

Hatice Hazal Okur

● ABOUT ME

PhD Candidate in Food Engineering and Biotechnology with a strong background in molecular biology and bioinformatics. My research focuses on unraveling the intricate epigenetic mechanisms by which plant-derived microRNAs (miRNAs) exert crosskingdom regulatory effects on human health. To advance this understanding, I am developing innovative laboratory protocols for isolating small RNAs and quantifying miRNAs using real-time quantitative PCR (RT-qPCR). In parallel, I am employing a suite of bioinformatic tools to comprehensively analyze miRNA stability and identify potential human target genes. This research has the potential to revolutionize our understanding of dietary interventions and personalized nutrition.

● EDUCATION AND TRAINING

11/2022 – CURRENT

PHD. FOOD ENGINEERING AND BIOTECHNOLOGY - 38TH CYCLE LIBERA UNIVERSITÀ DI BOLZANO | MICRO4FOOD LABORATORY

Supervisor: Professor Raffaella Di Cagno Co-Supervisor: Dr. Ali Zein Alabiden Tlais and Dr. Andrea Polo

Ph.D. Thesis: Study of the Effects of Plant-Derived MicroRNAs on the Human Gut Microbiota

Research Scope & Skills:

- **Molecular Biology:** PCR, qPCR, gel electrophoresis, bioanalyzer, small RNA isolation
- **Microbiology:** Bacterial culture, growth kinetics, metabolic profiling, phenotypic microarray analysis (Omnilog)
- **Bioinformatics:** Sequence alignment, RNA secondary structure prediction, cross-kingdom regulation (in silico), primer design, metabolic pathway prediction
- **Biostatistics:** XLSTAT, R programming

01/2019 – 03/2022 Izmir, Türkiye

MSC. FOOD ENGINEERING-FOOD BIOTECHNOLOGY-EGE UNIVERSITY-FACULTY OF ENGINEERING

02/2020 – 01/2021 Helsinki, Finland

MSC. FOOD MICROBIOLOGY AND BIOTECHNOLOGY-UNIVERSITY OF HELSINKI

Thesis Master's Thesis: Production of fermented milk product by using probiotic *Lactobacillus rhamnosus* GG (ATCC 53103) strain

09/2014 – 01/2019 Hatay, Türkiye

BSC. FOOD ENGINEERING-HATAY MUSTAFA KEMAL UNIVERSITY

09/2016 – 07/2017 Maribor, Slovenia

BSC. ERASMUS+ UNIVERSITY OF MARIBOR-FACULTY OF AGRICULTURE AND LIFE SCIENCE

● ACADEMIC AND INDUSTRIAL WORK EXPERIENCES

02/2023 – CURRENT

Visiting Researcher-Mirnagreen S.r.l.- Bolzano, Italy

- Specializing in Small RNA isolation, with a focus on assessing quantity and integrity using Qubit and Bioanalyzer analysis for downstream applications.
- Conducting RT-QPCR for microRNA quantification, and proficiently analyzing RT-QPCR data using R.
- miRNA profiling from small RNA sequencing results, analyze miRNA secondary structure under physiological conditions, and identify putative target genes of plant miRNAs.

07/10/2024 – CURRENT

Teaching Assistant - Libera Università di Bolzano, Italy

BSc. course: 'Microbial fermentations in gastronomy and methods of recovery of agro-food by-products.' 40417 · AGR/ 16 · L-GASTR Enogastronomy in Mountain Areas · EN · 2024/2025 · 18 hours

02/2023 – 09/2023

Supervision and Mentorship-Libera Università di Bolzano, Italy

Provided guidance and supervision to a Master's student conducting research.

Master's Thesis: Explored Factors Affecting the Stability and Functionality of Plant-Derived microRNA at Oral, Gastric, and Intestinal Levels: An In-Vitro Approach.

11/2022 – CURRENT

PhD Candidate-Libera Università di Bolzano, Italy

Molecular Microbiology Skills:

- Proficiently conducted RNA and DNA extraction from microbial communities.
- Executed 16S PCR.
- Utilized RT-qPCR for precise gene expression analysis.
- Using the SHIME model, the impact of a developed functional food on gut microbiota profiles was investigated, enabling analysis of metabolites via HPLC and comprehensive DNA and RNA extraction for sequencing.

Microbiology Skills:

- Demonstrated expertise in a range of microbiological techniques and methodologies.
- Conducted cell culture experiments to explore microbial behaviour.

Fermentation Processes:

- Acquired hands-on experience in fermentation processes, showcasing skills in optimizing fermentation control.

