



▶ Anastasia Kritikou

Post-Doctoral Researcher at University of Athens

Phone: +302107274430

e-mail: ankritik@chem.uoa.gr

Education

B.Sc. in Chemistry (2011-2017), University of Patras, **Degree:** 7.92/ 10.0

M.Sc. in Chemical Analysis & Quality Control (2017-2019), University of Athens, **Degree:** 9.38/ 10.0

Ph.D. in Analytical Chemistry (2019-2022), National and Kapodistrian University of Athens, **Degree:** Excellent

Research Topics

Undergraduate Thesis: “Determination of DNA sequences by chemiluminescence”, Laboratory of Instrumental Analysis, Chemistry Department, University of Patras, Greece (2015-2016). Supervisor Professor: Th. Christopoulos”.

Master Thesis: “Development of a multi-residue methodology for the determination of thyreostats in food of animal origin by hydrophilic interaction liquid chromatography-tandem mass spectrometry (HILIC-MS/MS)”, Laboratory of Analytical Chemistry, Chemistry Department, University of Athens, Greece (2017-Present). Supervisor Professor: N. Thomaidis

PhD Thesis: “Development of advanced methodologies based on High Resolution Mass Spectrometry for food of animal origin authenticity characterization”, Laboratory of Analytical Chemistry, Chemistry Department, University of Athens, Greece (2019-to date). Supervisor Professor: N. Thomaidis

Research Interests

General research interests: Food Authenticity, Foodomics (Metabolomics, Proteomics, Lipidomics), High Resolution Mass Spectrometry (HRMS) techniques, MS-based method development, Chromatographic separation techniques, Chemometrics- Statistics. Advanced analytical techniques (Sample Preparation techniques (QuEChERS, Ultrasonic-assisted extraction, SPExtraction, etc.), UHPLC coupled with HRMS (LC-ESI-TIMS-QTOFMS, LC-ESI-QTOFMS) and other direct HRMS techniques (MALDI-TOFMS). Expert-knowledge in HRMS based target, suspect, and non-target screening workflows for the characterization of food matrices. Wide experience in the development and application of targeted and untargeted omics-based methodologies

Work Experience

2017-to date: Laboratory of Chemical Analysis - Quality Control, Chemistry Department, NKUA

Analytical services in Food Industry, focusing on the following areas:

- Determination of veterinary drugs, pesticides residues and other contaminants
- Authenticity assessment – Detection of possible adulteration and other illegal practices

06/2014-08/2014: Aviation Fuel & Lubricant Analysis Department, EKO S.A.

(Hellenic Petroleum Group of Companies), Skaramangas, Attiki, Greece

Quality control, focusing on the following areas:

- Determination of the chemical content of Aviation Fuels (JETA-1, JP-8) (total acidity, viscosity, conductivity, etc.)
- Analysis of chemical composition of lubricants (metals with XRF, IR spectrum from FTIR, viscometry, etc.)

Projects

2018 –2022: **FoodOmicsGR** – Molecular Characterization of Food (funding: EPANEK-NSFR)

2018-2021: **GREEN POULTRY MEAT ANTIFREE**: Develop a poultry meat system with reduced environmental footprint in complete absence of antibiotics (funding: EPANEK-NSFR)

2018-2020: Emblematic action - **The Olive Road** (funding: Ministry of Education)

2017-2021: **National program for Coccidiostats residues monitoring** in food and feed of animal origin Program, Laboratory of Analytical Chemistry, National and Kapodistrian University of Athens in collaboration with the Ministry of Rural Development and Food

2016-2017: **EMBLAS II, EU/UNDP** Project: Improving environmental monitoring in the Black Sea. Analysis of water framework priority substances and screening of black sea specific pollutants in water biota and sediment samples obtained during the National Pilot Monitoring Studies and Joint Open Sea Surveys and risk assessment of identified pollutants

