




Nasir Mohajel, Pharm.D., Ph.D.

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 [Google Scholar profile](#)

Bio:

I received my Ph.D. in pharmaceutical sciences from Tehran University in 2012, where I worked on gene delivery vectors. I am a researcher in the Department of Molecular Virology at Pasteur Institute of Iran, where I am developing novel gene and drug delivery vectors from self-assembling peptides. I use molecular dynamics simulations and chemoinformatics to build machine learning models to design or predict the behavior of these peptides. I also apply these skills in analyzing patent metadata to generate patent landscapes in technological fields related to pharmaceutical sciences.

Education:

- October 2006 – April 2012
Tehran University of Medical Sciences
Ph.D. in pharmaceutical sciences
- February 2000 - November 2005
Isfahan University of Medical Sciences
Pharm.D.

Experiences:

- March 2013 – Present
Assistant professor, Pasteur Institute of Iran
- September 2013 – Present

Lecturer in Protein formulation for Ph.D. candidates, Pasteur Institute of Iran

- September 2011 - July 2016
Lecturer in physical pharmacy and pharmaceutics for Pharm. D. students, Shahid Sadoughi University of Medical Sciences, Yazd
- March 2008 - April 2012
Research assistant, Tehran University of Medical Sciences
- March 2008 - April 2012
Research assistant, Pasteur Institute of Iran
- October 2006 - June 2007
Teaching assistant, Tehran University of Medical Science

Achievements:

- Ph.D. thesis defense with A grade, Tehran University of Medical Sciences, 2012
- Second rank in board examination, Tehran University of Medical Sciences, 2008
- Pharm.D. thesis defense with A⁺ grade, Isfahan University of Medical Sciences 2006
- Outstanding pharmacy student of the year, Isfahan university of medical sciences, 2005

Skills:

- MD simulation and analysis with GROMACS package
- Data analysis and machine learning using python and R
- Building molecular models in Chemaxon command line tools like Molconvert
- Statistical design and analysis of experiments
- Image analysis with Image J and Fiji
- Polymer synthesis and chemical modification
- Nanoparticulate drug and gene delivery systems delivery systems
- Fluent written and spoken English

Research Projects:

Principal Investigator

- **2019 -2020**
Patent landscape for medical countermeasures against Ebola virus disease

- **2017- Present**
Self-assembly of amphiphilic peptides with DNA, inspired by virus particle formation, for gene delivery

- **2016-2017**
Preparation of national roadmap of research on oncolytic viruses

- **2014- 2015**
Design and construction of synthetic virus like particles with surface functional groups from amphiphilic peptides

Supervisor in PhD thesis

- **2018-present**
Design, construction and evaluation of nano-carrier mediated drug delivery to breast cancer cells using self-assembled amphiphilic peptides
Saeid Zanganeh, Pasteur Institute of Iran

- **2018-present**
Preparation and coating superparamagnetic iron oxide nanoparticles (SPIONs) with zwitterionic amphiphilic peptide and Evaluation of physicochemical and biological properties of modified SPIONs
Marzieh Ferdowsian, Pasteur Institute of Iran

- **2018-present**
Delivery of E6 oncogene silencing shRNA to cervical cancerous cells with self-assembled amphiphilic peptide nanoparticles for apoptosis induction
Razieh Taghizadeh, Pasteur Institute of Iran

Supervisor in Msc thesis

- **2015-2017**

Development of a differential diagnostic method for ebola virus based on suspension array technology

Sanaz Pourmohammad, Tehran University of Medical Sciences

○ **2014-2016**

Simulation of self-assembly behavior of amphiphilic peptides for prediction of critical aggregation concentration

Mehrdad Moradi, Payam Nour University

○ **2014- 2016**

Counting spots in an Elispot test using image analysis techniques

Fatemeh Moezzi, Faculty of Medical Engineering, Amir Kabir University

○ **2014- 2016**

Automatic determination of virus concentration in plaque assays using image analysis methods

