes. Indicator bacteria are an appropriate indicator for the functioning of these processes, of chlorination. These bacteria are often resistant to the chlorination process, consequently their elimination is a very delicate process. This study is focused on the optimization of conventional water treatment processes (coagulation, sedimentation, and filtration, chlorine disinfection) to prevent waterborne diseases. In a water treatment plant, the presence of indicator bacteria was investigated at each step of water treatment for a 20month monitoring period. Raw water is from surface origin which is heavily influenced by meteorological conditions. Samples were taken at each step of water treatment processes: Raw water, pre-chlorination, post-sedimentation, post-filtration and post-chlorination. The indicator bacteria analyzed were coliform bacteria, Escherichia coli, fecal enterococci, Clostridium perfrigens and total colony count. All data on the effectiveness of indicator bacteria removal were obtained in full scale. This study has shown that it is required the optimization of coagulation process for the efficient removal of indicator bacteria. The optimization of this process increases the efficiency of removing these bacteria through physical elimination up to 99% thus ensuring hygienically clean water.

Keywords: Indicator bacteria, conventional water treatment, optimization.

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ISO 9308-1:2004 – Water quality – Enumeration of *Escherichia coli* and coliform bacteria – Part 1: Membrane filtration method for waters with low bacterial background flora.
 EN ISO 7800-2 – Water Quality-Detection and enumeration of intestinal enterococci

Part 2: membrane filtration method) ISO 7899-2:2000).

Short Biography of the presenting author:

Adela Kullaj graduated in 2007 from the University of Tirana, Faculty of Natural Sciences, where I have received the title of "Biologist". In the same faculty, I followed a master degree in Biotechnology–Microbiology and a PhD with a focus on water quality and water treatment. For almost 16 years, I have been working at Bovilla Water Treatment Plant.



My area of interest is drinking water quality and sanitation that dates back to 2003, when I carried out a 3-year study on the microbiological quality of bottled water. In my current position at the Bovilla Water Treatment Plant, I've had hand-on contributions to assessments of the causes of earthy odour of water and have excelled in optimizing conventional water treatment process. I have conducted different studies in relation to microbiological water quality assessment for the Bovilla Region and have presented my findings to scientific audiences. The Bovilla engagement has also given me good knowledge of the challenges and opportunities of local government units and public utility providers as regards both organizational and human resources aspects. My long-term goal is to gain more research experience in the water sector with focus on contaminant exposure, human health and implementation of innovative water treatment technologies. The engagement has given me experience in both preparation and delivery of capacity building products. Working as a university lecturer has prepared me and developed excellent analytical, pedagogic, computer and organizational skills- in addition to abilities in technical report drafting and data collection related to water assessments.



ANTIPARASITIC DRUG RESISTANCE IN PARASITIC ORGANISMS

Pavlina Melani. Jeorjia Masho, Denisa Palushi, Geraldo Sopaj

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ABSTRACT

The developing ability of parasites to resist antiparasitic drugs that were previously effective has brought a growing challenge for the public health sector and the veterinary sector. This phenomenon directly affects the effectiveness of treatments and the control of parasitic infections. The main factors that contribute to the emergence of this resistance include the excessive and uncontrolled use of antiparasitic drugs, incorrect dosages, and repeated treatments without proper follow-up. Resistance is seen in both human and animal parasites. Antiparasitic resistance affects different classes of drugs, such as chemical and biological ones. The consequences are numerous, including the prolongation of infections, difficulty in clinical management, high-cost treatments, and losses in the agricultural sector. To prevent the spread of this resistance, it is necessary to use drugs carefully and to develop new methods of treatment.

Key words: Parasite resistance; Antiparasitic drugs; Treatment development.

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Short Biography of the presenting author:

I am a third-year Laboratory Medicine student with a strong interest in microbiology and antimicrobial resistance. I work well in group settings and thrive in collaborative environments. Currently, I am focused on my thesis about microorganisms' resistance to antimicrobials. I am passionate about staying up-to-date with the latest scientific research and contributing to the field.



SECONDARY ANEMIA AS A CONSEQUENCE OF PARASITIC INFECTIONS

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ABSTRACT

Anemia secondary to parasitic infections represents a significant and often overlooked public health challenge, particularly in low- and middle-income countries. The resulting anemia can be microcytic, normocytic, or macrocytic depending on the underlying cause, and frequently coexists with other morbidities, compounding its clinical severity. Despite its high prevalence and impact, anemia caused by parasitic infections remains underdiagnosed and undertreated due to limited access to diagnostic tools and integrated care strategies in endemic regions. This presentation aims to provide a comprehensive overview of the pathophysiology, clinical manifestations, and epidemiology of secondary anemia due to parasitic infections. Children are particularly vulnerable, as anemia in these groups is associated with poor growth, reduced cognitive development etc. This study highlights recent evidence on the burden of disease, diagnostic challenges, and current therapeutic approaches, including antiparasitic agents, iron supplementation, and nutritional interventions. Furthermore, it advocates for the integration of deworming programs, vector control, and public health education to reduce transmission and recurrence. Addressing parasitic anemia requires a multidisciplinary approach involving clinical care, laboratory support, and community-based strategies. Greater awareness and targeted policies are essential to mitigate the long-term health consequences of this preventable condition. This presentation underscores the urgency of incorporating parasitic anemia into broader anemia control frameworks and global health agendas.

