

# CURRICULUM VITAE

**Reza ABOOFAZELI, Pharm.D., Ph.D.**



**Name:** Reza ABOOFAZELI

**Date of Birth:** 30 September 1963

**Place of Birth:** Tehran, IRAN

**Marital Status:** Married

**Job Title:** Professor of Pharmaceutics & Chairman of Protein Technology Research Center

**Affiliation:** Department of Pharmaceutics, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, IRAN  
Protein Technology Research Center, Shahid Beheshti University of Medical Sciences, Tehran, IRAN

**Work Experience:** Employed by School of Pharmacy, Shahid Beheshti University of Medical Sciences as Instructor of Pharmacy in 1988,  
Assistant Professor of Pharmaceutics in 1994,  
Associate Professor of Pharmaceutics in 1999,  
Professor of Pharmaceutics in 2004.

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Post code: 19968-35113

## **EDUCATION AND QUALIFICATIONS**

### **Pharm. D. (Pharmacy Doctorate)**

Tehran University of Medical Sciences, IRAN

**Tehran, 1983-1988**

#### **Pharm.D. Thesis:**

*Synthesis of  $\alpha$ -hydroxycarboxylates and 2-hydroxybenzoates*

### **Ph.D., Pharmaceutics**

Chelsea Department of Pharmacy, King's College London, UK

**London, 1990-1994**

#### **Ph.D. Thesis:**

*The formation and characterization of phospholipid microemulsions.*

### **MSc., Medical Education**

**Tehran, 1997-2000**

Shahid Beheshti University of Medical Sciences, WHO Collaborating Center, Education Development Center.

#### **MSc. Thesis:**

*Pilot study of Internal Evaluation Questionnaires designed for Faculties and various Departments at the School of Pharmacy, Shahid Beheshti University of Medical Sciences*

### **Sabbatical**

Department of Pharmaceutics, College of Pharmacy, Rhode Island University, USA

**Jan 2001 - Sep 2001**

**Supervisors:** Professor Hossein Zia & Professor Thomas E. Needham, School of Pharmacy, Shahid Beheshti University of Medical Sciences

**AREA OF EXPERTISE**

- Nanopharmaceuticals (Nanospheres/Microspheres, Nanoemulsions/Microemulsions/Polymeric Micelles, Carbon Nanotubes (CNTs), Solid Lipid Nanoparticles (SLNs)
- Peptide and Protein Drugs (formulation, delivery)
- Medical and Pharmaceutical Statistics
- Dispersed Systems (Suspensions and Emulsions, Mico/Nanoemulsions)
- Physical Pharmacy

**MEMBERSHIP IN COMMITTEES AND COUNCILS*****A) School of Pharmacy, Shahid Beheshti University of Medical Sciences, TEHRAN, IRAN***

- Member of Editorial Board, Journal of Research in Medical Sciences **2003-2007**
- Deputy of Administration and Financial Affairs **2000-2002**
- Member of Editorial Board, Iranian Journal of Pharmaceutical Research **2002- present**
- Deputy of Research **1995-1999**
- Head of Pharmaceutics Department **1994-1998**

***B) Shahid Beheshti University of Medical Sciences (Senate House), TEHRAN, IRAN***

- Member of the Supreme Audit Board **2017- 2019**
- Chairman of the Journal “Trends in Peptide and Protein Sciences (TPPS)” **2015- present**
- Member of Vice-Chancellor of Research Policy Making Council **2015-2019**
- Director of Protein Technology Research Center (PTRC) **2012-present**
- Council of Incubation Center for Pharmaceutical Technology (ICPT) **2011- 2015**
- Postgraduate and Complementary Education Council, School of Pharmacy **2011- 2013**
- Supreme Council of Tissue Engineering and Nanotechnology Research Center **2006- 2017**
- Supreme Research Committee **1998-1999, 2005-2007**
- Director of Pharmaceutical Sciences Research Center **2005-2007**
- Deputy of Administration and Financial Affairs **2003-2005**
- Pharmacy Faculties Promotion Committee **1999-2007**
- Educational Program Evaluation Committee of Educational Development Center **1995-1999**

