University Academic Curriculum Vitae

Personal information

Name: **Ali Zein Alabiden Tlais**
E-Mail: altlais@unibz.it

Education since leaving school

- 2009-2012 - **B.Sc.** in General Biology (Lebanese University Faculty of Sciences, Beirut)
- 2012-2014 - **M.Sc.** in Plant Applied Biotechnology (Lebanese University Faculty of Sciences, Beirut)
- 2015-2017 - **M.Sc.** in Mediterranean Organic Agriculture (School of Management-LUM Jean Monnet University, Italy)
- 11/2017 – 10/2021 - **PhD** in "Food Engineering and Biotechnology", Faculty of Science and Technology, Free University of Bozen-Bolzano, Bozen-Bolzano (Italy). Project title: "Plant matrices fermentation: A biotechnological tool to enhance bioactive compounds and generate functional products". Supervisor: Prof. Raffaella Di Cagno.

Professional experience

- 03/2023-Present **Fixed-term Researcher**, Faculty of Agricultural, Environmental and Food Sciences, Free University of Bozen-Bolzano, Bozen-Bolzano (Italy).
  Project: "Design of new foods with improved functional, rheological and sensory properties also through the valorization of food by-products (PNRR Project)". Tasks: Characterization of microbiota mainly (lactic acid bacteria and yeast) using culture dependent and independent approaches. DNA extraction and amplification. Bioactive compounds identification and quantification using HPLC-PDA, UHPLC coupled Triple Quadrupole Mass Spectrometer (TQMS), Q-Exactive high resolution mass spectrometer coupled to an Ultimate 3000 UHPLC, gas chromatography mass spectrometry (GC-MS), and Amino acids analyzer. Setting up fermentation protocols for different food matrices and by-products. Assessment of health promoting properties of fermented products on human cell lines. Support interns, undergraduate and master students. Undertake teaching duties. Coordination and mentoring of five PhD students.
  Supervisor: Prof. Raffaella Di Cagno.
- 04/2022-03/2023- **Post-doctoral Researcher**, Faculty of Science and Technology, Free University of Bozen-Bolzano, Bozen-Bolzano (Italy).
  Project: "Smart Protein for a changing world. Future-proof alternative terrestrial protein sources for human nutrition encouraging environment regeneration, processing feasibility and consumer trust and acceptance (SMART PROTEIN)".
  Supervisor: Prof. Marco Gobbetti.
- 04/2021-03/2022- **Research Assistant (AR)**, Faculty of Science and Technology, Free University of Bozen-Bolzano, Bozen-Bolzano (Italy).
  Project: "Development of an eco-sustainable biotechnological process for the production of fruit juices and smoothies with low sugar content". Supervisor: Prof. Marco Gobbetti.

Interships

From / to	Job title	Name of academic Institution	Academic level	Responsibilities
Jun/Aug 2014	Intern	Lari Station and Department, Rayak-Bekaa (Lebanon)	Master's degree	Meristem extraction, micropropagation of Pistacia, nutrients medium preparation, sterilization and PCR techniques
Nov 2016/ Jun 2017	Intern	University of Bari, Bari (Italy)	Master's degree	Isolation, DNA extraction and identification of yeast and lactic acid bacteria; bioactive compounds identification and quantification.

