

Curriculum vitae

MALIHE KERAMATI



Personal information

Name: Malihe Keramati

Date of Birth: 1979

Nationality: Iranian

Native Language: Persian

Address: Pilot of Nano-Biotechnology Department, Pasteur Institute of Iran,
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Education:

2006- 2012 Ph.D.: Pharmaceutical Biotechnology, Pasteur Institute of Iran, Tehran, Iran.

Thesis title: Cloning and expression of streptokinase gene isolated from Iranian streptococci strains: Allelic variation analysis of Streptokinases and enzymatic assessment of the expressed proteins.

Supervisors: Dr. Farzin Roohvand, Dr. Mohammad Mahdi Aslani, Advisors: Dr. Shohreh Khatami, Dr.Mohammad Reza Aghasadeghi.

1997-2002 Pharm.D.: Pharmacy, Faculty of Pharmacy, Kerman University of Medical Sciences, Kerman, Iran.

Thesis title: Formulation of topical cream of Azelaic acid , physicochemical stability tests and in vitro release assay.

Supervisor:Dr. Payam Khazaeli.

Professional Experience:

2013-onwards, Assistant Professor, Pilot of biotechnology department, Pasteur Institute, Tehran, Iran

Awards:

- 1- Winner of Best Paper in 11th Iranian Microbiology congress & 1th East Mediterranean Microbiology Congress (2010).
- 2- Winner of best paper in 7th Pharmacy student's seminar (2001).

Patent:

Production of recombinant Streptokinase from isolated gene of streptococcus group G

Research Projects:

- 1- Principal investigator in "Design and cloning of full length and truncated recombinant forms of SeHAS (*S.equisimilis* Hyaluronan synthase) and evaluation of *in vitro* enzymatic synthesis of hyaluronan oligo- and polysaccharides" Supported by Pasteur institute of Iran
- 2- Principal Investigator in "Production and optimization of culture condition of hyaluronic acid from an Iranian isolate of *S.equisimilis* group G" Supported by Ministry Of Health
- 3- Principal Investigator in "Construction, expression and characterization of wild and mutant forms of S1 subunit of pertussis toxin in E.coli "Supported by Pasteur Institute of Iran.

Advisor of Ph.D thesis:

- 1- Ms. Maryam Rafipour "Construction, Expression and Characterization of Streptokinase Chimers Using Intra/Inter Cluster Allelic Exchange" Medical Biotechnology, Pasteur institute of Iran, onwards.
- 2- Ms. Faegheh Kazemi, "Construction and Expression of Engineered Streptokinase Molecules toward a Thrombolytic Drug with Enhanced Activity" Medical Biotechnology, Pasteur institute of Iran, onwards.
- 3- Ms.Vajihe Sadat Nikbin," Design and construction of live attenuated Bordetella pertussis via mutagenesis in ptx as a nasal vaccine candidate" Medical Microbiology, Pasteur Institute of Iran, onwards.

Supervisor of M.Sc. Theses:

- 1- Ms. Banafsheh Kazemi, "The role of ABC has operon on hyaluronic Acid production by *Streptococcus equisimilis* strains" Microbial Biotechnology M.Sc. Thesis, Islamic Azad University, Damghan Branch, onwards.
- 2- Ms. Fateme Khani," Effects of pH and Glucose concentration on HA production by *Streptococcus equisimilis*" Microbial Biotechnology M.Sc. Thesis, Islamic Azad University, Damghan Branch, onwards.
- 3- Mr. Yashar Hamedani pour, "Study of phenotype and genotype *Streptococcus pneumoniae* for Penicillin and Erythromycin resistance ". Medical Microbiology M.Sc. Thesis, Islamic Azad University, Tehran Branch, Defended , June.2015

- 4- Mr. Bahram Kahali, " Cloning and expression of pertussis toxin and pertactin of Bordetella Pertussis " Microbial Microbiology M.Sc. Thesis, Islamic Azad University, Arak Branch, Defended, Feb.2015
- 5- Mrs. Fariba Goudarzi "Assessment of prevalence and drug resistance of Beta hemolytic streptococcus in high school female students in the district13 of Tehran in 1392, Microbial Microbiology M.Sc. Thesis, Islamic Azad University, Ashkzar Branch, Advisor, Defended ,Oct.2014.

