

**Personal Information:**

**Name:** Maryam Tabarzad

**Date of birth:** 15 Sep 1982

**Degree:** Pharm.D., Ph.D. of Pharmaceutical Biotechnology

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**PhD** of Pharmaceutical Biotechnology, Shahid Beheshti University of Medical Science, Faculty of Pharmacy, Tehran, Iran

**Pharm.D.**, Shiraz University of Medical Science, Faculty of Pharmacy, Shiraz, Iran

**Employment:**

Assistant professor, Protein Technology Research Center, Shahid Beheshti University of Medical Science, 2014-present

**Professional activity:**

Managing Editor, *Trends in Peptide and Protein Sciences*, 2016-present

Research Council, Protein Technology Research Center, Shahid Beheshti University of Medical Science, 2017-present

Vice-Chancellor of Research Affairs, Protein Technology Research Center, Shahid Beheshti University of Medical Science, 2018-present

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**Publication:**

1. Hemmateenejad, B., Miri, R., **Tabarzad, M.**, Jafarpour, M., Zand, F.; Molecular modeling and QSAR analysis of anticonvulsant activity of some N-phenyl -N'-(4-pyridinyl)-urea derivatives, journal of molecular structure (Theochem) 684, 2004, 43-49
2. Hemmateenejad, B., Miri, R., Jafarpour, M., **Tabarzad, M.**, Foroumadi, A.; Multiple Linear Regression and Principal Component Analysis –Based prediction of anti-tuberculosis activity of some 2-aryl-1,3,4-thiadiazole derivatives ,QSAR &Combinatorial science , 25,2006,56-66
3. Hemmateenejad, B., Miri, R., Jafarpour, M.,**Tabarzad, M.**, Shamsipur, M.; Exploring QSAR for the inhibitory activity of a large set of aromatic/heterocyclic sulfonamides toward four different isoenzymes of carbonic anhydrase, QSAR Comb. Sci., 26,2007, 1065-1075
4. Miri, R., Javidnia, K.,Hemmateenejad, B.,**Tabarzad, M.**, Jafarpour, M.; Synthesis, Evaluation of Pharmacological Activities and Quantitative Structure–Activity Relationship Studies of a Novel Group of bis(4-Nitroaryl-1,4-dihyropyridine); Chem Biol Drug Des 2009; 73: 225–235
5. **Tabarzad, M.**, Kazemi, B., Vahidi, H., Aboofazeli, R., Shahhosseini, S. and Nafissi-Varcheh, N; Challenges to Design and Develop of DNA Aptamers for Protein Targets. I. Optimization of Asymmetric PCR for Generation of a Single Stranded DNA Library; Iran J Pharm Res., 2014 winter; 13(Suppl): 133–141.
6. **Tabarzad M.\***, Jafari M. Trends in the Design and Development of Specific Aptamers Against Peptides and Proteins. The protein journal. 2016 Apr 1; 35(2):81-99.
7. Mokhtarzadeh A., **Tabarzad M.**, Ranjbari J., de la Guardia M., Hejazi M., Ramezani M. Aptamers as smart ligands for nano-carriers targeting. TrAC Trends in Analytical Chemistry. 2016 Sep 30; 82:316-27.