Experience in academic teaching

- (2018-2019) **Laboratory Teaching Assistant**. Course unit: Fermentations as tools for making traditional and innovative foods and beverages. Master program: Food Sciences for Innovation and Authenticity, Free university of Bolzano, Italy. Responsible Prof: Marco Gobbetti. Total hours: **30h**. Language: English.
- (2018-2019) **Laboratory Teaching Assistant.** Course unit: The natural microbial starters for innovation and authenticity. Master program: Food Sciences for Innovation and Authenticity, Free university of Bolzano, Italy. Responsible Prof: Raffaella Di Cagno. Total hours: **20h.** Language: English.
- (2021-2022) **Laboratory Teaching Assistant.** Course unit: Food microbiology. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible Prof: Raffaella Di Cagno. Total hours: **28h.** Language: English.
- (2021-2022) **Laboratory Teaching Assistant.** Course unit: The natural microbial starters for innovation and authenticity. Master program: Food Sciences for Innovation and Authenticity, Free university of Bolzano, Italy. Responsible Prof: Raffaella Di Cagno. Total hours: **32h**. Language: English.
- (2022-2023) **Laboratory Teaching Assistant.** Course unit: Food microbiology. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible Prof: Raffaella Di Cagno. Total hours: **32h**. Language: English.
- (2023-2024) **Laboratory Teaching.** Course unit: Food microbiology. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **32h**. Language: English.
- (2023-2024) **Course Teaching.** Course unit: Cocoa and coffee fermentation. Master program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2023-2024) **Course Teaching.** Course unit: Food-human axis: the gut microbiome. Phd program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2024-2025) **Course Teaching.** Course unit: Cocoa and coffee fermentation. Master program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2024-2025) **Course Teaching.** Course unit: Microbial fermentations in

gastronomy and methods of recovery of agro-food by-products. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.

- (2024-2025) **Course Teaching.** Course unit: Food-human axis: the gut microbiome. Phd program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2025-2026) **Course Teaching.** Course unit: Cocoa and coffee fermentation. Master program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2025-2026) **Course Teaching.** Course unit: Microbial fermentations in gastronomy and methods of recovery of agro-food by-products. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **30h**. Language: English.
- (2025-2026) **Laboratory Teaching.** Course unit: Food microbiology. Bachelor program: Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Responsible: Ali Zein Alabiden Tlais. Total hours: **32h**. Language: English.

Student co-supervision at Free University of Bolzano-Bozen

- (2018-2019) **Undergraduate program:** Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Student: Rachele Zambelli. Thesis' title: Tailored biotransformation of apple by-product as a source of nutritional supplement. Language: English.
- (2020-2021) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Anna Salvian. Thesis' title: Microbial biotechnology for the development of fruit juices and smoothies with low sugar content. Language: English.
- (2021-2022) **Undergraduate program:** Agricultural, Food and Mountain Environmental Sciences, Free University of Bozen-Bolzano, Italy. Student: Angelica Paoli. Thesis' title: Strain selection for improved fermentation of sauerkraut. Language: English.
- (2021-2022) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Davide Ferri. Thesis' title: Development of a novel fermented plant-based product with high functional properties. Language: English.
- (2022-2023) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Davide Gozzi. Thesis' title: From Waste to Value: Unlocking the potential of red wine pomace and microalgae through tailored fermentation. Language: English.
- (2022-2023) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Davide Gozzi. Thesis' title: From Waste to Value: Unlocking the potential of red wine pomace and microalgae through tailored fermentation. Language: English.
- (2022-2023) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Elisa De Bastiani. Thesis' title: Factors affecting the stability and functionality of

plant-derived microRNA at oral, gastric and intestinal level: an in-vitro approach. Language: English.

- (2022-2023) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Anna De Santo. Thesis' title: Avocado puree as substrate for the production of oxylipins through tailored microbial fermentation. Language: English.
- (2022-2023) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Giulia Gramenzi. Thesis' title: From Waste to Value: Exploiting the Synergy between Olive Wastes, Microalgae, and Fermentation for Functional Bread Production. Language: English.
- (2023-2024) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Nicolò Anzelini. Thesis' title: Novel plant-based beverages: set-up of fermentation and nutritional characterization. Language: English.
- (2024-2025) **Master of science:** M.sc in Food Sciences for Innovation and Authenticity, Free University of Bozen-Bolzano, Italy. Student: Osaro Osagie Otote. Thesis' title: Fructophilic Lactic Acid Bacteria as Emerging Psychobiotic: Assessing Gastrointestinal Survival, Pro-Technological Traits, and Metabolite Production in Simulated Gut Conditions. Language: English.

