

## CURRICULUM VITAE

**Dr Mehrdad Mohammadi, Ph. D**

**Assistant Professor of Medical Bacteriology**

Mehrdad Mohammadi

Date of birth: January, 01/01/1988

Place of birth: Ardabil, Iran

Marital status: Married

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### Education

PhD, in Medical Microbiology, “Kashan University of Medical Sciences,” Kashan, Iran, 2022.

MSc in Medical microbiology, “Isfahan University of Medical Sciences” Isfahan, Iran, 2018.

BSc in Clinical Laboratory Science, “Isfahan University of Medical Sciences” Isfahan, Iran, 2011.

Title of MSc Thesis: Investigation of the relative frequency and genetic diversity of Human Bocavirus and viral infections with 3 RSV and rotavirus in children under three years of age with acute gastrointestinal and respiratory viral infections in Imam Hossein (AS) hospital in Isfahan in 2015-2016

Title of PhD Thesis: Isolation and identification of lytic bacteriophages against carbapenemase producing *Klebsiella pneumoniae* form urban wastewater

## Honour, and Awards

The best student researcher of University, Kashan Univ. Med. Sci., 2019

The best student researcher of the Country, Ministry of Health and Medical Education, 2020

The best student researcher of University, Kashan Univ. Med. Sci., 2021

## Teaching/ Administration Positions

2024- Assistant Professor, Bacteriology and virology department, Medical school, Shiraz University of Medical sciences (SUMS), Shiraz, Iran

## Research interests

My principal research interests lie in the field of Clinical bacteriology, including clinical diagnosis, Quality control. In research field interests lie in phage therapy, bioinformatics, evolutionary molecular phylogenetic of pathogens and drug and vaccine designing. I am currently undertaking some project Including design, inhibitory proteins of antibiotic resistance pathogens.

## Publications (book)

Comprehensive theoretical and practical guide to medical bioinformatics Softwares, Mehrdad Mohammadi, Ali Nazari Alam, Kashan University of Medical Sciences Pub, 2020

Performance, interoperation and Quality Control of Laboratory tests of Medical Microbiology, Mehrdad Mohammadi, Ali Nazari Alam, Kashan University of Medical Sciences Pub, 2021

Blood Biochemistry tests at the clinical laboratory, Mehrdad Mohammadi, Ali Nejadi, Kashan University of Medical Sciences Pub, 2022

## Publications

- 1 Bahrami, N., **Mohammadi, M.**, Sabzi, N. & Ghanei, M. The correlation between quorum sensing genes (pqsR and lasR) in antibiotic resistance of *Pseudomonas aeruginosa* isolated from burned patients. *Archives of Medical Laboratory Sciences* **4** (2018).
- 2 **Mehrdad Mohammadi**, N. B. M. K. J. F. The Occurrence of Type I, II, and III Integrons in Multi-drug Resistance and Methicillin-Resistant *Staphylococcus aureus* Isolates in Iran. *Current Microbiology* **77**, Published-Online (2020).

- 3 **Mohammadi, M.** Acute respiratory infection in Co-infection form of bacteria and virus, human bocavirus with streptococcus pneumoniae: a case report. *International Journal of Infection* **7** (2020).
- 4 **Mohammadi, M.** HBoV-1: virus structure, genomic features, life cycle, pathogenesis, epidemiology, diagnosis and clinical manifestations. *Frontiers in Cellular and Infection Microbiology* **13**, 592 (2023).
- 5 **Mohammadi, M.,** Armin, S. & Piroozmand, A. Molecular detection and phylogenetic analysis of human parechovirus in children with acute gastroenteritis in Iran. *Future Virology* **15**, 783-789 (2020).
- 6 **Mohammadi, M.,** Armin, S. & Yazdanpour, Z. Human bocavirus infections and co-infections with respiratory syncytial virus and Rotavirus in children with acute respiratory or gastrointestinal disease. *Brazilian Journal of Microbiology* **51**, 45-51 (2020).
- 7 **Mohammadi, M. &** Bahrami, N. The Evaluation of Antibiotic Resistance Pattern and Frequency of blaVIM and blaNDM Genes in Isolated Acinetobacter baumannii from Hospitalized Patients in Isfahan and Shahrekord. *Razi Journal of Medical Sciences* **27**, 143-156 (2020).
- 8 **Mohammadi, M. et al.** A review of phenotypic methods for detecting antibiotic resistance induced by carbapenemase enzyme in bacteria isolated from clinical specimens. *medical journal of mashhad university of medical sciences* **65** (2022).
- 9 **Mohammadi, M. &** Faghri, J. Genetic diversity of Staphylocoagulase genes (Coa) among methicillin-resistant Staphylococcus aureus isolates at clinical specimens of blood and urinary infections. *Tehran University Medical Journal* **77**, 208-215 (2019).
- 10 **Mohammadi, M. &** Mehrkesh, M. Evaluation of the prevalence of Rotavirus in children under 3 years with acute gastroenteritis in Isfahan, 2018. *Razi Journal of Medical Sciences* **26**, 79-87 (2019).
- 11 **Mohammadi, M.,** Meskini, M. & do Nascimento Pinto, A. L. 2019 Novel coronavirus (COVID-19) overview. *Journal of public health*, 1-9 (2020).
- 12 **Mohammadi, M. et al.** The role of nanotechnology in overcoming barriers to phage therapy: an overview. *Future Virology* (2023).
- 13 **Mohammadi, M.,** Mirzaei, H. & Motallebi, M. The role of anaerobic bacteria in the development and prevention of colorectal cancer: A review study. *Anaerobe* **73**, 102501 (2022).
- 14 **Mohammadi, M.,** Rajabi, S., Piroozmand, A. & Mirhosseini, S. A. In silico study of pacific oyster antiviral polypeptides as potential inhibitory compounds for SARS-CoV-2 main protease. *Jentashapir Journal of Cellular and Molecular Biology* **11** (2020).
- 15 **Mohammadi, M.,** Sabzi, N., Bahrami, N. & Fathizadeh, H. An Association Between HBoV and Acute Gastroenteritis in a 2-Month-Old Infant: A Case Report. *Thrita* **8** (2019).
- 16 **Mohammadi, M.,** Saffari, M. & Siadat, S. D. Phage therapy of antibiotic-resistant strains of Klebsiella pneumoniae, opportunities and challenges from the past to the future. *Folia Microbiologica*, 1-12 (2023).

