

Curriculum Vitae

Personal Information

Name: Hassan Maleki

Date of Birth: September 16, 1988

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Education

- Ph.D. in Medical Nanotechnology, School of Advanced Medical Technologies, Tehran University of Medical Sciences (2015–2020)
- M.Sc. in Medical Nanotechnology, School of Advanced Medical Technologies, Tehran University of Medical Sciences (2011–2014)
- B.Sc. in Operating Room Technology, Tehran University of Medical Sciences (2009–2011)
- Associate Degree in Operating Room Technology, Ilam University of Medical Sciences (2006–2009)

Honors and Awards

- Ranked 1st nationwide in the Ph.D. entrance exam in Medical Nanotechnology, 2015
- Ranked 1st in the Ph.D. comprehensive exam in Medical Nanotechnology, 2017
- Ranked 1st nationwide in the 2nd National Nanotechnology Competition, 2012
- Ranked 8th nationwide in the 5th National Nanotechnology Competition, 2015
- Ranked 1st in the 4th 'Pishro' Nanotechnology Competition, 2016
- Ranked 4th nationwide in the M.Sc. entrance exam in Medical Nanotechnology, 2011
- Ranked 15th nationwide in the Associate-to-Bachelor entrance exam, 2009

Professional Experience

- 20 months of mandatory clinical service in the Operating Room, Imam Khomeini Hospital, Eslamabad-e Gharb
- Teaching and research collaborator in the Department of Medical Nanotechnology, 2018–2020
- Faculty Member, Department of Medical Nanotechnology, School of Pharmacy, Kermanshah University of Medical Sciences (since Dec 2020)

Teaching Experience

- Certified National Instructor of Nanotechnology (Grade A, Nanotechnology Development Headquarters)
- Organizer of educational seminars on nanotechnology for students under the supervision of the National Nanotechnology Initiative
- **Teaching Responsibilities (since December 2020) in the M.Sc. and Ph.D. Educational Program in Medical Nanotechnology:**
 - Nanomedicine I, II
 - Advanced Nanomedicine
 - Introduction to Nanotechnology
 - Fundamentals of Colloidal Systems and Interfaces
 - Medical Information Systems
 - Instrumentation and Analytical Methods for Nanostructures
 - Nanomaterials and Nanostructures
 - Fabrication Methods of Nanostructures
 - Fundamentals of Business in Nanotechnology
 - Principles of Working with Laboratory Animals

Theses

- M.Sc. Thesis: Synthesis and cytotoxicity evaluation of PLGA nanoparticles loaded with methotrexate on human glioblastoma cells
- Ph.D. Dissertation: Co-delivery of etoposide and paclitaxel via PEG-PLGA nanoparticles and evaluation of their antitumor effects on glioblastoma cells (in vitro and in vivo)

Administrative and Executive Activities

- Head of the Department of Medical Nanotechnology, School of Pharmacy, Kermanshah University of Medical Sciences (2024–2025)
- Director of Cultural and Student Affairs, School of Pharmacy, Kermanshah University of Medical Sciences (2024–2025)
- Head of the Student Research Committee, School of Pharmacy, Kermanshah University of Medical Sciences (2023–2024)
- Reviewer for journals: Nanomedicine Research Journal, International Journal of Nanomedicine, Journal of Chemical Engineering and Catalysis, Gels, Pharmaceutics, etc.
- Instructor of GraphPad Prism and OriginPro software

Research field and skills:

- ❖ **Nanotechnology-Enabled Drug Delivery:** Design and fabrication of nanoparticles, nanoemulsions, nanofibers, and hydrogels for controlled and targeted drug delivery.

- ❖ **Cancer Nanomedicine:** Development of multi-drug and phytochemical-loaded nanocarriers; in vitro and in vivo evaluation for glioblastoma, melanoma, breast, colorectal, and skin cancers.
- ❖ **Regenerative Medicine & Wound Healing:** Fabrication of bioactive scaffolds and nanofibrous dressings incorporating natural extracts and antimicrobial nanoparticles; assessment of biocompatibility and healing efficacy.
- ❖ **Neurodegenerative & Metabolic Disorders:** Nanoformulations for Alzheimer's disease, neuropathic pain, and diabetes; electrochemical biosensors for biomarker detection; animal model studies.
- ❖ **Advanced Biomaterials & Biosensing:** Development of smart hydrogels, multi-enzyme immobilization systems, and nanomaterial-based biosensors for biomedical and regenerative applications.

