

Curriculum Vitae

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PERSONAL INFORMATION

Place of birth: Paris, France

Nationality: Iranian

RESEARCH & LEADERSHIP PROFILE

R&D leader and industrial biotechnologist with 10+ years of multidisciplinary experience across precision fermentation, recombinant milk proteins, protein & enzyme engineering, metabolic engineering, and bioinformatics. Former R&D Director at Maya Milk, where she led and expanded R&D teams developing animal-free dairy proteins through precision fermentation and recombinant protein expression. Experienced in building and mentoring scientific teams, establishing planning routines, aligning projects with company strategy, and delivering results in fast-paced startup and academic environments. Her background combines academic research (Post-Doc, PhD, M.Sc.) with industrial R&D leadership, particularly in food/ingredient biotech and synthetic biology.

RESEARCH INTERESTS

- Edible recombinant proteins & animal-free dairy proteins
- Precision fermentation & industrial biotechnology
- Protein & enzyme engineering; recombinant pharmaceuticals
- Metabolic engineering & synthetic biology
- Drug delivery, immunoinformatics, and molecular simulation (docking, 3D modeling, MD)
- Genetic engineering and cell culture (plant, microbial, and mammalian)

CURRENT & RECENT POSITIONS

R&D Director, Maya Milk, Turkey (2022–2025)

- Led R&D for precision-fermentation-based animal-free milk proteins.
- Established planning routines, weekly check-ins, and execution frameworks, improving team delivery reliability.
- Designed and oversaw expression pipelines for recombinant bovine milk proteins and alternative fats.

- Prioritized and redirected projects based on feasibility and data-driven evaluation.
- Mentored junior scientists and strengthened team technical capabilities.
- Collaborated with leadership on scientific strategy and fundraising materials.

Cell Culture Department Founder & Bioinformatics Supervisor, Genesabz Co., Iran (2020–Present)

- Founded and supervised the cell culture division for industrial applications.
- Led computational design projects, including antigen design, molecular docking, and immunoinformatics.

Postdoctoral Researcher (Industrial Biotechnology), NIGEB, Tehran, Iran (2016–2020)

- Genetic manipulation of Iranian duckweed ecotypes to express synthetic human immunogens.
- Developed edible recombinant platforms and optimized gene transformation in plant and microbial systems.
- Conducted antigen design and expression in eukaryotic and prokaryotic hosts.

Lecturer (Genetics, Molecular Biology, Bioinformatics)

- Alzahra University, Tehran, Iran (2019–2020)
- Payame Noor University, Tehran, Iran (2016)

EDUCATION

Post-Doctorate (Post-Doc), Industrial Biotechnology

Agricultural Biotechnology Department, NIGEB, Tehran, Iran (2016–2020)

Project: Genetic manipulation of Iranian duckweed ecotypes to express synthetic human immunogens.

Ph.D., Bioengineering / Biotechnology

Yildiz Technical University, Istanbul, Turkey (2011–2014) – GPA: 3.93/4

Thesis: Usage of microorganisms as essential macronutrient sources in hydroponic cultivation systems.

M.Sc., Molecular Biology & Genetics

Yildiz Technical University, Istanbul, Turkey (2007–2010) – GPA: 3.59/4

Thesis: Prion protein-coding gene (PRNP) variability in sheep from Turkey and Iran.

B.Sc., Biology – Biotechnology

Istanbul University, Istanbul, Turkey (2001–2005)

Diploma, Iranian High School

Istanbul, Turkey (1996–2000)

PROFESSIONAL & ACADEMIC EXPERIENCE

R&D Director – Maya Milk (2022–2025, Turkey)

- Led and expanded R&D department focused on precision-fermentation-based animal-free milk proteins.
- Implemented structured planning routines and weekly check-ins; increased reliability on deadlines and milestones.
- Oversaw pipelines for recombinant bovine milk proteins and tailored fatty acid profiles mimicking dairy composition.
- Ensured alignment with company strategy and timelines; redirected projects when necessary.

