



Mohammad Reza Rahimi

Medical Microbiology Researcher & Laboratory Scientist

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Scientific Profiles

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Languages

Persian: Native

English: Fluent

Spanish: Conversational

Turkish: Conversational

Executive Summary

Dedicated and research-oriented Medical Microbiologist with strong clinical and diagnostic experience. Specializing in antimicrobial resistance (AMR), bacterial biofilms, molecular diagnostics, and the integration of artificial intelligence with clinical microbiology. Proven background in laboratory diagnostics and translational biomedical research.

Education

- **M.Sc. in Medical Microbiology**– Kashan University of Medical Sciences and Health Services | **2018 – 2023**
- **B.Sc. in Medical Laboratory Sciences** –Islamic Azad University | **2014 – 2018**

Key Technical & Laboratory Skills

- **Microbiology:** Microbial Culture & Identification (Advanced), Disk Diffusion, MIC/MBC Determinations, Biofilm Assays.
- **Molecular Biology:** DNA/RNA Extraction, Conventional & Quantitative PCR (qPCR), Primer Design.
- **Diagnostics & Quality Control:** Clinical specimen handling, automated diagnostic platforms, laboratory safety protocols.
- **Bioinformatics & Analytics:** Basic sequence analysis, biomedical data visualization, and statistical modeling.

Research Interests

- **Antimicrobial Resistance (AMR):** Investigating resistance mechanisms in MDR isolates.
- **Nanomaterials & Natural Compounds:** Evaluating antibiofilm and synergistic properties.
- **Molecular Diagnostics:** Developing PCR-based assays for pathogen detection.
- **AI & Computational Microbiology:** Applying machine learning to microbial data analysis.

Publications & Selected Works

1. Effect of combining curcumin nanoparticles and *Hyssopus officinalis* hydroalcoholic extract on the expression of the *ompA* gene associated with multidrug-resistant *Acinetobacter baumannii* biofilm

Journal of Genetic Engineering and Biotechnology

 DOI: [10.1016/j.jgeb.2026.100804](https://doi.org/10.1016/j.jgeb.2026.100804)

2. Multifunctional $\text{Zn}_2\text{Ti}_3\text{O}_8$ nanoparticles: Dual photocatalytic and antibiofilm activity against *Klebsiella pneumoniae*

Inorganic Chemistry Communications

 DOI: [10.1016/j.inoche.2025.115613](https://doi.org/10.1016/j.inoche.2025.115613)

3. Biosynthesis, Characterization, and Antibacterial Activity of Manganese Oxide Nanoparticles Synthesized Using Aqueous Extract of *Eriobotrya japonica* Leaf

ChemistrySelect

 DOI: [10.1002/slct.202500314](https://doi.org/10.1002/slct.202500314)

4. Antimicrobial Effect of Curcumin Nanoparticles and *Ferulago angulata* Boiss Extract Against Methicillin-Resistant *Staphylococcus aureus* (MRSA) Isolated from Wound Infections

BioNanoScience

 DOI: [10.1007/s12668-024-01563-1](https://doi.org/10.1007/s12668-024-01563-1)

5. Effect of curcumin nanoparticles and alcoholic extract of *Falcaria vulgaris* on the growth rate, biofilm, and gene expression in *Pseudomonas aeruginosa* isolated from burn wound infection

Molecular Biology Reports

 DOI: [10.1007/s11033-023-08559-2](https://doi.org/10.1007/s11033-023-08559-2)

6. In silico design and immunoinformatics analysis of a chimeric vaccine construct based on *Salmonella* pathogenesis factors

Microbial Pathogenesis

 DOI: [10.1016/j.micpath.2023.106130](https://doi.org/10.1016/j.micpath.2023.106130)

7. In Vitro Evaluation of Antiviral Activity Effect of Selenium, *Bacillus clausii* Supernatant, and Their Combination on the Replication of *Herpes Simplex Virus 1*

Jundishapur Journal of Microbiology

 DOI: [10.5812/jjm-129848](https://doi.org/10.5812/jjm-129848)

Publications & Selected Works

8. Antimicrobial activity of children's toothpaste on the bacteria causing dental caries

Iranian Journal of Medical Microbiology

DOI: [10.30699/ijmm.16.5.399](https://doi.org/10.30699/ijmm.16.5.399)

9. A systematic review and meta-analysis of urinary tract infection, frequency of IS elements and MDR isolates retrieved from adult patients

Gene Reports

DOI: [10.1016/j.genrep.2020.100707](https://doi.org/10.1016/j.genrep.2020.100707)

10. Prevalence of integrons and antibiotic resistance pattern in *Acinetobacter baumannii* isolated from clinical samples of Iranian patients: A systematic review and meta-analysis

Ethiopian Journal of Health Sciences

DOI: [10.4314/ejhs.v29i5.15](https://doi.org/10.4314/ejhs.v29i5.15)

Books & Educational Monographs

- **Rahimi, M. R.**, et al. (2022). *Urine Analysis at a Glance*. Dara Publications. (In Persian)
- **Rahimi, M. R.**, et al. (2021). *A Journey into the World of Coagulation*. Dara Publications. (In Persian)
- **Rahimi, M. R.**, et al. (2021). *Quick Review of Hematology: Red Blood Cell Disorders*. Dara Publications. (In Persian)
- **Rahimi, M. R.**, et al. (2019). *Staining in the Microbial World*. Dara Publications. (In Persian)

Honors & Awards

- **National Exemplary Student (1st Place):** Awarded by the Ministry of Health and Medical Education, 2018.
- **Selected Candidate:** National Elites Foundation of Iran (Talent Scheme), 2023.
- **Member of Student Talent Committee:** Kashan University of Medical Sciences, 2018–2023.
- **International Peer Reviewer:** *Gene Reports* and other international journals, 2019–2021.
- **Author:** Specialized Medical & Biological Books, Dara Publications, 2018–Present.