- 17 **Mohammadi, M.** *et al.* Isolation, characterization, therapeutic potency, and genomic analysis of a novel bacteriophage vB\_KshKPC-M against carbapenemase-producing *Klebsiella pneumoniae* strains (CRKP) isolated from Ventilator-associated pneumoniae (VAP) infection of COVID-19 patients. *Annals of clinical microbiology and antimicrobials* **22**, 1-25 (2023).
- 18 **Mohammadi, M.**, Sandle, T., Rajabi, S., Khorshidi, A. & Piroozmand, A. Potential Drugs for Treating COVID-19 Infection. *International Journal of Infection* **7** (2020).
- 19 **Mohammadi, M.**, Shayestehpour, M. & Mirzaei, H. The impact of spike mutated variants of SARS-CoV2 [Alpha, Beta, Gamma, Delta, and Lambda] on the efficacy of subunit recombinant vaccines. *Brazilian Journal of Infectious Diseases* **25** (2021).
- 20 **Mohammadi, M.** *et al.* Phylogenetic analysis of human bocavirus in children with acute respiratory infections in Iran. *Acta Microbiologica et Immunologica Hungarica* **66**, 485-497 (2019).
- 21 Nemati, R., Valizadeh, M., **Mohammadi, M.** & Kamali, A. Bioinformatic analysis reveals in common genes between colorectal cancer and recurrent colorectal malignancy. *Gene Reports* **25**, 101375 (2021).
- 22 Salehi, M. *et al.* Assessment of BIV1-CovIran inactivated vaccine-elicited neutralizing antibody against the emerging SARS-CoV-2 variants of concern. *Clinical Microbiology and Infection* **28**, 882-e881 (2022).
- 23 Tafreshi, S. A. H., **Mohammadi, M.** & Rajabi, S. In silico Study of Marine Algae as Potential Inhibitory Compounds with SARS-CoV-2 Main Protease. (2020).
- 24 Yousefi, M., **Mohammadi, M.**, Afshar, D. & Nazari-Alam, A. Evaluation of Frequency, Drug Resistance and Serotyping of *Streptococcus Pneumoniae* in Iran: A Systematic Review. *بایبل پزشکی علوم دانشگاه علمی مجله* **23**, 189-198 (2021).

## Teaching Experiences

Teaching in Diagnostic Laboratory workshops, Kashan University of Medical Sciences, 2022-2023

Teaching in academic research's workshops, Kashan University of Medical Sciences, 2022-2023

Teaching in Molecular Docking workshops, Kashan University of Medical Sciences, 2022-2023

## Innovation, invention, discovery

1. The GenBank accession number of *Klebsiella pneumoniae* bacteriophage in Iran ON489264.2
2. The GenBank accession numbers of Human Bocavirus isolates in Iran, (MH377116.1, MH061315.1, MH605178.1, MH605179.1, MH605180.1, MH687361.1, MH687362.1, MK020416.1, MK020417.1, MK020418.1, MK020419.1, MK020420.1, MH553949.1, MH574941.1)
3. The GenBank accession numbers of Human Parechovirus isolates in Iran (GenBank MN150692-MN150701)

## **Foreign languages**

English, French

## **Skills**

1. Bacterial isolation, biochemical and molecular identification techniques
2. Antibiotic susceptibility test (Disc Diffusion, MIC, Agar Dilution)
3. Carbapenem resistance phenotypic and molecular detection techniques
4. Bacterial Biofilm determination techniques
5. Plaque assay of Phages,
6. Isolation, purification, and titration of the phages
7. Phage concentration and storage
8. Identification of bacteriophage host range
9. Transmission electron microscopy (TEM) to assess phage morphology
10. The stability of phages to pH and temperature , Evaluation of the effect of cationic ions on phage adsorption, The optimal infection multiplication for phage identification,
11. One-step growth assessment
12. Whole phage genome and annotation
13. Phylogenetic analysis
14. Cloning, Western Blot, SDS-PAGE, PCR, Real-time PCR, Primer design, Gel Electrophoresis,
15. Molecular Docking,
16. Whole genome sequence analysis in Phages,
17. Genome sequencing analysis,
18. Diagnostic lab expert in medical labs.
19. Cell culture , ELISA, Direct immunofluorescence (DIF), Indirect immunofluorescence