

Neda Saraygord-Afshari
Ph.D.



Positions

Faculty
(Assistant professor, 2014-current)

Iran University of Medical Sciences (IUMS) Faculty
of allied medical sciences
Department of Medical Biotechnology
Tehran, Iran

Emails Afsahri.n@iums.ac.ir
neda.s.afshari@gmail.com

Tel (+98-21) 86704668
Mobile (+98)9120257358

Education

Ph.D.	Biophysics, Tarbiat Modares University, Tehran, Iran	Sep 2012
M.Sc.	Biophysics, Tarbiat Modares University, Tehran, Iran	Sep 2009
B.Sc.	Biology, Razi University, Kermanshah, Iran	Jul 2003
Equivalent of M.Sc. degree	Master of Business Administration (MBA), Sharif University Of Technology, Tehran, Iran,	2019-current

Executive Experiences

- Manager of the Educational Development Office (EDO), 2016-current.
- Member of the Strategic Committee of Iran University of Medical Sciences (IUMS) Core Research Laboratory (ICL), 2020-current.
- Head of Iran University of Medical Sciences (IUMS) Core Research Laboratory (ICL), 2019.
- Member of the Spatial planning committee, 2019-current.
- Member of the Educational Evaluation committee of the Ministry of Health's Transformation and Innovation Packages.
- Coordinator of the Biotechnologies' laboratory, IUMS, Biotechnology Department, 2014-current.

- Member of the student’s research committee, IUMS, Faculty of the allied medical sciences, 2012-current.
 - Collaboration with Iran Academy of Medical Sciences, 2012-2015.
-

Academic biography

- A cross-disciplinary researcher with expertise in proteomics techniques and data interpretation.
 - Interested in clinical omics-based systems biology and medical bioinformatics.
 - Manager of several research projects mainly focused on breast neoplasms using different approaches including:
 - Neoantigens discovery by serological proteome analysis (SERPA) techniques.
 - Epitope mapping and discovery of antibody-recognizing motifs of cancer protein antigens.
 - Investigating the miRNA tumor regulating functions using proteome profiling techniques.
 - Deciphering the biochemical pathways involved in tumorigenesis of cancer stem cells by designing innovative proteomic experiments.
 - Developing innovative microfluidic Lab-On-Chip platforms to explore drug dosage effects on tumor cells.
 - Design and construction of nanoparticles for co-delivery of breast cancer-specific drugs.
 - Investigating the synergistic effect of drugs in breast cancer treatment.
 - Manager of some research projects focused on proteome profiling of stem cells to make applicable suggestions for tissue engineering platforms.
 - Manager of some research projects focused on the development of the microfluidic devices for drug dosing and drug monitoring.
 - Have some expertise in environmental dosimetry due to a period of collaboration with AEOI.
-

Teaching experiences

University programs

1. **Protein engineering**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
2. **Computational and systems biology**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
3. **Bioengineering and Biotechnology**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
4. **Practical genetic engineering**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
5. **Scaffolding in tissue engineering**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
6. **Electrochemistry**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
7. **Principles of research methodology**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
8. **Bioethics**, IUMS, Department of medical biotechnology, a course of Ph.D. program.
9. **Methods for research in neuroscience**, IUMS, Department of medical neuroscience, a course of Ph.D. program.