Ph.D Thesis co-supervisor at Free University of Bolzano

- Stefano Tonino, Advancement and prospects of study of bioactive peptides during food fermentation, Ph.D in Food Engineering and Biotechnology, 36th cycle.
- Elisabetta Trossolo, Encouraging the consumption of alternative protein sources through the design of novel fermented foods, Ph.D in Food Engineering and Biotechnology, 37th cycle.
- Adineh Tajmosavilangerdi, Development and preclinical testing of a functional beverage for boosting the immune system in the elderly, Ph.D in Food Engineering and Biotechnology, 37th cycle.
- Chiara Viretto, Functional screening of microbial resources for healthy food fermentations through a predictive understanding of genotype-phenotype relationships, Ph.D in Food Engineering and Biotechnology, 38th cycle.
- Amir Shazad, Generating novel synbiotic formulations with multi-functional features: A special focus on their psychobiotic effects, Ph.D in Food Engineering and Biotechnology, 38th cycle.
- Hatice Hazal Okur, Study of the Effects of Plant-Derived MicroRNAs on the Human Gut Microbiota, Ph.D in Food Engineering and Biotechnology, 38th cycle.

Partnership in national projects

- 2018-2022 PRO4HEALTHFOOD: Processing for sustainable and healthy sauerkraut: a traditional South Tyrol fermented food. (call: CRC call 2018 by the Faculty of Science and Technology of the Free University of Bozen).
- 2020-2021 FLAB4BEES: A pioneering investigation on biofilm by fructophilic lactic acid bacteria: a first step to sketch out potential strategy for the improvement of honeybee health. (call: CRC-RTD2020 by the Faculty of Science and Technology of the Free University of Bozen).
- 2023-2025 Puff_pastry: Development of innovative solutions for improving the rheological and shelf-life properties of puff pastry products. (call:

Contract for research project by the Faculty of Science and Technology of the Free University of Bozen).

- Co-Principal Investigator of the industrial project commissioned by Zuccato entitled "Controlled-Fermented Sauerkraut vs. Traditional Sauerkraut: Analysis of the Nutritional Profile, Digestibility, and Effects on the Gut Microbiota in Fresh and Pasteurized Sauerkraut," aimed at studying and defining an innovative fermentation protocol to overcome the critical issues associated with spontaneous and prolonged fermentation, while also producing sauerkraut enriched with bioactive compounds. The two-year project was carried out in collaboration between Zuccato and the Free University of Bolzano (Decree 2025-09-19_100_), with a total funding of €150,000.00 (CUP I53C25001830007).
- Co-Principal Investigator of the industrial project commissioned by Puratos entitled " StartCult - R&D Feasibility Study within grouped proposal approach," aimed at at developing a phenotyping of 16 starter cultures (13 lactic acid bacteria and 3 yeasts) belonging to Puratos by using the OmniLog Phenotype MicroArray (PM) Technology.

Other academic and research responsibilities

- Member of Organizing committee for the VIII International Symposium on Sourdough, “Resilience Sustainability, Wellness”, Free University of Bozen-Bolzano, 14-17th June, 2020.
- Member of the organizing committee of the International Conference on Fermented Foods, held from October 27 to 30, 2025, at the NOI Techpark in Bolzano, Italy.
- A member of the International Center on Food Fermentations (ICOFF) (https://icoff.noi.bz.it/en/icoff). Contribution to multidisciplinary projects aimed at promoting sustainable food innovation through the use of microbial technologies (valorization of agri-food by-products, including whey (in collaboration with the company Mila and apple waste (in collaboration with the company VOG).
- **Guest Editor**, Special Issue on “Fermented Foods”, *International Journal of Food Microbiology* (Elsevier), 2025.

Research and scholarship

Date granted	Award Holder(s)	Funding Body	Title	Amount received
Oct 2015	Ali Zein Alabiden Tlais	Mediterranean Agronomic Institute of Bari	Scholarship to pursue my Master studies at School of Management-LUM Jean Monnet University	15.000 EUR

Nov 2017	Ali Zein Alabiden Tlais	Free University of Bolzano	Scholarship to pursue my PhD studies at Free University of Bozen-Bolzano) (53.000 EUR)	53.000 EUR

Publications

1) Filannino, P., Di Cagno, R., ***Tlais, A. Z. A***., Cantatore, V., & Gobbetti, M. (2019). Fructose-rich niches traced the evolution of lactic acid bacteria toward fructophilic species. Critical reviews in microbiology, 45(1), 65-81. Doi: https://doi.org/10.1080/1040841X.2018.1543649

