



Madalina Lorena Medeleanu

WORK EXPERIENCE

Institute of Neurology and Genetics, Cyprus

City: Nicosia | **Country:** Cyprus

[19/01/2025 – 18/06/2025]

Marie Skłodowska-Curie Fellowship

Faculty of Pharmacy, University of Seville

City: Seville | **Country:** Spain

[01/2024 – 06/2024]

EU-FORA Fellowship

Research activities in risk assessment of food additives (nanoemulsions based on citrus essential oils)

University of Agricultural Sciences and Veterinary Medicine Cluj Napoca

City: Cluj-Napoca | **Country:** Romania

[26/10/2021 – 31/08/2024]

Research Assistant

- Research activities at USAMV Cluj-Napoca (microbiological and physico-chemical analyses, assessment of physical, chemical, and microbiological risks for food safety, drafting of scientific articles)

University of Agricultural Sciences and Veterinary Medicine Cluj Napoca

City: Cluj-Napoca | **Country:** Romania

[22/11/2019 – 09/2023]

Analytical chemist

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UASVM Cluj Napoca- Ursus Breweries (Monitoring of bitter acids from beer)

City: Cluj-Napoca | **Country:** Romania

[08/2020 – 11/2021]

Analytical chemist

- Determination of bitterness value and color of beer samples

EDUCATION AND TRAINING

[01/10/2021 – Current]

PhD Student

Univesity of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca

City: Cluj-Napoca | **Country:** Romania | **Field(s) of study:** Biotechnology | **Thesis:** In vitro studies on the biofunctionality of bioactive compounds in volatile oils

Citrus essential oils are complex mixtures of volatile compounds with manifold possibilities to be used as active antioxidant and antimicrobial ingredients in food, cosmetics or pharmaceutical products. These uses are limited by their susceptibility to external factors such as: light, temperature, pH, oxygen, humidity. In order to enhance the physical-chemical stability of citrus essential oils, they were encapsulated into nano-emulsions. In this study, nano-emulsions were prepared through the ultrasonication method, using citrus oils as lipidic phase and Tween 80 and ethanol as surfactant, and co-surfactant respectively. Citrus oil nano-emulsions were prepared by mixing 8% (v/v) of oil phase (bergamot, tangerine, orange, pomelo and lemon essential oils) with 1% (v/v) of Tween 80, 1% (v/v) of ethanol and 90% of deionized water using a magnetic stirrer and sonication at 72 amplitudes for 15 minutes. The PDI, turbidity, morphology, volatile profile and bioactive properties were investigated and their stability was monitored under different environmental conditions (storage at room temperature, at 37°C, refrigeration, freezing). Each emulsion exhibited different degrees of gravitational separation. Gas chromatography mass spectrometry (GC-MS) coupled with headspace solid phase micro-extraction (HS-SPME) was used to characterize the volatile fingerprint of nano-emulsions. My doctoral thesis is based on the characterization of EO-NEs with antimicrobial and antioxidant potential.

[10/2019 – 07/2021] **Master in Forensic Chemistry**

UBB Cluj-Napoca, Faculty of Chemistry and Chemistry Engineering

City: Cluj-Napoca | **Country:** Romania | | **Level in EQF:** EQF level 7

[10/2016 – 07/2019] **Chemist**

Univerity of Bucharest, Faculty of Chemistry

City: Bucuresti | **Country:** Romania | | **Level in EQF:** EQF level 6

[09/2012 – 07/2016] **Highschool degree**

Colegiul National Spiru Haret - Tecuci

City: Tecuci | **Country:** Romania |

LANGUAGE SKILLS

Mother tongue(s): Romanian

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Spanish

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Communication skills | Chromatographic techniques | Spectrophotometric techniques | Toxicological testing using in silico tools | In vitro assays | Good command of Microsoft Office™ | Use of scientific databases (PubMed, ScienceDirect, EFSA, FDA | Skilled in scientific writing and publication | Proficient in analytical method development and validation | Experience in planning and executing analytical experiments independently

