

Mohamed Fathi Abdallah, Ph.D.

Postdoctoral Fellow at Microbial Toxins, Virulence and Toxicity Research Group, Ghent University, Belgium

+32 494 459 218

MoFathiAbdallah

Recent update: March 2023

Faculty of Bioscience Engineering

Coupure Links 653, Building B, Gent 9000, Belgium.

mohamed.fathi@ugent.be

mfathiabdallah@gmail.com

Current Position & Tasks

Post-Doctoral Mandate [10/2020 – Now] Department of Food Technology, Safety and Health, Faculty of Bioscience Engineering, Ghent University, Belgium.

Project: MICRO-TOX project, funded by The Special Research Fund (BOF), Ghent University.

Research Projects and Academic Tasks:

- Unravelling the *in vitro* toxic effects of the cyanobacterial microcystins, and their interactions with co-exposed microplastics [role:- main researcher and budget holder★].
- AF-CYSTIN-milk: assessing the incidence of aflatoxin M1 and microcystin-LR in water buffalo milk from Philippines and their potential *in vitro* toxic interaction. VLIRUOS Global Minds Grant 2021 [role:- main researcher and budget holder★].
- Supervision of PhD and master students [role:- official co-supervisor★].

Previous Position(s) & Experience

Research Scientist [04/2020 – 09/2020] Food Safety Department, Teagasc Food Research Centre, Ashtown, Dublin, Ireland.

Project: Agritox project (An interreg project funded by the EU).

Research Projects and Tasks

- Development of accurate and precise methods for the analysis of mycotoxins in food.
- Organization and management of the traceability of Agritox project samples and their results.
- Writing technical reports, project progress reports and peer reviewed publications.
- Effective communication of research to collaborators and stakeholders.
- Interpretation of research findings and preparing scientific and popular press publications.
- Reporting and discussing progress updates with Agritox project team.

(Post)Graduate Education (International mobility in 6 countries)

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| Ph.D. | <p>[2016 – 2020] Pharmaceutical Sciences (Bioanalysis).
Centre of Excellence in Mycotoxicology and Public Health, Ghent University, Belgium.
<u>PhD thesis:</u> “Pre-and post-harvest innovative tools to reduce toxigenic fungi and mycotoxins”.
<u>Research Projects and Academic Tasks:</u></p> <ul style="list-style-type: none"> - Biological control of <i>Fusarium graminearum</i> and its mycotoxins in Maize. MYCOKEY project “funded by the Horizon 2020 research and innovation programme” (role:- PhD researcher). - MYCOSUGAR: Investigating the occurrence of mycotoxins and their producing fungi in sugarcane grass and its by-products and the related public health hazard in humans. VLIRUOS Global Minds Grant 2019 [role:- main researcher ★]. - Supervision of master thesis students [role:- practical tutor and academic mentor★]. |
| MSc | <p>[2013 – 2016] Master in Pharmaceutical Sciences (MSc, Toxicology).
Hacettepe University, Turkey.
<u>Subject:</u> Mycotoxin detection in food and feedstuffs.
<u>Master thesis:</u> “Simultaneous multi-mycotoxin detection in maize and animal feed from Egypt using the state-of-the-art methodology LC-MS/MS”.</p> |
| TOMER | <p>[2012 – 2013] Diploma of Turkish Language Proficiency (TOMER)
Ankara University, Turkey.</p> |
| BVSc | <p>[2007 – 2011] Bachelor of Veterinary Medical Sciences (BVSc).
Assiut University, Egypt.</p> |

Grants, Fellowships and Scientific Awards

Grants

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| 2021 | - VLIRUOS Global Minds Grant for AF-CYS Milk project (11,000 €).
Side project from Ghent University, Belgium. [role:- main researcher and budget holder★]. |
| 2019 | - VLIRUOS Global Minds Grant for MYCOSUGAR project (11,000 €).
Side project from Ghent University, Belgium. [role:- main researcher★]. |
| 2018 | - Full Registration Fee Grant to The 3 rd International Online Course on Postharvest and Fresh-Cut Technologies, Universidad Politécnica de cartagena, Spain. |