10. **Molecular and cellular biology**, IUMS, Department of Immunology, a course of Ph.D. program.
11. **Bioinformatics**, IUMS, Department of tissue engineering, a course of Ph.D. program.
12. **Bioinformatics**, IUMS, Department of molecular medicine, a course of Ph.D. program.
13. **Advanced Biochemistry**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
14. **Immunochemistry**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
15. **Nanobiotechnology**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
16. **Bioinformatics**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
17. **Advanced techniques in biotechnology**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
18. **Biological safety, ethics and rights**, IUMS, Department of medical biotechnology, a course of M.Sc. program.
19. **Molecular and cellular biology**, IUMS, Department of hematology, a course of M.Sc. program.
20. **Molecular and cellular biology**, IUMS, Department of immunology, a course of M.Sc. program.
21. **Molecular and cellular biology**, IUMS, Department of radiobiology, a course of M.Sc. program.
22. **Medical information systems**, IUMS, Department of operating room, a course of M.Sc. program.
23. **Cellular biology**, IUMS, Department of radiology, a course of B.Sc. program.
24. **Biophysics**, IUMS, Department of Medical laboratory scientist, a course of B.Sc. program.
25. **Biophysical chemistry**, Islamic azad university, Department of biology, a course of B.Sc. program.
26. **Biophysics**, Islamic azad university, Department of biology, a course of B.Sc. program.
27. **Radiation biology**, Islamic azad university, Department of biology, a course of B.Sc. program.

Workshops

1. **Problem based learning (PBL)**, IUMS, Faculty of allied medical sciences, a course for faculty members.
2. **How to write a research proposal?** IUMS, Faculty of allied medical sciences, a course for masters and Ph.D. students.
3. **Proteomics**, Tarbiat Modares University, Faculty of biological sciences, a course for masters and Ph.D. students.
4. **Proteomics**, Held in The 17th National & 5th International Iranian Biology Conference.

HSR and educational research projects

- To propose a comprehensive approach for postgraduate student's admission in Medical base sciences at Iran's medical universities; ongoing project.

Publications

Book compilation

1. **Technology to aid the early detection of cancer: A review on the CTC detection techniques, from conventional methods to the advent of the microfluidic Lab-On-Chip devices.** ISBN: 978-600-155-070-6; 2016, In Persian.
Verification link on the National Library of Iran site:

http://opac.nlai.ir/opac-prod/search/briefListSearch.do?command=FULL_VIEW&id=4144377&pageStatus=0&sortKeyValue1=sortkey_title&sortKeyValue2=sortkey_author

2. **Chernobyl accident: A consequence of cold war.** ISBN: 978-600-91012-7-6; 2011, In Persian. Verification link on the National Library of Iran site:

http://opac.nlai.ir/opac-prod/search/briefListSearch.do?command=FULL_VIEW&id=2088576&pageStatus=0&sortKeyValue1=sortkey_title&sortKeyValue2=sortkey_author

Book translation

1. **Gene cloning and DNA analysis: An Introduction. Translations into Persian against English.2017**

Verification link on the National Library of Iran site:

http://opac.nlai.ir/opac-prod/search/briefListSearch.do?command=FULL_VIEW&id=4849404&pageStatus=0&sortKeyValue1=sortkey_title&sortKeyValue2=sortkey_author

Journal articles

1. Mohammad Panahi, Bahareh Rahimi, Golbarg Rahimi, Teck Yew Low, Neda Saraygord-Afshari*, Effat Alizadeh*, **Cytoprotective effects of antioxidant supplementation on mesenchymal stem cell therapy**; Journal of Cellular Physiology; (2020); Doi: [10.1002/jcp.29660](https://doi.org/10.1002/jcp.29660)
2. Pey Yee Lee, Neda Saraygord-Afshari, Teck Yew Low, **The evolution of two-dimensional gel electrophoresis-from proteomics to emerging alternative applications**; Journal of Chromatography A; (2020); Doi: [10.1016/j.chroma.2019.460763](https://doi.org/10.1016/j.chroma.2019.460763)
3. Shabnam Shahrivari, Zeinab Bagheri, Neda Saraygord-Afshari*, Hamid Latifi, **Three-dimensional cell cultures in anticancer drug researches: From traditional methods to emerging microfluidic technology**; Journal of Isfahan Medical School, 2019, 37 (535): 845-856.
4. Neda Saraygord-Afshari*, Mostafa Naderi, Hossein Naderi-Manesh; **A survey on the Influence of Religious Fasting On the Dry-Eye Syndrome Occurrence by Integrating Data Published on Tear Proteome Change in Fasting-People, Diabetics, Smokers, and Dry-Eye Patients**; Quran & Medicine; 2018; 3(3).
5. Hamidreza Abbasi, Neda Saraygord-Afshari*, Neda Mohammadi, Mohammad-morad Farajollahi, Reza Falak; **Improving proteome coverage for HS578T breast cancer cell-line due to efficient interfering removal**; Journal of Isfahan Medical School, 2018, 36 (471): 216-220 (in Persian).
6. Bahareh Rahimi, Mohammad Panahi, Neda Saraygord-Afshari*; **Application of MSC-based gene therapy in the personalized treatment of gastrointestinal cancers**; Iranian Journal of Personalized Medicine, 2018; 2(8):3-8 (in Persian).
7. Negar Etehad Roodi, Maryam Hemmaty, Neda Saraygord-Afshari*; **Protein nano-cages: Novel carriers for optimized targeted remedy**; F1000Research, 2017, 6 (1541).
8. Mahboobeh Shahrabi-Farahani, Nasiseh Taromi, Neda Saraygord-Afshari*, Mohammad-morad Farajollahi; **Diagnosis of Prostate Cancer, from Conventional Methods Towards the New Promising CTCs**; Alborz University Medical Journal, 2016, 5(1): 53-58.