Sajedeh Edalatfar, Faculty of Medical Engineering, Amir Kabir University

Advisor in PhD thesis

○ **2015- 2018**

Novel affinity methods for purification of human papillomavirus type 16 VLPs

Arezou Fathabadi, Azad University

○ **2013 – 2018**

Design construction and expression of mutated streptokinase variants to obtain thrombolytic drug with increased activity

Faeghe Kazemi, Pasteur Institute of Iran

○ **2014 – 2017**

Production of a retargeted lentiviral vector to VEGFR2 with nanobodies

Roshanak Ahani, Pasteur Institute of Iran

Ph.D. Thesis

○ **2008-2012**

Preparation and evaluation of inhalable microparticles containing thiolated chitosan pDNA nanocomplexes by spray drying technology

Pharm.D. Thesis:

- **2004-2006**
Diltiazem HCl controlled porosity osmotic pump

Papers:

- Ebola as a case study for the patent landscape of medical countermeasures for emerging infectious diseases
Nasir Mohajel, Arash Arashkia
Nature biotechnology, 2021
DOI: 10.1038/s41587-021-00970-z
- Novel Descriptors Derived from the Aggregation Propensity of Di- and Tripeptides Can Predict the Critical Aggregation Concentration of Longer Peptides
Saeed Zanganeh, Loghman Firoozpour, Soroush Sardari, Ali Afgar, Cohan Cohan, A, Nasir Mohajel
ACS Omega, 2021
DOI: 10.1021/acsomega.1c01293
- Expression and Purification of a Bispecific Antibody against CD16 and Hemagglutinin Neuraminidase (HN) in E. Coli for Cancer Immunotherapy
Mina Bahrololoumi Shapourabadi, Farzin Roohvand, Arash Arashkia, Nasir Mohajel, Shahriyar Abdoli, Zahra Shahosseini, Frank Momburg, Mostafa Jarahian, Mohsen Abolhassani, Kayhan Azadmanesh
Reports of Biochemistry & Molecular Biology, 2020
DOI: 10.29252/rbmb.9.1.50
- Oncolytic adenovirus: A tool for cancer therapy in combination with other therapeutic approaches

Nasser Hashemi Goradel, Nasir Mohajel, Ziba Veisi Malekshahi, Samira Jahangiri, Masoud Najafi, Bagher Farhood, Keywan Mortezaee, Babak Negahdari, Arash Arashkia

Journal of cellular physiology, 2019
DOI: 10.1002/jcp.27850

- Computational simulations assessment of mutations impact on streptokinase (SK) from a group G streptococci with enhanced activity – insights into the functional roles of structural dynamics flexibility of SK and stabilization of SK–μplasmin catalytic complex

Faegheh Kazemi, Seyed Shahriar Arab, Nasir Mohajel, Malihe Keramati, Niloofar Niknam, Mohammad Mehdi Aslani, Farzin Roohvand

Journal of Biomolecular Structure and Dynamics, 2019
DOI: 10.1080/07391102.2018.1472668

- Rotavirus VP6 as a potential vaccine candidate

Atefeh Afchangi, Somayeh Jalilvand, Nasir Mohajel, Sayed Mahdi Marashi, Zabihollah Shoja

Reviews In Medical Virology, 2019
DOI: 10.1002/rmv.2027

- Immunization of Mice by Rotavirus NSP4-VP6 Fusion Protein Elicited Stronger Responses Compared to VP6 Alone

Atefeh Afchangi, Arash Arashkia, Zahra Shahosseini, Somayeh Jalilvand, Sayed Mahdi Marashi, Farzin Roohvand, Nasir Mohajel, Zabihollah Shoja

Viral immunology, 2018
DOI: 10.1089/vim.2017.0075

- Interleukin 20 Gene Polymorphism (rs1518108) is not Associated with Sustained Virological Response in Iranian Patients with Hepatitis C Virus Infection.

