

Curriculum Vitae

Shima Aliebrahimi



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Birth: 21 Sep. 1985, Tehran, Iran.

Education:

Ph.D., (2012-2017), **Cell and Molecular Biology**, University of Tehran, Tehran, Iran.

M.Sc., (2020-present), **Medical Education**, Smart University of Medical Sciences, Tehran, Iran.

M.Sc., (2008-2011), **Microbiology**, Shahid Beheshti University, Tehran, Iran.

B.Sc., (2004-2007), **Cell and Molecular Biology-Microbiology**, Alzahra University, Tehran, Iran.

Scientific Position:

Assistant Professor (2018-present), Smart University of Medical Sciences (SMUMS)

Executive Position:

Director of faculty affairs since 2024, SMUMS.

Coordinator of the accreditation process of e-learning centers, High Council of Virtual Learning (2018-2023).

Professional Membership:

- Member of the ethics committee of Smart University of Medical Sciences since 2018

- Member of scientific board of the First International Congress of Artificial Intelligence in Medical Sciences, 2023.

Course Teaching:

- Computational Drug Design: Molecular Docking (Short-term course & CME), SMUMS.
- Cell culture, Teacher assistance, Tehran University of Medical Sciences (TUMS) & SMUMS.
- AI application in drug discovery, Workshop, Qazvin University of Medical Sciences & Iranian Bioinformatic Society.

Approved Projects:

- Prediction of inhibitory effect of drug compounds on serine/threonine kinase MNK-1 based on virtual screening (**Principal investigator**), SMUMS, In progress.
- Evaluation of the anticancer effects of chitosan-coated magnetic solid lipid nanoparticles for controlled release of papaverine (**Supervisor, PharmD. thesis**), TUMS, In progress.
- Designing and implementation of visual training for the purpose of non-invasive isolation and primary culture of cells isolated from rat prostate tissue (**co-investigator**), SMUMS, In progress.
- Design, implementation, and evaluation of short-term course of computational drug design: molecular docking (**Principal investigator**), SMUMS, In progress.
- Prediction and repositioning of drug compounds as MNK-1 inhibitor and its effect on the WNT/ β -catenin pathway in ovarian cancer (**Advisor, Ph.D. thesis**), TUMS, In progress.
- Study the cytotoxic effect of papaverine nanoliposome on glioblastoma cells (**Supervisor, PharmD. thesis**), Islamic Azad University, In progress.
- Evaluation of cisplatin and clarithromycin co-treatment on TIMP-1 expression in cisplatin-resistant ovarian cancer cells (**co-investigator**), TUMS, In progress.
- Evaluation of Paclitaxel and Capmatinib co-treatment on expression of genes involved in EMT pathway in 4T1 breast cancer cells (**co-investigator**), TUMS, In progress.
- Evaluation of the anti-apoptotic effects of PEG-functionalized graphene oxide loaded with paclitaxel in the *in vitro* & *in vivo* model of breast cancer (**co-investigator**), TUMS, In progress.

- Evaluation of the effects of hydroalcoholic extract of *Salvia aristata* Aucher ex Benth, the isolated dominant compound and its derivative on induction of apoptosis and inhibition of STAT3 pathway in MDA MB-231 cells (**Advisor, PharmD. thesis**), TUMS, In progress.
- Study of cytotoxicity mechanisms of withaferin A on MKN-45 gastric cancer cells (**Supervisor, PharmD. thesis**), Islamic Azad University, In progress.
- Evaluation of the effect of simultaneous administration of capmatinib and paclitaxel on the expression of genes involved in the EMT pathway in MDA-MB231 breast cancer cells (**Advisor, PharmD. thesis**), TUMS, (2022-2023).
- Evaluation of EJ138 cells stemness properties in co-culture with metastatic and non metastatic derived cancer associated fibroblasts from bladder cancer (**Advisor, PharmD. thesis**), TUMS, (2020-2022).
- Co-treatment effect of paclitaxol & capmatinib on cytotoxic effect in 4T1 breast tumor in mice (**co-investigator**), TUMS, In progress.
- Evaluation the synergic effects of metformin and cisplatin on inhibition of hedgehog pathway, and autophagy in cisplatin resistance ovarian cancer cells (**Advisor, Ph.D. thesis**), TUMS, In progress.
- Assessment of cytotoxicity & genotoxicity of selected pesticides available in Iranian Markets (**co-investigator**), TUMS, (Jan 2021- June 2021)
- Evaluation of single and combined effects of heat stress and titanium dioxide nanoparticles (TiO₂) on DNA in mouse brain in order to predictive model of brain injuries in co-exposure (**co-investigator**), TUMS, (2020-2022).
- Evaluation of invasive potential in gastric cancer cell line MKN-45 resistant to Capecitabine (**co-investigator**), TUMS, In progress.
- Study of Green Tea Polyphenols (GTPs) on MDA-MB-231 & MCF-7 breast cancer stem-like cells (CSC-LCs) in comparison to parent cancer cells (**Advisor, PharmD. thesis**), National Institute for Medical Research Development (NIMAD), (2019-2021).
- Study the inhibitory effect of Statins on c-Met signaling *in silico* & *in vitro* (**co-investigator**), TUMS, (2020-2021).
- Evaluation of c-Met signaling and stemness effects on chemo-resistance of gastric cancer cells (**Advisor, Ph.D. thesis**), TUMS, (2019-2022).
- Evaluation of simvastatin on expression of pluripotency transcription factors of breast cancer cells under hypoxia and normoxia (**co-investigator**), TUMS, (2019-2021).
- Evaluation of iron oxide nanoparticles combined with magnetic hyperthermia and anticancer drug delivery on breast cancer model (**co-investigator**), NIMAD, (2018-2020).

