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Morteza Eskandani, Pharmaceutical Nanotechnology (Doctor of Philosophy)

H-Index in google scholar: 36, RG Score: 33.83, Research items: 101, Citation: 2833

## Education

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2011-08 to 2015-08-01

**Ph.D/** Pharmaceutical Nanotechnology

**University of Guilan: Rasht, Guilan, Iran**

2005-07 to 2007-07-01

**M.Sc/** Biochemistry

**Gorgan University of Agricultural Sciences and Natural Resources: Gorgan, Golestan, Iran**

2001-07 to 2005-07-01

**Bachelor science/** Zoology

## Thesis

**PhD** *Isolation and elucidation of cytotoxic compound of Dorema glabrum Fisch. C.A, Ferula ovina Boiss and Salvia sahendica Boiss and Buhse, their formulation in to the nano structured lipids and assessment of their effects on ovarian and lung cancer cell lines in hypoxia condition., Supervisor: Professor Hossein Nazemiyeh*

**MSc** *Assessment of oxidative stress and alpha-MSH gene sequences in Iranian vitiligo patients.*,  
Supervisor: **Professor Sadegh Hasannia**

## Employments

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2015-11 to present

Assistant professor

**Islamic Azad University: Bonab, Azarbayjan, Iran**

2009-07 to 2011-07-01

Lecturer (Biology-Biochemistry)

**Payame Noor University: Maragheh, Maragheh, Iran**

2009-07 to 2011-07-01

Lecturer (Biology-Biochemistry)

**Golestan Hospital: Teharn, Teharn, Iran**

2007-07 to 2009-07-01

Assistant manager (Medical laboratory)

## Executive occupations

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2016-2 to present

Manager, Research Center for Pharmaceutical Nanotechnology

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2015-11 to present

Director of web design and maintenance, Research Center for Pharmaceutical Nanotechnology

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2015-2 to present

Secretary and founder of Scientific Meetings In RCPN (SMIR), Research Center for Pharmaceutical Nanotechnology

<http://nano.tbzmed.ac.ir>

**Tabriz University of Medical Sciences: Tabriz, East Azerbaijan, Iran**

2016-10 to present

Secretary and founder of e-Learning In RCPN (e-LIR), Research Center for Pharmaceutical Nanotechnology

<http://nano.tbzmed.ac.ir/?PageID=106>

## Supervised/ advised theses

### **tPA encapsulation in polymeric nanoparticle as therapeutic for brain ischemia**

Role: Advisor

Student: Masoumeh Zamanlou, PhD thesis

Status: Ongoing

### **Targeted nanoparticles for chemo-/gene therapy of ovarian cancer**

Role: Advisor

Student: Somayeh Vandghanooni, PhD thesis

Status: Finihsed

### **Comparison of anti-oxidative properties of intact marrubiin and marrubiin-SLNs in cardiovascular disease**

Role: Advisor

Student: Aylar Nakhband, PhD thesis

Status: Ongoing

### **Formulation and physicochemical characterization of folic acid tagged Fe nanoparticles against ovarian cancer**

Role: Advisor

Student: Maryam Ranjbar, PhD thesis

Status: Finished

### **The effect of silibin on the doxorubicin resistant cancer cell lines**

Role: Advisor

Student: Bahador Larti, PhD thesis

Status: Ongoing

### **The effect of food additive PG and TBHQ on the secondary metabolites of lactic acid bacteria and their anticancer properties**

Role: Supervisor

Student: Marziyeh Salmanzadeh, PhD thesis

Status: Finished

## Grants

**Pharmacologic effects of sclareol on cancer cells in hypoxia**

Role: Executer

Funder: Support fund for researcher and technologist, Tehran, President affairs, Iran

Status: Ongoing

**Formulation, physicochemical characterization and anticancer properties of sclareol loaded solid lipid nanoparticles**

Role: Executer

Funder: Drug applied research center, Tabriz, Iran

Status: Ongoing

**tPA encapsulation in polymeric nanoparticle as therapeutic for brain ischemia**

Role: Co-PI

Funder: Neuroscience research center, Tabriz, Iran

Status: Ongoing

**Targeted nanoparticles for chemo-/gene therapy of ovarian cancer**

Role: Co-PI

Funder: Research Center for Pharmaceutical Nanotechnology, Tabriz, Iran

Status: Ongoing

**Comparison of anti-oxidative properties of intact marrubiin and marrubiin-SLNs in cardiovascular disease**

Role: Co-PI

Funder: Research Center for Pharmaceutical Nanotechnology, Tabriz, Iran

Status: Ongoing

**Formulation and physicochemical characterization of folic acid tagged Fe nanoparticles against ovarian cancer**

Role: Co-PI

Funder: Islamic Azad University, Science and Research Branch, Tehran, Iran

Status: Finished

**The effect of silibin on the doxorubicin resistant cancer cell lines**

Role: Co-PI

Funder: Faculty of pharmacy, Tabriz, Iran

Status: Ongoing

**The effect of food additive PG and TBHQ on the secondary metabolites of lactic acid bacteria and their anticancer properties**