***C) Ministry of Health, Treatment and Medical Education, IRAN***

- Board Member of Iranian Association of Pharmaceutical Scientists (IAPS), **2021-present**
- Member of Education and Research Council of Virtual Medical Sciences University **2017- present**
- Generic Drugs Review and Approval Committee **2002-2005**
- Iranian National Formulary Committee **1999-2012**
- Exam and Evaluation Committee of Pharmaceutics (Board of Pharmaceutical Sciences, Postgraduate Students) **1998-2007, 2019-present**
- Iranian Pharmacopoeial Council **2006-209**
- Exam and Evaluation Committee of Pharmaceutical Biomaterials (Board of Pharmaceutical Sciences, Postgraduate Students) **2010-2012**
- Pharmacy Curriculum Review Committee **1997-2000**
- Commission of Eligibility Approval for Drug Manufacturing and Import **2005-2007**

**RESPONSIBILITIES IN EXTERNAL BODIES (Outside the University)**

- Board Member and Managing Director of Osvah Pharmaceutical Company, Iran. **2012-2013**
- Board member of BioDarou Company, Iran. **2010-2012**
- Board member and Managing Director, Iranian Blood Research and Fractionation Holding Company (IBRF), Iran. **2006-2010**
- Board member, Sobhan Oncology Pharmaceutical Company, Iran. **2007-2009**



- Board member and Chairman of the Board, Zahravi Pharmaceutical Company, Iran. **2006-2008**
- Board member, Zahravi Pharmaceutical Company, Iran. **2004-2006**
- Board Member and Managing Director of Osvah Pharmaceutical Company, Iran. **2012-2013**

## **PUBLISHED BOOKS**

- 1) Physicochemical Principles of Pharmacy and Problem Solving, 2004 (in Farsi).
- 2) Iranian National Formulary (INF), 1<sup>st</sup> (1999); 2<sup>nd</sup> (2001); 3<sup>rd</sup> (2004); 4<sup>th</sup> (2007) and 5<sup>th</sup> (2010), Member of the Editorial Board, (in Farsi).
- 3) Physical Pharmacy, Vol. 1, 2019 (in Farsi).
- 4) Solutions to Question and Problems, in accompany to Physical Pharmacy, Vol. 1, 2019 (in Farsi).
- 5) Physicochemical Principles of Pharmacy, 2023 (translated in Farsi).
- 6) Physical Pharmacy (in Farsi), Vol. 2, 2023 (in Farsi) (In press).
- 7) Solutions to Question and Problems, in accompany to Physical Pharmacy, Vol. 2, 2023 (in Farsi) (In press).

## **SOME RESEARCH PROJECTS**

- Method development for the assay of posaconazole in plasma. Co-worker.
- Development of oil in water nanoemulsion of cumin/dill essential oil. Co-worker.
- In vitro evaluation of wound healing effect of a new designed antimicrobial peptide. Co-worker.
- Design, production and evaluation of a new antimicrobial peptide. Principal Co-worker
- Synthesis of dipeptide pal-KT. Principal Co-worker.
- Method development for the analysis of dipeptide pal-KT. Principal Co-worker.
- Preparation and characterization of Brinzolamide-loaded nanoemulsions and evaluation of its efficacy as a novel ophthalmic delivery system. 2<sup>nd</sup> Project coordinator.
- Laccase solubilization in water-in-oil microemulsions. Enzyme catalysis and stability. Co-Worker.
- Replacement of specific ligand for pharmaceutical proteins using SELEX method. Co-worker.
- Design and Development of an oligonucleotide aptamer as a specific ligand to human coagulation factor VIII. Co-worker.
- Study on the potential of polymeric micelles for the penetration of a loaded drug through the blood brain barrier. Project coordinator and supervisor.
- Study on the aggregation phenomenon in proteins and evaluation of protective effects of various additives on protein aggregation. Project coordinator and supervisor
- Optimization of formulation and application of lyophilization technique as approaches to increase the stability and efficacy of Intravesical BCG. Project coordinator and supervisor.
- Use of a nanoemulsion base for increasing the solubility and improvement of anti-proliferative activity of Rapamycin. Project coordinator and supervisor.
- Investigation into the influence of PEGylation in optimizing the solubility and biocompatibility of carbon nanotubes in biological systems. Project coordinator and supervisor.
- Preparation and Evaluation of cyclosporine-loaded carbon nanotubes as a novel IV dosage form with optimized physicochemical properties and increased efficiency. Project coordinator and supervisor.
- Establishment of a valid and standard HPLC method for quality control of Somatropin and its pharmaceutical preparations. Project coordinator and supervisor.
- Preparation and characterization of urea-loaded microspheres as an approach to formulate topical moisturizing product. Project coordinator and supervisor.
- Preparation, evaluation and optimization of recombinant human growth hormone-loaded biodegradable microspheres as a novel approach for oral protein delivery. Project coordinator and supervisor.