- Study of cytotoxic effect of simvastatin on the CSC MDA-MB-231 cells in normal and hypoxic condition (**co-investigator**), TUMS, (2017-2020).
- Pre-clinical evaluation of thermotherapy with magnetic nanoparticles and alternating magnetic field (AMF) in suppressing proliferation in breast cancer tumor xenograft model in nude mice (**co-investigator**), TUMS, (2016-2020).
- Evaluation of *in vitro* cytotoxicity of plant active agents on pancreatic cancer stem cells based on virtual screening (**co-investigator**), Iran National Science Foundation (INSF), (2015-2017).

Publications:

– Articles

1. Salari Sharif M, Mohseni HS, Khanavi M, Ghadami Sh, Jafarzadeh E, Tavajohi Sh, **Aliebrahimi Sh***, Ostad SN*. Exploring the synergistic effect of sildenafil and green tea polyphenols on breast cancer stem cell-like cells and their parental cells: A potential novel therapeutic approach. *Anti-cancer Agents in Medical Chemistry*, 2024; 24(4):304-15.
2. **Aliebrahimi Sh**, Farnudiyan-Habibi A, Heidari Fatemeh, Amani Amir, Montazeri V, Sabz Andam S, Saber R, Alizadeh AM, Ostad SN. Using Chitosan-Coated Magnetite Nanoparticles as a Drug Carrier for Opioid Delivery Against Breast Cancer, 2024. submitted.
3. Rastegar-Pouyani N, Montazeri V, Marandi N, **Aliebrahimi S**, Andalib M, Jafarzadeh E, Montazeri H, Ostad SN. The impact of Cancer-Associated Fibroblasts on drug resistance, stemness, and epithelial-mesenchymal transition in Bladder Cancer: A comparison between recurrent and non-recurrent patient-derived CAFs. *Cancer Investigation*. 2023:1-6.
4. **Aliebrahimi Sh**, Habibian Sezavar A, Sabet B, Ostad SN, Montazeri V. Primary Culture by Enzymatic Disaggregation. *Journal of Visualized Medicine*, 2023; 5:e0100.
5. Sajjadi Mohri SM, Montazeri V, **Aliebrahimi S**, Abedi A, Zare Dehnavi M, Jamshidzade A, Ostad SN. Anticancer properties of a new platinum (IV) agent on HT1080 cancer stem-like cells: an in vitro study. *Acta Medica Iranica*, 2022;60(12):756-64.
6. Habibi P, Ostad SN, Heydari A, **Aliebrahimi S**, Montazeri V, Rahimi Foroushani A, MonazzamMR, Ghazi-Khansari M, Golbabaei F. Effect of Heat Stress on DNA Damage: A Systematic Literature Review. *International Journal of Biometeorology*, 2022. ;66(11):2147-58.
7. Mohseni HS, Sahebhasagh R, Tavajohi S, Ghahremani MH, Kebriaeezadeh A, **Aliebrahimi S**, Ostad SN. Evaluation of genotoxic and cytotoxic effects of some insecticides used in Iran on murine fibroblast cells (L-929). *Toxicology and Environmental Health Sciences*. 2022;12:1-6.