Role: Executer

Funder: Research Center for Pharmaceutical Nanotechnology, Tabriz, Iran

Status: Finished

**Anti-cancer drug discovery from halophytes plants based on bioassay-guided isolation platform**

Role: Co-PI

Funder: National Institute for Medical Research Development (NIMAD), Deputy of research and technology, Ministry of Health, Tehran, Iran

Status: Finished

**Development of aptamer targeted/opsonized nanoparticle bio-conjugates for enhanced therapy of MUC1-positive breast cancer cells in hypoxia**

Role: PI- Executer, **Enlightened researcher grant**

Funder: National Institute for Medical Research Development (NIMAD), Deputy of research and technology, Ministry of Health, Tehran, Iran

Status: Ongoing

**Preparation, characterization, cellular uptake and antiproliferative effects of Acriflavine loaded solid lipid nanoparticles on A549 human lung epithelial cancer cells**

Role: PI-Executer, **Enlightened researcher grant**

Funder: National Institute for Medical Research Development (NIMAD), Deputy of research and technology, Ministry of Health, Tehran, Iran

Status: Finished

## Patents

**Production of fluorescent nanoparticles containing acetyl shikonin for drug distribution studies in vivo**

Registration No: 84336 (2014)

Country: Iran

## Journal Publications

[1] S. Vandghanooni, Z.F. Vahid, A. Nakhband, M.B. Bahadori, M. Eskandani, Sclareol Inhibits Hypoxia-Inducible Factor-1 $\alpha$  Accumulation and Induces Apoptosis in Hypoxic Cancer Cells, *Adv Pharm Bull* 12(3) (2022) 593-602.

[2] S. Vandghanooni, H. Samadian, S. Akbari-Nakhjavani, B. Khalilzadeh, M. Eskandani, B. Massoumi, M. Jaymand, Electroactive nanofibrous scaffold based on polythiophene

for bone tissue engineering application, *Journal of Materials Research* 37(3) (2022) 796-806.

[3] S. Vandghanooni, M. Eskandani, Z. Sanaat, Y. Omid, Recent advances in the production, reprogramming, and application of CAR-T cells for treating hematological malignancies, *Life Sciences* (2022) 121016.

[4] N. Rahmanian, M. Mohammadpour, A. Bagheri, M. Shokrzadeh, M. Eskandani, Doxorubicin and Doxorubicin-loaded Nanoliposome Triggers Hepatocyte Cells Senescence through Accumulation of Inflammatory Factors and Activation of P53, *J Mazandaran Univ Med Sci* 31(205) (2022) 17-28 (Persian).

[5] F. Mehdizadeh, R. Mohammadzadeh, H. Nazemiyeh, M. Mesgari-Abbasi, M. Barzegar-Jalali, M. Eskandani, K. Adibkia, Electrosprayed Nanoparticles Containing Hydroalcoholic Extract of *Echinacea Purpurea* (L.) Moench Stimulates Immune System by Increasing Inflammatory Factors in Male Wistar Rats, (2022).

[6] A. Khani, M. Eskandani, H. Derakhshankhah, K. Soleimani, S.A. Nakhjavani, B. Massoumi, R. Jahanban-Esfahlan, K. Moloudi, M. Jaymand, A novel stimuli-responsive magnetic hydrogel based on nature-inspired tragacanth gum for chemo/hyperthermia treatment of cancerous cells, *Journal of Polymer Research* 29(4) (2022) 1-14.

[7] S.S. Hosseini, A. Jebelli, S. Vandghanooni, A. Jahanban-Esfahlan, B. Baradaran, M. Amini, N. Bidar, M. de la Guardia, A. Mokhtarzadeh, M. Eskandani, Perspectives and trends in advanced DNA biosensors for the recognition of single nucleotide polymorphisms, *Chemical Engineering Journal* (2022) 135988.

