

# Curriculum Vitae

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**Behrooz Sadeghi-Kalani** (Date of birth: 5 July 1986 )

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## Current Position

- Ph.D. of medical Bacteriology, Iran University of Medical Sciences (IUMS)  
Feb 2015 – Dec 2019
- Thesis: Evaluating the effect of peptide-antisense conjugate on the inhibition of virulence factors expression in *Listeria monocytogenes*

## Education

- **B.Sc in laboratory Science at Shiraz University, Shiraz, Iran.**
  - **M.Sc in Microbiology at Tehran University of Medical Sciences (TUMS)**  
**Thesis :** Typing of *Listeria monocytogenes* based multiple locus variable number tandem Repeat analysis
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## Research Interests

- **Bioinformatics**
- **Toxin antitoxin, persister cell**
- **Bacterial resistance**

- **Bacterial persistence**
  - **Drug discovery, Antisense therapy**
  - **Anaerobic bacteria, Probiotics**
  - **Microaerophilic bacteria**
  - **Crispr cas**
  - **Bacterial epidemiology**
  - **Microbiota**
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## **Skills**

1. DNA Extraction, RNA Extraction, Protein Extraction, cDNA synthesis
2. PCR, RAPD-PCR, ERIC-PCR, RFLP –PCR, MLVA, MLST, HRM, RT-PCR, Q-RT-PCR, ARMS-PCR, PFGE,
3. Electrophoresis, SDS-PAGE, Western blot, Cell Culture, ELISA, Flow cytometry, Chromatography
4. **Bioinformatics:** Genomics and proteomics (blast, primer design, probe design, PNA, antimicrobial peptide, siRNA, Crispr cas9 design, Phylogenetic tree, VNTR, Polymorphism, protein modeling, docking, protein interaction, gene function)
5. **Software:** office (word, powerpoint, excel, SPSS, Graph Pad Prism)

Bionumeric, MEGA 7, Jalview, Bioedit, Gene runner, Genetools, ligplus,  
Autodock, Molegro Virtual Docker, PyMOL, CLC Sequence Viewer 7,  
EndNote X6, Oligo.v7

6. Work with laboratory animals

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**Teaching Assistant:**

1. Teaching Practical bacteriology for Medical students at Iran University of Medical Sciences. (2014-2019)
2. Teaching Practical molecular techniques for M.Sc students at Iran University of Medical Sciences. (2014-2019)
3. Teaching Theoretical molecular techniques for M.Sc students at Iran University of Medical Sciences. (2014-2019)
4. Teaching Theoretical molecular techniques for Ph.D. students at Iran University of Medical Sciences. (2015-2019)
5. Teaching Practical molecular techniques for Ph.D. students at Iran University of Medical Sciences. (2015-2019)
6. Teaching Bioinformatics for M.Sc students at Iran University of Medical Sciences. (2015-2019)
7. Teaching bacteria systematics for M.Sc students at Iran University of Medical Sciences. (2015-2019)

8. Teaching Theoretical bacteria for nursing students at Iran University of Medical Sciences. (2014-2019)
  9. Teaching Theoretical bacteria for Midwifery students at Iran University of Medical Sciences. (2014-2019)
  10. Teaching Theoretical bacteria for Optometry students at Iran University of Medical Sciences. (2014-2019)
  11. Teaching 10 courses of molecular workshops during the years 2015 to 2019
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### **Attended Congress and Schools**

1. 5th International Congress of Laboratory & Clinic ; 15-18 January 2013, Tehran-Iran , presented the article entitled : Evaluation of antibacterial activity alcoholic extract of *crataeguspentagyana* on *pseudomonas pseudomonas aeruginosa* and *staphylococcus aureus* growth inhibition in vitro
2. 5th International Congress of Laboratory & Clinic ; 15-18 January 2013, Tehran-Iran , presented the article entitled : *listeria monocytogenes* as a vector for cancer immunotherapy
3. 6th International Congress of Laboratory & Clinic ; 12-14 February 2014, Tehran-Iran (Participated in the Workshop PCR and primer design)
4. 6th International Congress of Laboratory & Clinic ; 12-14 February 2014, Tehran-Iran (Participated in the Workshop Principles of bioinformatics)