Peer-reviewed Publications:

- 1- Towards A Superior Streptokinase for Fibrinolytic Therapy of Vascular Thrombosis. **Keramati M.**, Arabi Mianroodi R., Memarnejadian A., Mirzaie A., Sazvari S., Aslani M.M., Roohvand F. Cardiovascular & Hematological Agents in Medicinal Chemistry, 2013, 11, 1-12.
- 2- Screening, Cloning and Expression of Active Streptokinase from an Iranian Isolate of S.equisimilis Group C in *E. coli*. **Keramati M.**, Roohvand F., Aslani M.M., Khatami Sh., Aghasadeghi M.R., Sadat M., Memarnejadian A., Motevalli F. Iran J Basic Med Sci, 2013, 16, 620-7.
- 3- Pitfalls in screening streptococci for retrieving superior streptokinase (SK) genes: no activity correlation for streptococcal culture supernatant and recombinant SK. **Keramati M.**, Roohvand F., Aslani M.M., Motevalli F., Khatami Sh., Memarnejadian A. J Ind Microbiol Biotechnol. 2013, 40:151–158
- 4- PCR/RFLP-based allelic variants of streptokinase and their plasminogen activation potencies. **Keramati M.**, Roohvand F., Eslaminejad Z., Mirzaie A., Nikbin V.S., Aslani M.M , FEMS Microbiol Lett . 2012,335, 79–85.
- 5- Comparing susceptibility to bacitracin and PYR test in identification of group A streptococci.Mirzaie,A.,**Keramati,M.**,Roohvand,F.,Eslaminejad,Z.,Nikbin,V.,Aslani,MM, Journal of Biology Science (in Persian) 2009, 10, 65-73.
- 6- Method validation of titration as analytical method for Azelic acid quantification. Khazaeli, P., **Keramati M.**, Saryazdi,S. Journal of Kerman Medical science (in Persian) 2004,2,34-41.

Refereed Short articles published as national Congress Proceedings (with English abstracts):

- 1- Kazemi F., Niknam N., **Keramati M.**, Mohajel N., Roohvand F., Aslani M.M., Arab S.A. Rational site selection for investigation of amino acids interaction by computational studies: streptokinase as a case study . The national conference on protein and peptide science; from basic to medical and industrial application, 10-11 Dec.2014, Shiraz, Iran. Molecular Biology Research Communications 2014;3 (Suppl. 1): 182
- 2- **Keramati M.** Real-time kinetic analysis of macromolecular interaction by using surface plasmon resonance.12th Iranian Congress of Biochemistry & 4th International Congress of Biochemistry and Molecular Biology, Mashhad, Iran, Sep 6-9 Sep. 2011, Clinical Biochemistry, Volume 44, Issue 13, supplement, Sep. 2011, S250
- 3- **Keramati M.**, Roohvand F., Aslani M.M., Agha Sadeghi MR., Khatami Sh., Motavalli F., Memarnejadian A., Mirzaie A. Characterization, isolation and expression of streptokinase from clinical strain streptococci group C in comparison with reference strain. Proceedings of the 7th National Biotechnology Congress of Iran, 12-14 Sep. 2011

Congresses Abstracts:

- 1- Kazemi F., **Keramati M.**, Rafipour M., Arab S.A., Mohajel N., Roohvand F. Design, modeling and expression of engineered molecules of streptokinase. The first international and 9th national biotechnology congress, 24-26 May 2015, Shahid Behashti University, Tehran, Iran
- 2- Kahali B., **Keramati M.**, Shahcheraghi F., Mashhoori M., Rafipour M. Cloning and expression of S1 subunit of Bordetella pertussis in E.coli. The first international and 13th Iranian Genetic Congress, 24-26 May 2014, Tehran, Iran
- 3- Hamedani pour Y., Mousavi SF., **Keramati M.**, Nobari S., Kahali B. Design of Multiplex PCR for study of erythromycin and penicillin resistance gene of Streptococcus pneumonia, The first international and 13th Iranian Genetic Congress, 24-26 May 2014, Tehran, Iran
- 4- Mashhoori M., **Keramati M.**, Shahcheraghi F., Kahali B., Rafipour M. Construction of S1 pertussis toxin mutant gene for induction of homologous recombination in Bordetella pertussis, The first international and 13th Iranian Genetic Congress, 24-26 May 2014, Tehran, Iran
- 5- Mashhoori M., Kahali B., Shahcheraghi F., **Keramati M.** Pertussis: From whole-cell vaccine to intranasal vaccine, The 2th Iranian congress of Medical Bacteriology, 2-4 Oct.2013 , Tehran, Iran