Publications

Peer-Reviewed Journal Articles

1. Kamali M, Dinarvand R, **Maleki H**, Arzani H, Mahdavian P, Nekounam H, Adabi M, Khosravani M. Preparation of imatinib base loaded human serum albumin for application in the treatment of glioblastoma. *RSC Advances*. 2015;5(76):62214-9.
2. Baharifar H, Honarvarfard E, Haji Malek-kheili M, **Maleki H**, Barkhi M, Ghasemzadeh A, Khoshnevisan K. The Potentials and Applications of Cellulose Acetate in biosensor technology. *Nanomedicine Research Journal*. 2017 Dec 1;2(4):216-23.
3. **Maleki H**, Dorkoosh F, Adabi M, Khosravani M, Arzani H, Kamali M. Methotrexate-loaded PLGA nanoparticles: Preparation, characterization and their cytotoxicity effect on human glioblastoma U87MG cells. *Int J Med Nano Res*. 2017;4(1):020.
4. Khoshnevisan K, Daneshpour M, Barkhi M, Gholami M, Samadian H, **Maleki H**. The promising potentials of capped gold nanoparticles for drug delivery systems. *Journal of Drug Targeting*. 2018;26(7):525-32.
5. Khoshnevisan K, **Maleki H**, Samadian H, Shahsavari S, Sarrafzadeh MH, Larijani B, Dorkoosh FA, Haghpanah V, Khorramizadeh MR. Cellulose acetate electrospun nanofibers for drug delivery systems: Applications and recent advances. *Carbohydrate Polymers*. 2018;198:131-41.
6. Khoshnevisan K, **Maleki H**, Honarvarfard E, Baharifar H, Gholami M, Faridbod F, Larijani B, Faridi Majidi R, Khorramizadeh MR. Nanomaterial based electrochemical sensing of the biomarker serotonin: a comprehensive review. *Microchimica Acta*. 2019;186(1):1-21.
7. Khoshnevisan K, **Maleki H**, Samadian H, Doostan M, Khorramizadeh MR. Antibacterial and antioxidant assessment of cellulose acetate/polycaprolactone nanofibrous mats impregnated with propolis. *Int J Biol Macromol*. 2019;140:1260-8.
8. Arzani H, Adabi M, Mosafer J, Dorkoosh F, Khosravani M, **Maleki H**, Nekounam H, Kamali M. Preparation of curcumin-loaded PLGA nanoparticles and investigation of its

cytotoxicity effects on human glioblastoma U87MG cells. *Biointerface Res Appl Chem*. 2019;9(5):4225-31.