Fellowships

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| 06/2020 | - Postdoctoral Mandate-Special Research Fund (BOF) [Ghent University, Belgium].
[Research grant number BOF20/PDO/032 for three-years 10/2020- 09/2023]. |
| 09/2020 | - Research Leaders 2025 - A Fellowship Programme for developing the Next Generation of Agri-Food Research Leaders, Austria/Ireland [granted, but untaken/excused]. |
| 08/2016 | - PhD Research Position [Ghent University, Belgium]. |
| 09/2015 | - Erasmus Student Mobility for Studies, Center for Analytical Chemistry, Universität für Bodenkultur Wien [Tulln, Austria]. |
| 09/2014 | - Erasmus Student Mobility for Placement, IfADo Institute [Dortmund, Germany]. |
| 09/2012 | - Turkish Government Scholarship [Ankara, Turkey]. |
| 03/2012 | - Full Tuition Graduate Teaching and Research Assistantship [Assiut University, Egypt]. |

Scientific Awards

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| 2022 | - Best Oral Presentation from Toxins journal (Power of Fungi and Mycotoxins in Climate Change Symposium, Croatia). |
| 2019 | - Young Scientist Winner [Invited speaker★] (Eurachem Workshop, Estonia). |
| 2019 | - Outstanding Contribution in reviewing from Food Chemistry Journal. |
| 2018 | - Best Poster Award from Toxins journal (2 nd African Symposium on Mycotoxicology, Kenya). |

Research Techniques

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| Ghent University | - <i>In Vitro</i> cytotoxicity assays, cell imaging, mitochondrial toxicity assays (bioenergetics) in human cell lines.
- (Un-)targeted analysis of fungal secondary toxic metabolites using HRLC-MS/QTOF.
- Quantitative analysis of mycotoxins using LC-MS/MS.
- Assessment of different biocontrol agents against toxigenic fungi <i>in vitro</i> and <i>in planta</i> . |
| BOKU University
&
IfADo Institute | - Different analytical techniques for detection of mycotoxins and their metabolites in food metrics and human biological fluids (blood and urine) and cell culture medium through HPLC-DAD/FLD and LC-MS/MS.
- ELISA assays for quantifying aflatoxin M1 in human urine. |
| Hacettepe University | - Detection of different mycotoxins in different food and feed matrices “animal feed, cereals and dairy milk samples” using HPLC-FLD. |

Scientific Output

Google Scholar link <https://scholar.google.com/citations?user=05FfukgAAAAI&hl=en>

Peer Reviewed Research Articles (* corresponding authorship; † equal co-authorship)

- 17) X Chen, **MF Abdallah**, C Grootaert, F Van Nieuwerburgh, A Rajkovic (2023). Elucidating the combined toxicity of aflatoxin B1 and fumonisin B1 on HepG2 cells based on respirometry and transcriptome analyses. Environment International, Accepted.
- 16) Y Tian, **MF Abdallah**, M De Boevre, K Audenaert, C Wang, S De Saeger, A Wu (2023). Deciphering Alternaria metabolic responses in microbial confrontation via an integrated mass spectrometric targeted and non-targeted strategy. Food Chemistry, 134694. doi: 10.1016/j.foodchem.2022.134694.
- 15) H Zhang, Y Li, **MF Abdallah**, H Tan, J Li, S Liu, R Zhang, F Sun, Y Li, S Yang (2023). Novel one-point calibration strategy for high-throughput quantitation of microcystins in freshwater using LC-MS/MS. Science of The Total Environment, 159345. doi: 10.1016/j.scitotenv.2022.159345.