9. Neda Saraygord-Afshari, Hossein Naderi-Manesh* and Mostafa Naderi*; **Increasing proteome coverage for gel-based human tear proteome maps: towards a more comprehensive profiling**; Biomedical chromatography; 2015; 29: 1056–1067.
10. Zaidodine Pashandi, Neda Saraygord-Afshari, Hossein Naderi-Manesh*, and Mostafa Naderi; **Comparative proteomic study reveals the molecular aspects of delayed ocular symptoms induced by sulfur mustard**"; International Journal of Proteomics; 2015, ID: 659241.
11. Neda Saraygord-Afshari, Hossein Naderi-Manesh and Mostafa Naderi; **Enhanced reproducibility of the human gel-based tear proteome maps in the presence of di-(2-hydroxyethyl) disulfide**; Biotechnology and Applied Biochemistry; 2014, DOI: 10.1002/bab.1221.
12. Neda Saraygord-Afshari, Hossein Naderi-manesh*, Mostafa Naderi; **Evaluation of the Chaotropes, Ionic, Nonionic and Zwitterionic Detergents as Tear Proteome Solubilizers during the IEF Process**; Journal of Biotechnology Tarbiat Modares University, 2013, 3(2): 67-78 (in Persian).
13. Neda Saraygord-Afshari, Fereshteh Abbasisar, Parviz Abdolmaleki*, Mahdi Ghiassi-Nejad and Ali Attarilar; **Determination of ⁹⁰Sr in milk and milk powder in Tehran and estimation of annual effective dose**; Environmentalist; 2011, 31: 308-314.
14. Neda Saraygord-Afshari, Fereshteh Abbasisar, Parviz Abdolmaleki* and Mahdi Ghiassi-Nejad; **Determination of ⁴⁰K concentration in milk samples consumed in Tehran-Iran and estimation of its annual effective dose**; Iranian journal of radiation research, 2009; 7 (3):159-164.

Conference Presentations (Invited Speaker)

1. **Recent scientific revolutions and the development of personal dentistry**; The 9th dental congress; Olympic hotel, Tehran, Iran; **2018**.
2. **Different OMICS technologies and their determinant role in the progressive development of systems biology and new medicine**; 3rd Congress on novel and innovative laboratory technology Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2015**.