8. Sharafi Z., Ranjbari J., Javidi J., Nafissi-Varcheh N., **Tabarzad M.**\* Direct Immobilization of Coagulation Factor VIII on Au/Fe<sub>3</sub>O<sub>4</sub> Shell/Core Magnetic Nanoparticles for Analytical Application. Trends in Peptide and Protein Sciences. 2016 Oct 4; 1(1):20-6.
9. Pazhouhandeh M., Salmannejad F., Nafissi-Varcheh N., **Tabarzad M.**\* The Effect of Arginine as an Anti-Aggregation Excipient on Recombinant Human Growth Hormone. Trends in Peptide and Protein Sciences. 2016 Oct 4;1(1):31-7.
10. Barati M., **Tabarzad M.**, Safarpour H., Ghaderi O. Validation of a Simple and Rapid Method for Assessment of Intracellular Bacterial Asparaginase. Iranian Journal of Pharmaceutical Sciences. 2016 Apr 1; 12(2):33-42.
11. Nikzad J., Shahhosseini S., **Tabarzad M.**, Nafissi-Varcheh N., Torshabi M. Simultaneous detection of bovine and porcine DNA in pharmaceutical gelatin capsules by duplex PCR assay for Halal authentication. DARU Journal of Pharmaceutical Sciences. 2017 Feb 14; 25(1):3.
12. **Tabarzad M.**\*, Jafari M., Nafissi-varcheh N. Can Aptameric Ligands Specific to Plasma Coagulation Factor VII Bind the Recombinant Form with High Affinity: Affinity Measurement by Fluorescence Method. Avicenna Journal of Medical Biotechnology. 2017 Mar 1; 9(2):109-12.
13. Jafari M., Rezaei M., Kalantari H., **Tabarzad M.**, Daraei B. Optimization of aflatoxin B1 aptasensing. Journal of Toxicology, 2017 May 14; 2017.
14. Vahidi H, Nafissi-Varcheh N, Kazemi B, Aboofazeli R, Shahhosseini S, **Tabarzad M.**\* Challenges to Design and Develop of DNA Aptamers for Protein Targets. II. Development of the Aptameric Affinity Ligands Specific to Human Plasma Coagulation Factor VIII Using SEC-SELEX. Iranian journal of pharmaceutical research: IJPR. 2017;16(2):737.
15. Ranjbari J., Mokhtarzadeh A., Alibakhshi A., **Tabarzad M.**\*, Hejazi M., Ramezani M. Anti-cancer drug delivery using carbohydrate-based polymers. Current Pharmaceutical Design, 2017 May, 23(39), pp. 6019-6032
16. Panahi Chegini, P., Nikokar, I., Hosseinabadi, T., **Tabarzad, M.**\* Concerns in the Design and Development of Novel Antimicrobial Peptides, Trends in Peptide and Protein Sciences, 2017; 1(4): 135-143

17. Ramezanzpour, M., Daei, P., Khanaki, K., Hosseinabadi, T., **Tabarzad, M.\*** The Relationship Between Janus Kinase Pathways and microRNAs, Trends in Peptide and Protein Sciences, 2017; 1(4): 144-152
- 18-Mokhtarzadeh A, Hassanpour S, Vahid ZF, Hejazi M, Hashemi M, Ranjbari J, **Tabarzad M.\***, Noorolyai S, de la Guardia M. Nano-delivery system targeting to cancer stem cell cluster of differentiation biomarkers. Journal of Controlled Release. 2017 Sep. 266, pp. 166-186
- 19-Delshadian Z., Mortazavian A.M., **Tabarzad M.**, Hosseini S.M., Mohammadi R., Rouhi M., Salami M., Khosravi-Darani K. Optimisation of experimental conditions for binding of divalent iron to bioactive casein phosphopeptides. International Journal of Food Science & Technology. 2018, 53(3), pp. 784-793.
20. Jafari M., Rezaei M., Kalantari H., **Tabarzad M.**, Daraei B. DNAzyme-aptamer or aptamer-DNAzyme paradigm: biochemical approach for aflatoxin analysis. Biotechnology and Applied Biochemistry. 2018, 65(2), pp. 274-280.
- 21- **Tabarzad M.\***, Sharafi Z., Javidi J. Covalent Immobilization of Coagulation Factor VIII on Magnetic Nanoparticles for Aptamer Development. Journal of Applied Biomaterials & Functional Materials. 2018, 16(3), pp.161-170.
- 22-Daei, P., Ramezanzpour, M., Khanaki, K.\*, **Tabarzad, M.\***, Nikokar, I., Hedayati, C.H. and Elmi, A. Aptamer-based Targeted Delivery of miRNA let-7d to Gastric Cancer Cells as a Novel Anti-Tumor Therapeutic Agent. Iranian Journal of Pharmaceutical Research, 2018, 17(4), pp.1537-1549.
- 23-Babaeipour, V., Vahidi, H., Alikhani, S., Ranjbari, J.\*, Alibakhshi, A. and **Tabarzad, M.\*** Effect of Acyl Homoserine Lactone on Recombinant Production of Human Insulin-like Growth Factor-1 in Batch Culture of Escherichia coli. Protein and peptide letters. 2018, 25, pp.1-6.
- 24- Naddafi, F., Shirazi, F.H., Talebkhan, Y., **Tabarzad, M.**, Barkhordari, F., Aliabadi Farahani, Z., Bayat, E., Moazzami, R., Mahboudi, F. and Davami, F. A comparative study of the bispecific monoclonal antibody, blinatumomab expression in CHO cells and E. coli. Preparative Biochemistry and Biotechnology, 2018, 48(10), pp. 961-967.

