



Curriculum Vitae

Nastaran Barati

Personal Information:

Nastaran Barati, Pharm.D., Ph.D.

Molecular Medicine Research Center

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Educations:

2012-2017: Ph.D. of Pharmaceutical Biotechnology, Faculty of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran.

2004-2010: Pharm D, School of Pharmacy, Jundishapur University of Medical Sciences, Ahvaz, Iran.

1997-2003: Experimental diploma, National Organization for Development of Exceptional Talents, Sampad, Farzanegan, Ahvaz, Iran.

Academic Position:

Assistant Professor of Research and Technology

Molecular Medicine Research Center

Hamadan University of Medical Sciences, Hamadan, Iran. 2018- Now

Research interests:

- ✓ Vaccine Delivery
- ✓ Nanobiotechnology
- ✓ Nanotechnology
- ✓ Phytomedicine
- ✓ Recombinant Proteins
- ✓ Peptide Drug Delivery
- ✓ Phage Therapy
- ✓ Cancer Therapy
- ✓ Cancer Prophylaxis

Publications:

1. Investigating the effect of parasites (toxoplasma gondii RH strain, Leishmania major (MRHO/IR/75/ER), and hydatid cyst) antigens on Alzheimer's disease: An in vivo evaluation, **Nastaran Barati**, Ali Shojaeian, Mahdi Ramezani, Fereshte Kalhori, Salman Zafari, Sara Soleimani Asl, Seyedmousa Motavallihaghi, Experimental Neurology, 2024.
2. The Effect of Melatonin on Increasing the Health Related Quality of Life in Non-Metastatic Breast Cancer Patients: Three-Year Follow up a Clinical Trial, Zahra Keshtpour Amlashi, Fateme Sheida, Robab Anbiaee, Leili Tapak, Seyed Rohallah Hosseini, Hossein Mosaedian, **Nastaran Barati**, Integrative Cancer Therapies, 2024.
3. Association between toxoplasmosis and COVID-19 infection: A cross-sectional study, Ali Ehsan Shahbazi, **Nastaran Barati**, Eissa Soleymani, Pegah Khandan Del, Abolfazl Khandan Del, Nemat Azizi, Mehran Bakhtiari, Seyedmousa Motavallihaghi, Medical Laboratory Journal, 2023.
4. Dimedone nanoparticle as a promising approach against toxoplasmosis: In vitro and in vivo evaluation, Seyedmousa Motavallihaghi, Amir Hossein Maghsood, Davood Nematollahi, **Nastaran Barati**, Sara Soleimani Asl, Abbas Farmani, Faeze Foroughi-Parvar, Mohammad Fallah, Biomedicine & Pharmacotherapy, 2023
5. In vitro anticancer activity of hydatid cyst fluid on colon cancer cell line (C26), Seyedmousa Motavallihaghi, Hamid Tanzadehpanah, Sara Soleimani Asl, Ali Shojaeian, Milad Yousefimashouf, **Nastaran Barati**, Egyptian Journal of Medical Human Genetics. 2023