5. 18th International and Iranian Congress of microbiology ; 29-31 August 2017, Tehran, Iran ( Precipitated and presented oral entitling : study of putative type II Toxin-antitoxin system in *S.epidemidis* isolates)
  6. 19th International and Iranian Congress of microbiology; 4-6 September 2018, Tehran, Iran (**Best Oral Presentation** entitling: TRs analysis revealed *Staphylococcus epidermidis* transmission among patients and hospital)
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## Journal Papers

1. Narimisa N, Sadeghi Kalani B, Mohammadzadeh R, Masjedani Jazi F. Combination of Antibiotics—Nisin Reduces the Formation of Persister Cell in *Listeria monocytogenes*. *Microbial Drug Resistance*. 2020.
2. Narimisa N, Kalani BS, Amraei F, Mohammadzadeh R, Mirkalantari S, Razavi S, et al. Type II toxin/antitoxin system genes expression in persister cells of *Klebsiella pneumoniae*. *Reviews in Medical Microbiology*. 2020.
3. Narimisa N, Amraei F, Kalani BS, Mohammadzadeh R, Jazi FM. Effects of sub-inhibitory concentrations of antibiotics and oxidative stress on the expression of type II toxin-antitoxin system genes in *Klebsiella pneumoniae*. *Journal of global antimicrobial resistance*. 2020;21:51-6.
4. Narimisa N, Amraei F, Kalani BS, Azarnezhad A, Jazi FM. Biofilm establishment, biofilm persister cell formation, and relative gene expression analysis of type II toxin-antitoxin system in *Klebsiella pneumoniae*. *Gene Reports*. 2020:100846.
5. Moradkasani S, Kouhsari E, Jazi FM, Kalani BS, Pakzad I. Evaluation of putative toxin-antitoxins systems in clinical *Brucella melitensis* in Iran. *Infectious disorders drug targets*. 2020.
6. Mohammadzadeh R, Shivaee A, Ohadi E, Kalani BS. In silico insight into the dominant type II toxin–antitoxin systems and Clp proteases in *Listeria monocytogenes* and designation of

derived peptides as a novel approach to interfere with this system. *International Journal of Peptide Research and Therapeutics*. 2020;26(1):613-23.

7. Khodaei N, Sadeghi Kalani B, Zamani M, Mohammadzadeh R, Talebi M, Narimani T, et al. Evaluation of the genetic relatedness of *Bacteroides fragilis* isolates by TRs analysis. *Iranian Journal of Basic Medical Sciences*. 2020;23(10):1323-7.

8. Javanmard Z, Kalani BS, Razavi S, Farahani NN, Mohammadzadeh R, Javanmard F, et al. Evaluation of cell-penetrating peptide-peptide nucleic acid effect in the inhibition of cag A in *Helicobacter pylori*. *Acta Microbiologica et Immunologica Hungarica*. 2020;67(1):66-72.

9. Hemmati A, Diba K, Parvin S, Ohadi E, Kalani BS, Lotfollahi L. RAPD PCR and actA based molecular typing of *L. monocytogenes* isolated from human, food and domestic animals in northwest of Iran. *Meta Gene*. 2020:100790.

10. Amraei F, Narimisa N, Mohamadzade R, Lohrasbi V. The expression of type II TA system genes following exposure to the sub-inhibitory concentration of gentamicin and acid stress in *Brucella* spp. *Microbial Pathogenesis*. 2020:104194.

11. Amraei F, Narimisa N. Persister cells formation and expression of type II Toxin-Antitoxin system genes in *Brucella melitensis* (16M) and *Brucella abortus* (B19). *Iranian Journal of Pathology*. 2020;15(2):127.