Publications in journals and books

- Athina Tzora, Aikaterini Nelli, **Anastasia S. Kritikou**, Danai Katsarou, Ilias Giannenas, Ilias Lagkouvardos, Nikolaos S. Thomaidis and Ioannis Skoufos, “The “crosstalk” between microbiota and metabolomic profile of Kefalograviera cheese after the innovative feeding strategy of dairy sheep by omega-3 fatty acids”, *Foods*, **2022**.
- Marilena E. Dasenaki, **Anastasia S. Kritikou**, Nikolaos S. Thomaidis “Meat safety II: Residues and contaminants” (chapter 17) in “Lawrie's Meat Science, 9th edition” by Fidel Toldra (Ed), *Woodhead Publishing Series in Food Science, Technology and Nutrition*, Wiley, **2022** (accepted).
- **Anastasia S. Kritikou**, Marilena E. Dasenaki, Nikolaos S. Thomaidis, “Multi-residue analysis of thyreostats in animal muscle tissue by Hydrophilic Interaction Liquid Chromatography-tandem Mass Spectrometry: A thorough chromatographic study”, *Analytica Chimica Acta*, **2022** (submitted).
- **Anastasia S. Kritikou**, Reza Aalizadeh, Dimitrios E. Damalas, Ioanna V. Barla, Carsten Baessmann, Nikolaos S. Thomaidis, “MALDI-TOF MS integrated workflow for food authenticity investigations: An untargeted proteomics approach

for rapid detection of PDO feta cheese adulteration”, *Food Chemistry*, **2021**, 370:131057.

- Georgios Theodoridis, Alexandros Pechlivanis, Nikolaos S. Thomaidis, Apostolos Spyros, Constantinos A. Georgiou, Triantafyllos Albanis, Ioannis Skoufos, Stavros Kalogiannis, , George T. Tsangaris, Athanasios S. Stasinakis, Ioannis Konstantinou, Alexander Triantafyllidis, Konstantinos Gkagkavouzis, **Anastasia S. Kritikou**, Marilena E. Dasenaki, Helen Gika, Christina Virgiliou, Dritan Kodra, Nikolaos Nenadis, Ioannis Sampsonidis, Georgios Arsenos, Maria Halabalaki, Emmanuel Mikros, and on behalf of the FoodOmicsGR_RI Consortium, “FoodOmicsGR_RI. A Consortium for Comprehensive Molecular Characterization of Food Products”, *Metabolites*, **2021**, 11 (2), 74.
- **Anastasia S. Kritikou**, Reza Aalizadeh, Dimitrios E. Damalas, Ioanna V. Barla, Volker Sauerland, Carsten Baessmann, Nikolaos S. Thomaidis, “Rapid Detection of Feta Cheese Adulteration via MALDI-TOF MS”, *Bruker Daltonics*, **2021**, Bruker Application note, Germany.
- Anastasia Zerva, Athanasios Limnaios, **Anastasia S. Kritikou**, Nikolaos S. Thomaidis, Petros Taoukis, Evangelos Topakas, “A novel thermophile β -galactosidase from *Thermothielavioides terrestris* producing galactooligosaccharides from acid whey”, *New Biotechnology*, **2021**, 63, 45-53.
- Anastasia Zerva, Koar Choroziyan, **Anastasia S. Kritikou**, Nikolaos S. Thomaidis, Evangelos Topakas, “ β -Glucosidase and β -Galactosidase-Mediated Transglycosylation of Steviol Glycosides Utilizing Industrial Byproducts”, *Frontiers Bioengineering*, **2021**, 9, 444, DOI=10.3389/fbioe.2021.685099.
- Elena Charalampous, Nikoletta Xamonaki, Anastasios Asimakopoulos, **Anastasia Kritikou**, Kostas Bethanis, Athanassios Chrissanthopoulos, Ioannis Choinopoulos, Emmanuel Simandiras, Spyros Koinis, Heterotrimetallic tetrathiomolybdate and tetrathiotungstate complexes of rhodium(I) and copper(I) with Rh-Mo(W)-Cu interactions, *Polyhedron*, Volume 210, **2021**, 115536, <https://doi.org/10.1016/j.poly.2021.115536>.
- Sofia K. Drakopoulou, **Anastasia S. Kritikou**, Ioannis C. Martakos, Panagiota A. Katsianou, Georgios A. Koulis, Nikolaos S. Thomaidis, “The role of Analytical Chemistry in Food Authenticity Studies: Ensuring the quality and the unique characteristics of high-priority food products”, *Chimica Chronika*, **2020**, Volume 8, Issue 8, Vol.82., Athens.