- [2025] [Citrus essential oils nano-emulsions: Antimicrobial and Anti-inflammatory Dual Strategy Against Foodborne Pathogens](#)
Authors: Mădălina Lorena Medeleanu, Mary Fucile, Anca Corina Fărcaș, Giancarlo Statti, Dan Cristian Vodnar, Sonia Ancuța Socaci, Filomena Conforti | **Journal Name:** Food Bioscience | **Volume, Issue and Pages:** Volume 71 | **Publisher:** Elsevier
- [2024] [Risk assessment of food additives including dietary exposure](#)
Authors: Mădălina Lorena Medeleanu, Silvia Pichardo Sanchez, Giorgiana M. Cătunescu, Ana B. Cerezo | **Journal Name:** EFSA Journal | **Volume, Issue and Pages:** EU-FORA SERIES 7 | **Publisher:** Wiley
- [2024] [Citrus essential oils nano-emulsions: formulation and characterization](#)
Authors: Mădălina MEDELEANU, Anca F, Cristina COMAN, Loredana L, Zorița D, Esther S, Aaron C, Sonia SOCACI | **Journal Name:** Bulletin of USAMV, Food Science and Technology | **Volume, Issue and Pages:** Pages 1-22
- [2023] [Citrus essential oils-Based nano-emulsions: Functional properties and potential applications](#)
Authors: M Medeleanu, A Fărcaș, C Coman, L Leopold, Z Diaconeasa, SSocaci | **Journal Name:** Food Chemistry:X | **Volume, Issue and Pages:** 20 | **Publisher:** Elsevier
- [2024] [Succinic acid-A run-through of the latest perspectives of production from renewable biomass](#)
Authors: Laura Mitrea, Bernadette-Emőke Teleky, Silvia-Amalia Nemes, Diana Plamada, Rodica-Anita Varvara, Mihaela-Stefana Pascuta, Calina Ciont, Ana-Maria Cocean, Madalina Medeleanu, Alina Nistor, Ancuta-Mihaela Rotar, Carmen-Rodica Pop, Dan-Cristian Vodnar | **Journal Name:** Helyon | **Volume, Issue and Pages:** Vol. 10, Issue 3 | **Publisher:** Elsevier
- [2024] [FT-IR and HPLC analysis of silver fir \(Abies alba Mill.\) bark compounds from different geographical provenances](#)
Reference: I Morar, RStefan, C Dan, R Sestras, P Truta, M Medeleanu, F Ranga, P Sestras, A Truta, A Sestras
Authors: Irina M Morar, Razvan Stefan, Catalina Dan, Radu E Sestras, Petru Truta, Mădălina Medeleanu, Florica Ranga, Paul Sestras, Alina M Truta, Adriana F Sestras | **Journal Name:** Helyon | **Volume, Issue and Pages:** Vol. 10, Issue 5 | **Publisher:** Elsevier
- [2023] [Food Additives as Functional Ingredients in Food Products](#)
Authors: S Socaci, LSalanță, AFărcaș, SNemeș, MMedeleanu, | **Publisher:** Springer International Publishing
- [2023] [Extraction and Characterization of Bioactive Compounds from Prunus Spinosa L. Fruits with Potential in the Development of Edible Films](#)
Authors: Oana NEGREAN, Anca FĂRCAȘ, Sonia SOCACI, Călina CIONT, Mădălina MEDELEANU, Elemer SIMON, Oana POP | **Journal Name:** Bulletin of USAMV, Food Science and Technology | **Volume, Issue and Pages:** Vol. 80, No. 2
- [2023] [Biotics \(Pre-, pro-, post-\) and uremic toxicity: implications, mechanisms, and possible therapies](#)
Reference: Laura Mitrea, Mădălina Medeleanu, Carmen-Rodica Pop, Ancuța-Mihaela Rotar, Dan-Cristian Vodnar
Authors: Laura Mitrea, Mădălina Medeleanu, Carmen-Rodica Pop, Ancuța-Mihaela Rotar, Dan-Cristian Vodnar | **Journal Name:** Toxins | **Volume, Issue and Pages:** Vol. 15, Issue 9, Pages 548 | **Publisher:** MDPI
Link: <https://www.mdpi.com/2072-6651/15/9/548>