- 25-Ramezanpour, M., Daei, P., **Tabarzad, M.\***, Khanaki, K.\*, Elmi, A. and Barati, M.. Preliminary study on the effect of nucleolin specific aptamer-miRNA let-7d chimera on Janus kinase-2 expression level and activity in gastric cancer (MKN-45) cells. *Molecular Biology Reports*, 2019, 46(1), pp. 207-215
- 26-Mirakabad FS, Khoramgah MS, Keshavarz FK, **Tabarzad M\***, Ranjbari J. \* Peptide dendrimers as valuable biomaterials in medical sciences. *Life sciences*. 2019 Aug 12:116754.
- 27-Hosseiniabadi T, Lorigooini Z, **Tabarzad M\***, Salehi B, Rodrigues CF, Martins N, Sharifi-Rad J.\* Silymarin antiproliferative and apoptotic effects: Insights into its clinical impact in various types of cancer. *Phytotherapy Research*. 2019 Aug. 33(11), pp. 2849-2861
- 28-Naddafi F, **Tabarzad M**, H. Shirazi F. Use of Green Fluorescent Protein (GFP) Vector in Classical Restriction Enzyme-based Cloning Methods of Gateway Cloning System. *International Pharmacy Acta*. 2019, 2(2019): e6
- 29-Naddafi F, Davami F, **Tabarzad M**, Barkhordari F, Shirazi SF. Construction of a mammalian IRES-based expression vector to amplify a bispecific antibody, Blinatumomab. *Iranian Journal of Pharmaceutical Research*. 2019, 18 (4), pp. 2117-2123
- 30- Naddafi, F., Mahboudi, F., **Tabarzad, M.**, Aliabadi Farahani, Z., H Shirazi, F. and Davami, F., The Epigenetic Regulation of Blinatumomab Gene Expression: Tumor Cell-dependent T cell Response against Lymphoma Cells and Cytotoxic Activity. *International Journal of Molecular and Cellular Medicine (IJMCM)*, 2019, 8(1), pp.55-66.
- 31- Afrasiabi, S., Pourhajibagher, M., Raoofian, R., **Tabarzad, M.\*** and Bahador, A.\*, Therapeutic applications of nucleic acid aptamers in microbial infections. *Journal of Biomedical Science*, 2020, 27(1), p.6.
- 32- Mohit, E., **Tabarzad, M.** and Faramarzi, MA.\*, Biomedical and Pharmaceutical-Related Applications of Laccases, *Current Protein & Peptide Science*, 2020. 21(1), p.78.
- 33- Panahi Chegini, P., Nikokar, I.\*, **Tabarzad, M.\***, Faezi, S., Mahboubi, A., Effect of amino acid substitutions on biological activity of antimicrobial peptide: design recombinant production, and biological activity, *Iranian Journal of Pharmaceutical Research*. 2020, In press.

**Book:**

Tabarzad, M, Nafissi-varche, N; Oligonucleotides Aptamers: Development and Applications (*in Farsi*). Supported financially by Shahid Beheshti University of Medicinal Sciences; 2013

**Book chapter**

Tabarzad, M., Ghorbani-Bidkorpbeh, F. and Hosseinabadi, T., 2019. Improved Silymarin Characteristics for Clinical Applications by Novel Drug Delivery Systems. In: *Novel Drug Delivery Systems for Phytoconstituents*, p.195. CRC press

**Abstracts Presented in Congresses:**

1- 8th seminar of pharmaceutical science, Shiraz, Aug 26-28, 2002, assay of Medicinal Plants that affect the immunity system in book of “Ghanon Dar Teb” بررسی گیاهان دارویی مؤثر بر سیستم ایمنی در

کتاب طب بوعلی سینا

2- The 15<sup>th</sup> European Symposium on Quantitative Structure-Activity Relationships & Molecular Modelling, 05-10 September 2004, Istanbul, Turkey, Molecular modeling and QSAR analysis of anticonvulsant activity of some N-phenyl –N’-(4-pyridinyl)-urea derivatives