Conference Presentations

- **Anastasia S. Kritikou**, Nikolaos S. Thomaidis, “*HRMS methodologies and applications for thorough food of animal origin authenticity investigation*”, FoodOmicsGR_RI conference, Thessaloniki, Greece, September 12, **2022**. (Oral presentation)
- **Anastasia S. Kritikou**, Nikolaos S. Thomaidis, “*HRMS methodologies and applications for thorough food of animal origin authenticity investigation*”, FoodOmicsGR_RI conference, Athens, Greece, September 20, **2022**. (Oral presentation)
- **Anastasia S. Kritikou**, Nikolaos S. Thomaidis, “*New developments in fast food testing: MALDI for rapid direct analysis*”, Recent Advances in Food Analysis, RAFA 2022, Prague, Czech Republic, September 6-9, **2022**. (Oral presentation)

- Sofia K. Drakopoulou, **Anastasia S. Kritikou**, Carsten Baessmann, Nikolaos S. Thomaidis, “*Trapped Ion Mobility combined with LC-HRMS for high-performance 4D metabolomics in food adulteration studies: Extra virgin olive oil adulteration study with olive oils of lower quality*”, Recent Advances in Food Analysis, RAFA 2022, Prague, Czech Republic, September 6-9, **2022**. (Poster presentation)
- **Anastasia S. Kritikou**, Sofia K. Drakopoulou, Marilena E. Dasenaki, Carsten Baessmann, Ioannis Skoufos, Athina Tzora, Nikolaos S. Thomaidis, “*RP- & HILIC-HRMS analytical platforms incorporated with Trapped Ion Mobility Mass Spectrometry for targeted & untargeted 4D-metabolomics: Animal muscle tissues authenticity assessment as a case study*”, Recent Advances in Food Analysis, RAFA 2022, Prague, Czech Republic, September 6-9, **2022**. (Poster presentation)
- Evangelia Krystalli, **Anastasia S. Kritikou**, Carsten Baessmann, Nikolaos S. Thomaidis, “*A protein-based approach for the investigation of Greek traditional yogurt adulteration with milk powder via High Resolution Mass Spectrometry (MALDI-TOFMS)*”, Recent Advances in Food Analysis”, Recent Advances in Food Analysis, Recent Advances in Food Analysis, RAFA 2022, Prague, Czech Republic, September 6-9, **2022**. (Poster presentation)
- Georgios A. Koulis, Panagiota A. Katsianou, Sofia K. Drakopoulou, **Anastasia S. Kritikou**, Marilena E. Dasenaki, Charalampos Proestos, Nikolaos S. Thomaidis “*Targeted and untargeted HRMS metabolomic study in PDO Greek olive drupes for varietal and geographical origin verification*”, Athens Conference on Advances in Chemistry, ACAC 2022 (poster presentation).
- **Anastasia S. Kritikou**, Dimitrios E. Damalas, Carsten Baessmann, Bob Galvin, Pierre C Mbarushimana, Nikolaos S. Thomaidis “*Potential of polymer-based MALDI matrices for the detection of food-relevant low molecular weight compounds: Application to crucial authenticity issues*”, American Society for Mass Spectrometry, ASMS **2022** (poster presentation).
- **Anastasia S. Kritikou**, Sofia K. Drakopoulou, Marilena E. Dasenaki, Richard T. Seitz, Carsten Baessmann, Nikolaos S. Thomaidis “*Untargeted 4D-metabolomics in animal tissues’ authenticity assessment, exploiting RP- & HILIC-HRMS analytical platforms incorporated with Trapped Ion Mobility Mass Spectrometry*”, American Society for Mass Spectrometry, ASMS **2022** (poster presentation).
- Sofia K. Drakopoulou, Stefanos E. Kokolakis, Marilena E. Dasenaki, **Anastasia S. Kritikou**, Nikolaos S. Thomaidis “*Wide scope screening of >900 pesticides in olive oil using LC-ESI/GC-APCI-QToF-MS*”, 12th International Conference on “Instrumental Methods of Analysis” (IMA-2021), 20-23 September **2021**, virtual event (poster presentation).
- **Anastasia S. Kritikou**, Sofia K. Drakopoulou, Marilena E. Dasenaki, Evangelos Gikas, Nikolaos S. Thomaidis “*Holistic untargeted LC-HRMS-based metabolomics workflow for food authenticity studies: Exploiting both RPLC- & HILIC-HRMS platforms capability for citrus juices authenticity investigation*”, 12th International Conference on “Instrumental Methods of Analysis” (IMA-2021), 20-23 September **2021**, virtual event (poster presentation).
- **Anastasia S. Kritikou**, Marilena E. Dasenaki, Nikolaos S. Thomaidis, “*HRMS methodologies and applications for high-priority food authenticity characterization*”, National Research Infrastructure FoodOmicsGR_RI one-day conference, FoodOmicsGR_RI 2020, Greece, December 15, **2020**. (Oral presentation)
- **Anastasia S. Kritikou**, Dimitrios E. Damalas, Ioanna V. Barla, Reza Aalizadeh, Volker Sauerland, Bob Galvin, Carsten Baessmann, Nikolaos S. Thomaidis, “*Rapid MALDI-TOF-based Proteomics Approach for Fast and Reliable Detection of*