## **MEMBERSHIP IN INTERNATIONAL SOCIETIES**

- A) American Association of Pharmaceutical Scientists (AAPS), 2005-2017



CV – Dr. R. Aboofazeli

- B) Controlled Release Society (CRS), 2005-2010
- C) Medical Council of I.R. Iran, 1988-Present
- D) Iranian Association of Pharmaceutical Scientists (IAPS), 2000-Present
- E) Iranian Association of Pharma Management and Economics (IAPME), 2012-2014

## **SOME PUBLICATIONS**

- **Optimized cutaneous delivery of anti-wrinkle dipeptide KT via molecular modification: preformulation, permeation, and the importance of conjugate chain length**  
(2023) *Bioimpacts*, In press.  
Mahsa Sayed Tabatabaei , Farzad Kobarfard, Reza Aboofazeli, Sorour Ramezanpour, Hamid Reza Moghimi
- **Application of supramolecular technology for the delivery of erythropoietin: Synthesis of  $\beta$ -cyclodextrin-erythropoietin inclusion complex via a host-guest interaction**  
(2023) *Journal of Drug Delivery Science and Technology*, 84, 104460  
Bahareh Alizadeh Bishak, Afshin Zargi, Reza Aboofazeli, Arash Mahboubi
- **Preparation application of SPRA technology for delivery of erythropoietin: Stability evaluation of conjugated erythropoietin with adamantane and in SPRA inclusion complex**  
(2022) *Iranian Journal of Pharmaceutical Research*, 21(1):e134282.  
Bahareh Alizadeh Bishak, Afshin Zargi, Arash mahboubi, and Reza Aboofazeli
- **Measurement of Hansen solubility parameters of third-degree burn eschar**  
(2021) *Burns*, 48(4), 860-871.  
Maryam Hosseini, Michael S. Roberts, Reza Aboofazeli, Hamid R. Moghimi
- **Preparation and characterization of lidocaine-loaded, microemulsion-based topical gels**  
(2022) *Iranian Journal of Pharmaceutical Research*, 21: e1: 1-21.  
Mahshid Daryab, Mehrdad Faizi, Arash Mahboubi and Reza Aboofazeli
- **Brinzolamide-loaded nanoemulsions: ex vivo transcorneal permeation, cell viability and ocular irritation tests**  
Mohammad Mehdi Mahboobian, Ali Seyfoddin, Reza Aboofazeli, Seyed, Mohsen Foroutan, Ilva Dana Rupenthal  
(2019) *Pharmaceutical Development and Technology*, 24(5), 600-606.
- **Rapamycin-loaded, capryol tm 90 and oleic acid mediated nanoemulsions: formulation development, characterization and toxicity assessment**  
(2018) *Iranian Journal of Pharmaceutical Research* 17(3), 830-850.  
Sobhani H, Tarighi P, Ostad SN, Shafaati A, Nafissi-Varcheh, N, **Aboofazeli, R.**
- **Formulation development and evaluation of the therapeutic efficacy of brinzolamide containing nanoemulsions**  
(2016) *Iranian Journal of Pharmaceutical Research*, 16(3): 847-857.  
Mahboobian MM, Seyfoddin A, Rupenthal ID, Aboofazeli R, Foroutan 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**  
(2017) *Iranian Journal of Pharmaceutical Research*, 16(2): 734-744.  
Vahidi H, Nafissi-Varcheh N, Kazemi B, **Aboofazeli R**, Shahhosseini S, Tabarzad M.
- **Development of an RP-HPLC-UV method for simultaneous detection of nimodipine and its metabolite in cerebrospinal fluid of rat**  
(2017) *Iranian Journal of Pharmaceutical Research*, 16(2): 471-477.  
Sotoudegan S, Amini M, Faizi M, **Aboofazeli R.**
- **Brinzolamide-loaded nanoemulsions: In vitro release**



(2016) *Iranian Journal of Pharmaceutical Sciences*, 12(3): 75-93.

Mahboobian MM, Foroutan M, **Aboofazeli R.**

- **Nimodipine-loaded pluronic® block copolymer micelles: preparation, characterization, in vitro and in vivo studies**

(2016) *Iranian Journal of Pharmaceutical Research*, 15(4): pp. 641-661.

Sotoudegan S, Amini M, Faizi M, **Aboofazeli R.**

- **Laccase activity in CTAB-based water-in-oil microemulsions**

(2016) *Iranian Journal of Pharmaceutical Research*, 15(3): pp. 441-452.