9. Khoshnevisan K, Honarvarfard E, Torabi F, **Maleki H**, Baharifar H, Faridbod F, Larijani B, Khorramizadeh MR. Electrochemical detection of serotonin: a new approach. *Clin Chim Acta*. 2020;501:112-9.
10. Samadian H, **Maleki H**, Fathollahi A, Salehi M, Gholizadeh S, Derakhshankhah H, Allahyari Z, Jaymand M. Naturally occurring biological macromolecules-based hydrogels: Potential biomaterials for peripheral nerve regeneration. *Int J Biol Macromol*. 2020;154:795-817.
11. Samadian H, **Maleki H**, Allahyari Z, Jaymand M. Natural polymers-based light-induced hydrogels: Promising biomaterials for biomedical applications. *Coord Chem Rev*. 2020;420:213432.
12. **Maleki H**, Naghibzadeh M, Amani A, Adabi M, Khosravani M. Preparation of paclitaxel and etoposide co-loaded mPEG-PLGA nanoparticles: an investigation with artificial neural network. *J Pharm Innov*. 2021;16(1):11-25.
13. Doostan M, **Maleki H**, Doostan M, Khoshnevisan K, Faridi-Majidi R, Arkan E. Effective antibacterial electrospun cellulose acetate nanofibrous patches containing chitosan/erythromycin nanoparticles. *Int J Biol Macromol*. 2021;168:464-73.
14. Khoshnevisan K, Baharifar H, Torabi F, Sadeghi Afjeh M, **Maleki H**, Honarvarfard E, Mohammadi H, Sajjadi-Jazi SM, Mahmoudi-Kohan S, Faridbod F, Larijani B. Serotonin level as a potent diabetes biomarker based on electrochemical sensing: a new approach in a zebra fish model. *Anal Bioanal Chem*. 2021;413(6):1615-27.
15. **Maleki H**, Najafabadi MRH, Webster TJ, Hadjighassem MR, Sadroddiny E, Ghanbari H, Khosravani M, Adabi M. Effect of Paclitaxel/etoposide co-loaded polymeric nanoparticles on tumor size and survival rate in a rat model of glioblastoma. *Int J Pharm*. 2021;604:120722.
16. Khoshnevisan K, **Maleki H**, Baharifar H. Nanobiocide based-silver nanomaterials upon coronaviruses: approaches for preventing viral infections. *Nanoscale Res Lett*. 2021;16(1):1-9.
17. **Maleki H**, Khoshnevisan K, Sajjadi-Jazi SM, Baharifar H, Doostan M, Khoshnevisan N, Sharifi F. Nanofiber-based systems intended for diabetes. *J Nanobiotechnol*. 2021;19(1):317.
18. Khoshnevisan K, Chehrehgosha M, Conant M, Meftah AM, Baharifar H, Ejtahed HS, Angoorani P, Gholami M, Sharifi F, **Maleki H**, Larijani B. Interactive relationship between Trp metabolites and gut microbiota: The impact on human pathology of disease. *J Appl Microbiol*. 2022.
19. Doostan M, Doostan M, **Maleki H**, Faridi Majidi R, Bagheri F, Ghanbari H. Co-electrospun poly(vinyl alcohol)/poly(ϵ -caprolactone) nanofiber scaffolds containing coffee and *Calendula officinalis* extracts for wound healing applications. *J Bioact Compat Polym*. 2022.
20. Doostan M, Doostan M, Mohammadi P, Khoshnevisan K, **Maleki H**. Wound healing promotion by flaxseed extract-loaded polyvinyl alcohol/chitosan nanofibrous scaffolds. *Int J Biol Macromol*. 2023;228:506-16.