Cell Culture Department Founder & Bioinformatics Supervisor – Genesabz Co. (2020–Present)

- Established cell culture facilities and assays for industrial and research applications.
- Supervised bioinformatics and computational design, including synthetic chimeric antigens.
- Conducted freelance antigen design against *Acinetobacter baumannii* and other bacterial pathogens.

Postdoctoral Researcher – NIGEB, Tehran, Iran (2016–2020)

- Antigen design, transformation, and expression into eukaryotic and prokaryotic model organisms.
- Optimization of edible platforms for gene transformation in Lemnaceae and other plant systems.

Earlier Research Experience (2008–2014)

- Utilization of microorganisms as macronutrient sources in hydroponic greenhouse conditions.
- Gene transformation optimization for various plant systems.
- Genetic analysis of infertility patients and chromosomal abnormality screening.
- Prion genetics in native Iranian and Turkish sheep and goats.
- Maternal lineage and mtDNA variation studies in endangered hawksbill turtles.

SELECTED RESEARCH PROJECTS

- Expression of edible recombinant bovine milk alternative proteins.
- Design and production planning of fatty acid profiles mimicking dairy milk.
- Design of recombinant hyaluronic acid polymers with low molecular weight.
- Design of chimeric peptide/polypeptides for GLP applications.
- Optimization of gene transformation in Lemnaceae and edible platforms.
- Aeroponic Iranian saffron culture (patent registration initiated; first public presentation in 2022).

TEACHING EXPERIENCE

University Teaching

Alzahra University, Tehran, Iran (2019–2020)

- Basic Genetics
- Genetics Laboratory

Payame Noor University, Tehran, Iran (2016–2017)

- Molecular Evolution
- Basic Genetics

Training & Courses Delivered (Industrial / Short Courses)

- Practical Bioinformatics (Genesabz Co., 2020–Present)
- Molecular Docking (Genesabz Co., 2020–Present)
- Molecular Phylogenetics (Genesabz Co., 2020–Present)
- Immunoinformatics (Genesabz Co., 2020–Present)
- Software & Databases Used in Genetics (Yildiz Technical University; Tehran University, 2009)

ORAL PRESENTATIONS & CONFERENCE CONTRIBUTIONS (SELECTED)

- 2024, Talk – From Gene to Plate (Hidden Power of Biotechnology in the Food Industry Devolution), Tehran, Iran.
- 2021, Poster – Generating a Practical Method for Transient & Stable Gene Transformation to Duckweed via *Agrobacterium tumefaciens*, 12th National & 4th International Biotechnology Congress, Tehran, Iran.
- 2020, Oral – DNA Barcoding: An Effective Molecular Tool to Identify Gene Expression Host Organisms, 21st National & 9th International Congress on Biology, Semnan, Iran.
- 2017, Oral – Production & Purification of tPA Protein from Native Plants Grown in Greenhouses, National Congress of Research & Innovation in Biotechnology, Isfahan, Iran.
- Multiple posters and talks on macronutrients by microorganisms, hawksbill turtle genetics, PRNP variability in sheep, miRNAs & cancer, prions, bioinformatics, and chromatin structure (2008–2015).

SCIENTIFIC TRAINING & COURSES (SELECTED)

- Biological Networks, NIGEB, Tehran, Iran (2024)
- Fermentation Workshop, NIGEB, Tehran, Iran (2024)
- Python Programming (2020–2021)
- Human/Cancer Cell Culture Technique & MTT Assay, Geneiran Co. (2019)
- Molecular Dynamics Simulation by Gromacs, Pasteur Institute of Iran (2018)

- Purification & Pharmacopeial Characterization of Recombinant Therapeutic Proteins, Pasteur Institute of Iran (2018)
- Vaccine Design Training Course, Pars Silico Company (2018)
- NGS Practical & Theoretical Course, Gene Iran Laboratory (2016)
- SCNT Cloning in Farm Animals; IVF & IVM practical courses; sperm chromatin analysis (Royan Institute, 2016–2017)