Azimi M, Nafissi N, Faramarzi MA, **Aboofazeli, R.**

- **Study of laccase stability and activity in the presence of ionic and non-ionic surfactants and the bioconversion of indole in laccase-TX-100 system**

(2016) *Journal of Molecular Catalysis B: Enzymatic*, 126: 69-75.

Azimi M, Nafissi N, Mogharabi M, Faramarzi MA, **Aboofazeli, R.**

- **Formulation development and toxicity assessment of triacetin mediated nanoemulsions as novel delivery systems for rapamycin.**

(2015) *Iranian Journal of Pharmaceutical Research*, 14 (Supplement), pp. 3-21.

Sobhani H, Tarighi P, Ostad SN, Shafaati A, Nafissi-Varcheh, N, **Aboofazeli, R.**

- **Laccase activity, stability and kinetic parameters in aqueous surfactant solutions**

(2014) *Molecular Biology Research Communications*, 3 (Supplement), 102.

Azimi, M., Nafissi-Varcheh, N., **Aboofazeli, R.**, Faramarzi, MA.

- **Biocatalysis in water-in-oil microemulsion systems**

(2014) *Molecular Biology Research Communications*, 3 (Supplement), 103.

Azimi, M., Nafissi-Varcheh, N., **Aboofazeli, R.**, Faramarzi, MA.

- **Analysis of aggregation behavior of alpha interferon during agitation and freeze-thawing stresses**

(2014) *Molecular Biology Research Communications*, 3 (Supplement), 275.

Salmannejad, F., Nafissi-Varcheh, N., Shafaati, A., **Aboofazeli, R.**

- **Design of oligonucleotide ligands with affinity for coagulation factor VIII**

(2014) *Molecular Biology Research Communications*, 3 (Supplement), 71.

Tabarzad, M., Kazemi, B., Vahidi, H., **Aboofazeli, R.**, Shahhosseini, S., Nafissi-Varcheh, N.

- **Challenges to improve the stability and efficacy of an intravesical BCG product**

(2014) *Iranian Journal of Pharmaceutical Research*, 13 (Supplement), pp. 143-150.

Hozouri, HR., Norouzian D., Nafissi-Varcheh, N., **Aboofazeli, R.**

- **Study on the effect of solution conditions on heat induced-aggregation of human alpha interferon**

(2014) *Iranian Journal of Pharmaceutical Research*, 13 (Supplement), pp. 27-34.

Salmannejad, F., Shafaati, A., Nafissi-Varcheh, N., **Aboofazeli, R.**

- **Challenges to design and develop of DNA aptamers for protein targets. I. optimization of asymmetric PCR for generation of a single stranded DNA library**

(2014) *Iranian Journal of Pharmaceutical Research*, 13 (Supplement), pp. 133-141.

Tabarzad, M., Kazemi, B., Vahidi, H., **Aboofazeli, R.**, Shahhosseini, S., Nafissi-Varcheh, N.

- **A reverse phase high performance liquid chromatographic method for determination of rapamycin**

(2013) *Iranian Journal of Pharmaceutical Research*, 12 (Supplement), pp. 75-79.

Sobhani H, Shafaati A, Nafissi-Varcheh, N, **Aboofazeli, R.**

- **PEGylated single-walled carbon nanotubes as nanocarriers for cyclosporin A delivery**

(2012) *AAPS PharmSciTech*, 14 (2), pp. 593-600.

Hadidi, N., Kobarfard, F., Nafissi-Varcheh, N., **Aboofazeli, R.**



- **Evaluation of the effect of PEGylated single-walled carbon nanotubes on viability and proliferation of Jurkat cells**

(2012) *Iranian Journal of Pharmaceutical Research*, 11 (1), pp. 27-37.

Hadidi, N., Shirazi, S.F., Kobarfard, F., Nafissi-Varcheh, N., **Aboofazeli, R.**

- **Optimization of single-walled carbon nanotube solubility by non-covalent PEGylation using experimental design methods.**

(2011) *International Journal of Nanomedicine*, (6), pp. 737-746.

Hadidi, N., Kobarfard, F., Nafissi-Varcheh, N., **Aboofazeli, R.**

- **Preparing poly (lactic-co-glycolic acid) (PLGA) microspheres containing lysozyme-zinc precipitate using a modified double emulsion method**

(2011) *Iranian Journal of Pharmaceutical Research*, 10 (2), pp. 203-209.

Nafissi-Varcheh, N., Luginbuehl, V., **Aboofazeli, R.** Merkle, H.P.