12. Zamani M, Jazi FM, Kalani BS, Khodaei N. Prevalence of Premature Stop Codons (PMSCs) in *Listeria monocytogenes* isolated from clinical and food samples in Iran. *Gene Reports*. 2019;17:100451.

13. Shivaee A, Mohammadzadeh R, Shahbazi S, Pardakhtchi E, Ohadi E, Kalani BS. Time-variable expression levels of mazF, atlE, sdrH, and bap genes during biofilm formation in *Staphylococcus epidermidis*. *Acta Microbiologica et Immunologica Hungarica*. 2019;66(4):499-508.

14. Shivaee A, Kalani BS, Talebi M, Darban-Sarokhalil D. Does biofilm formation have different pathways in *Staphylococcus aureus*? *Iranian Journal of Basic Medical Sciences*. 2019;22(10):1147.

15. Ohadi E, Khoramrooz SS, Kalani BS, Mirzaii M, Pouriran R, Nasrabadi MRB, et al. Evaluation of high-resolution melting analysis for spa-typing of methicillin-resistant and-susceptible *Staphylococcus aureus* isolates. *New Microbes and New Infections*. 2019;32:100618.

16. Ohadi E, Goudarzi H, Kalani BS, Taherpour A, Shivaee A, Eslami G. Serotyping of *Listeria monocytogenes* Isolates from Women with Spontaneous Abortion Using Polymerase Chain Reaction Method. *Journal of Medical Bacteriology*. 2019;8(3, 4):8-17.
17. Mohammadzadeh R, Kalani BS, Kashanian M, Oshaghi M, Amirmozafari N. Prevalence of vaginolysin, sialidase and phospholipase genes in *Gardnerella vaginalis* isolates between bacterial vaginosis and healthy individuals. *Medical Journal of the Islamic Republic of Iran*. 2019;33:85.
18. Mohammadzadeh R, Azadegan A, Kalani BS. Listeriolysin S may inhibit the anti-listerial properties of *Lactobacillus plantarum*. *Microbial pathogenesis*. 2019;137:103744.
19. Mohammadzadeh N, Kalani BS, Bolori S, Azadegan A, Gholami A, Mohammadzadeh R, et al. Identification of an intestinal microbiota signature associated with hospitalized patients with diarrhea. *Acta Microbiologica et Immunologica Hungarica*. 2019;66(2):189-202.
20. Mirzaei R, Kalani BS, Moghadam MS, Mahdiun F, Irajian G. Multilocus variable number tandem repeat analysis and antimicrobial susceptibility pattern of *Staphylococcus epidermidis* isolates in Tehran, Iran. *Reviews in Medical Microbiology*. 2019;30(2):95-108.
21. Kalani BS, Najafi M, Mohammadzadeh R, Razavi S, Ohadi E, Irajian G. Targeting *Listeria monocytogenes* consensus sequence of internalin genes using an antisense molecule. *Microbial pathogenesis*. 2019;136:103689.
22. Kalani BS, Khodaei F, Moghadampour M, Lotfollahi L, Ohadi E, Foroozeshfard M, et al. TRs analysis revealed *Staphylococcus epidermidis* transmission among patients and hospital. *Ann Ig*. 2019;31:52-61.
23. Hasanvand H, Teymouri F, Ohadi E, Azadegan A, Kalani BS. Biofilm Formation in *Staphylococcus epidermidis* Isolated from Hospitalized Patients. *Archives of Clinical Infectious Diseases*. 2019(In Press).
24. Shivaee A, Mirshekar M, Sadeghi Kalani B, Bordbar D, Ohadi E, Masjedian Jazi F. Evaluation of the Effects of Curcumin Nanoparticles on the Expression of Genes Involved in Biofilm Formation in UPEC. *Infection Epidemiology and Microbiology*. 2018;4(4):115-21.
25. Khodaei F, Kalani BS, Alizadeh N, Hassani A, Najafi M, Kalantar E, et al. Genotyping and phylogenetic analysis of group B *Streptococcus* by multiple locus variable number tandem repeat analysis in Iran. *Galen Medical Journal*. 2018;7:1121.