6. Potential therapeutic effects of Ivermectin in COVID-19, **Nastaran Barati**, Seyedmousa Motavallihaghi, Banafsheh Nikfar, Shahla Chaichian, Amir Abbas Momtazi-Borojeni, *Experimental Biology and Medicine*. 2022
7. Urinary levels of amorphous urate crystals as a biological marker for occupational exposure to crystalline free silica, Ali Poormohammadi, Erfan Ayubi, **Nastaran Barati**, Seyedmousa Motavallihaghi, Effat Sadat Mir Moeini, Fereshteh Mehri, *Journal of Air Pollution and Health*, 2022
8. AE36 HER2/neu-derived peptide linked to positively charged liposomes with CpG-ODN as an effective therapeutic and prophylactic vaccine for breast cancer, **Nastaran Barati**, Amin Reza Nikpoor, Fatemeh Mosaffa, Atefeh Razazan, Ali Badiee, S SeyedMousa Motavallihaghi, Javad Behravan, Mahmoud Reza Jaafari, *Journal of Drug Delivery Science and Technology*. 2022
9. Distribution of Human Cystic Echinococcosis and Genotypes of Hydatid Cyst And Adult Worm of *Echinococcus granulosus* In Iran: A Systematic Review and Meta-Analysis, SEYEDMOUSA Motavallihaghi, Mahdi Fakhar, Manoochehr Karami, **Nastaran Barati**, Pegah Ameri, Khadijeh Rahmati, Mohammad Fallah, *International Journal of Pharmaceutical Research*, 2021.13 (3)
10. Preparation of nanoliposomes containing HER2/neu (P5+ 435) peptide and evaluation of their immune responses and anti-tumoral effects as a prophylactic vaccine against breast cancer, L Naghibi, M Yazdani, AA Momtazi-Borojeni, A Razazan, N Barati, *PLoS One*. 2020 Dec 10; 15(12):1-15
11. Potential therapeutic effects of curcumin in gastric cancer, N Barati, AA Momtazi-Borojeni, M Majeed, A Sahebkar, *Journal of cellular physiology*. 2019 March; 234 (3): 2317-2328
12. Immunogenicity and antitumor activity of the superlytic λ F7 phage nanoparticles displaying a HER2/neu-derived peptide AE37 in a tumor model of BALB/c mice, N Barati, A Razazan, J Nicastro, R Slavcev, A Arab, F Mosaffa, *Cancer letters*. 2018 June 28; 424 (2018): 109-116
13. Nanoliposomes carrying HER2/neu-derived peptide AE36 with CpG-ODN exhibit therapeutic and prophylactic activities in a mice TUBO model of breast cancer, N Barati, AR Nikpoor, A Razazan, F Mosaffa, A Badiee, A Arab, *Immunology letters*. 2017 Oct; 190(1):108-117

14. P435 HER2/neu-derived peptide conjugated to liposomes containing DOPE as an effective prophylactic vaccine formulation for breast cancer, N Farzad, N Barati, AA Momtazi-Borojeni, M Yazdani, A Arab, A Razazan, *Artificial cells, nanomedicine, and biotechnology* 47 (1), 664-672
15. Exosomes: nanoparticulate tools for RNA interference and drug delivery, F Shahabipour, N Barati, TP Johnston, G Derosa, P Maffioli, A Sahebkar. *Journal of cellular physiology*. 2017 July; 232 (7): 1660-1668
16. Biological and pharmacological evaluation of dimethoxycurcumin: A metabolically stable curcumin analogue with a promising therapeutic potential, M Teymouri, N Barati, M Pirro, A Sahebkar, *Journal of cellular physiology*. 2018 Jan; 233(1): 124-140.
17. Development of Solid lipid nanoparticles as Eschar delivery system for Nitrofurazone Using Taguchi Design Approach, MHH Behzad Sharif, Nastaran Barati, Fakher rahim *International Journal of Research in Pharmaceutical Sciences*. 2010 1 (4), 466-472.
18. Renal hydatid cyst; a rare infectious disease, HAM Reza, G Rreza, B Nastaran, MH Mousa, *Oxford medical case reports* 2019 (3), omz011
19. Conjugated nanoliposome with the HER2/neu-derived peptide GP2 as an effective vaccine against breast cancer in mice xenograft model, A Razazan, J Behravan, A Arab, N Barati, L Arabi, Z Gholizadeh, *PloS one*. 2017 Oct 18; 12(10):1-22
20. Lambda bacteriophage nanoparticles displaying GP2, a HER2/neu derived peptide, induce prophylactic and therapeutic activities against TUBO tumor model in mice, A Razazan, J Nicastro, R Slavcev, N Barati, A Arab, F Mosaffa, MR Jaafari, *Scientific reports*. 2019 Feb 9(1): 1-11.
21. The viral approach to breast cancer immunotherapy, A Arab, N Behravan, A Razazan, N Barati, F Mosaffa, J Nicastro, R Slavcev, *Journal of cellular physiology*. 2019 Feb; 234(2): 1257-1267
22. Preparation of nanoliposomes linked to HER2/neu-derived (P5) peptide containing MPL adjuvant as vaccine against breast cancer, S Rastakhiz, M Yazdani, S Shariat, A Arab, N Barati. *Journal of cellular biochemistry*. 2019 Feb; 120(2): 1294-1303
23. Lambda phage nanoparticles displaying HER2-derived E75 peptide induce effective E75-CD8+ T response, A Arab, J Nicastro, R Slavcev, A Razazan, N Barati, AR Nikpoor, *Immunologic research*. 2018 Feb; 66(1): 200-206