EDITORIAL & REVIEWING ACTIVITIES

Journal Reviewer, The EuroBiotech Journal (2023–Present)

Journal Reviewer, Genetic Engineering and Biosafety Journal (2019–Present)

PROFESSIONAL MEMBERSHIPS

Turkish Proteomics Association (TuPA), 2023–Present

European Biotechnology Thematic Network Association (EBTNA), 2020–Present

PUBLICATIONS (SELECTED PEER-REVIEWED ARTICLES)

- Cytotoxicity Effect of Chitosan-Encapsulated Ricin-Herceptin Immunotoxin Nanoparticles on Breast Cancer Cell Lines, *Current Nanoscience*, 2025.
- The Effect of Culture Conditions and Medium on the In-Vitro Cultivation of Three Species of Duckweed Native to Iran as a Plant with Biotechnological Applications, *Journal of Plant Research (Iranian Journal of Biology)*, 2024.
- Recombinant Production of a Chimeric Protein Containing StxB, Eae, Cfab, and LTB Proteins in Hairy Roots of *Nicotiana tabacum*, *Journal of Applied Biotechnology Reports*, 2024.
- Comparative Genome Analysis of Infectious Human and Domestic Animal Coronaviruses, *Journal of Veterinary Research*, 2023.
- DNA Barcoding and Biomass Accumulation Rates of Native Iranian Duckweed Species for Biotechnological Applications, *Frontiers in Plant Science*, 2022.
- Effects of the Pathological E200K Mutation on Human Prion Protein: A Computational Screening and Molecular Dynamics Approach.
- Combination of Trehalose and Low Boron in the Presence of Decreased Glycerol Improves Post-Thawed Ram Sperm Parameters, *Andrology*, 2021.
- Poly(glycerol sebacate) and Polyhydroxybutyrate Electrospun Nanocomposite Facilitate Osteogenic Differentiation of Mesenchymal Stem Cells, *Journal of Drug Delivery Science and Technology*, 2021.
- Association between rs362746 Polymorphism of RELN and Schizophrenia in Iranian Patients, *Personalized Medicine Journal*, 2021.

- Usage of Microorganisms as Essential Macronutrients Source in Hydroponic Cultivation System, Journal of Biotechnology, Elsevier, 2015.
- Isolation and Characterization of Some Phosphate-Solubilizing Microorganisms from the Rhizosphere, International Journal of Biosciences, 2014.
- Genetic Diversity and Phylogeography of Hawksbill Turtle in the Persian Gulf, Journal of Biodiversity and Environmental Sciences, 2014.
- PRNP Variability in Sheep from Turkey and Iran, Biochemical Genetics, 2011.
- mtDNA Variation of the Critically Endangered Hawksbill Turtle (*Eretmochelys imbricata*) Nesting on Iranian Islands of the Persian Gulf, Genetics and Molecular Research, 2011.

(Full publication list available on request.)

ACADEMIC AWARDS

Best Second Poster Award, International VII. IUGEN Molecular Biology & Genetics Student Winter School, Istanbul University, Istanbul, Turkey (2010).

TECHNICAL SKILLS

Laboratory & Experimental:

Precision fermentation; metabolic engineering; molecular biology; cloning and expression systems (prokaryotic and eukaryotic); protein modeling; recombinant protein expression; cell culture (plant, microbial, mammalian).

Computational & Bioinformatics:

Linux; bioinformatics pipelines; immuno-bioinformatics databases; protein & enzyme engineering tools; metabolic engineering tools; Gromacs molecular dynamics; MATLAB; Python.

Productivity & Data Analysis:

Microsoft Office, scientific data analysis, project planning and tracking (OKRs, milestones).

LANGUAGES

Persian: Native

English: Fluent

Turkish: Fluent

French: Basic (progressing)

CAREER PERSPECTIVE

Motivated to contribute as an R&D leader in a modern, innovative company or research center that values interdisciplinary research, teamwork, and international collaboration. Particularly interested in alternative proteins, precision fermentation, and industrial biotechnology for sustainable food and health solutions.