2) Filannino, P., ***Tlais, A. Z. A,*** Morozova, K., Cavoski, I., Scampicchio, M., Gobbetti, M., & Di Cagno, R. (2020). Lactic acid fermentation enriches the profile of biogenic fatty acid derivatives of Avocado fruit (*Persea americana* Mill.). *Food Chemistry*, *317*, 126384. Doi: https://doi.org/10.1016/j.foodchem.2020.126384

3) ***Tlais, A. Z. A.,*** Fiorino, G. M., Polo, A., Filannino, P., & Di Cagno, R. (2020). High-Value Compounds in Fruit, Vegetable and Cereal Byproducts: An Overview of Potential Sustainable Reuse and Exploitation. *Molecules*, 25(13), 2987. Doi: https://doi.org/10.3390/molecules25132987

4) ***Tlais, A. Z. A***., Da Ros, A., Filannino, P., Vincentini, O., Gobbetti, M., & Di Cagno, R. (2021). Biotechnological re-cycling of apple by-products: a model of reservoir of biogenic phenolic compounds. *Food Chemistry*, 336, 127616. Doi: https://doi.org/10.1016/j.foodchem.2020.127616

5) Filannino, P., Di Cagno, R., Gambacorta, G., ***Tlais, A. Z. A.,*** Cantatore, V., & Gobbetti, M. (2021). Volatilome and Bioaccessible Phenolics Profiles in Lab-Scale Fermented Bee Pollen. *Foods*, *10*(2), 286. doi.org/10.3390/foods10020286

6) M'hir, S., Filannino, P., Mejri, A., ***Tlais, A. Z. A.,*** Di Cagno, R., & Ayed, L. (2021). Functional Exploitation of Carob, Oat Flour, and Whey Permeate as Substrates for a Novel Kefir-Like Fermented Beverage: An Optimized Formulation. *Foods*, *10*(2), 294. https://doi.org/10.3390/foods10020294

7) ***Tlais, A. Z. A.,*** Kanwal, S., Filannino, P., Albiac, M. A., Gobbetti, M., & Di Cagno, R. (2022). Effect of sequential or ternary starters-assisted fermentation on the phenolic and glucosinolate profiles of sauerkraut in comparison with spontaneous fermentation. Food Research International, 156, 111116. https://doi.org/10.1016/j.foodres.2022.111116

8) ***Tlais, A. Z. A.,*** Polo, A., Filannino, P., Cantatore, V., Gobbetti, M., & Di Cagno, R. (2022). Biofilm formation as an extra gear for *Apilactobacillus kunkeei* to counter the threat of agrochemicals in honeybee crop. Microbial Biotechnology. doi:10.1111/1751-7915.14051

9) ***Tlais, A. Z. A.,*** Lemos Junior, W. J. F., Filannino, P., Campanaro, S., Gobbetti, M., & Di Cagno, R. (2022). How microbiome composition correlates with biochemical changes during sauerkraut fermentation: A focus on neglected bacterial players and functionalities. Microbiology spectrum, 10(4), e00168-22.

10) Minervini, F., Comitini, F., De Boni, A., Fiorino, G. M., Rodrigues, F., ***Tlais, A. Z. A.,*** Carafa, I., De Angelis, M. (2022). Sustainable and health-protecting food ingredients from bioprocessed food by-products and wastes. Sustainability. https://doi.org/10.3390/su142215283

11) ***Tlais, A. Z. A.,*** Rantsiou, K., Filannino, P., Cocolin, L. S., Cavoski, I., Gobbetti, M., & Di Cagno, R. (2022). Ecological linkages between biotechnologically relevant autochthonous microorganisms and phenolic compounds in sugar apple fruit (Annona squamosa L.). International Journal of Food Microbiology, 110057.

