

Mohammad Akrami

Personal Information:

First Name: Mohammad
Surname: Akrami
Sex: Male
Nationality: Iranian
E-mail: m-akrami@sina.tums.ac.ir
Contact number: 0098 64121511



Academic Rank:

- Assistant professor at Pharmaceutical Biomaterials Department, Faculty of Pharmacy, Tehran University of Medical Sciences (TUMS).
- Invited to teach “Introduction to Pharmacy” at Tehran College of Engineering, Chemical Engineering Department (Pharmaceutical Engineering) (2017 ... now).
- Invited to teach “Introduction to Pharmaceutical science” at Alborz campus, Tehran University (2019 ... now).
- Invited to teach "Biocompatibility", "Polymers in Medical engineering" and "Analytical methods in Medicine" in IBUTUMS institute, (2020 ... now).
- Invited to teach “Physicochemical Quality Control of Drugs” at Faculty of Pharmacy, Baqiyatallah university (2019).

Education:

2011-2016 PhD candidate, Department of Pharmaceutical Biomaterials
Faculty of Pharmacy - Tehran University of Medical Sciences. Thesis
title: “Preparation and characterization of peptide functionalized Gold
nanoparticles for breast cancer cell therapy.”

M.Sc., Faculty of Biological Sciences, Tarbiat Modares University,
Tehran, Iran. Thesis title: Plasminogen activation by plasminogen
activators: The role of anti-human plasminogen monoclonal antibodies.

Research Interests:

- 3D pharming and 3D Bioprinting
- Nanoghost Fabrication.
- Microbubble based drug delivery systems.
- Cancer targeting.

Career summary

- R&D Head, SOHA Pharmaceutical Company, 2015-2017.
- R&D Consultant, SOHA Pharmaceutical Company, 2013-2015.
- R&D Expert, SOHA Pharmaceutical Company, 2009-2011.
- QC/Production site Expert, Diagnostic kits, Chemenzyme Company, 2007-2009
- Chairman of the Board, Zist Mavad Pharmed Co. 2017-date
- Member of Productivity Secretariat in Ministry of health. Deputy of education, Ministry of health, 2022
- Member of working group of Entrepreneurship and knowledge-based businesses in medical education, Deputy of education, Ministry of health, 2022
- Secretary and member of working group of Convergence in Advanced Science and Technology, Deputy of education, Ministry of health, 2021-2023.

PROFESSIONAL EXPERIENCES

- Hands-on experience of Pharmaceutical analytical method development.
- Hands-on experience of Pharmaceutical analytical method Validation.
- Hands-on experience of solid and semi-solid pharmaceutical formulation.
- Hands-on experience of diagnostic biochemical kit development by autoanalyzer.
- Hands-on experience of analytical instruments: HPLC, FTIR, Electrophoresis, 3D printing, Electrospinning, Electrospaying, ...
- Hands-on experience of preparation of gold nanoparticles functionalized drug delivery systems.

- Experienced in protein expression, purification and characterization.
- Experienced in cell culture (cancer cell lines).
- Experienced in 3D printing in Pharmaceutical sciences.
- Experienced in Electrospinning

Awards

- Member of selected process, 24th Shahid Motahari Festival, Tehran University of Medical Sciences, 2023.