[A Sustainable Approach for the Development of Innovative Products from Fruit and Vegetable By-Products](#)

[2022]

Reference: Mircea V Muntean, Anca Corina Fărcas , Mădălina Medeleanu , Liana Claudia Salantă and Andrei Borsa

Authors: Mircea V Muntean, Anca Corina Fărcas , Mădălina Medeleanu , Liana Claudia Salantă and Andrei Borsa | **Journal Name:** Sustainability | **Volume, Issue and Pages:** Vol. 14, Issue 17, Pages 10862 | **Publisher:** MDPI

CONFERENCES AND SEMINARS

[12/11/2024 – 14/11/2024]

The 38th EFFoST International Conference Bruges, Belgium

Poster presentation: Can citrus essential oils nano-emulsions be considered food additives? A

comprehensive study using in silico and in vitro approaches

[26/09/2024 – 28/09/2024]

The 23rd International Conference "LIFE SCIENCES FOR SUSTAINABLE DEVELOPMENT"

Cluj-Napoca, Romania

Oral Presentation: CITRUS ESSENTIAL OILS NANO-EMULSIONS: FROM A TOXICOLOGICAL POINT OF VIEW

[03/07/2024 – 05/07/2024]

AETOX2024 Murcia, Spain

Poster presentation: Advances in the Development and Toxicological evaluation of Nano-emulsions of essential oils as food additives

[30/04/2024 – 02/05/2024]

IAFP's European Symposium on Food Safety Geneve, Switzerland

Oral presentation: **Safety of Food Additives and Their Role in Improving Food Quality**

[22/11/2023 – 24/11/2023]

"Applications of Chemistry in Nanosciences and Biomaterials Engineering"
NanoBioMat 2023 – Winter Edition

Bucharest

Online participation, Oral presentation: *"Calabrian Citrus Fruits: From Peels to Essential Oils; Characterization of Their Nanoemulsions"*

[06/11/2023 – 08/11/2023]

The 37th EFFoST International Conference Valencia, Spain

Poster Presentation: *Italian Citrus Fruits: From Peels to Essential Oils; Formulation and Characterization of Nanoemulsions*

[19/10/2023 – 20/10/2023]

EURO-ALIMENT 2023 THE 11TH INTERNATIONAL SYMPOSIUM Galati, Romania

Oral Presentation: *"Optimization of the Method of Forming Nanoemulsions and Their Characterization"*

[22/11/2023 – 24/11/2023]

6th ISEKI Food-e-Conference Online

Oral presentation: Italian citrus fruits: from peels to essential oils; formulation and characterization of nano-emulsions

[28/09/2023 – 30/09/2023]

The 22nd International Conference "LIFE SCIENCES FOR SUSTAINABLE DEVELOPMENT"

Cluj-Napoca, Romania

Oral Presentation: *"Italian Citrus Fruits: From Peels to Essential Oils; Formulation and Characterization of Nanoemulsions"*

[06/2023 – 06/2023]

International Exhibition of Inventions and Innovations "TRAIAN VUIA" Timișoara, 9th Edition
Timisoara, Romania

Gold Medal: *Citrus Essential Oils-Based Nanoemulsions – An Innovative Ingredient Used in Functional Food*

[27/04/2023 – 28/04/2023]

Student Scientific Symposium with International Participation, "Ion Ionescu de la Brad" University of Life Sciences
Iasi, Romania

Oral Presentation: *"Optimization of the Method of Forming Nanoemulsions and Their Characterization"*

[21/11/2022 – 25/11/2022]