- 14) F Sun, P Wu, **MF Abdallah**, H Tan, Y Li, S Yang (2023). One sample multi-point calibration curve as a novel approach for quantitative LC-MS analysis: the quantitation of six aflatoxins in milk and oat-based milk as an example. *Food Chemistry*, 135593. doi: 10.1016/j.foodchem.2023.135593.
- 13) H Zhang, **MF Abdallah**, J Zhang, Y Yu, Q Zhao, C Tang, Y Qin, J Zhang (2022). Comprehensive quantitation of multi-signature peptides originating from casein for the discrimination of milk from eight different animal species using LC-HRMS with stable isotope labeled peptides. *Food Chemistry*, 390, 133126. doi: 10.1016/j.foodchem.2022.133126.
- 12) H Tan, F Sun, **MF Abdallah**, J Li, J Zhou, Y Li, S Yang (2022). Background ions into exclusion list: A new strategy to enhance the efficiency of DDA data collection for high-throughput screening of chemical contaminations in food. *Food Chemistry*, 385, 132669. doi: 10.1016/j.foodchem.2022.132669.
- 11) X Chen, **MF Abdallah**, C Grootaert, A Rajkovic (2022). Bioenergetic status of the intestinal and hepatic cells after short term exposure to fumonisin B1 and aflatoxin B1. *International Journal of Molecular Sciences*, 23 (13), 6945. doi: 10.3390/ijms23136945 (Open Access).
- 10) I Vanhoutte, C De Tender, K Demeyere, **MF Abdallah**, S Ommeslag, P Vermeir, S De Saeger, J Debode, E Meyer, S Croubels, K Audenaert, L De Gelder (2021). Bacterial Enrichment Cultures Biotransform the Mycotoxin Deoxynivalenol into a Novel Metabolite Toxic to Plant and Porcine Cells. *Toxins*, 13 (8), 552. doi: 10.3390/toxins13080552 (Open Access).
- 9) L De Colli, K De Ruyck, **MF Abdallah**, J Finnan, E Mullins, S Kildea, J Spink, C Elliott, M Danaher (2021). Natural co-occurrence of multiple mycotoxins in unprocessed oats grown in Ireland with various production systems. *Toxins*, 13 (3), 188. doi: 10.3390/toxins13030188 (Open Access).
- 8) MF Abdallah*, K Audenaert, SD Saeger, J Houbraken (2020). Revisiting an *Aspergillus flavus* Strain Isolated from an Egyptian Sugarcane Field in 1930. *Microorganisms*, 8 (11), 1633. doi: 10.3390/microorganisms8111633 (Open Access).
- 7) J Tant, M Ameyet, S Landschoot, NÚ De Zutter, S De Saeger, M De Boevre, **MF Abdallah**, T Van der Lee, C Waalwijk, K Audenaert (2020). At the scene of the crime: New insights into the role of weakly pathogenic members of the fusarium head blight disease complex. *Molecular Plant Pathology*, 21 (12), 1559-1572. doi: 10.1111/mpp.12996 (Open Access).
- 6) **MF Abdallah***, K Audenaert, L Lust, S Landschoot, B Bekaert, G Haesaert, M De Boevre, S De Saeger (2020). Risk characterization and quantification of mycotoxins and their producing fungi in sugarcane juice: A neglected problem in a widely-consumed traditional beverage. *Food Control*, 108, 106811. doi: 10.1016/j.foodcont.2019.106811.
- 5) **MF Abdallah***, G Girgin, T Baydar (2019). Mycotoxin detection in maize, commercial feed, and raw dairy milk samples from Assiut City, Egypt. *Veterinary Sciences*, 6 (2), 57. doi: 10.3390/vetsci6020057 (Open Access).
- 4) **MF Abdallah***, M De Boevre, S Landschoot, S De Saeger, G Haesaert, K Audenaert (2018). Fungal Endophytes Control Fusarium graminearum and Reduce Trichothecenes and Zearalenone in Maize. *Toxins*, 10 (12), 493. doi: 10.3390/toxins10120493 (Open Access).
- 3) **MF Abdallah***, R Krska, M Sulyok (2018). Occurrence of Ochratoxins, Fumonisin B2, Aflatoxins (B1 and B2), and Other Secondary Fungal Metabolites in Dried Date Palm Fruits from Egypt: A Mini-Survey. *Journal of Food Science*, 83 (2), 559-564. doi: 10.1111/1750-3841.14046.
- 2) **MF Abdallah**, G Girgin, T Baydar, R Krska, M Sulyok (2017). Occurrence of multiple mycotoxins and other fungal metabolites in animal feed and maize samples from Egypt using LC-MS/MS. *Journal of the Science of Food and Agriculture*, 97 (13), 4419-4428. doi: 10.1002/jsfa.8293.
- 1) **MF Abdallah**, R Krska, M Sulyok (2016). Mycotoxin contamination in sugarcane grass and juice: first report on detection of multiple mycotoxins and exposure assessment for aflatoxins B1 and G1 in humans. *Toxins*, 8 (11), 343. doi: 10.3390/toxins8110343 (Open Access).