• **Publications:**

1. **Mohammad Akrami et al**, Evaluation of multilayer coated magnetic nanoparticles as biocompatible curcumin delivery platforms for breast cancer treatment, *RSC Adv.*, **2015**,5, 88096-88107
2. **Mohammad Akrami et al.** Tuning the anticancer activity of a novel pro-apoptotic peptide using gold nanoparticle platforms. *Sci. Rep.* 6, 31030; doi: 10.1038/srep31030 (**2016**).
3. Ali mousavizadeh, Ali Jabbari, **Mohammad Akrami**, Hassan Bardania, Cell targeting peptides as smart ligands for targeting of therapeutic or diagnostic agents: a systematic review, *Colloids and Surfaces B: Biointerfaces*, **2017**, 1;158: 507-517.
4. Navid Aeineh, Fahimeh Salehi, **Mohammad Akrami**, Firouzeh Nemati, Masoumeh Alipour, Milad Ghorbani, Glutathione Conjugated Polyethylenimine on the Surface of Fe₃O₄ Magnetic Nanoparticles as a Theranostic Agent for Targeted and Controlled Curcumin Delivery, *Journal of Biomaterials Science, Polymer Edition*, Tylor & Francis, **2018**; 29(10):1109-1125.
5. Milad Ghorbania, Bahareh Bigdeli, Leili Jalili-baleh, Hadi Baharifar, **Mohammad Akrami**, Sadegh Dehghani, Bahram Goliaei, Amir Amani, Alireza Lotfabadi, Hamid Rashedi, Ismaeil Haririan, Curcumin-lipoic acid conjugate as a promising anticancer agent on the surface of gold-iron oxide nanocomposites: A pH-sensitive targeted drug delivery system for brain cancer theranostics, *European Journal of Pharmaceutical Sciences*, **2018**, 1;114:175-188.
6. A Maleki, K Mansouri, M Mirshahi, AK Pourfatholah, **M Akrami**, The potentials of antiplasminogen monoclonal antibodies in fibrinolytic & angiogenesis system manipulation, , *Tehran University of Medical Sciences* 67 (1), **2009**
7. **M Akrami et al**, The effect of anti-human plasminogen monoclonal antibodies on Glu-plasminogen activation by plasminogen activators, *Tehran University Medical Journal TUMS Publications* 64 (5), 23-33, **2006**.
8. Hassan Bardania Mohsen Alipour, Marzieh Baneshi, Saman Hosseinkhani, Reza Mahmoudi, Ali Jabari Arabzadeh, **Mohammad Akrami**, Jalil Mehrzad, Recent progress in biomedical applications of RGD-Based ligand: From precise cancer theranostics to biomaterial engineering: A systematic review, *Journal of Biomedical Materials Research*, **2019**.
9. Amirnezam Farboudi, Arezo Nouri, Sara Shirinzad, Parsa Sojoudi, Soodabeh Davaran, **Mohammad Akrami**, Mohammad Irani, Synthesis of magnetic gold coated poly (ε-caprolactonediol) based polyurethane/poly(N-isopropylacrylamide)-grafted-chitosan core-shell nanofibers for controlled release of paclitaxel and 5-FU, *International Journal of Biological Macromolecules*, **2019**.
10. Hamid Akbari Javar Saeed Moayedi, Seyed Nasser Ostad, Mehdi Khoobi, **Mohammad Akrami**, Mazda Rad-Malekshahi, Ismaeil Haririan, A coherent rhythm from basic sciences of medicine, pharmacy and engineering, *Journal of Medicine and Cultivation*, Ministry of

Health and Medical Education (MOHME), Deputy of Education, 58-66. **2019**.