8. Habibi P, Ostad SN, Monazzam MR, Rahimi Foroushani A, Ghazi-Khansari M, **Aliebrahimi S**, Montazeri V, Golbabaie F. Thermal Stress and TiO₂ Nanoparticle Induced Oxidative DNA Damage and Apoptosis in Mouse Hippocampus. *Environmental Science and Pollution Research*. 2022;1-12.
9. Jafarzadeh E, Montazeri V, **Aliebrahimi S**, Habibian Sezavar A, Ghahremani MH, Ostad SN. Combined regimens of cisplatin and metformin in cancer therapy: a systematic literature review and meta-analysis. *Life Science*, 2022;304:120680.
10. Farnudiyan-Habibi A, Mirjani M, Montazeri V, **Aliebrahimi S**, Katouzian I, Abdolhosseini S, Rahmani A, Keyvani H, Rad-Malekshahi M, Ostad SN. Review on approved and In Progress COVID-19 vaccines. *Iranian Journal of Pharmaceutical Research*, 2022; 21(1): e124228.
11. Rasouli A, **Aliebrahimi S**, Montazeri V, Ghahremani MH, Ostad SN. Combination effect of doxorubicin and HIF inhibitor on MCF-7 CD44⁺/CD24⁻ subpopulation cells in hypoxic condition. *Brazilian Journal of Pharmaceutical Sciences*, 2022;58:e18754.
12. Gholizadeh F, Ghahremani MH, **Aliebrahimi S**, Shadboorestan A, Ostad SN. Assessment of cannabinoids agonist and antagonist in invasion potential of K562 cancer cells. *Iranian Biomedical Journal*, 2019; 23(2):153-158.
13. **Aliebrahimi S**, Montasser Kouhsari S, Arab SS, Shadboorestan A, Ostad SN. Phytochemicals, withaferin A and carnosol, overcome pancreatic cancer stem cells as c-Met inhibitors. *Biomedicine & Pharmacotherapy*, 2018;106:1527-1536.
14. **Aliebrahimi S**, Montasser Kouhsari S, Ostad SN, Arab SS, Karami L. Identification of phytochemicals targeting c-Met kinase domain using consensus docking and molecular dynamics simulation studies. *Cell Biochemistry and Biophysics*, 2018;76(1-2):135-145.
15. Malekmarzban F, Seyedabadi M, Ghahremani MH, **Aliebrahimi S**, Habibollahi P, Tavajohi S, Ostad SN. Role of nitric oxide and metallothionein in cytotoxic activity of cadmium in Caco-2 cells. *Acta Medica Iranica*, 2018. 56(5):287-294.
16. Yahyavi Z, Fazeli MR, Mirfeizi M, **Aliebrahimi A**, Ostad SN. Cytotoxic Activity of Familact: A Probiotic Supplement. *Iranian Journal of Toxicology*, 2018. 12(4):41-45.
17. Salehi M, Amini M, **Aliebrahimi S**, Ghadbeigi S, Kiani M, Yahyavi Z, Ostad SN. Novel synthetic derivatives of dichloroimidazole targeting NorA efflux pump against methicillin-resistant *Staphylococcus aureus*. *International Pharmacy Acta*, 2018; 1(2):167-175.
18. Majdzadeh M, **Aliebrahimi S**, Vatankhah M, Ostad SN. Celecoxib and L-NAME effects on apoptosis and cell cycle of MCF-7 CD44⁺/CD24^{-/low} subpopulation. *Turkish Journal of Biology*, 2017;41:826-834.
19. Mohammadpour F, Ostad SN, **Aliebrahimi S**, Daman Z. Anti-invasion effects of cannabinoids agonist and antagonist on human breast cancer stem cells. *Iranian Journal of Pharmaceutical Research*, 2017;16(4):1479-1486.
20. **Aliebrahimi S**, Raheb J, Ebrahimipour G, Bardania H, Nurollah M, Aghajani Z. Designing a new recombinant indigenous *Klebsiella oxytoca* ISA4 by cloning of *dsz*

genes. *Journal Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 2015;37:2056-2063.