Review Articles and Book Chapters

- 4) R Tavelli, M Callens, C Grootaert, **MF Abdallah**, A Rajkovic (2022). Foodborne pathogens in the plastisphere: Can microplastics in the food chain threaten microbial food safety?. *Trends in Food Science & Technology*, 129, 1-10. doi: 10.1016/j.tifs.2022.08.021
- 3) **MF Abdallah***, WHR Van Hassel, M Andjelkovic, A Wilmotte, A Rajkovic (2021). Cyanotoxins and Food Contamination in Developing Countries: Review of Their Types, Toxicity, Analysis, Occurrence and Mitigation Strategies. *Toxins*, 13 (11), 786. doi: 10.3390/toxins13110786 (Open Access).
- 2) **MF Abdallah***, M Ameye, S De Saeger, K Audenaert, G Haesaert (2018). Biological control of mycotoxigenic fungi and their toxins: An update for the pre-harvest approach. Book Name Fungi and Mycotoxins-Their Occurrence, Impact on Health and the Economy as well as Pre-and Postharvest Management Strategies. IntechOpen, doi: 10.5772/intechopen.76342 8580795.pdf (Open Access).
- 1) **MF Abdallah**, G Girgin, T Baydar (2015). Occurrence, prevention and limitation of mycotoxins in feeds. *Animal Nutrition and Feed Technology*, 15 (3), 471-490. doi: 10.5958/0974-181X.2015.00048.7 (Open Access).

Editorial Letters

- 3) **MF Abdallah***, W Xu and A Abdeen (2022) Editorial: Environmental contaminants and animal health: Analysis, toxicity, and mitigation. Front. Vet. Sci. 9:1102836. doi: 10.3389/fvets.2022.1102836 (Open Access).
- 2) M Gado, D Abdelsadek, F Zahran, NN El-Salhey, O Mehrez, S Abdel-Hay, S Mohamed, **MF Abdallah*** (2022). Mycotoxin occurrence in Egyptian foods: Highlights on the findings of the past decade. Egypt Scholars Journal, 1 (1), 1-3. doi: 10.52649/egscj21632545 (Open Access).
- 1) **MF Abdallah***, M De Boevre, K Audenaert, G Haesaert, S De Saeger (2018). Highlight report: Mycotoxins as food contaminants in Africa—challenges and perspectives. Archives of Toxicology, 92 (6), 2151-2152. doi: 10.1007/s00204-018-2203-2 (Open Access).

Services and Professional ActivitiesMember of the following Scientific Societies

European Society of Toxicology In Vitro (ESTIV); Society for Mycotoxin Research; Belgian society of Toxicology; Young NMC network; Nordic Metabolomics Society; International Society of Mycotoxicology.

Organizer & Host

- Co-organizer of the 1st MycoKey International Conference, Ghent Belgium.

Guest Editor

- Toxins Journal [Special Issue "Current Research on Mycotoxins in Food and Feed: From Detection and Unravelling of Toxicity to Control"]. Submission deadline 30 June 2023.
- Frontiers in Veterinary Science Journal [Special Issue "Environmental Contaminants and Animal Health: Analysis, Toxicity, and Mitigation"]. Submission deadline 30 August 2022.

Reviewer

- Journal of Hazardous Materials; Toxicon; Journal of the Science of Food and Agriculture; Toxins; Regulatory Toxicology and Pharmacology; World Mycotoxins Journal; Environmental International; Food Chemistry

Languages

Arabic (Native)	English (Excellent)	French (Basic)	Turkish (Basic)
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Referees**Postdoc mentor**

Prof. Andreja Rajkovic
Ghent University, Belgium.

✉ andreja.rajkovic@ugent.be

PhD project supervisor

Prof. Sarah De Saeger
Ghent University, Belgium.

✉ sarah.desaeger@ugent.be

Master thesis supervisor

Dr. Michael Sulyok
University of Natural Resources and Life
Sciences, Austria

✉ michael.sulyok@boku.ac.at