Feta Cheese Adulteration”, 68th ASMS Conference on Mass Spectrometry and Allied Topics, ASMS 2020, Philadelphia, Pennsylvania, May 31- June 4, **2020**. (Poster presentation)

- **Anastasia S. Kritikou**, Dimitrios E. Damalas, Ioanna V. Barla, Reza Aalizadeh, Volker Sauerland, Carsten Baessmann, Nikolaos S. Thomaidis, “*Rapid MALDI-TOF-MS-based Proteomics Approach for Reliable Detection of PDO Feta Cheese Adulteration, Recent Advances In Food Analysis*”, RAFA 2019, Prague, Czech Republic, November 5-8, **2019**. (Poster presentation)
- Nikolaos S. Thomaidis, Sofia K. Drakopoulou, **Anastasia S. Kritikou**, Dimitrios E. Damalas, Marilena Dasenaki “*Using Bruker HRMS-Techniques for the Development of Novel Methods for Food Authenticity and Fraud Investigation*”, 9th International Symposium on Recent Advances in Food Analysis, RAFA 2019, Prague, Czech Republic, p.63 November 5-8, **2019**. (Bruker’s vendor seminar).
- **Anastasia S. Kritikou**, Dimitrios E. Damalas, Ioanna V. Barla, Reza Aalizadeh, Volker Sauerland, Carsten Baessmann, Nikolaos S. Thomaidis, “*Novel MALDI-TOF-MS-based Methodology for Rapid Detection of PDO Feta Cheese Adulteration*”, 11th International Conference on Instrumental Methods of Analysis, IMA 2019, Ioannina, Greece, September 22-25, **2019**. (Poster presentation)
- Athanasia K. Christopoulou, **Anastasia S. Kritikou**, Marilena E. Dasenaki, Nikolaos S. Thomaidis, “*Development of a Multi-Residue Methodology for the Determination of Veterinary Drugs in Animal Feed By RP-HPLC-MS/MS*”, 11th International Conference on Instrumental Methods of Analysis, IMA 2019, Ioannina, Greece, September 22-25, **2019**. (Poster presentation)
- **Anastasia S. Kritikou**, Marilena E. Dasenaki, Nikolaos S. Thomaidis, “*Development of a Multi-Residue Methodology for the Determination of Thyreostats in Bovine Muscle Tissue by Hydrophilic Interaction Liquid Chromatography-Tandem Mass Spectrometry (HILIC-MS/MS)*”, 11th Aegean Analytical Chemistry Days, AACD 2018, Chania, Crete, Greece, September 25-29, **2018**. (Oral presentation)

Patents

European Patent EP22201755.0 entitled “A method for evaluating the authenticity of food products and a system thereof”, Nikolaos S. Thomaidis, Reza Aalizadeh, Sofia K. Drakopoulou, Anastasia S. Kritikou, (submitted October 14th, 2022)

Awards & Honors

- Awarded “Track4Value” idea, Category of Innovative Ideas, entrepreneurship competition “Olive Challenge”, FILAIOS (**2022**)
- “Track4Value” nominated in the top-30 innovative ideas in EIT Food Jumpstarter competition (**2022**)
- Full Scholarship of Excellence for Doctoral studies, State Scholarships Foundation (I.K.Y.) (**2022**)
- Graduate Teaching Assistant Scholarship, National and Kapodistrian University of Athens (**2022**)
- Awarded “Track4Value” idea, Category of Innovative Ideas, entrepreneurship competition “Trophy- Τροφή Challenge”, New Agriculture for New Generation (**2021**)

- Distinction in the field "Women in Entrepreneurship", Category "Current Persons", Business Woman (**2022**)

Professional Affiliations

Association of Greek Chemists, 2016-Present
Hellenic Mass Spectrometry Society, 2018-Present

Contact information

Anastasia Kritikou

Office: 4th floor, Wing D, Office 8

Phone: +30 210 727 4430

Postal Address: Panepistimioupoli Zografou, Postal Code:15771, Athens, Greece

Email: [**ankritik@chem.uoa.gr**](mailto:ankritik@chem.uoa.gr)