24. Cryptosporidium animal species in Iran: a systematic review and meta-analysis, RG Mousa Motavalli Haghi, Zohreh Khorshidvand, Salman Khazaei, N Barati, BioMed Central. 2020 Dec; 48(1):1-15
25. A nano-liposome vaccine carrying E75, a HER-2/neu-derived peptide, exhibits significant antitumour activity in mice, A Arab, J Behravan, A Razazan, Z Gholizadeh, AR Nikpoor, N Barati. Journal of drug targeting. 2018 Apr; 26(4): 365-372

Book:

آشنایی با فرمولاسیون داروهای ترکیبی داروخانه

Congress Presentation:

- Oral presentation in 7th international conference on health, crisis and safety, In vitro and in vivo evaluation of nano dimedone against Toxoplasma gondii in an experimental model of acute toxoplasmosis, Tbilisi, Georgia. 2023.
- Oral presentation in 10th international conference on science & development of nanotechnology, Evaluation the effect of Solid lipid nanoparticles conjugated with cadmium telluride (CdTe) quantum dots loaded with Meglumine Antimoniate and Amphotericin B on Leishmania major parasites in vitro and in vivo, Tbilisi, Georgia. 2023.
- Oral presentation in 7th international conference on health, crisis and safety, Inhibition of liver cancer cell line by hydatid cyst fluid, Tbilisi, Georgia. 2023.
- Oral presentation in 7th international conference on health, crisis and safety, Investigating the effect of aerobic-resistance exercises on P53 gene expression in prostate cancer patients, Tbilisi, Georgia. 2023.
- Oral presentation in 7th international conference on health, crisis and safety, Antitumor activity of E. granulosus cyst fluid on colon cancer cell line, Tbilisi, Georgia. 2023.
- Oral presentation in 7th international conference on health, crisis and safety, Inhibition of growth of B16F10 cancer cell line by B antigen of hydatid cyst, Tbilisi, Georgia. 2023.

- Oral presentation in 10th international conference on science & development of nanotechnology, in vitro and in vivo evaluation of nano dimedone against Leishmania major, Tbilisi, Georgia. 2023
- Oral presentation in 7th international conference on health, crisis and safety, Investigating the effect of exercise on P53 gene expression in breast cancer patients. Tbilisi, Georgia. 2023.
- Poster in 10th international conference on science & development of nanotechnology, comparison of the protective effect of resveratrol nisome and resveratrol on reducing the secondary effects of subacute toxicity with aluminum phosphide (rice tablets) in the liver tissue of male rats, Tbilisi, Georgia. 2023.
- Mini-oral presentation in 14th laboratory and clinical congress. Iran, 2023
- Oral presentation in 10th international conference on science & development of nanotechnology, Toxoplasma gondii Exosomes: Versatile Tools for Understanding Host-Parasite Interactions, Developing Therapeutics, and Modulating Host Immune Responses and Metabolism, Tbilisi, Georgia. 2023.
- Oral presentation in International Nanotechnology congress of Istanbul, Turkey, 2015
- Oral presentation in Nanotechnology congress of Hamadan, Iran 2017
- Poster in Thirteenth Pharmacy Student Seminar of Jundishapour, Ahvaz
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Patent:

- Carrier of fluconazole and benzofuran for treatment of candidiasis (140050140003 • 5560)
- Labeled Lipid nanoparticles of Amphotericin B and Glucantime (140050140003002498)
- Supplement for fast cultivation of Acanthamoeba (140050140003003018)
- Lam fixator for stool exam test (140050140003002924)
- Suppository formulation in hypoglycemic patients (139850140003008486)
- Lip balm with natural color, without parabens (139750140003010121)
- Temperature tank and nanoparticle filtering of the sonicator device (140050140003002652)

Honors:

- The owner of the best patent in the 23rd research and technology festival. Hamadan university of medical sciences. **2022**
- Grade 2 researcher in 22th Research festival of Hamadan university of medical sciences, **2021**
- Top researcher in 21th Research festival of Hamadan university of medical sciences, **2020**
- Registering a Technology Company related to the Production of Research Laboratory Materials in the Incubation Center of Hamadan University of Medical Sciences

Teaching experience

- Teaching **Internship** to students of pharmacy, Ghaem Hospital of Mashhad University of medical sciences (2012-2017).

Ongoing projects

- 1) The use of stem cells in the treatment of infertility in Poor ovarian response (POR) patients.
- 2) The use of stem cells in the rate of resumption of menstrual cycles and improvement of premature menopause symptoms in premature ovarian failure (POF) patients.
- 3) Gastrointestinal cancer registry (colorectal-gastric): setting up a biobank and family registry
- 4) Investigating the effect of quercetin/cyclodextrin combination on ovarian tissue; The level of oxidative stress and the expression of cytochrome 450 p genes in the ovaries of polycystic ovary syndrome model rats.
- 5) Antitumor and adjuvant activity of chitosan nanoparticles, IL-12 and crude hydatid cyst antigen, in BALB/c mouse model of breast cancer.
- 6) Antitumor activity of chitosan nanoparticles, IL-12 and SAG1 recombinant antigen of *Toxoplasma gondii* tachyzoite strain RH in mouse model of breast cancer
- 7) Investigating the relationship between the level of oxidative activity of seminal fluid and men's sperm analysis with the frequency of toxoplasmosis
- 8) Gastrointestinal Cancer Registry (colorectal and gastric): Developing Bio-bank and Family Registry

- 9) PVA/Amylose-graft-Gallic acid@Curcumin nanocomposite films: preparation, characterization and evaluation as wound dressing materials
- 10) Inhibition of growth of B16F10 cancer cell line by B antigen of hydatid cyst
- 11) Evaluation of the effect of nanoparticles conjugated with cadmium telluride (CdTe) quantum dots loaded with meglumine antimoniate (glucantime) and amphotericin B on promastigotes and amastigotes of *Leishmania major* parasites in vitro and in vivo
- 12) Evaluation of the effect of hydatid cyst B Antigen on colon cancer cell line
- 13) Evaluation of the effect of liposomal nanoparticles loaded with fluconazole and a new benzofuran derivative on *Candida glabrata* in vitro
- 14) Evaluation of the effect of Ivermectin in treatment of COVID-19
- 15) Comparison of laboratory results related nephropathy in employees of Hamedan Cement Factory with a control group
- 16) Preparation and evaluation of multi epitope peptide encapsulated in PLGA nanoparticles for immunotherapy of colorectal cancer in vitro and in vivo
- 17) In vitro and in vivo evaluation of a new benzofuran derivative against *Toxoplasma gondii* in experimental models of acute toxoplasmosis
- 18) Quality and outcomes in Hamadan cancer surgery: a prospective, international cohort study
- 19) Comparison between the protective effect of niosome of resveratrol and resveratrol on reducing secondary side effects in subacute toxicity with aluminum phosphide (rice tablets) in liver tissue of male rats
- 20) Evaluating the expression levels of NLRP3, IL-18, IL-1 β and Caspase-1 in animal model of neurotoxicity induced by streptozotocin under treatment with crude hydatid cyst antigen
- 21) Evaluation of the effect of *Toxoplasma gondii* antigen on colon cancer cell lines SW948 and SW48
- 22) Evaluation of the effect of solid lipid nanoparticles loaded with amphotericin B and glucantime on *Leishmania major* in vitro