11. Hassan Bardania, Reza Mahmoudi, Hamed Bagheri, Zeinab Salehpour, Mohamad Hassan Fouani, Bitra Darabian, Seyed Sajjad Khoramrooz, Ali Mousavizadeh, Majid Kowsari, Seyyed Ebrahim Moosavifard, Gunna Christiansen, Danesh Javeshghani, Mohsen Alipour* and **Mohammad Akrami***, Facile preparation of a novel biogenic silver-loaded Nanofilm with intrinsic anti-bacterial and oxidant scavenging activities for wound healing, *Nature scientific reports* **2020** (10): 6129.
12. **Mohammad Akrami** et al, Potential anticancer activity of a new pro-apoptotic peptide-thioctic acid gold nanoparticle platform **2021**;32(14):145101. doi: 10.1088/1361-6528/abd3cb.
13. Ameer Sabah Sahib Hussein Abdelamir Mohammad, Mowafaq M Ghareeb, **Mohammad Akrami**, Design and characterization of Tacrolimus monohydrate loaded core shell lipid polymer hybrid nanoparticle, *Journal J Complement Med Res.*, 2020 (11), 5, 204-214.
14. M. Hashim, A.A.-J., Rajab, N.A., Tekie, F.S.M., Dinarvand, R., **Akrami, M**, Investigations factors affecting formulation of anastrozole as nanostructured lipid carrier, , *Journal International Journal of Pharmaceutical Research*, **2020** (12) 937-949.
15. Mohammadreza Hasani, Azerbaijan Ehsan Bahmani, Mania Habibi Jouybari, Amir Hassaniazardaryani, Pouya Goleij, **Mohammad Akrami**, Mohammad Irani, Electrospun gold nanorods/graphene oxide loaded-core-shell nanofibers for local delivery of paclitaxel against lung cancer during photo-chemotherapy method, *European Journal of Pharmaceutical Sciences*, 164, 1 September **2021**, 105914.
16. Amirnezam Farboudi, Arezo Nouri, Sara Shirinzad, Parsa Sojoudi, Soodabeh Davaran, **Mohammad Akrami**, Mohammad Irani, Synthesis of magnetic gold coated poly (ϵ -caprolactonediol) based polyurethane/poly(N-isopropylacrylamide)-grafted-chitosan core-shell nanofibers for controlled release of paclitaxel and 5-FU *International journal of biological macromolecules*, 150, **2020**, 1130-1140.
17. I. Haririan Ameer S. Sahib, **M. Akrami**, Shaima'a N. A. Alhammid, Hussein A. Muhammed, Chlorambucil and Quantum Dots Co-Loaded Nanostructured Lipid Carrier for In Vitro Cytotoxicity, *International Journal of Drug Delivery Technology*, IJDDT, 11, ,**2021**
18. Ameer S Sahib, Shaimaa NA Alhammid, **M Akrami**, Hussein A Muhammed, Preparation and In-vitro Hematological Evaluation of Chlorambucil Loaded Lipid Nanoparticles, *International Journal of Drug Delivery Technology* 11 (3), 850-857, **2021**.
19. Amirhossein Farahani, Abbas Zarei-Hanzaki, Hamid Reza Abedi, Ismaeil Haririan, **Mohammad Akrami**, Zeynab Aalipour, Lobat Tayebi, An investigation into the polylactic acid texturization through thermomechanical processing and the improved d33 piezoelectric outcome of the fabricated scaffolds, *Journal of Materials Research and Technology*, 15, **2021**, 6356-6366.
20. Reza Alisani, Navid Rakhshani, Maryam Abolhallaj, Foojan Motevalli, Parvaneh Ghaderi-shekhi Abadi, **Mohammad Akrami**, Mohsen Shahrousvand, Fariborz Sharifian Jazi, Mohammad Irani, Adsorption, and controlled release of doxorubicin from cellulose

- acetate/polyurethane/multi-walled carbon nanotubes composite nanofibers, *Nanotechnology* 33 (15) **2022**, 155102.
21. M Mohammadalizadeh, S Dabirian, **M Akrami**, Z Hesari, SPION based magnetic PLGA nanofibers for neural differentiation of mesenchymal stem cells, *Nanotechnology*, **2022**
 22. Sahar Mohajeri, Saeed Moayedi, Leila Azimi, **Mohammad Akrami**, Mazda Rad-Malekshahi, Mohammad Reza Fazeli, Fatemeh Fallah, Ismaeil Haririan, Nanobiosensor Based on Sugar Code-AuNPs Aggregation: A Key to Opening New Gates in Rapid Diagnosis of Streptococcal Pharyngitis, *Frontiers in Bioengineering and Biotechnology*, **2022**
 23. Parmida Malekzade, Seyed Hossein Hosseini, Mahsa Shahbakhsh, Parviz Shayan, Mohammad Zibaei, Shahram Jamshidi, Elham Rismani, Abdorreza Naser Moghadasi, **Mohammad Akrami**, Fateme Jalousian, Preliminary study of *Toxocara canis* Recombinant C-type Lectin as a suitable antigen for serodiagnosis of human toxocariasis, **2022**
 24. Mohammad Poorhossein, Fatemehsadat Pishbin, Abolghasem Ataie, **Mohammad Akrami**, Designing a multifunctional nanoplatfrom based on PEGylated cobalt ferrite magnetic nanoparticles containing capecitabine for cancer theranostics, *Ceramics International*, **2022**.
 25. Sorour Ramezanpour, Pedram Tavatoni, **Mohammad Akrami***, Mona Navaei-Nigjeh, Pezhman Shiri, Potential wound healing of PLGA Nanoparticles containing a novel L-Carnitine-GHK peptide conjugate, *Journal of Nanomaterials*, Hindawi, **2022**.
 26. Hamid Akbari Javar Saeed Moayedi, Seyed Nasser Ostad, Mehdi Khoobi, **Mohammad Akrami**, Mazda Rad-Malekshahi, Ismaeil Haririan, A coherent rhythm from basic sciences of medicine, pharmacy and engineering, *Journal of Medicine and Cultivation*, Ministry of Health and Medical Education (MOHME), Deputy of Education, 58-66. **2019**.
 27. Maryam Khayati, Hamidreza Kheiri Manjili, Masoud Soleimani, Simzar Hosseinzadeh, **Mohammad Akrami**, Ismaeil Haririan, Seyed Hossein Ahmadi Tafti, Microfluidic synthesis of zoledronic acid loaded chitosan nanoparticles used for osteogenic differentiation of mesenchymal cells, *International Journal of Biological Macromolecules*, **2023**.
 28. Ehsan Bahmani, Babak Faraji Dizaji, Sam Talaei, Shahnaz Koushkbaghi, Hamid Yazdani, Parvaneh Ghaderi-shekhi Abadi, **Mohammad Akrami**, Mohsen Shahrousvand, Fariborz Sharifian Jazi, Mohammad Irani, Fabrication of poly (ϵ -caprolactone)/paclitaxel (core)/chitosan/zein/multi-walled carbon nanotubes/doxorubicin (shell) nanofibers against MCF-7 breast cancer, *Polymers for Advanced Technologies*, **2023**.
 29. Tahmineh Ghahri, Zeinab Salehi, Sareh Aghajanzpour, Mohamadreza Baghabatun Eslaminejad, Niloofar Kalantari, **Mohammad Akrami**, Rassoul Dinarvand, Hae Lin Jang, Mehdi Esfandyari-Manesh, Development of osteon-like scaffold-cell construct by quadruple coaxial extrusion-based 3D bioprinting of nanocomposite hydrogel, *Biomaterials Advances*, **2023**.