- 6- Sazvari S., **Keramati M.**, Aslani M.M., Motavalli F., Chaichi Nosrati A., Roohvand F., Expression of streptokinase (SK) gene from invasive group A Streptococcus (NZ131): A new gene for recombinant SK production. The 13th Iranian & the Second International Congress of Microbiology, 14-16 June 2012, Ardebil, Iran
- 7- **Keramati M.**, Roohvand F., Aslani M.M., AghaSadeghi M.R., Khatami Sh., Motavalli F., Memarnejadian A. Characterization, isolation and expression of streptokinase from clinical strain streptococci group C in comparison with reference strain. Proceedings of the 7th National Biotechnology Congress of Iran, 12-14 Sept. 2011, Tehran, Iran
- 8- **Keramati M.**, Mirzaei A., Eslaminejad Z., Roohvand F., Aslani MM. Sequence diversity of a-domain of Streptokinase gene in non-invasive group A Streptococci. The first international and 12 Iranian congress of Microbiology, Oral presentation, 23-26 May 2011, Kermanshah, Iran.
- 9- **Keramati, M.**, Aslani, MM., Mirzaie, A., Memarnejadian, A., Motavalli, F., Aghasadeghi, MR., Roohvand, F. Structural diversity of streptokinase and plasminogen activation activity. The 12th Iranian Pharmaceutical Science Congress (IPSC), oral presentation, 2-5 August 2010, Zanjan, Iran.
- 10- **Keramati, M.**, Memarnejadian, A., Aslani, MM., Aghasadeghi, MR., Motevalli, F., Mirzaie, A., Roohvand, F. Comparison of three refolding methods for purified recombinant streptokinase. The 3th Iranian proteomics congress, Pasteur Institute of Iran. 26-27 May 2010, Tehran, Iran
- 11- **Keramati, M.**, Mirzaie, A., Eslaminejad, Z., Nikbin, V., Roohvand, F., Aslani, MM. Cloning, expression and characterization of streptokinase from group G streptococci in E.coli. 11th Iranian Microbiology congress & 1th East Mediterranean Microbiology Congress. 10-13 May 2010, Guilan, Iran.
- 12- **Keramati, M.**, Mirzaie, A., Eslaminejad, Z., Nikbin, V., Roohvand, F., Aslani, MM. High degree of polymorphisms and activity differences in streptokinase of streptococci isolated from Iranian patients. 11th Iranian Microbiology congress & 1th East Mediterranean Microbiology Congress. 10-13 May 2010, Guilan, Iran
- 13- **Keramati, M.** Clinical Application of Metabolomics in Breast Cancer. The 5th International Breast Cancer Congress, 24-26 February 2010, Tehran, Iran
- 14- Mirzaie, A., **Keramati, M.**, Roohvand, F., Eslaminejad, Z., Nikbin, V., Aslani, MM. PCR-RFLP analysis of streptokinase gene in beta-hemolytic streptococci isolates. The 3th Iranian Congress of Clinical Microbiology, 6-8 October 2009, Shiraz, Iran
- 15- **Keramati, M.**, Khazaeli, P., Saryazdi, S. Formulation of Azelaic acid topical cream and in vitro release assay. The 8th Pharmacy Students Seminar, 13-15 March 2002, Kerman, Iran
- 16- **Keramati, M.**, Khazaeli, P., Mirzajani, S. Method Validation for alpha hydroxy acids quantification by chemical titration in organic solvents. The 7th Pharmacy Students Seminar, Nov. 2001, Esfahan, Iran.