[8] R. Eskandani, M. Kazempour, R. Farahzadi, Z. Sanaat, M. Eskandani, K. Adibkia, S. Vandghanooni, A. Mokhtarzadeh, Engineered nanoparticles as emerging gene/drug delivery systems targeting the nuclear factor- $\kappa$ B protein and related signaling pathways in cancer, *Biomedicine & Pharmacotherapy* 156 (2022) 113932.

[9] M. Eskandani, B. Navidshad, M. Eskandani, S. Vandghanooni, F.M. Aghjehgheshlagh, A. Nobakht, A.A. Shahbazfar, The effects of L-carnitine-loaded solid lipid nanoparticles on performance, antioxidant parameters, and expression of genes associated with cholesterol metabolism in laying hens, *Poultry Science* 101(12) (2022) 102162.

[10] M. Eskandani, M. Eskandani, S. Vandghanooni, B. Navidshad, F.M. Aghjehgheshlagh, A. Nobakht, Protective effect of L-carnitine-loaded solid lipid nanoparticles against H<sub>2</sub>O<sub>2</sub>-induced genotoxicity and apoptosis, *Colloids and Surfaces B: Biointerfaces* (2022) 112365.

- [11] H. Derakhshankhah, B. Haghshenas, M. Eskandani, R. Jahanban-Esfahlan, S. Abbasi-Maleki, M. Jaymand, Folate-conjugated thermal-and pH-responsive magnetic hydrogel as a drug delivery nano-system for “smart” chemo/hyperthermia therapy of solid tumors, *Materials Today Communications* 30 (2022) 103148.
- [12] B. Davand-Barenji, M. Eskandani, R. Rahbarghazi, M.H. Geranmayeh, Mesenchymal stem cell secretome induced the acquisition of anti-inflammatory phenotype in rat cortical microglia in vitro, *Journal of Research in Clinical Medicine* 10(1) (2022) 22-22.
- [13] S. Vandghanoonia, Z. Sanaata, R. Farahzadi, M. Eskandani, H. Omidian, Y. Omid, Recent progress in the development of aptasensors for cancer diagnosis: Focusing on aptamers against cancer biomarkers, *Microchemical Journal* 106640 (2021).
- [14] S. Vandghanooni, Z. Sanaat, J. Barar, K. Adibkia, M. Eskandani, Y. Omid, Recent advances in aptamer-based nanosystems and microfluidics devices for the detection of ovarian cancer biomarkers, *TrAC Trends in Analytical Chemistry* 143 (2021) 116343.
- [15] S. Vandghanooni, F. Rasoulilian, M. Eskandani, S. Akbari Nakhjavani, M. Eskandani, Acriflavine-loaded solid lipid nanoparticles: preparation, physicochemical characterization, and anti-proliferative properties, *Pharmaceutical Development and Technology* 26(9) (2021) 934-942.
- [16] M. Shokrzadeh, A. Bagheri, N. Ghassemi-Barghi, N. Rahmanian, M. Eskandani, Doxorubicin and doxorubicin-loaded nanoliposome induce senescence by enhancing oxidative stress, hepatotoxicity, and in vivo genotoxicity in male Wistar rats, *Naunyn-Schmiedeberg's Archives of Pharmacology* (In press) (2021).
- [17] P. Safarzadeh Kozani, P. Safarzadeh Kozani, M. Hamidi, O. Valentine Okoro, M. Eskandani, M. Jaymand, Polysaccharide-based hydrogels: Properties, advantages, challenges, and optimization methods for applications in regenerative medicine, *International Journal of Polymeric Materials and Polymeric Biomaterials* (2021) 1-15.
- [18] F. Rasouliyan, M. Eskandani, M. Jaymand, S.A. Nakhjavani, R. Farahzadi, S. Vandghanooni, M. Eskandani, Preparation, physicochemical characterization, and anti-proliferative properties of Lawsone-loaded solid lipid nanoparticles, *Chemistry and physics of lipids* 239 (2021) 105123.
- [19] N. Rahmanian, M. Shokrzadeh, M. Eskandani, Recent advances in  $\gamma$ H2AX biomarker-based genotoxicity assays: A marker of DNA damage and repair, *DNA repair* 108 (2021) 103243.