30. Amirhossein Farahani, Abbas Zarei-Hanzaki, Hamid Reza Abedi, Sara Daryoush, Zahra Delbari Ragheb, Fatemeh Mianabadi, Sahar Shahparvar, **Mohammad Akrami**, Ebrahim Mostafavi, Hamideh Khanbareh, Farhad R. Silk-Based Biopolymers Promise Extensive Biomedical Applications in Tissue Engineering, Drug Delivery, and BioMEMS, *Journal of Polymers and the Environment*, Springer, **2023**.
31. Hossein Amini, Amin Sokhansanj, **Mohammad Akrami***, Ismaeil Haririan*, Design and Fabrication of a High Performance Microfluidic Chip for Blood Plasma Separation: Modelling and Prediction of System Behaviour via CFD Method, *International journal of Analytical Chemistry*, Hindawi, **2023**.
32. Sama Rastpeiman, Zahra Panahi, **Mohammad Akrami***, Ismaeil Haririan and Maryam Asadi, Facile fabrication of an extended-release tablet of Ticagrelor using three dimensional printing technology, *Journal of Biomedical Materials Research Part A*, Wiley, **2023**.
33. Azin Abdollahi, Zahra Ansari, **Mohammad Akrami***, Ismaeil Haririan, Simin Dashti-Khavidaki, Mohammad Irani, Mojtaba Kamankesh, Emad Ghobadi, Additive manufacturing of an extended-release tablet of tacrolimus, *Materials*, **2023**.
34. Zahra Karami, Jalil Mehrzad*, **Mohammad Akrami*** and Saman Hosseinkhani, Anti-inflammation-based treatment of atherosclerosis using Gliclazide-loaded biomimetic nanoghosts, *Scientific reports*, 13880, **2023**.
35. Maryam Asadi, Zeinab Salehi, **Mohammad Akrami**, Mohammadreza Hosseinpour, Stefan Jockenhövel, Samaneh Ghazanfari, 3D printed pH-responsive tablets containing N-acetylglucosamine-loaded methylcellulose hydrogel for colon drug delivery applications, *International Journal of Pharmaceutics*, 645, **2023**.
36. Hajikhani, Zoha; Haririan, Ismaeil; **Akrami, Mohammad**; Hajikhani, Saba, Nanoarchitectonics of doxycycline-loaded vitamin E–D- α -tocopheryl polyethylene glycol 1000 succinate micelles for ovarian cancer stem cell treatment, *Nanomedicine, Future Medicine*, **2023**.
37. Zahra Karami, Mohammad Akrami*, Jalil Mehrzad, Mehdi Esfandyari-Manesh, Ismaeil Haririan, Saeed Nateghi, An anti-inflammatory Glyburide-loaded nanoghost for atherosclerosis therapy: a red blood cell based bio-mimetic strategy. *Giant*:100206, **2023**.
38. Malekzadeh, Parmida; Hosseini, Seyed Hossein; Jalousian, Fateme; **Akrami, Mohammad**; Nia, Narges Amini, A Comparison Survey on Native and Denaturation Conditions for Solubilization and Purification of *Toxocara canis* C-type Lectin Recombinant Protei, *Journal of Veterinary Research*,78, **2023**.
39. Z Katoli, M Navaei-Nigjeh, S Mirzababaei, H Sabahi, M Baeri, **M Akrami**, Kaveh Roshanbinfar, Felix B Engel, Mohammad Abdollahi, Incorporation of montmorillonite into microfluidics-generated chitosan microfibers enhances neuron-like PC12 cells for application in neural tissue engineering, *Carbohydrate Polymers*, 2024: 342, 122272.
40. MA Zaker, S Ostovar, V Bazargan, **M Akrami**, M Marengo, Z Salehi, Microfluidic synthesis of alginate co-polymeric microgels for enhanced