26. Kalani BS, Irajian G, Lotfollahi L, Abdollahzadeh E, Razavi S. Putative type II toxin-antitoxin systems in *Listeria monocytogenes* isolated from clinical, food, and animal samples in Iran. *Microbial pathogenesis*. 2018;122:19-24.
27. Kalani B, Tahvildar F. Study of MazEF, sam, and phd-doc putative toxin-antitoxin systems in *Staphylococcus epidermidis*. *Acta microbiologica et immunologica Hungarica*. 2018.
28. Gheidar H, Haddadi A, Kalani BS, Amirmozafari N. Nanoparticles impact the expression of the genes involved in biofilm formation in *S. aureus*, a model antimicrobial-resistant species. *Journal of Medical Bacteriology*. 2018;7(3-4):30-41.
29. Ghanavati R, Ohadi E, Kazemian H, Yazdani F, Toriki A, Kalani BS, et al. Evaluation of Fosfomycin Activity Against Extended Spectrum Beta Lactamase (ESBL) Producing Enterobacteriaceae Isolated from Three Centers of Tehran, Iran. *Recent patents on anti-infective drug discovery*. 2018;13(2):180-6.
30. Farahani NN, Jazi FM, Nikmanesh B, Asadolahi P, Kalani BS, Amirmozafari N. Prevalence and antibiotic susceptibility patterns of *Salmonella* and *Shigella* species isolated from pediatric diarrhea in Tehran. *Archives of Pediatric Infectious Diseases*. 2018;6(4).
31. Abdollahzadeh R, Fard MS, Rahmani F, Moloudi K, Azarnezhad A. Predisposing role of vitamin D receptor (VDR) polymorphisms in the development of multiple sclerosis: A case-control study. *Journal of the neurological sciences*. 2016;367:148-51.
32. Kalani BS, Pournajaf A, Sedighi M, Bahador A, Irajian G, Valian F. Genotypic characterization, invasion index and antimicrobial resistance pattern in *Listeria monocytogenes* strains isolated from clinical samples. *Journal of Acute Disease*. 2015;4(2):141-6.
33. Bahador A, Pournajaf A, Neghabi M, Solimany Jelodar R. Typing and Evaluation of the Genetic Relatedness of *Listeria monocytogenes* Strains Isolated from Food Samples by the Multiple-Locus Variable number Tandem Repeat Analysis (MLVA). *Iranian Journal of Medical Microbiology*. 2015;8(4):13-9.
34. Bahador A, Kalani BS, Valian F, Irajian G, Lotfollahi L. Phenotypic and genotypic characteristics of *Listeria monocytogenes* isolated from dairy and meat products. *Avicenna Journal of Clinical Microbiology and Infection*. 2015;2(3):26905-.
35. Rezaeifar A, Eskandari-Nasab E, Moghadampour M, Kharazi-Nejad E, Hasani S-S-A, Asadi-Saghandi A, et al. The association of interleukin-18 promoter polymorphisms and serum



levels with duodenal ulcer, and their correlations with bacterial CagA and VacA virulence factors. *Scandinavian journal of infectious diseases*. 2013;45(8):584-92.

36. Eskandari-Nasab E, Sepanjnia A, Moghadampour M, Hadadi-Fishani M, Rezaeifar A, Asadi-Saghandi A, et al. Circulating levels of interleukin (IL)-12 and IL-13 in *Helicobacter pylori*-infected patients, and their associations with bacterial CagA and VacA virulence factors. *Scandinavian journal of infectious diseases*. 2013;45(5):342-9.

37. Eskandari-Nasab E, Moghadampour M, Hasani SS, Hadadi-fishani M, Mirghanizadeh-Bafghi SA, Asadi-Saghandi A, et al. Relationship between  $\gamma$ -interferon gene polymorphisms and susceptibility to brucellosis infection. *Microbiology and Immunology*. 2013;57(11):785-91.