Key words: Parasitic infections, Iron deficiency, Helminths, Nutritional anemia

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Short Biography of the presenting author:

I am Jeorjia Masho, a third-year student in the Bachelor of Medical Laboratory Sciences program, with a strong interest in clinical diagnostics and public health. Throughout my academic journey, I have gained practical experience in hematology, microbiology, parasitology, and biochemistry, developing both technical and analytical skills crucial for laboratory work. I am passionate about improving diagnostic accuracy and contributing to early disease detection, especially in under-resourced communities. Currently, I am working on a project exploring secondary anemia and its implications for global health.







One Health drugs against parasitic vector borne diseases in Europe and beyond OneHealth*drugs* Cost Action CA21111

SYNTHESIS AND ANTIMICROBIAL ACTIVITY OF NEW COUMARIN DERIVATIVES AGAINST FUNGAL AND BACTERIAL STRAINS

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ABSTRACT

The synthesis of coumarin derivatives has garnered significant attention due to their promising antimicrobial properties. In this study, some new coumarin derivatives were synthesized and evaluated for their antimicrobial activity against various fungi and bacterial strains, including *Aspergillus flavus, Botrytis, Candida albicans, Escherichia coli,* and *Staphylococcus aureus*. The antimicrobial activity was assessed using the zone of inhibition (mm) method, where the effect of different concentrations of coumarin derivatives (1mg/ml, 3mg/ml, and 5mg/ml) was compared to the control. The results indicated that the synthesised coumarin derivatives exhibited different degrees of activity against the tested microorganisms. These findings suggest that coumarin derivatives possess a broad spectrum of antimicrobial activity, with potential applications in the development of novel antimicrobial agents. Further studies are required to optimize the synthesis of these derivatives and explore their full therapeutic potential.

Key words: Coumarin derivatives, antimicrobial activity, Fungal inhibition, Bacterial inhibition.

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Short Biography of the presenting author:

Prof. Dr. Arben Haziri is a full professor at the Department of Chemistry, Faculty of Mathematical and Natural Sciences, University of Prishtina. He completed his Master's degree at the University of Bern (Switzerland), and also obtained his Ph.D. from the University of Bern (Switzerland). He did a postdoctoral study at the University of Hiroshima (Japan) and at the University of Basel (Switzerland). His research was focused on the synthesis of modified nucleosides and nucleotides for application in antisense therapy. Prof. Haziri founded his own research group, where he is currently synthesizing small organic molecules for use in medicinal chemistry, particularly as antimicrobial and anticoagulant agents. He currently holds the position as the Vice Dean at the Faculty of Mathematical and Natural Sciences at University of Prishtina.

Graphical abstract





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ADVANCEMENTS IN SURVEILLANCE, PREVENTION, AND THERAPEUTICS FOR PARASITIC DISEASES: A ONE HEALTH APPROACH TO TACKLING HUMAN AND ANIMAL INFECTIONS

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ABSTRACT

Parasitic diseases remain a major public health issue, affecting both humans and animals, particularly in tropical and subtropical regions. Surveillance, prevention, and therapeutic strategies are critical to mitigating the impact of these diseases. Surveillance systems, including molecular diagnostics, serological testing, and geo-referenced data, have enhanced the detection and monitoring of parasitic infections, enabling more targeted public health responses (Molyneux et al., 2017). Preventive approaches, such as vector control, improved sanitation, vaccination, and education, are essential to reducing transmission rates (Patz et al., 2000). Despite significant advances in drug development, therapeutic options for parasitic infections remain limited, and the emergence of drug resistance complicates treatment strategies, especially for diseases like malaria and leishmaniasis (Tait et al., 2018). Recent progress in antimalarial and antihelminthic drug development, along with new combination therapies, offers promising alternatives (Fairlamb et al., 2016). This review examines current advancements in the surveillance, prevention, and treatment of parasitic diseases, highlighting the need for a One Health approach that integrates human, animal, and environmental health to address the complex challenges posed by parasitic infections (Gould et al., 2015).

Key words: Drug development, parasitic diseases, surveillance,

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Ömer Gürkan Dilek is an Associate Professor at the Faculty of Veterinary Medicine, Burdur Mehmet Akif Ersoy University, Türkiye. He specialises in veterinary anatomy and physiology, with a particular focus on imaging techniques such as computed tomography, magnetic resonance imaging, and ultrasonography. His research encompasses anatomical studies of various animal species, including rabbits and chinchillas, contributing significantly to the field of veterinary anatomical sciences.





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