21. Chehrehgosha M, Khoshnevisan K, **Maleki H**, Baharifar H, Meftah AM, Sajjadi-Jazi SM, Sharifi F. A systematic study of nano-based fibrous systems: Diagnostic and therapeutic approaches for dementia control. *Ageing Res Rev.* 2023;101853.
22. **Maleki H**, Azadi H, Yousefpour Y, Doostan M, Doostan M, Farzaei MH. Encapsulation of Ginger Extract in Nanoemulsions: Preparation, Characterization and in vivo Evaluation in Rheumatoid Arthritis. *J Pharm Sci.* 2023.
23. **Maleki H**, Doostan M, Shojaei S, Doostan M, Stamatis H, Gkantzou E, Bonkdar A. Nanofiber-based systems against skin cancers: Therapeutic and protective approaches. *J Drug Deliv Sci Technol.* 2023;82:104367.
24. **Maleki H**, Doostan M, Farzaei MH, Seifi P, Miraghaee S, Doostan M. Achillea wilhelmsii-incorporated chitosan@Eudragit nanoparticles intended for enhanced ulcerative colitis treatment. *AAPS PharmSciTech.* 2023;24(5):112.
25. Saghafi Y, Baharifar H, Najmoddin N, Asefnejad A, **Maleki H**, Sajjadi-Jazi SM, Bonkdar A, Shams F, Khoshnevisan K. Bromelain-and silver nanoparticle-loaded polycaprolactone/chitosan nanofibrous dressings for skin wound healing. *Gels.* 2023;9(8):672.
26. Asgari R, Azami S, Abdolmaleki A, Khazaei M, Sajadi S, **Maleki H**, Bakhtiari M. Does Embryo Transfer in the Blastocyst Stage Increase the Chance of Implantation and Live Birth? *J Kermanshah Univ Med Sci.* 2023;27(4).
27. **Maleki H**, Doostan M, Khoshnevisan K, Baharifar H, Maleki SA, Fatahi MA. Zingiber officinale and thymus vulgaris extracts co-loaded polyvinyl alcohol and chitosan electrospun nanofibers for tackling infection and wound healing promotion. *Heliyon.* 2024;10(1).
28. Safari M, Fakhri S, **Maleki H**, Farzaei MH. Evaluating the anti-neuropathic effects of naringin-loaded chitosan nanocarriers in a murine model of constriction injury. *J Bioact Compat Polym.* 2024;39(1):29-45.
29. Chehrehgosha M, Sharifi A, Meftah AM, **Maleki H**, Sajjadi-Jazi SM, Baharifar H, Khoshnevisan K, Sharifi F. Demographic and biological factors in interrelationships between physical, cognitive, psychological, and social frailty in community-dwelling older adults: Data from the Birjand Longitudinal Aging Study (BLAS). *Maturitas.* 2024;181:107905.
30. Doostan M, **Maleki H**, Khoshnevisan K, Baharifar H, Doostan M, Bahrami S. Accelerating healing of infected wounds with G. glabra extract and curcumin Co-loaded electrospun nanofibrous dressing. *J Biomater Appl.* 2024;39(3):249-65.
31. Valadi M, Doostan M, Khoshnevisan K, Doostan M, **Maleki H**. Enhanced healing of burn wounds by multifunctional alginate-chitosan hydrogel enclosing silymarin and zinc oxide nanoparticles. *Burns.* 2024;50(8):2029-44.
32. Barhaghtalab RH, Aiyelabegan HT, **Maleki H**, Mirzavi F, Navashenaq JG, Abdi F, Ghaffari F, Vakili-Ghartavol R. Recent advances with erythrocytes as therapeutics carriers. *Int J Pharm.* 2024;665:124658.
33. Shojaei S, Doostan M, Mohammadi Motlagh H, Esnaashari SS, **Maleki H**. Development of 5-fluorouracil/etoposide co-loaded electrospun nanofibrous scaffold for localized anti-melanoma therapy. *J Appl Biomater Funct Mater.* 2024;22.

34. Tavallaei O, Doostan M, Khoshnevisan K, Tahmasebi A, **Maleki H**. Wound healing promotion by poly(vinyl alcohol)/chitosan electrospun nanofibrous scaffold loaded with *Achillea wilhelmsii* extract. *Nanomed J*. 2025;12(1).
35. Rastegar A, Baharifar H, Dabir K, **Maleki H**, Gholipour-Kanani A, Mozafari F, Khoshnevisan K. Fabrication and characterization of ZnO nanoparticle-loaded nanofibers for diabetic wound healing applications: an in vivo study. *BioNanoSci*. 2025;15(1):90.
36. Amirian R, Mohammadi Pour P, **Maleki H**, Fakhri S, Asgary S, Farzaei MH, Echeverría J. Evaluating the anti-neuropathic effects of the thymol-loaded nanofibrous scaffold in a rat model of spinal cord injury. *Front Pharmacol*. 2025;16:1507397.
37. Doostan M, Rahmani Azar AO, **Maleki H**. Selenium nanoparticles and paclitaxel co-delivery by a PCL based nanofibrous scaffold to enhance melanoma therapy. *J Biomater Appl*. 2025.
38. **Maleki H**, Aiyelabegan HT, Javadi P, Abdi F, Mirzavi F, Behjani ZZ, Rizvanov AA, Takallu S, Kumar R, Barhaghtalab RH, Hosseinpouri A. Nanotechnology-mediated precision drug delivery strategies for breast cancer treatment. *Biomed Pharmacother*. 2025;188:118224.
39. Hosseini S, Doostan M, Izadi Nazar AH, Vakili-Ghartavol R, **Maleki H**. Biofabricated Hydrogel Composite of Tragacanth Gum and Chitosan Loaded with Copper Oxide Nanoparticles for Enhanced Cutaneous Wound Regeneration. *J Biomed Mater Res B Appl Biomater*. 2025; 113(10).