https://doi.org/10.1016/j.ijfoodmicro.2022.110057

12) Fiorino, G. M., ***Tlais, A. Z. A.,*** Losito, I., Filannino, P., Gobbetti, M., & Di Cagno, R. (2023). Triacylglycerols hydrolysis and hydroxy-and epoxy-fatty acids release during lactic fermentation of plant matrices: an extensive study showing inter-and intra-species capabilities of lactic acid bacteria. Food Chemistry, 135552. https://doi.org/10.1016/j.foodchem.2023.135552

13) Polo, A., ***Tlais, A. Z. A.,*** Filannino, P., Da Ros, A., Arora, K., Cantatore, V., ... & Cagno, R. D. (2023). Novel Fermented Ice Cream Formulations with Improved Antiradical and Anti-Inflammatory Features. Fermentation, *9*(2), 117. https://doi.org/10.3390/fermentation9020117

14) Arora, K., ***Tlais, A. Z. A.*,*** Augustin, G., Grano, D., Filannino, P., Gobbetti, M., & Di Cagno, R.* (2023). Physicochemical, nutritional, and functional characterization of gluten-free ingredients and their impact on the bread texture. *LWT*, 114566. https://doi.org/10.1016/j.lwt.2023.114566

15) Krause, M., Sørensen, J. S., Petersen, I. L., Duque-Estrada, P., Cappello, C., ***Tlais, A.Z.A***., Di Cagno, R., Ispiryan, L., W. Sahin, A., K. Arendt, E. & Zannini., E. (2023). Associating Compositional, Nutritional and Techno-Functional Characteristics of Faba Bean (Vicia faba L.) Protein Isolates and Their Production Side-Streams with Potential Food Applications. *Foods, 12, 919.* https://doi.org/10.3390/foods12050919

16) Cappello, C., ***Tlais, A. Z. A.,*** Acin-Albiac, M., Lemos Junior, W. J. F., Pinto, D., Filannino, P., ... & Di Cagno, R. (2023). Identification and Selection of Prospective Probiotics for Enhancing Gastrointestinal Digestion: Application in Pharmaceutical Preparations and Dietary Supplements. *Nutrients*, *15*(6), 1306. https://doi.org/10.3390/nu15061306

17) ***Tlais, A. Z. A.,*** Trossolo, E., Tonini, S., Filannino, P., Gobbetti, M., & Di Cagno, R. (2023). Fermented whey ewe's milk-based fruit smoothies: Bio-recycling and enrichment of phenolic compounds and improvement of protein digestibility and antioxidant activity. Antioxidants, 12(5), 1091. https://doi.org/10.3390/antiox12051091

18) Ameur, H., ***Tlais, A. Z. A.,*** Paganoni, C., Cozzi, S., Suman, M., Di Cagno, R., ... & Polo, A. (2024). Tailor-made fermentation of sourdough reduces the acrylamide content in rye crispbread and improves its sensory and nutritional characteristics. International Journal of Food Microbiology, 410, 110513. https://doi.org/10.1016/j.ijfoodmicro.2023.110513

19) Tonini, S., ***Tlais, A. Z. A.*,*** Galli, B. D., Helal, A., Tagliazucchi, D., Filannino, P., ... & Di Cagno, R. (2024). Lentils protein isolate as a fermenting substrate for the production of bioactive peptides by lactic acid bacteria and neglected yeast species. Microbial Biotechnology, 17(1), e14387. DOI: 10.1111/1751-7915.14387

20) M'hir, S., Ayed, L., De Pasquale, I., Fanizza, E., ***Tlais, A. Z. A.****, Comparelli, R., ... & Filannino, P. (2024). Comparison of Milk Kefirs Obtained from Cow's, Ewe's and Goat's Milk: Antioxidant Role of Microbial-Derived Exopolysaccharides. Antioxidants, 13(3), 335. https://doi.org/10.3390/antiox13030335

21) Tonini, S., ***Tlais, A. Z. A.*,*** Filannino, P., Di Cagno, R., & Gobbetti, M. (2024). Apple Blossom Agricultural Residues as a Sustainable Source of Bioactive Peptides through Microbial Fermentation Bioprocessing. Antioxidants, 13(7), 837. https://doi.org/10.3390/antiox13070837