3- 9<sup>th</sup> seminar of pharmaceutical science, Tabriz, Aug 23-26, 2004, Molecular modeling and QSAR analysis of anticonvulsant activity of some N-phenyl –N’-(4-pyridinyl)-urea derivatives

4- First seminar of medicinal & natural product chemistry, Shiraz, May 10-11, 2005, Multiple Linear Regression and Principal Component Analysis –Based prediction of anti-tuberculosis activity of some 2-aryl-1,3,4-thiadiazole derivatives

5- 10<sup>th</sup> Iranian pharmaceutical science conference, Tehran (shahid beheshti), Aug 2006, QSAR study of some aromatic/heterocyclic sulphonamides on four different isoenzymes of carbonic anhydrase (CAI,CAII,CAIV,CAIX)

6- 11<sup>th</sup> Iranian pharmaceutical science conference, Kerman, Aug 18-21, 2008, Quantitative analysis of structural factors that affect the toxicity of ionic liquid

7- The 10<sup>th</sup> Seminar of Iranian Pharmacy Student, Mashahd, 2004, Molecular modeling and QSAR analysis of anticonvulsant activity of some N-phenyl –N’-(4-pyridinyl)-urea derivatives

- 8- The 11<sup>th</sup> Seminar of Iranian Pharmacy Student, Shiraz, 2005, Multiple Linear Regression and Principal Component Analysis –Based prediction of anti-tuberculosis activity of some 2-aryl-1,3,4-thiadiazole derivatives (The best poster)
- 9- The 7<sup>th</sup> Annual Research Congress of Iranian Students of Medical Science, Shahid Beheshti University of Medical Science, 2006, Multiple Linear Regression and Principal Component Analysis –Based - prediction of anti-tuberculosis activity of some 2-aryl-1,3,4-thiadiazole derivatives
- 10- The 8<sup>th</sup> Annual Research Congress of Iranian Students of Medical Science and the 1<sup>st</sup> international student congress on medical research in Iran, 2007, Synthesis, evaluation of pharmacological activities and QSAR studies of novel group of bis 1,4-dihydropyridines
- 11-14<sup>th</sup> European Congress on Biotechnology Barcelona, Spain 13–16 September, 2009 , Abstract (online): New Biotechnology, Volume 25, Supplement 1, September 2009, Pages S9-S10 ;Nucleolin and its position in cancer therapy; M. Tabarzad and F. Hosseini Shirazi; doi:10.1016/j.nbt.2009.06.026
- 11- 12<sup>th</sup> Iranian Pharmaceutical Science Congress, Zanjan, Aug2010, Synthesis, Evaluation of Pharmacological Activities and Quantitative s Structure–Activity Relationship Studies of a Novel Group of bis(4-Nitroaryl-1,4-dihyropyridine)
- 12- 12<sup>th</sup> Iranian Pharmaceutical Science Congress, Zanjan, Aug2010, Challenges in quality control of glycoprotein biopharmaceuticals
- 13- 13<sup>th</sup> Iranian Pharmaceutical Science Congress, Isfahan, Sep2012, Design of a ssDNA oligodeoxynucleotide library with diverse random sequences and its amplification optimization
- 14-The national conference on protein and peptide science: from basic to medical and industrial application, Shiraz, Dec 2014, Design of oligonucleotide ligands with affinity for coagulation factor VIII
- 15- The national conference on protein and peptide science: from basic to medical and industrial application, Shiraz, Dec 2014, Fusion proteins in pharmaceutical sciences: today and tomorrow
- 16- The national conference on protein and peptide science: from basic to medical and industrial application, Shiraz, Dec 2014, Analysis of host cell proteins, the uninvited guests

17- The national conference on protein and peptide science: from basic to medical and industrial application, Shiraz, Dec 2014, Innovative position of aptamer in the protein world

18- The 3<sup>rd</sup> national seminar on the role of medical basic science on health promotion, Tehran, Feb 2015, Clinical potentials of aptamer ligands.

19- 14th Iranian Pharmaceutical Sciences Congress and 1st Symposium of Biopharmaceutics and Pharmacokinetics, Tehran, Dec 2015, Attachment of coagulation factor viii to the gold magnetic nanoparticles for analytical application.