Book Chapters

- 1) Moossavi S, Fehr K, **Maleki H**, Seyedpour S, Keshavarz-Fathi M, Tabasi F, Heravi M, et al. Prevention of COVID-19: Preventive Strategies for General Population, Healthcare Setting, and Various Professions. In: *Coronavirus Disease-COVID-19*. Springer, Cham; 2021. p. 575-604.
- 2) **Maleki H**, Khoshnevisan K, Baharifar H. Random and Positional Immobilization of Multi-enzyme Systems. In: *Multienzymatic Assemblies*. Humana, New York, NY; 2022. p. 133-150.
- 3) Baharifar H, Khoshnevisan K, **Maleki H**. Compartmentalized Immobilization of Multi-enzyme Systems. In: *Multienzymatic Assemblies*. Humana, New York, NY; 2022. p. 151-162.
- 4) Koshnevisan K, **Maleki H**, Baharifar H. Advancement of Synthetic Biology Strategies for Bioinspired Regenerative Medicine. In: *Principles of Bioinspired and Biomimetic Regenerative Medicine*. Springer Nature Switzerland; 2025. p. 521-553.

Supervised Theses and Approved Research Projects

1. Fabrication of nanofibrous coating containing cerium oxide nanoparticles and azelaic acid and evaluation of its physicochemical and biological properties. (Code: 50005717)

2. Fabrication, optimization, and characterization of clove essential oil nanoemulsion containing quercetin for accelerating diabetic wound healing in animal model. (Code: 50005517)
3. Fabrication and physicochemical analysis of boswellic acid nanoemulsion and evaluation of its anti-Alzheimer activity in animal model. (Code: 50005495)
4. Preparation and physicochemical analysis of liposomes loaded with metformin and quercetin for reducing diabetic symptoms in animal model. (Code: 50005410)
5. Fabrication and characterization of gelatin-based nanofibers loaded with echinacea extract for accelerating diabetic wound healing in animal model. (Code: 4040473)
6. Fabrication and optimization of alginate-based nanofibers loaded with sulfadiazine and *Ferula assa-foetida* extract for accelerating diabetic wound healing in animal model. (Code: 4040454)
7. Processing and physicochemical analysis of chitosan-coated liposomes loaded with morin for effective Alzheimer's treatment in animal model. (Code: 4030793)
8. Fabrication and characterization of alginate-coated chitosan nanoparticles containing morin and evaluation of therapeutic effects in ulcerative colitis animal model. (Code: 4030805)
9. Fabrication and physicochemical analysis of nanoliposome formulation containing morin and evaluation of therapeutic effects in psoriasis animal model. (Code: 4030770)
10. Macroscopic and histopathological evaluation of bay leaf (*Laurus nobilis*) essential oil nanoemulsion on skin wound healing in male rat model. (Code: 50004444)
11. Fabrication and characterization of injectable hydrogel formulation for co-delivery of selenium nanoparticles and carboplatin to locally inhibit breast cancer growth in animal model. (Code: 4030603)
12. Fabrication of injectable hyaluronan-alginate hydrogel containing zinc ferrite nanoparticles and azelaic acid for inhibiting growth and inducing apoptosis in melanoma skin cancer cells. (Code: 4030598)
13. Fabrication of polyvinyl alcohol hydrogel containing cyclodextrin nanosponge loaded with gentisic acid for effective diabetic wound healing in animal model. (Code: 4030601)
14. Fabrication of alginate-based hydrogel containing cyclodextrin nanosponge loaded with curcumin for effective diabetic wound healing in animal model. (Code: 4030602)
15. Fabrication and development of hydrogel wound dressing containing silver sulfadiazine and zinc oxide nanoparticles for severe burn wound treatment. (Code: 50003753)
16. Preparation and analysis of nanofibrous coating containing gentisic acid and evaluation of wound healing in male rat model. (Code: 4040259)
17. In vitro and in vivo evaluation of nanofibrous coating containing ajwain essential oil and silver fir cone extract for antibacterial activity and wound healing. (Code: 4020812)
18. Fabrication and characterization of indomethacin-containing nanoemulgel and evaluation of therapeutic effects in rheumatoid arthritis animal model. (Code: 4020815)
19. Comprehensive evaluation of molecular mechanisms underlying wound healing mediated by phytochemicals. (Code: 4020477)