22) Gautheron, O., Nyhan, L., Ressa, A., Torreiro, M. G., ***Tlais, A. Z. A.,*** Cappello, C., ... & Sahin, A. W. (2024). Solid-State Fermentation of Quinoa Flour: An In-Depth Analysis of Ingredient Characteristics. Fermentation, 10(7), 360. https://doi.org/10.3390/fermentation10070360

23) ***Tlais, A. Z. A.,*** Polo, A., Granehäll, L., Filannino, P., Vincentini, O., De Battistis, F., ... & Gobbetti, M. (2024). Sugar lowering in fermented apple-pear juice orchestrates a promising metabolic answer in the gut microbiome and intestinal integrity. Current Research in Food Science, 9, 100833. https://doi.org/10.1016/j.crfs.2024.100833

24) Gautheron, O., Nyhan, L., Torreiro, M. G., ***Tlais, A. Z. A.,*** Cappello, C., Gobbetti, M., ... & Sahin, A. W. (2024). Exploring the Impact of Solid-State Fermentation on Fava

Bean Flour: A Comparative Study of Aspergillus oryzae and Rhizopus oligosporus. Foods, 13(18), 2922. https://doi.org/10.3390/foods13182922

25) Mastrolonardo, F., Costantini, A., Polo, A., Verni, M., Junior, W. J. F. L., ***Tlais, A. Z. A.,*** ... & Di Cagno, R. (2024). New fermented Plant-Based Ingredients in Sourdough Breads Enhanced Nutritional Value and Impacted on Gut Microbiota. Future Foods, 100498. https://doi.org/10.1016/j.fufo.2024.100498

26) Stringari, A., ***Tlais, A. Z. A.,*** Polo, A., Ameur, H., De Micheli, T., Aquaro, N., ... & Di Cagno, R. (2025). Sourdough fermentation and red lentil protein enrichment as sustainable valorization of pasta by-products to make new pasta. Current Research in Food Science, 101094. https://doi.org/10.1016/j.crfs.2025.101094

27) Trossolo, E., ***Tlais, A. Z. A.*,*** Tonini, S., Filannino, P., Gobbetti, M., & Di Cagno, R. (2025). Fermentation of a wine pomace and microalgae blend to synergistically enhance the functional value of protein-and polyphenol-rich matrices. Food Research International, 115785. https://doi.org/10.1016/j.foodres.2025.115785

28) Polo, A., Calabrese, F. M., ***Tlais, A. Z. A.,*** Ferrocino, I., De Filippis, F., Celano, G., ... & Gobbetti, M. (2025). A Novel Plant-Based Food to Enlarge the Access of Healthy Bioactive Compounds Typical of the Mediterranean Diet to Non-Adherent People. Food Frontiers. https://doi.org/10.1002/fft2.70044

29) Palatzidi, A., Nikoloudaki, O., ***Tlais, A. Z. A.,*** Zannini, E., O'Mahony, J. A., Tsakalidou, E., ... & Di Cagno, R. (2025). Fermented plant-based cream cheese analogues formulated using legume flours and avocado pulp. Future foods, 11, 100580. https://doi.org/10.1016/j.fufo.2025.100580

30) Viretto, C., ***Tlais, A. Z. A.*,*** Arora, K., Ameur, H., Tuccillo, F., Polo, A., ... & Gobbetti, M. (2025). Unraveling the functional potential of microbial resources and pulse-based matrices for sourdough breadmaking. *Future Foods*, 100643. https://doi.org/10.1016/j.fufo.2025.100643

31) Shazad, A., ***Tlais, A. Z. A.*,*** Gottardi, D., Filannino, P., Patrignani, F., Lanciotti, R., ... & Di Cagno, R. (2025). Enhancing bioactive profiles of elderberry juice through yeast fermentation: a pathway to low-sugar functional beverages. Current Research in Food Science, 101100. https://doi.org/10.1016/j.crfs.2025.101100

32) Stringari, A., ***Tlais, A. Z. A.*,*** Tonini, S., Pinto, D., Mondadori, G., Filannino, P., ... & Gobbetti, M. (2025). Revitalising Brewers' Spent Grains and Enriching With Biogenic Compounds Through the Fermentation of Fructophilic Lactic Acid Bacteria and Yeasts. *Microbial Biotechnology*, *18*(6), e70171. https://doi.org/10.1111/1751-7915.70171