Mona S Larijani, Seyed M Sadat, Mehri Nikbin, Nasir Mohajel
Clinical laboratory, 2017

DOI: 10.7754/Clin.Lab.2017.170308

- Merkel cell polyomavirus IgG antibody levels are associated with progression to AIDS among HIV-infected individuals

Rouhollah Vahabpour, Maryam Nasimi, Niloofar Naderi, Mostafa Salehi-Vaziri, Nasir Mohajel, Farzin Sadeghi, Hossein Keyvani, Seyed Hamidreza Monavari

Archives of Virology, 2016

DOI: 10.1007/s00705-016-3186-z

- Sindbis Virus-Pseudotyped Lentiviral Vectors Carrying VEGFR2-Specific Nanobody for Potential Transductional Targeting of Tumor Vasculature

Roshank Ahani, Farzin Roohvand, Reza Ahangari Cohan, Mohammad Hossein Etemadzadeh, Nasir Mohajel, Mahdi Behdani, Zahra Shahosseini, Navid Madani, Kayhan Azadmanesh

Molecular biotechnology, 2016

DOI: 10.1007/s12033-016-9973-7

- Prevalence of Merkel Cell polyomavirus in Tehran: an age-specific serological study

Rouhollah Vahabpour, Mohammad Reza Aghasadeghi, Mostafa Salehi-Vaziri, Nasir Mohajel, Hossein Keyvani, Maryam Nasimi, Maryam Esghaei, Seyed Hamidreza Monavari

Iranian Red Crescent Medical Journal, 2016

DOI: 10.5812/ircmj.26097

- Expression of HCV Alternative Reading Frame Protein (Core+ 1/F) in Baculovirus Expression System and its Evaluation for Assessment of Specific Anti-core+ 1 Antibody in Iranian HCV Infected Patients

Pooneh Rahimi, Rouhollah Vahabpour, Farideh Sadat Sajadian Fard, Fatemeh Motevalli, Fatemeh Fotouhi Chahouki, Mohammad Reza Aghasadeghi, Azam Bolhassani, Seyed Mehdi Sadat, Ehsan Mostafavi, Nasir Mohajel, Ali Jahanian-Najafabadi, Mohammad Reza Amiran

Clinical Laboratory, 2016

DOI: 10.7754/Clin.Lab.2016.160205

- Lack of TNF- α Gene Polymorphism (rs1799724) Association with Sustained Virological Response in Iranian Patients with Chronic HCV Infection

Mona Sadat Larijani¹&, Narges Bahiraei²&, Mehri Nikbin, Nasir Mohajel, Leila Naghizadeh Rad, Fahimeh Baghbani, Maryam Mapar, Seyed Mehdi Sadat

Asian Pacific Journal of Cancer Prevention, 2016

DOI: 10.14456/apjcp.2016.193

- Correlation Study Between IL-28B Gene Polymorphism (rs8099917SNP) and Sustained Virological Response in Iranian Patients with Chronic Hepatitis C

Mona Sadat Larijani, Seyed Mehdi Sadat, Mehri Nikbin, Seyedeh Solmaz Talebi, Foozieh Javadi, Nasir Mohajel, Azam Bolhassani, Mahtab Daneshvar, Mohammad Reza Aghasadeghi, Mohammad Hassan Pouriayevali, Maryam Mapar

Clinical laboratory, 2016

DOI: 10.7754/Clin.Lab.2015.150724

- Diversity of VP7 genes of G1 rotaviruses isolated in Iran, 2009–2013

Somayeh Jalilvand, Atefeh Afchangi, Nasir Mohajel, Farzin Roohvand, Zabihollah Shoja

Infection, Genetics and Evolution, 2015

DOI:10.1016/j.meegid.2015.09.025

- Inhaled sildenafil nanocomposites: lung accumulation and pulmonary pharmacokinetics

Elham Ghasemian, Alireza Vatanara, Mohammad Reza Rouini, Abdolhossein Rouholamini Najafabadi, Kambiz Gilani, Hoda Lavasani, Nasir Mohajel

Pharmaceutical development and technology, 2015,

DOI:10.3109/10837450.2015.1086369

- Expression of a biotin acceptor peptide (BAP)- containing protein with potential of incorporation on the lentiviral envelope as a viral surface engineering platform

Mohammad Hossein Etemadzadeh, Arash Arashkia, Farzin Roohvand, Roshank Ahani, Nasir Mohajel, Dariush Norouzian, Kayhan Azadmanesh
Research in Pharmaceutical Sciences, 2015

- Preparation and evaluation of inhalable itraconazole chitosan based polymeric micelles

Esmail Moazeni, Kambiz Gilani, Abdolhosein R Najafabadi, Mohammad reza Rouini, Nasir Mohajel, Mohsen Amini, MA Barghi.