20. Synthesis and characterization of chitosan nanoparticles containing glycyrrhizic acid and evaluation of therapeutic effects in gastric ulcer animal model. (Code: 4020813)
21. Antibacterial activity and skin biocompatibility evaluation of polyvinyl alcohol/chitosan nanofibers containing salicylic acid and copper oxide nanoparticles. (Code: 4020456)
22. Fabrication and physicochemical analysis of azelaic acid-containing nanofiber and evaluation of antibacterial activity and skin biocompatibility. (Code: 4020452)
23. Fabrication and evaluation of antioxidant, antibacterial, and skin regeneration activity of lemon verbena (*Aloysia citriodora*) essential oil nanoemulsion as an anti-acne formulation. (Code: 4020349)
24. Fabrication and physicochemical evaluation of lavender essential oil (*Lavandula*) nanoemulsion containing azelaic acid for accelerating skin wound healing in animal model. (Code: 4020346)
25. Evaluation of anticancer and anti-invasive effects of fluorouracil- and quercetin-loaded nanofiber/hydrogel coating on melanoma cells. (Code: 4020091)
26. Fabrication and characterization of indirubin-loaded nanofibrous scaffolds and evaluation of their anticancer activity on melanoma cells in vitro. (Code: 4020093)
27. Fabrication, physicochemical characterization, and anticancer effects evaluation of silymarin nanoemulsion on colorectal cancer cells. (Code: 4020090)
28. In vitro evaluation of antibacterial and wound healing effects of tragacanth gum-chitosan hydrogel containing copper oxide nanoparticles. (Code: 4020347)
29. In vitro evaluation of wound healing properties of polyvinyl alcohol/chitosan nanofibers containing *Achillea wilhelmsii* extract. (Code: 4010739)
30. Co-loading of paclitaxel and selenium nanoparticles into nanofibers and in vitro evaluation of their anticancer activity against melanoma cells. (Code: 4010750)
31. Preparation and analysis of polyvinyl alcohol/chitosan nanofibrous wound dressing containing selenium nanoparticles and quercetin for skin wound healing. (Code: 4010353)
32. Synthesis and evaluation of hydroxychloroquine nanoemulsion formulations and their therapeutic effects in rheumatoid arthritis animal model. (Code: 4010359)
33. Fabrication of alginate-chitosan hydrogels containing silymarin and zinc oxide nanoparticles for burn wound healing. (Code: 4010361)
34. Evaluation of wound healing effects of nanofibrous wound dressings containing ginger and thyme extracts on infected wounds. (Code: 4010322)
35. Fabrication of polyvinyl alcohol/chitosan nanofibrous wound dressings containing curcumin and licorice extract for infected wound healing. (Code: 4000789)
36. Evaluation of therapeutic effects of Eudragit-coated chitosan nanoparticles containing *Achillea wilhelmsii* extract in ulcerative colitis animal model. (Code: 4000908)
37. Evaluation of anti-neuropathic effects of chitosan-based naringin nanocarriers in a chronic constriction injury model in rats. (Code: 4000603)
38. Fabrication and characterization of ginger extract-loaded nanoemulsions and evaluation of their therapeutic effects in rheumatoid arthritis animal model. (Code: 4000487)
39. Preparation of polyvinyl alcohol/chitosan scaffolds loaded with 5-fluorouracil and evaluation of cytotoxicity against A-375 cancer cells. (Code: 3011344)

40. Design, fabrication, and physicochemical analysis of inhalable nanocarriers containing memantine and borneol and evaluation of their efficacy in Alzheimer's treatment in animal model. (Code: 990798)