33) ***Tlais, A. Z. A.*,*** Trossolo, E., Stringari, A., Gramenzi, G., Filannino, P., Pinto, D., ... & Di Cagno, R. (2025). Exploiting the Synergy among Olive Oil Mill Wastewater, Microalgae, and Fermentation for Wheat Bread Fortification. *LWT*, 118030. https://doi.org/10.1016/j.lwt.2025.118030

34) Caponio, M., Verni, M., ***Tlais, A. Z. A.,*** Longo, E., Pontonio, E., Di Cagno, R., & Rizzello, C. G. (2025). Development, optimization and integrated characterization of rice-based yogurt alternatives enriched with roasted and non-roasted sprouted barley flour. *Current Research in Food Science*, 101059. https://doi.org/10.1016/j.crfs.2025.101059

35) Viretto, C., ***Tlais, A. Z. A.*,*** Tuccillo, F., Polo, A., Arora, K., Verté, F., ... & Gobbetti, M. (2025). Maximize the synergistic interactions among microbial consortia and plant-based matrices to design fermented cereal-pulse-based beverages. *Food Research International*, 117045.

36) Tajmousavilangerudi, A., Viretto, C., Anzelini, N., Stringari, A., Prati, A., Larcher, M., ... & ***Tlais, A. Z. A.*** (2025). Unlocking microbial interactions: Multi-Plant-based-substrate fermentation with water kefir starters for functional beverage innovation. *Current Research in Food Science*, 101194. https://doi.org/10.1016/j.crfs.2025.101194

37) Munghang, T. T., Thierry, N. N., Viretto, C., ***Tlais, A. Z. A.,*** Polo, A., Gobbetti, M., & Ejoh, R. A. (2025). Development of plant-based infant complementary food from

Cucumeropsis mannii, Dioscorea dumetorum, Musa paradiasica, and Malus domestica fermented with lactic acid bacteria. Food, Nutrition and Health, 2(1), 1-19. https://doi.org/10.1007/s44403-025-00038-9

38) Shazad, A., ***Tlais, A. Z. A.*,*** Trossolo, E., Bacchiocchi, S. C., Filannino, P., Pinto, D., ... & Di Cagno, R. (2025). Pre-digestion of soybeans, fermentation with fructophilic lactic acid bacteria, and in silico analyses to uncover psychobiotic potential. *Food Research International*, 117904. https://doi.org/10.1016/j.foodres.2025.117904

39) Shazad, A., ***Tlais, A. Z. A.*,*** Cappello, C., Bacchiocchi, S. C., Filannino, P., Gobbetti, M., & Di Cagno, R. (2025). Comprehensive functional profiling of yeasts: gastrointestinal resistance, metabolic capacities, and psychobiotic potential. *Applied Food Research*, 101178. https://doi.org/10.1016/j.afres.2025.101178

40) Mushtaq, B. S., Nikoloudaki, O., Ben, M., Arora, K., Tlais, A. Z. A., Polo, A., ... & Gobbetti, M. (2025). Development of nutritionally enhanced sourdough bread through Tritordeum bran incorporation and assessment in an in vitro gut simulation. *Future Foods*, 100874. https://doi.org/10.1016/j.fufo.2025.100874

41) ***Tlais, A. Z. A.,*** Losito, I., Filannino, P., Trossolo, E., Tonini, S., Garofalo, G., ... & Di Cagno, R. (2025). Bacterial-driven lipid remodeling in avocado fermentation via hydroxylation and oxidation routes. *Food Chemistry*, 147546. https://doi.org/10.1016/j.foodchem.2025.147546

42) Secchi, G., Tajmousavilangerudi, A., Viretto, C., ***Tlais, A. Z. A.*,*** Angeli, A., Vrhovsek, U., ... & Franciosi, E. (2026). Fermented beverages enriched with quinoa or chestnut–persimmon: Nutritional, functional, and anti-nutritional assessment. *LWT*, 119054. https://doi.org/10.1016/j.lwt.2026.119054