Training and workshops attended:

1. Pharma Management "translation of life science into business " an academic program of the Danube University Krems , Faculty of Medicine and Health, 25-28 Nov.2014.
2. The 4th International symposium on molecular technology (Biotechnology in progress) Drug Development and therapeutics, 14-16 Oct.2014, Tehran, Iran
3. Elsevier Author Workshop on "How to write an international article", 29 Oct.2014, Tehran, Iran"Project Management" by Iranian Medical Biotechnology Network, 15 Feb., 2014, Pasteur institute of Iran, Tehran, Iran
4. Culture of murine spleen cells, bone marrow and peritoneal macrophages, Tehran University, 12-13 Oct. 2011, Tehran, Iran
5. "Fundamentals of cell culture" by Academic Center for Education, Iranian biological resource center, 14 Jul.2011, Tehran, Iran
6. "Developing Therapeutic Recombinant Proteins: from cloning to clinic "10-11 May 2011, Pasteur institute of Iran, Tehran, Iran
7. "The first Iranian Venomics Symposium" 23 Dec.2010, Pasteur institute of Iran, Tehran, Iran
8. Practical training course of "DNA SIS MAX, sequence analysis software" 8-9 Aug.2010, Pasteur Institute of Iran, Tehran, Iran
9. "Fermentation" training course, 20-33 Feb.2010, Pasteur Institute of Iran, Tehran, Iran
10. Second International Symposium on molecular technology (Infectious Diseases and Inflammation) 26-28 June, 2007, Shahid Beheshti University, Tehran, Iran
11. The First Workshop on New Generation Vaccines against Tuberculosis: Developing Countries in Post-BCG World, Pasteur Institute of Iran, Research and Production Complex, 27- 28 Dec. 2006, Tehran, Iran
12. The electronic (2 weeks) coursework training Bioinformatics, Tarbiat Modarres University, Nov. 2006, Tehran ,Iran

Teaching Experiences:

- 1- Lecturer in workshop on "Bioinformatics and Primer Design", 14th International Iranian Congress of Microbiology, Tehran, Iran, August 2013
- 2- Quality Control of Biological products (Clean Room Technology) Ph.D. students of Pharmaceutical Biotechnology, Pasteur institute of Iran,2014-2015
- 3- Enzymology (Site Directed Mutagenesis and Protein Engineering)Ph.D. students of Pharmaceutical Biotechnology, Pasteur institute of Iran,2015
- 4- Advanced genetic engineering (Application of enzymes in genetic engineering) Ph.D students of medical Bacteriology Pasteur institute of Iran,2014
- 5- Pharmaceutical Biotechnology (Biological Process Management) Pharm.D students, International branch of faculty of Pharmacy ,Tehran university of Medical Science,2013
- 6- Principal of Standard Procedures (Standards of Microbial control of Biological Products) Ph.D students of Medical Biotechnology, Pasteur Institute of Iran,2015
- 7- Antibiotics and Anti-bacterial Agents ,Ph.D students of Medical Bacteriology and Msc. students of medical Microbiology, Pasteur Institute of Iran,2013-2015
- 8- Physiology of Microorganisms (Structure and function of auto-transporter proteins) Ph.D students of Medical Bacteriology and Msc. students of Medical Microbiology, Pasteur Institute of Iran,2013-2015
- 9- Microbial toxins and enzymes (Experimental course in Microbial Enzymes) Ph.D students of Medical Bacteriology, Pasteur Institute of Iran, Tehran university of Medical Science, Mashhad university of Medical Science, Hamadan University of Medical Science. 2013-2015
- 10- Molecular cell biology (Molecular Mechanism of Replication, Transcription and Translation in Prokaryotes) Msc. Student of Medical Microbiology, Pasteur institute of Iran,2013-2015
- 11- Molecular techniques in Microbial detection (Experimental course in plasmid ,genomic DNA extraction and PCR) Msc. Student of Medical Microbiology, Pasteur institute of Iran,2013

Research Skills:

1. Basic molecular biology and recombinant DNA technology (DNA/RNA extraction, cloning, PCR, RT-PCR, SOE PCR, RFLP, PCR/RFLP, phylogenetic analysis, site directed mutagenesis).
2. Bacterial and Mammalian cell culture techniques
3. Recombinant protein expression and purification
4. Western-blot analysis and Electrophoresis including PAGE and SDS-PAGE.
5. Humoral immune response analysis (ELISA, Cell-ELISA, ...)
6. Polyclonal antibody preparation

Membership of scientific societies:

1. Iranian Biotechnology Society
2. Iranian genetic Society
3. Scientific Association of Pharmacists