DARU Journal of Pharmaceutical Sciences 2012
DOI: 10.1186/2008-2231-20-85

- Drying of a plasmid containing formulation: chitosan as a protecting agent.

Nasir Mohajel, abdolhossein R Najafabadi, Kayhan Azadmanesh, Mohsen Amini, Alireza Vatanara, Esmail Moazeni, Amirabbas Rahimi, Kambiz Gilani,

DARU Journal of Pharmaceutical Sciences 2012
DOI: 10.1186/2008-2231-20-29

- Development of chitosan-based nanoparticles for pulmonary delivery of itraconazole as dry powder formulation,

Kambiz Gilani, Esmail Moazeni, Somayeh Jafari-Nejad, Mahmoud Ghazi-Khansari, Abdolhossein Rouholamini Najafabadi, Nasir Mohajel,

Powder Technology, 2012
DOI: 10.1016/j.powtec.2012.01.045

- Optimization of a spray drying process to prepare dry powder microparticles containing plasmid nanocomplex,

Nasir Mohajel, Abdolhossein R Najafabadi, Kayhan Azadmanesh,
Mohsen Amini, Alireza Vatanara, Esmail Moazeni, Amirabbas Rahimi,
Kambiz Gilani,

International Journal of Pharmaceutics, 2012

DOI: 10.1016/j.ijpharm.2011.11.014

Presentations:

- Design and adjuvant formulation of a mutant HPV-E7 protein devoid of transforming/oncogenic properties but retaining high anti-tumor cellular activities as a candidate immunotherapeutic vaccine - Bioinformatics and in vivo analyses

M. Shirazi, M. Navari, Z. Shoja, N. Mohajel, M. Shams Nosrati,

F. Roohvand, A. Arashkia

Cytotherapy, 2020

- Multiplex Detection of Four Potentially Deadly Pathogens With Suspension Array Technology

Sanaz Pourmohammad, Babak Negahdari, Nasir Mohajel, Arash Arashkia

Poster In: 18th international Iranian Congress of Microbiology, Tehran, August, 2017.

- Generation of Merkel Cell Polyomavirus Virus-Like Particles (VLPs) to develop a VLP-based Enzyme-linked Immuno-sorbent Assay (ELISA)

Rouhollah Vahabpour, Seyed Hamid Reza Monavari, Mohammad Reza Aghasadeghi, Hossein Keyvani, Mostafa Salehi-Vaziri, Nasir Mohajel, Mehdi Sadat

Poster In: The 7th Laboratory & Clinic and The 1st Clinical Virology Conferences, Tehran, February 2015.

- Rational site selection for investigation of amino acids interaction by computational studies: Streptokinase as a case study

Faegheh Kazemi, Niloofar Niknam, Malihe Keramati, Nasir Mohajel, Farzin Roohvand, Mohammad Mehdi Aslani, Seyed Shahriar Arab

Poster In: The national conference on protein & peptide sciences: From basic to medical & industrial applications, Shiraz University, December 2014.

- Low molecular weight chitosan as a potential gene vector,

Nasir Mohajel, Kambiz Gilani, Abdolhosein Roholamini, Mohsen Amini, Alireza Vatanara, Esmail Moazeni, Amirabbas Rahimi and Kayhan Azadmanesh.,

Poster In: Nanomedicine Conference, Mashhad Medical University, Mashhad, 2009

- Diltiazem HCl osmotic pump,

Nasrer Tavakoli, Majid Tabbakhian, Nasir Mohajel, Poster

Poster In: Conference of Controlled Release Society, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran 2007

- Diltiazem HCl controlled porosity osmotic pump,

Nasrer Tavakoli, Majid Tabbakhian, Nasir Mohajel,

Oral presentation In: conference of Iranian pharmacy students, Shiraz, 2005