43) Meyer, A. R., Gettemans, T., Tan, J. P., Tuccillo, F., Viretto, C., ***Tlais, A. Z. A.,*** Angelescu, I. R., ... & Bokulich, N. A. (2026). Rising together: exploring sourdough fermentation diversity through co-design in the HealthFerm citizen science initiative. *npj Science of Food*. https://doi.org/10.1038/s41538-026-00725-7

Further data

Poster Presentation at the following conferences:

- "XXIII Workshop on the Developments in the Italian PhD Research on Food Science", Technology and Biotechnology, 19 – 21 September 2018, Oristano (Italy), Poster title: "Metabolism of plant phenolic compounds during the lactic fermentation of fruits and vegetables".
- "6th International Conference on Foodomics". From Knowledge to Industry, from Industry to Knowledge, Cesena (Italy), 14-16 October 2020, Poster title: "Biotechnological re-cycling of apple by-products: A reservoir model to produce a dietary supplement fortified with biogenic phenolic compounds".
- "7th International Conference on Microbial Diversity Agrifood microbiota as a tool for a sustainable future, September 26-29, 2023 – Parma, Italy, Poster title: From Waste to Value: Exploiting the Synergy between Olive Wastes, Microalgae, and Fermentation for Wheat Bread Fortification".

Speaker at the following conferences:

- "8th Congress of European Microbiologists", 7-11 July, Glasgow, Scotland. Presentation title: "Tailored biotransformation of apple by-products as a source of nutritional supplement".
- "6th International Conference on Food Chemistry & Technology (FCT-2020)" - A Virtual Conference held on October 05-06, 2020, Presentation title: "Lactic acid fermentation enriches the profile of biogenic fatty acid derivatives of avocado fruit (*Persea americana* Mill.)".
- FEMS online conference on microbiology, 28-31 October 2020, Presentation title: "Lactic acid fermentation enriches the profile of biogenic fatty acid derivatives of avocado fruit (*Persea americana* Mill.)".
- "7th International Conference on Microbial Diversity Agrifood microbiota as a tool for a sustainable future, September 26-29, 2023 – Parma, Italy, Presentation title: Revitalizing the Gut Microbiome: Unleashing the Power of

Low-Sugar Fermented Juices".

- "International Conference on Fermented Foods, 27th – 30th October 2025-Bolzano (Italy)., Presentation title: Beyond fatty acids: new insights into bacterial fatty acid derivatives using avocado fermentation as a model system"

Participation in Summer School:

- "13th Mass Spectrometry School in Biotechnology and Medicine", 7-13 July 2019, Bubrovnik, Croatia.

Granted Patents

Giuliani G., Gobbetti M., R. Di Cagno., Pinto D., Marzani B., Rinaldo F., Fiorino G., **Tlais A.Z.A.** 2025. SUPERFOOD FOR PROLONGING THE LONGEVITY OF AN INDIVIDUAL, **EP4142762 (Accepted)**

Pinto D., Mascolo A., Di Cagno R., Gobbetti M., De Angelis., **Tlais A.Z.A.,** Marzani B., Giuliani G. 2025 MICROBIOLOGICAL PROCESS FOR THE PRODUCTION OF A FERMENTED EXTRACT FROM OLIVE OIL WASTEWATER (OMWW), **P024061IT-01 (Under review)**

Giuliani G., Pinto D., Mascolo A., Marzani B., Di Cagno R., Gobbetti M., **Tlais A.Z.A. 2025** COMPOSITION FOR THE PREVENTION OF SKIN DEHYDRATION, FOR THE IMPROVEMENT OF SKIN
BARRIER PROPERTIES AND FOR THE TREATMENT OF WOUNDS IN SKIN REGENERATION, **P024074IT-01 (Under review)**

Language competence

Arabic: Native language
English: C2 Mastery of proficiency, written and spoken English. Certificate: Internal unibz certification for C1 (Language center of Free University of Bozen-Bolzano)
Italian: B2; Internal unibz certification (Language center of Free University of Bozen-Bolzano)