

# Alisa Khodadadi

Assistant Professor of Medical Biotechnologist

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## Summary

Medical Biotechnologist with research expertise in cancer immunotherapy, multi-epitope vaccine design, immunoinformatics, transcriptomic data analysis, and molecular biotechnology. Experienced in integrating computational biology with experimental validation for vaccine development and targeted drug delivery against colorectal cancer.

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## Education

**PhD** Hamadan University of Medical Sciences, PhD in Medical Biotechnology – Iran

- Dissertation: Design and Development of a Multi-Epitope Vaccine Against Colorectal Cancer: Epitope Identification, In Silico Vaccine Design, Cloning, Vaccine Delivery, and In Vitro Evaluation
- Supervisor: Dr. Meysam Soleimani Badia

**MSc** Hamadan University of Medical Sciences, MSc in Medical Biotechnology – Iran

- Thesis: Effects of let-7e on Migration and Apoptosis of Colorectal Cancer Cells and Its Association with DCLK1
- Supervisor: Dr. Rezvan Najafi

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## Research Experience

**Hamadan University of Medical Sciences**, Graduate Researcher

- Conducted PhD dissertation research on multi-epitope vaccine design against colorectal cancer, spanning epitope prediction to in vitro evaluation
- Developed EGFR-targeted ferritin nanocages for targeted doxorubicin delivery in colorectal cancer models
- Contributed to research on multi-epitope vaccines for SARS, MERS, and COVID-19
- Investigated the regulation of let-7e gene expression and its oncogenic impact on HCT-116 colorectal cancer cells

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## Publications

**Design and in vivo evaluation of a multi-epitope vaccine that suppresses tumour growth in a murine colorectal cancer model** Jan 2025

*Alisa Khodadadi*

(Journal of Drug Targeting)

**Enhancing Chemotherapy for Colorectal Cancer: EGFR-Conjugated Ferritin Nanocages for Targeted Doxorubicin Delivery** Jan 2025

*Alisa Khodadadi*

(Journal of Drug Targeting)

**Nanofabrication Nanotechnology for SARS-CoV-2 Diagnosis** Jan 2022

*Alisa Khodadadi*

**Induction of let-7e Gene Expression Attenuates Oncogenic Phenotype in HCT-116 Colorectal Cancer Cells Through Targeting DCLK1 Regulation** Jan 2019

*Alisa Khodadadi*

(Life Sciences)

**PD-1/PD-L1 Immune Checkpoint: Potential Target for Cancer Therapy** Jan 2019

*Alisa Khodadadi*

(Journal of Cellular Physiology)

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## Skills

**Laboratory Skills:** Cell culture, molecular cloning, PCR, SDS-PAGE, Western blotting, recombinant protein expression and purification, DNA/RNA extraction, gel electrophoresis, animal handling, tumor induction

**Bioinformatics:** Immunoinformatics, GEO and microarray analysis, MODELLER, MOE, R, Python, JavaScript, statistical data analysis

**Languages:** Persian (Native), English (Professional Working Proficiency)

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## Honors and Awards

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### Gold Medal – Japan Design, Idea & Invention Expo (JDIE)

Jan 2022

- Awarded for a laboratory diagnostic kit for cutaneous leishmaniasis

### Silver Medal – 5th China (Shanghai) International Exhibition of Inventions

- Awarded for a laboratory diagnostic kit for cutaneous leishmaniasis

### MSRT English Proficiency Test

- Achieved score of 92/100

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## Patents

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### Syringe with Integrated Mixing Filter – Registered Patent

### Dual-Sided Rotating Distilled Water Reservoir for Injectable Powder Medications – Registered Patent