- [20] M.B. Bahadori, G. Zengin, M. Eskandani, A. Zali, M.-M. Sadoughi, S.A. Ayatollahi, Determination of phenolics composition, antioxidant activity, and therapeutic potential of Golden marguerite (*Cota tinctoria*), *Journal of Food Measurement and Characterization* 15(4) (2021) 3314-3322.
- [21] M. Zamanlu, M. Eskandani, J. Barar, M. Jaymand, P.S. Pakchin, M. Farhoudi, Enhanced thrombolysis using tissue plasminogen activator (tPA)-loaded PEGylated PLGA nanoparticles for ischemic stroke, *Journal of Drug Delivery Science and Technology* 53 (2020) 101165.
- [22] S. Vandghanooni, M. Eskandani, J. Barar, Y. Omid, Antisense LNA-loaded nanoparticles of star-shaped glucose-core PCL-PEG copolymer for enhanced inhibition of oncomiR-214 and nucleolin-mediated therapy of cisplatin-resistant ovarian cancer cells, *International journal of pharmaceutics* 573 (2020) 118729.
- [23] S. Vandghanooni, M. Eskandani, Natural polypeptides-based electrically conductive biomaterials for tissue engineering, *International Journal of Biological Macromolecules* (2020).
- [24] S. Vandghanooni, J. Barar, M. Eskandani, Y. Omid, Aptamer-conjugated mesoporous silica nanoparticles for simultaneous imaging and therapy of cancer, *TrAC Trends in Analytical Chemistry* 115759(10.1016/j.trac.2019.115759) (2020) In press.
- [25] M.B. Bahadori, G. Zengin, L. Dinparast, M. Eskandani, The health benefits of three Hedgenettle herbal teas (*Stachys byzantina*, *Stachys inflata*, and *Stachys lavandulifolia*)-profiling phenolic and antioxidant activities, *European Journal of Integrative Medicine* 36 (2020) 101134.
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- [28] S. Vandghanooni, M. Eskandani, Electrically conductive biomaterials based on natural polysaccharides: Challenges and applications in tissue engineering, *International journal of biological macromolecules* 141 (2019) 636-662.

- [29] A. Sadeghinia, J. Barar, M. Eskandani, M.A. Rafi, Y. Omid, Blood-Brain Barrier and Advanced Carriers for Brain Drug Delivery And Targeting, Nanocarriers for Brain Targeting, Apple Academic Press 2019, pp. 37-68.
- [30] Z. Ranjbar-Navazi, Y. Omid, M. Eskandani, S. Davaran, Cadmium-free quantum dot-based theranostics, TrAC Trends in Analytical Chemistry 118 (2019) 386-400.
- [31] R. Mohammad-Rezaei, B. Massoumi, M. Eskandani, M. Abbasian, M. Jaymand, A new strategy for the synthesis of modified novolac resin and its polymer/clay nanocomposite, eXPRESS Polymer Letters 13(6) (2019) 543-552.
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- [34] M.B. Bahadori, S. Vandghanooni, L. Dinparast, M. Eskandani, S.A. Ayatollahi, A. Ata, H. Nazemiyeh, Triterpenoid corosolic acid attenuates HIF-1 stabilization upon cobalt (II) chloride-induced hypoxia in A549 human lung epithelial cancer cells, Fitoterapia 134 (2019) 493-500.
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- [36] M. Zamanlu, M. Farhoudi, M. Eskandani, J. Mahmoudi, J. Barar, M. Rafi, Y. Omid, Recent advances in targeted delivery of tissue plasminogen activator for enhanced thrombolysis in ischaemic stroke, Journal of drug targeting 26(2) (2018) 95-109.
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- [38] S. Vandghanooni, M. Eskandani, J. Barar, Y. Omid, AS1411 aptamer-decorated cisplatin-loaded poly (lactic-co-glycolic acid) nanoparticles for targeted therapy of miR-21-inhibited ovarian cancer cells, Nanomedicine 13(21) (2018) 2729-2758.