Reviewer of articles:

- Prognostic analysis and risk assessment based on RNA editing in hepatocellular carcinoma

- The assessment of serum and salivary iron, ferritin, and TIBC in women with and without iron deficiency anemia
- Effect of liquorice extract-containing antimicrobial mouthwash on *Helicobacter pylori* in vitro
- Antimicrobial Effect of *Ficus carica* on Nosocomial Bacterial Infections
- The Genetic Basis of Hypertension: An Overview
- Decreased IL-6 and TNF- α ; proteins and metalloproteinase-2,9 levels following cerebral ischemia in cinnamon-treated
- Combined antibacterial activity of cetylpyridinium chloride in the presence of two herbal extracts against *Streptococcus*
- A Drug Utilization Evaluation Study of Intravenous Acetaminophen in Neurology Ward of Teaching Hospital: A Retrospective Single-center Cohort Study
- Comparison of the Effect of Fluoride 0.2% and a Combination Mouthwash (Flavonoid Compounds and Fluoride 0.2%) against *Streptococcus mutans* and *Lactobacillus acidophilus*: In Silico & In Vitro study
- Association of TLR4 Polymorphisms and Febrile Neutropenia in Childhood Acute Lymphoblastic Leukemia

Reviewer of proposals:

1. An evaluation of general practitioners' expectations and concerns toward the enhancement of community pharmacists' role in medication management: the case of Hamedan
2. Evaluation of antibiotic residues in honey: A systematic review and meta-analysis
3. Determination of the aflatoxins using solid phase microextraction by liquid chromatography-mass spectrometry method in food samples
4. Preparation and Assessment of polymeric Wound Dressing Adorned with Green Synthesized Silver Nanoparticles and Ginseng Root Extract.
5. Comparison of aromatherapy with essential oils of Lavender and Rose on nausea and vomiting in patients undergoing chemotherapy
6. Efficacy of Hemoperfusion on the mortality rate of patients with COVID-19 in Malayer Gharazi hospital; case- control study

7. The study of the association between hypophosphatemia and severity of Corona Virus Disease
8. Clinical evaluation of Almond oil (*Prunus dulcis*) for the prevention or improvement of COVID-19
9. Drug Utilization Evaluation of Vancomycin in COVID19 infected patients admitted in Intensive Care Unit, Hamedan Teaching Hospitals.
10. Evaluation of pentoxifylline effects as an adjuvant therapy on clinical improvement and inflammatory markers in diabetic patients with COVID 19
11. Determination oseltamivir resistance level by an H275Y genotyping assay among isolated outbreak and Seasonal Influenza A (H1N1) Viruses in Hamadan Province in 2015/2016
12. Evaluation of narcotic, psychotropic and illegal ingredients in unauthorized obesity and weight loss drugs, available in Hamedan province

Reviewer of patents:

- ✓ Three-channel syringe for multi-drug injections
- ✓ Dark sampler for Light-sensitive experiments
- ✓ Laboratory smear preparation holder

Work Experiences:

- ✓ Department of Research and Technology, Hamadan University of Medical Science from 2018 – now
- ✓ Food and Drug Organization, Ahvaz University of Medical Sciences (2010-2012)
- ✓ Drug Distribution Company, Salamat Pakhsh Hasti (2011-2012)
- ✓ Work in Pharmacy as Technical Assistant (Doctor of Pharmacy) (2010-2021)