01/2021 – 02/2021

Consultant (project-based)-Bonne Juice-Johja , Finland

- Provided crucial information about raw materials, including analysis of ingredient suitability for the company.
- Conducted communication with suppliers, ensuring informed decisions on raw material procurement.
- Analyzed information on raw materials, determining their compatibility with company requirements.

02/2020 – 01/2021

Exchange Research Assistant-University of Helsinki- Helsinki, Finland

- **Microbial Engineering:** Applied advanced molecular biology techniques, including cloning, transformation, and bacterial conjugation, to develop genetically modified bacteria with enhanced probiotic properties.
- **Functional Food Development:** Contributed to the formulation and development of innovative vegan and dairy probiotic beverages.
- **Microbial Characterization:** Utilized advanced microbial detection and identification methods to analyze microbial communities and their metabolic potential.

Under the supervision of Prof. Per Erik Joakim Saris

02/2019 – 02/2020

Research Assistant- Ege University - Izmir, Türkiye

- Applied basic microbiology skills for research.
- Specialized in cell immobilization techniques.
- Writing scientific paper
- Assisted bachelor students in the food biotechnology laboratory.

07/2018 – 09/2018

Food Engineering-Internship-University of Maribor- Maribor, Slovenia

- Contributed to vineyard maintenance for optimal grape cultivation conditions.
- Active involvement in grape harvesting, assessing quality parameters of grape juice.
- Conducted chemical analysis of grapes and wine to ensure quality standards.
- Participated in winemaking processes, including preparation of wineries, containers, and equipment.
- Executed tasks related to wine filtering, bottling, and packaging, gaining hands-on experience in the production cycle.

07/2018 – 09/2018

Food Engineering-Internship-Slovene Chamber of Agriculture and Forestry - Institute of Agriculture and Forestry- Maribor, Slovenia

- Executed chromatographic analysis to evaluate wine composition.
- Engaged in wine-tasting sessions, refining sensory evaluation capabilities.
- Conducted physicochemical analysis of wines, gaining practical experience in assessing key properties.

09/2016 – 07/2017

Exchange Undergraduate Research Assistant- University of Maribor- Maribor, Slovenia

- Preparation of biological samples for chemical analysis-Volumetric Methods-Spectrometric methods.
- Determination of compounds in food with chromatographic methods.
- Determination of pesticide residues, plant pigments, antioxidants and organic acids in fruit and vegetables. (Prof. Janja Kristl)
- Risk Assessment of GMO and Novel/Functional Foods

Hands-on training in PCR and other molecular biological methods/ELISA
(Prof. Tomaz Langerholc)

PUBLICATIONS

Tıraş, Z. Ş. E., Okur, H. H., Günay, Z., & Yıldırım, H. K. (2022). Different approaches to enhance resveratrol content in wine. *Ciência e Técnica Vitivinícola*, 37(1), 13-28.

SUMMER SCHOOL AND TRAINING

14/07/2024 – 29/07/2024

Summer school- Next-generation Sequencing: Current Trends Summer

Host institution: Masaryk University, Brno, Czech Republic

Course content: Deep dive into metagenomics, transcriptomics, and whole-genome sequencing. Hands-on training in NGS library preparation and bioinformatics analysis. Proficiency in analyzing NGS data, including interpretation of results and effective data visualization. Exposure to the latest advancements in NGS technologies and their applications in human health.

CONFERENCES AND SEMINARS

1. Poster presentation at the 27th Workshop on the Developments in the Italian PhD Research on Food Science, Technology and Biotechnology (National Conference, Napoli. September 2024, 13-15th)

2. Oral presentation at 8th International Congress on Advance Biosciences and Biotechnology, (Cappadocia, Turkey, September 2024, 23-27th)

3. Oral presentation at International Congress on Physical, Social and Health Sciences (Ankara, Turkey, June 2022, 11-12th)

4. Oral presentation at International II. Hasat International Agriculture and Forest Congress. (Izmir, Turkey, November 2019, 8-9th)

HONOURS AND AWARDS

2019

Outstanding Graduating Food Engineering Major – Hatay Mustafa Kemal University

Erasmus Grant – European Union

2016, 2018, 2020

LANGUAGE SKILLS

Mother tongue(s): **TURKISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
GERMAN	A1	A1	A1	A1	A1
FINNISH	A1	A1	A1	A1	A1
SLOVENIAN	A1	A1	A1	A1	A1
ITALIAN	A1	A1	A1	A1	A1

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