

ABSTRACT

SCIENTIFIC ACHIEVEMENTS

During the period 2006-2017, my scientific activity mainly consisted in coordination of 3 research grants as project manager, scientific responsible person or partner responsible person, member of the research team for other 5 projects, publishing of 28 ISI indexed papers, and two national patents for new formulas of tooth paste. To date, my scientific contribution comprises a total number of more than 280 citations, Hirsch index – 10, and cumulative impact factor – 64.54 (2.30 average impact factor / article).

My research activity is focused on three main inter- and transdisciplinary areas:

- Antimicrobial susceptibility testing and resistance detection;
- New antimicrobial compounds;
- Laboratory methods for infection diagnosis.

Concerning the first research domain, our investigations consisted in susceptibility evaluation to fluoroquinolones of *Mycoplasma hominis* and *Ureaplasma urealyticum* clinical isolates collected from a group of women diagnosed with infertility during a prospective study supported by CNCSIS (project IDEI code 338/2007), and surveillance of ciprofloxacin resistance during and experiment performed in a chicken farm (in collaboration with IRSTEA – Rennes, France).

The second research domain refers to the design and testing of new antimicrobial molecules for their antibacterial and antifungal effects, and also to new formulations of antimicrobials as complexes with different carrier molecules (i.e. polymers, cyclodextrins) – in collaboration with research teams from *Petru Poni* Institute of Macromolecular Chemistry in Iași. A new subject is represented by the antimicrobial effect of non-thermal plasma activated water (PAW).

The third research domain was represented by various investigations concerning the infection diagnosis in humans and animals, and also by modern methods for microbial identification with contribution to MALDI-TOF analysis of arthroconidial yeasts.

PROFESSIONAL ACHIEVEMENTS

My professional development (2006-2017) was focused on knowledge improvement and updating. An inter- and transdisciplinary approach of the interest domains, a wider range of scientific topics, and international collaboration improvement have gradually allowed my participation in continuing medical education (CME) projects, activities of scientific evaluation, and studies of epidemiological surveillance. My aim was to target both national and European / international activities in order to improve the visibility of my institution and my country too.

Along with my participation in Medical Mycology Course jointly organized by Pasteur Institute and University Paris VII Denis-Diderot in Paris, France (2006), I had the opportunity to improve my knowledge and skills by attending other continuing medical education courses organized in Spain, France, Ireland, Denmark, and Sweden. I participated in 31 international scientific meetings, I organized and participated as faculty member in 13 national CME courses and 3 international CME courses. I am active member of 9 national and international scientific societies and also member of EUCAST – AST, a division of ESCMID involved in antimicrobial susceptibility testing standardization. Since March 2017, I'm representing Romania as a member of the Management Committee for the COST Action 16110 HUPLANTcontrol (Control of Human Pathogenic Microorganisms in Plant Production Systems).

I performed peer-reviews for manuscripts submitted to BMC Infectious Diseases, Journal of Antimicrobial Chemotherapy, Mycoses, Brazilian Journal of Microbiology, Romanian Review of Laboratory Medicine, British Journal of Medicine and Medical Research, Saudi Journal of Biological Sciences, BioMed Research International, Frontiers in Chemistry, Acta Medica Marisiensis, Lucrări Ştiinţifice USAMV Iaşi – seria Medicină Veterinară, Fungi & Mycotoxins, Revista Medico-Chirurgicală a Societăţii de Medici şi Naturalişti din Iaşi, Ataturk University Journal of Veterinary Sciences.

ACADEMIC ACHIEVEMENTS

At the Faculty of Veterinary Medicine in Iaşi, I successively filled the following teaching positions: junior assistant (1999-2002), assistant professor (2003-2007), lecturer (2007-2013), associate professor (2013-2016), and full professor (since 19 September 2016). As subject matters, I was on duty for

Hygiene and Environment Protection, Laboratory Medicine, Legislation and Veterinary Deontology, Mycology-Mycotoxicology, and Food Microbiology for Romanian students, and General Microbiology for the foreign students.

Simultaneously, between 2007-2009, I was a member of the academic staff of *Petre Andrei* University in Iași, as course convener for Microbiology (specializations Dental Medicine and Dental Technics).

In order to support the learning activities of students and specialists in veterinary and human medicine, I published 8 monographs, manuals and textbook chapters. I tried to organize the updated knowledge in the field and to make it available in a comprehensible form to those interested of practical and theoretical aspects of medical microbiology, and especially medical mycology. The text in these books contains numerous schemes and suggestive pictures which help the reader to easily understand the topics. Many of these illustrations are original and represent a first in the Romanian medical literature.

Establishing of the *Laboratory of Antimicrobial Chemotherapy* in 2009 has allowed the development of new research areas. Thus, the collaboration with national and international research institutions, universities, and pharmaceutical companies became more visible in the antimicrobials design and testing areas. Our lab currently has an appropriate logistics compatible with antimicrobial screening on a large panel of germs and basic molecular tests. Since 2015, Laboratory of Antimicrobial Chemotherapy is affiliated to EUCAST AFST network laboratories.

LONG TERM PLANS FOR EVOLUTION AND CAREER DEVELOPMENT

In the scientific area, I will continue to develop studies focused on drug design and evaluation of antimicrobial molecules and complexes, but I will also tackle new domains (i.e. molecular mechanisms of antimicrobials-microbial cell interaction, possibilities of using PAW in food safety and prevention of various infections). Between 2017-2019, I will coordinate the *in vitro* antimicrobial screening of a 400 compounds collection (Pathogen Box – Evotec Inc., USA).

From March 2017 onwards, I'll coordinate the national network involved in COST Action 16110 – Control of Human Pathogenic Microorganisms in Plant Production Systems. As academic and professional activities, I'm planning to publish periodically updated manuals for students

(Food Microbiology, Veterinary Microbiology, Clinical Mycology) and also to cooperate with other specialists in order to publish new textbooks about fungal infections and biomedical applications of non-thermal plasma discharges.