INOVALIMENT, International Fair of Inventions and Innovations in the Food Sector

Second Prize, Innovation Category: Experimental model for obtaining an innovative ingredient with antioxidant and antimicrobial potential, applicable in the development of the "green food" concept and in the treatment of gastrointestinal disorders

[18/09/2022 – 20/09/2022]

33rd International Symposium on Chromatography Budapest, Hungary

Poster presentation: Optimization of the Method of Forming Nano- Emulsions and Their Characterization

[26/05/2022 – 27/05/2022]

Multidisciplinary Conference on Sustainable Development Section: Food Chemistry, Engineering & Technology
Tmisoara, Romania

Poster presentation: Citrus oil nano-emulsions - so many options but one choice: physical stability and antibacterial activity in the food field

[27/05/2022 – 28/05/2022]

IV-INTERNATIONAL CONFERENCE OF FOOD, AGRICULTURE, AND VETERINARY SCIENCES Turkey
Online

Oral presentation: CITRUS OIL NANO-EMULSIONS - SO MANY OPTIONS BUT ONE CHOICE: PHYSICAL STABILITY AND ANTIBACTERIAL ACTIVITY IN THE FOOD FIELD

[15/09/2022 – 17/09/2022]

The 21st International Conference "LIFE SCIENCES FOR SUSTAINABLE DEVELOPMENT"
Cluj-Napoca, Romania

Oral presentation: Method optimization and characterization of essential oils nano-emulsions

[10/11/2022 – 10/11/2022]

International Conference for Students Student in Bucovina, Suceava România
Online

Oral presentation: OPTIMIZATION OF THE METHOD OF FORMING NANO-EMULSIONS AND THEIR CHARACTERIZATION-, 3rd prize

PhD STUDENTS' DAYS FACULTY OF FOOD ENGINEERING, TOURISM AND ENVIRONMENTAL PROTECTION, Arad, Romania
Online

SCIENTIFIC EXPERTISE

[09/2023 – 31/08/2024]

Food Risk Assessment - EUFORA Fellowship Program, EFSA

Induction Training

- Historical overview of the EU food safety system and key EU food safety legislation
- Basic scientific concepts of food safety
- Fundamentals and principles of food risk assessment
- Statistical concepts
- Data collection and processing
- Introduction to Microbiological Risk Assessment (MRA)
- Identification and characterization of pathogens in food and water
- MRA methodology
- Exposure assessment and risk characterization in MRA
- Advanced concepts in quantitative MRA
- Introduction to Chemical Risk Assessment
- Hazard identification and characterization
- Exposure assessment
- Risk characterization

Module 1

- Emerging risk identification
- Nanomaterials and areas of application
- Adverse Outcome Pathway (AOP)
- Mode of Action (MoA) and IATA approach
- OMICs in risk assessment
- Risk prioritization

Module 2

- Emerging risk identification
- Nanomaterials and areas of application
- Adverse Outcome Pathway (AOP)
- Mode of Action (MoA) and IATA approach
- OMICs in risk assessment
- Risk prioritization

[01/2024 – 06/2024]

Knowledge in Toxicological Risk Assessment

Expertise in the use of in silico (Biotransformer 3.0, ADMET Lab, PASS online) and in vitro (AMES, Micronucleus) tests for the toxicity assessment of citrus essential oils.

Knowledge in Analytical Chemistry

Chromatographic techniques

Spectrophotometric techniques

Determination of antioxidant activity

[10/2023 – 12/2023]

Erasmus Mobiltity - University of Calabria, Faculty of Pharmacy

Cell-based assays

food waste and its impact on the evolution of research and the circular economy.

PERSONAL SKILLS

Communication skills

Good communication skills acquired through participation in various national and international conferences

Drive licence

A1 and B

OPERATIONAL CAPACITY

Access to databases

Access to relevant databases such as PubMed, Web of Science, Scopus, etc.

VOLUNTEERING

[06/2018 – 08/2018] **National Commission for the Control of Nuclear Activities** Bucharest, Romania

[06/2017 – 07/2017] **Laropharm** Bucharest