- protein delivery applications, *Microfluidics and Nanofluidics* 2024: 28 (8), 1-15
41. B Zarei, **M Akrami**, N Rezaei, M Mahdavi, M Kamankesh, I Haririan A doxycycline-loaded microfiber of poly-metformin/PCL for eradicating melanoma stem cells, *International Journal of Pharmaceutics* 2024: 660, 124358.
 42. MH Shahriari, H Salmani, **M Akrami**, Z Salehi, Development of a facile, versatile and scalable fabrication approach of solid, coated, and dissolving microneedle devices for transdermal drug delivery applications, 2024: *Giant* 18, 100284.
 43. Seyyed Mostafa Hojjati, Zeinab Salehi, **Mohammad Akrami**, MRI-Traceable Multifunctional Magnetic Mesoporous Silica Nanoparticles (MMSN) Capped with Graphene Quantum Dots (GQD) as a Theragnostic System in Colorectal Cancer Treatment, *Journal of Drug Delivery Science and Technology*, 2024: 105700.
 44. Mahshid Monavari, Razieh Sohrabi, Hamidreza Motasadizadeh, Yousef Fatahi, Negin Mousavi Ejarestaghi, Miguel Fuentes-Chandia, Aldo Leal-Egana, **Mohammad Akrami**, Shahin Homaeigohar, Levofloxacin loaded poly (ethylene oxide)-chitosan/quercetin loaded poly (D, L-lactide-co-glycolide) core-shell electrospun nanofibers for burn wound healing ,*Frontiers in Bioengineering and Biotechnology*, 2024: 12, 1352717.
 45. Tahmineh Karami, Emad Ghobadi, **Mohammad Akrami** and Ismaeil Haririan, Fabrication of a Controlled-Release Core-Shell Floating Tablet of Ketamine Hydrochloride Using a 3D Printing Technique for Management of Refractory Depressions and Chronic Pain, *Polymers* 2024: 16 (6).
 46. Sama Rastpeiman, Zahra Panahi, **Mohammad Akrami**, Ismaeil Haririan, Maryam Asadi, Facile fabrication of an extended-release tablet of ticagrelor using three dimensional printing technology, *Journal of Biomedical Materials Research Part A*, 2024: 112 (1), 20-30

Selected abstracts

Presentation

- Journal of Thrombosis & Haemostasis, Vol.7, supplement2, 2009.
- 2^{ed} International Peptide Congress, 2015, Novel Anticancer Thiocctic acid Conjugated Pro-apoptotic Peptide.
- 14th, IPSC 2015, A theranostic surface modified SPION for Curcumin delivery and imaging applications

Patents

- 1- Iranian Patent Office, Registered N.: 89615
- 2- Iranian Patent Office, Registered N.: 88747

Ongoing research projects

- More than 30 projects in TUMS
https://isid.research.ac.ir/Mohammad_Akrami
- 10 Projects in collaboration with Tehran University