Selected Conference Oral & Poster Presentations

1. **Application of mesenchymal stem cell-based gene therapy in personalized treatment of gastrointestinal cancers**; The 2nd international personalized medicine congress of Iran; Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2018**, (Oral).
2. **Microfluidic 3D cell-Culture platforms for drug response monitoring: potential applications for individualized cancer treatment**; International congress on biomedicine (ICB); Milad tower conference hall, Tehran, Iran; **2017**, (Oral).
3. **Oxidative stress and mitochondrial dysfunctions in personalized cancerous signaling pathway**; The 2nd international personalized medicine congress of Iran; Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2018**, (Poster).
4. **The emergence of micro-isolator devices for high throughput exosome analysis: A technological leap towards personalized cancer treatment**; The 2nd international personalized medicine congress of Iran; Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2018**, (Poster).
5. **Personal tumor neoantigens and cancer immunotherapy**; The 2nd international personalized medicine congress of Iran; Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2018**, (Poster).

6. **Personalized micro-RNA profiling and their individualized theranostic applications in cancer treatment**; The 2nd international personalized medicine congress of Iran; Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran; **2018**, (Poster).
7. **Enhancing extraction efficiency of heterologously expressed recombinant prostate stem cell antigen in *E.coli***; The 2nd conference on protein and peptide sciences; Isfahan university, Isfahan, Iran; **2016**, (Poster).
8. **The art of Metastasis-On-Chip platforms to create metastasis models and developing cancer understandings**; 9th International congress on laboratory and clinics; Imam Khomeini International Conference Hall; Tehran, Iran, **2017**, (Poster).
9. **Application of microfluidics for high-throughput proteome analyses; 4th Congress on Novel & Innovative Laboratory Technologies**, Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran, **2016**, (Poster).
10. **MALDI Imaging Mass Spectrometry and advances in the diagnosis of cancer**; 4th Congress on Novel & Innovative Laboratory Technologies, Razi international conference hall, Iran University of Medical Sciences, Tehran, Iran, **2016**, (Poster).

As an Editorial Board

- Iranian Journal of Personalized Medicine

Memberships

- Iranian Proteomics Society (IPS)
- Iranian Biology Society

Honors and Awards

- Ranked 1st in the 23th vernacular Festival of IQNA; division of essay writing; **2018**.
- Ranked 1st in Tarbiat Modares University, Tehran, Iran, Ph.D. graduate class of **2012**.
- Ranked 1st in Tarbiat Modares University, Tehran, Iran, Ph.D. entrance exam, **2006**.
- Outstanding graduate student of the Tarbiat Modares University, Tehran, Iran, M.Sc. class of **2006**.
- Ranked 1st in Razi University, Kermanshah, Iran, B.Sc. graduate class of **2003**.

Grants Received as The Principal Investigator

- Received an international grant in a collaborative research project from UKM Medical Molecular Biology Institute (UMBI), Universiti Kebangsaan Malaysia, Bandar Tun Razak, 56000 Kuala Lumpur, Malaysia.
- IUMS Research grant, Code No.: 97-01-31-30757 **2018**, Just started.
- IUMS Research grant, Code No.: 97-01-31-33309 **2018**, Just started.

- IUMS Research grant, Code No.: 96-02-31-31327 **2017**, ongoing project.
 - This project is also partially granted by the Tabriz University of Medical Sciences, Code No:58916
 - IUMS Research grant, Code No.: 96-03-31-31318 **2017**, ongoing project.
 - This project is also partially granted by the Tabriz University of Medical Sciences, Code No:58915
 - IUMS Research grant, Code No.: 96-03-31-31905 **2017**, ongoing project.
 - IUMS Research grant, Code No.: 95-04-31-30076 **2016**, ongoing project.
 - IUMS Research grant, Code No.: 95-03-31-29452 **2016**, ongoing project.
 - This project is also partially granted for free service in the Shahid Beheshti University
 - IUMS Research grant, Code No.: 94-05-31-26867 **2016**, **Completed recently**.
 - IUMS Research grant, Code No.: 94-05-31-26849; **2016**, ongoing project
 - IUMS Research grant, Code No.: 94-02-31-26083; **2015**, ongoing project.
-

Patents

- A two-phase microfluidic gradient-maker chip linked to cell 3D culture chambers; [Under review](#).
- A compact Microfluidic gradient maker, with the capability to be linked to the cell culture chambers; [Under review](#).