20- 14th Iranian Pharmaceutical Sciences Congress and 1st Symposium of Biopharmaceutics and Pharmacokinetics, Tehran, Dec 2015, The Importance of Bioactive Peptides Derived From Macro or Microalgae.

21- 12<sup>th</sup> Iranian peptide conference & Humboldt-Kolleg, Tehran, Jan 2017, Design of a novel antimicrobial peptide based on magainin II sequence.

22-2<sup>nd</sup> International and 10<sup>th</sup> National biotechnology congress of Islamic Republic of Iran, Tehran, Aug 2017, Screening of Several Endemic Cyanobacteria as Bioreactors for the Synthesis of Gold Nanoparticles

23-15<sup>th</sup> Iranian Pharmaceutical Sciences Congress, Hamedan, Oct 2017, Aptasensors: Promising Affinity Biosensors for *in vitro* & *in vivo* Applications

24-15<sup>th</sup> Iranian Pharmaceutical Sciences Congress, Hamedan, Oct 2017, Application of Molecular Biology Methods in Herbal Medicine Authentication

25- 1<sup>st</sup> international congress on pharmacy updates, Tehran, Feb. 2018, Peptides and proteins with antifungal activity from medicinal plants.

26-1<sup>st</sup> international congress on pharmacy updates, Tehran, Feb. 2018, Development and stability comparison of targeted therapeutic nanomolecules of aptamer-miRNA conjugates using two methods of conjugation

27-The 3<sup>rd</sup> conference on protein and peptide sciences, Shiraz, April 2018, Chemical synthesis of pexiganan as a potent antimicrobial peptide and comparative assessment of its bioactivity with a commercial cyclic antimicrobial peptide.



28-2<sup>nd</sup> international congress on pharmacy updates, Tehran, Feb. 2019, Strategies in the Design of novel antimicrobial peptides: tools and effective properties in biological activity

29-2<sup>nd</sup> international congress on pharmacy updates, Tehran, Feb. 2019, Optimization of DNA Aptamer attachment on gold nanoparticles to develop an aptasensor for a bacterial infection

30-2<sup>nd</sup> international congress on pharmacy updates, Tehran, Feb. 2019, Comparative study of different methanolic extracts for partial purifying of Mycosporine-like Amino Acids in a microalgae species.

31- 16<sup>th</sup> Iranian Pharmaceutical Science Congress, Kermanshah, Nov. 2019, Study the production of mycosporine like amino acids in *Fischerella sp.*

### **Thesis supervisor/Advisor:**

#### **Finished:**

1. Detection of the gelatin origin in pharmaceutical capsules by PCR, **Pharm.D. degree**, 2014, **Advisor**
2. Design and development of an aflatoxin-B1 biosensor based on aptamer-DNAzyme, **Ph.D. degree**, 2014, **Advisor**
3. Analysis and optimization of the binding of divalent iron to bioactive casein phosphopeptides, **Ph.D. degree**, 2016, **Advisor**
4. Design and development of a chimeric nanomolecule containing aptamer and miRNA let-7d and evaluation of its effect on gastric cancer cell line; **MSc degree**, 2016, **Supervisor**
5. Evaluation the effect of nucleolin specific aptamer- miRNA let-7d conjugate on Janus Kinase expression in gastric cancer cell line; **MSc degree**, 2016, **Supervisor**
6. Design and antibacterial evaluation of a new anti-microbial peptide based on Magainin II; **MSc degree**, 2016, **Supervisor**
7. Extraction of mycosporine like amino acids from cyanobacteria, **Pharm.D. degree**, 2019, **Supervisor**

**In progress:**

1. Study of the induced structural changes in pexiganan (as an antimicrobial peptide) through metal nanoparticle attachment, **Ph.D. degree**, From 2016, **Supervisor**
2. Design and development of aptameric ligand for an oral pathogen, **Ph.D. degree**, From 2017, **Supervisor**
3. Design and development of cancer specific aptameric ligands using machine learning methods, **Ph.D. degree**, From 2017, **Supervisor**
4. Evaluation of the anti-inflammatory activity of polysaccharides produced by one of the cyanobacteria species. **Pharm.D. degree**, From 2019, **Advisor**

**Experimental skills:**

SELEX, PCR, Asymmetric PCR, Gel electrophoresis, SDS-PAGE, 2D electrophoresis, Column chromatography, Transformation, Cloning