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- [42] Z. Ranjbar-Navazi, M. Eskandani, M. Johari-Ahar, A. Nemati, H. Akbari, S. Davaran, Y. Omid, Doxorubicin-conjugated D-glucosamine-and folate-bi-functionalised InP/ZnS quantum dots for cancer cells imaging and therapy, *Journal of drug targeting* 26(3) (2018) 267-277.
- [43] A. Nakhband, M. Eskandani, N. Saeedi, S. Ghafari, Y. Omid, J. Barar, A. Garjani, Marrubiin-loaded solid lipid nanoparticles' impact on TNF- $\alpha$  treated umbilical vein endothelial cells: A study for cardioprotective effect, *Colloids and Surfaces B: Biointerfaces* 164 (2018) 299-307.
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- [46] A. Jafarizad, A. Taghizadehgh-Alehjougi, M. Eskandani, M. Hatamzadeh, M. Abbasian, R. Mohammad-Rezaei, M. Mohammadzadeh, B. Toğar, M. Jaymand, PEGylated graphene oxide/Fe<sub>3</sub>O<sub>4</sub> nanocomposite: synthesis, characterization, and evaluation of its performance as de novo drug delivery nanosystem, *Bio-medical Materials and Engineering* 29(2) (2018) 177-190.
- [47] H. Hamishehkar, M.B. Bahadori, S. Vandghanooni, M. Eskandani, A. Nakhband, M. Eskandani, Preparation, characterization and anti-proliferative effects of sclareol-loaded solid lipid nanoparticles on A549 human lung epithelial cancer cells, *Journal of Drug Delivery Science and Technology* 45 (2018) 272-280.

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[102] M. Eskandani, V. Kafil, J. Barar, H. Nazemiyeh, I. Tabriz, Themes: Title: Extraction of Galbanic Acid from Ferula Ovina (boiss) Based on a Bio-Assay Guided Fractionation Method.

## Selected Conference Proceedings

[1] **Morteza Eskandani**: Apoptosis inducing properties of Salvia Sahendica on MCF-7 human breast adenocarcinoma, 21st International Iranian Congress of Physiology & Pharmacology, Tabriz. 21st International Iranian Congress of Physiology & Pharmacology, Tabriz 2013; 09/2013

[2] **Morteza Eskandani**: stimuli responsive nanofibers prepared from poly (NIPAcrylAmidVproline) by green electospuning as an anticancer drug delivery. Conference Proceeding: Apoptosis inducing properties of Salvia Sahendica on MCF-7 human breast adenocarcinoma, 21st International Iranian Congress of Physiology & Pharmacology, Tabriz Morteza Eskandani 21st International Iranian Congress of Physiology & 08/2013

[3] **Morteza Eskandani**: Phytochemical analysis and cytotoxic activity of the methanolic extract of prangos aculis roots. Conference Proceeding: Apoptosis inducing properties of Salvia Sahendica on MCF-7 human breast adenocarcinoma, 21st International Iranian Congress of Physiology & Pharmacology, Tabriz Morteza Eskandani 21st International Iranian Congress of Physiology & 08/2013

[4] **Morteza Eskandani**: Prostate-Specific antigen: False negative and false positive result with patients' diabetes and renal function disease. 14 th international urology congress in Iran. 14 th international urology congress in Iran; 09/2011

[5] **Morteza Eskandani**: The influence of human intron insertion on eukaryotic vector expression. 10th international Biochemistry Congress in Tehran as Poster presentation. (2009). 10th international Biochemistry Congress; 10/2009

[6] **Morteza Eskandani**: The construction of chimeric T-cell receptor base of modeling study of VHH with MUC1 interaction. Nanotechnologies in oncology, Moscow (2008) as Oral presentation. Nanotechnologies in oncology, Moscow (2008); 10/2008

## Skills & Activities

*Skills* Nanomedicine, Cell Culture, Cancer Biology, Comet Assay, DNA Damage, Genotoxicity, Oxidative Stress, Cytotoxicity, Nanoparticles Drug Delivery, Electrospinning, Mutagenicity, Biochemistry, Oncology, Apoptosis, Biomarkers, Molecular Toxicology, Antioxidants, Cytotoxicity Assays, Cell Biology, MTT Assay, Biotechnology, Nanocomposites, Natural Product Chemistry, Hypoxia, Nano Drug Delivery, HPLC-UV, Nanoparticles, Pharmacology, In vitro Toxicology, Genetic Toxicology, Oxidative Stress Biomarkers, Natural Products, Genotoxicology, Hypoxia-Inducible Factor 1, DNA Fragmentation, Reactive Oxygen Species, Medicinal Plants, Antioxidant Activity, NMR Spectroscopy, Electrochemistry, Scaffold, Targeted Drug Delivery, Regenerative Medicine

*Languages* English, Persian and Turkish

*Hobbies* Ney, Setar and Tar playing, Music listening, Car driving, Sport, Hiking, Studying

*Scientific* - Physiology and Pharmacology Society of Iran

*Memberships* - Biochemistry Society of Iran  
- Nanotechnology Society of Iran

*Interests* - Nanomaterials, Biomaterials, Drug delivery, Targeted therapy, Tissue engineering