

Zeinab Ghazvinian



Research Profile

Research faculty member and cell and molecular biology scientist specializing in cancer immunotherapy, natural killer (NK) cell-based therapies, adoptive immune cell therapy, stem cell biology, preclinical cancer models, molecular biomarkers, and translational oncology research. Experienced in leading cellular and molecular research activities, supervising research projects, and coordinating multidisciplinary biomedical studies.

Current Academic Position

Research Faculty Member (Assistant Professor)
Department of Cellular and Molecular Biology
Research Institute for Gastroenterology and Liver Diseases
Shahid Beheshti University of Medical Sciences, Tehran, Iran
Head of Cellular and Molecular Department / Research Group Supervisor

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Research Interests

- Cancer immunotherapy and immune cell-based therapies.
- Natural killer (NK) cell biology, expansion, engineering, and therapeutic applications.
- Chemo-immunotherapy approaches in solid tumors.
- Adoptive cell therapy and preclinical cancer models.
- Stem cell biology, extracellular vesicles, and regenerative medicine.
- Identification and validation of molecular biomarkers for cancer diagnosis, prognosis, and treatment response.
- Translational oncology integrating experimental and computational approaches.

Education

- PhD in Applied Cell Science, Tehran University of Medical Sciences (2016–2022). Thesis: Chemo-immune cell therapy by administration of natural killer cells isolated from human peripheral blood in combination with Xeloda in a gastric cancer xenograft model.
- MSc in Laboratory Hematology and Blood Banking, Tarbiat Modares University (2011–2013). Thesis: The role of TGF- β in the in vitro differentiation of cord blood stem cells to osteoclasts with myeloma cell line co-culture.
- BSc in Laboratory Sciences, Tehran University of Medical Sciences (2007–2009).
- Associate Degree in Laboratory Sciences, Shahid Beheshti University of Medical Sciences (2004–2006).

Core Research Expertise

- Isolation, expansion, characterization, and functional evaluation of natural killer cells.
- Adoptive immune cell therapy, chemo-immunotherapy, and cancer immunotherapy.
- Preclinical cancer studies using nude and NOG mouse xenograft models.
- Stem cell isolation and characterization.
- Exosome isolation and characterization.
- Molecular biology techniques, including Real-time PCR, Western blot, immunohistochemistry, and flow cytometry.

Professional Experience

- Research Faculty Member (Assistant Professor) and Head of Cellular and Molecular Department / Research Group Supervisor, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences (March 2025–Present).
- Teaching Assistant, School of Medical Sciences, Islamic Azad University, Tehran (2013–2015).
- Teaching Assistant in Cell Culture and Stem Cell Isolation, School of Advanced Technologies in Medicine, Tehran University of Medical Sciences.
- Medical Laboratory Training Course, Shariati Hospital (2011–2013).

Research Projects and Scientific Activities

- Therapeutic effect of adaptively transferred TM4SF5-specific cytotoxic T cells in mouse models of colon cancer and hepatocellular carcinoma (NIMAD).
- Combining adoptive CISH-downregulated NK cell therapy with Bortezomib in hepatic and pancreatic cancer xenograft models.
- Preclinical study of NK cell therapy combined with metronomic Xeloda and anti-PD-1 antibody in gastric cancer xenograft models.
- Investigating chemo-immunotherapy combination strategies in advanced melanoma mouse models (INSF).
- Comparison of first-line chemotherapeutic agents for advanced melanoma in the induction of NKG2D ligands and the combination of selected agents with NK-92 cells in A375 melanoma cells.
- Investigation of Meloxicam and Celecoxib effects on PPAR- γ expression and inflammatory pathways in NAFLD cell models.
- Investigation of the effect of chiral carbon quantum dots on 5-fluorouracil release in MKN45 gastric cancer cells.
- Computational identification and experimental validation of ion transport-related genes in pancreatic cancer prognosis and immunotherapy responsiveness.

- Identification and laboratory validation of blood-specific biomarkers in patients with pancreatic cancer using gene expression profiling and machine learning techniques.
- Bioinformatic identification and experimental validation of NETosis regulator-based biomarker panels in pancreatic cancer.

Selected Publications

- Novel combination of mesenchymal stem cell-conditioned medium with sorafenib has synergistic antitumor effect in hepatocellular carcinoma cells. Asian Pacific Journal of Cancer Prevention (2019).
- Perspective of placenta-derived mesenchymal stem cells in acute liver failure. Cell & Bioscience (2020).
- Adaptive NK Cell Therapy Modulated by Anti-PD-1 Antibody in Gastric Cancer Model. Frontiers in Pharmacology (2021).
- Chemo-immune cell therapy by intratumoral injection of adoptive NK cells with capecitabine in gastric cancer xenograft model. BioImpacts (2022).
- Patient-derived xenograft models, applications, and challenges in cancer research. Journal of Translational Medicine (2022).
- Modification of Extracellular Vesicle Surfaces: An Approach for Targeted Drug Delivery. BioDrugs (2023).
- Contribution of Natural Killer Cells in Innate Immunity against Colorectal Cancer. Frontiers in Oncology (2023).
- Natural killer cell therapy in hepatocellular carcinoma: a comprehensive review. Discover Oncology (2025).

Workshops and Certifications

- Principles of Working with Laboratory Animals, NIMAD (2022).
- Exosome Isolation and Characterization.
- Systems Biology in Precision Medicine (70 hours), Shahid Beheshti University of Medical Sciences (2022).
- PCR, Real-Time PCR, Primer and Probe Design.