– **Congress presentation**

1. 17th National Congress of Biochemistry & 8th International Congress of Biochemistry & Molecular Biology, Tehran University of Medical Sciences, 23-26 Aug 2022; **Mini-oral presentation**. Cytotoxic evaluation of chitosan-coated Fe₃O₄ nanocarriers in conjugation with opium alkaloids. **Shima Aliebrahimi**, Fateme Heidari, Amir Amani, Vahideh Montazeri, Shiva Sabzandam, Seyed Nasser Ostad
2. 17th National Congress of Biochemistry & 8th International Congress of Biochemistry & Molecular Biology. Tehran University of Medical Sciences, 23-26 Aug 2022; **Mini-oral presentation**. An evaluation of the effectiveness of combined regimens of cisplatin and metformin in the treatment of cancer: a systematic review and meta-analysis. Emad Jafarzadeh, Vahideh Montazeri, Shima Aliebrahimi, Ahmad Habibian Sezavar, Mohammad H. Ghahremani, Seyed Nasser Ostad.
3. 12th National and 4th International Biotechnology Congress of Islamic Republic of Iran, 22-24 Aug 2021. Discovery of Statins Targeting c-Met Kinase Domain using Molecular Dynamics Simulation Studies. Elham Ahmad Alizadeh, **Shima Aliebrahimi**, Leila Karami, Seyed Nasser Ostad.
4. The 4th International Congress on BioMedicine (ICB2020), 9-12 Nov 2020. Preparation and characterization of noscapine loaded superparamagnetic iron oxide nanoparticles for drug delivery in breast cancer cells. Fateme Heidari, **Shima Aliebahimi**, Amir Amani, Vahide Montazeri, Shiva Sabzandam, Seyed Nasser Ostad.
5. 16th National Congress of Biochemistry & 7th International Congress of Biochemistry & Molecular Biology, 9-12 Nov 2020. Evaluation of cytotoxic effect of platinum (IV) and cisplatin on proliferation of EJ138 and main population of HT1080 cells and their Cancer Stem Like Cells. Seyedeh Masoume Sajjadi Mohri, Vahideh Montazeri, **Shima Aliebrahimi**, Anita Abedi, Simin Aghmasheh, Seyed Naser Ostad.
6. 16th National Congress of Biochemistry & 7th International Congress of Biochemistry & Molecular Biology, 9-12 Nov 2020. Evaluation of papaverine-iron oxide nanoparticles for anticancer drug delivery. **Shima Aliebrahimi**, Fateme Heidari, Amir Amani, Shiva Sabzandam, Vahideh Montazeri, Seyed Nasser Ostad
7. The 6th Conference on Bioinformatics, University of Tehran, Iran, 13-15 Dec 2016. Discovery of phytochemicals targeting c-Met kinase domain using consensus docking and molecular dynamics simulation studies. **Sh. Aliebrahimi**, Sh. Montasser Kouhsari, S. N. Ostad, Sh. Arab, L. Karami.
8. 13th Iranian and The 2nd International Congress On Microbiology, Ardebil University of Medical Sciences, Iran, 14-16 July 2012. Desulfurization activity evaluation of recombinant *Klebsiella oxytoca* ISA4. **Shima Aliebrahimi**, Gholam Hossein Ebrahimipour, Jamshid Raheb.
9. The 7th National Biotechnology Congress of I.R. Iran, 12-14 Sep 2011. Cloning and expression of desulfurization operon dszABC in native bacterium, *Klebsiella oxytoca*. **Aliebrahimi S.**, Raheb J., Ebrahimipour G., Aghajani Z., Nagmi Z.

10. Second National Conference of Applied Microbiology, University of Tehran, Iran, 16-17 Feb 2011. Isolation and identification of the gene encoding a desulfurase from DBT-desulfurizing bacterium, *Klebsiella oxytoca*. **Aliebrahimi S.**, Ebrahimipour G., Bambai B., Nurollah M.
11. Second National Conference of Applied Microbiology, University of Tehran, Iran, 16-17 Feb 2011. Improvement of biodesulfurization activity by *Klebsiella oxytoca*. Nurollah M., Ebrahimipour G., Mehrdad M., Negmi Z., **Aliebrahimi S.**
12. 11th National and The 1st International Congress On Microbiology, Guilan University of Medical Sciences, Iran, 10-13 May 2010. Biochemical and molecular identification of a new DBT-desulfurizing bacterium. **Shima Aliebrahimi**, Gholam Hossein Ebrahimipour.

Workshops (Education):

- Bioinformatics, ACECR, Iran University of Medical Sciences, Tehran, Iran.
- Preparation of antifungal drugs from medicinal plants: isolation, characterization and purification of bioactive compounds using HPLC and TLC, Pasteur Institute of Iran.
- Peer review & critical appraisal, TUMS, Tehran, Iran.
- The basic principles & applications of flowcytometry, Sababiomedicals, Science-based company, Tehran, Iran.

Research Interests:

- Computational biology
- Cell signaling
- Cancer biology