- **An approach to the design of a particulate system for oral protein delivery. II. Preparation and stability study of rhGH-loaded microspheres in simulated gastrointestinal fluids.**

(2011) *Iranian Journal of Pharmaceutical Research*, 10 (2), pp. 183-192.

Nafissi-Varcheh, N., **Aboofazeli, R.**

- **Nanometric-scaled emulsions (nanoemulsions).**

(2010) *Iranian Journal of Pharmaceutical Research*, 9 (4), pp. 325-326.

**Aboofazeli, R.**

- **Carbon nanotubes: A promising approach for drug delivery**

(2010) *Iranian Journal of Pharmaceutical Research*, 9 (1), pp. 1-3.

**Aboofazeli, R.**

## **SOME SUPERVISED Ph.D. THESES**

- i. Preparation and characterization of core-shell, imatinib-loaded nanofibers and evaluation of its efficacy for the treatment of breast cancer.
- ii. Molecular dynamics simulation of mesoporous silica nanoparticles for pH-responsive delivery of il-12 and resiquimod.
- iii. Preparation and in vivo characterization of posaconazole lipidic nanoparticles and evaluation of their efficacy in enhancing oral bioavailability in rat.
- iv. Preparation of PEGylated nanoparticles of erythropoietin alfa by using supramolecular technology and their physicochemical characterization
- v. Synthesis of dipeptide KT fatty acid derivatives and investigation into the polarity, self-association and transdermal absorption
- vi. Measurement of HSP in 3<sup>rd</sup> degree burn and design of a HSP-based nanoemulsion for optimization of peptide delivery in burned skin.
- vii. Measurement of Hansen solubility parameters in stratum corneum and its application as a novel tool in the design of nanoemulsions and their skin absorption
- viii. Preparation and characterization of Brinzolamide-loaded nanoemulsions and evaluation of its efficacy as a novel ophthalmic delivery system
- ix. Study on the aggregation of Interferon alpha in various conditions and evaluation of the influence of selective excipients for the prevention of aggregation.
- x. Preparation and characterization of polymeric micelles containing Nimodipine and evaluation of their penetration capability into Blood Brain Barrier.
- xi. Preparation and Characterization of Rapamycin-Containing Nanoemulsions and Evaluation of its Anti-Proliferative Activities in Cellular Medium.
- xii. Study on the biocatalytic activity and stability of laccase in water-in-oil microemulsion systems.
- xiii. Optimization of formulation and application of lyophilization technique as approaches to increase the stability and efficacy of Intravesical BCG, manufactured by Pasteur Institute in Iran.



- xiv. Design and Development of an oligonucleotide aptamer as a specific ligand to human coagulation factor VIII", (Research Advisor)
- xv. Preparation and evaluation of cyclosporine-loaded carbon nanotubes with optimized physicochemical properties and increased efficiency.
- xvi. Preparation and characterization of biodegradable microspheres containing recombinant human growth hormone (rhGH) as an approach to design an oral protein delivery system.
- XVII. Preparation and characterization of urea loaded microspheres and Rapamycin loaded nanospheres as an approach in treatment of skin diseases.

## **TEACHING RESPONSIBILITIES**

### **1) Undergraduate Pharmacy Students**

- **Physical Pharmacy**, course 1.  
States of Matter, Non-electrolyte Solutions, Electrolyte Solutions, Ionic Equilibria , Buffered and Isotonic Solutions
- **Physical Pharmacy**, course 2:  
Chemical Kinetics and Stability, Interfacial Phenomena, Colloidal Dispersions, Coarse Dispersions
- **Statistics** (Pharmaceutical & Medical Statistics)
- **Pharmaceutics**, course 3 (Dispersed and colloidal systems)

### **2) Postgraduate Pharmacy Students**

- Advanced Physical Pharmacy and Pharmaceutics (Micro/Nanoemulsions),
- Protein and Peptide Drugs

## **INTERNAL PATENTS**

- ***Microemulsion-based dermatological gels with local anesthetic effect***

State Organization for Registration of Deeds and Properties: Intellectual Property Center, I.R. Iran  
Daryab M, Mahboubi A, **Aboofazeli R.**

- ***Inhibition and preservation of biological activity of pharmaceutical proteins, using Extremolytes as compatible solutes***

State Organization for Registration of Deeds and Properties: Intellectual Property Center, I.R. Iran  
Salmannejad F, Shafaati A, **Aboofazeli R.**

- ***Ectoin as an Extremolyte preservative for interferon-alpha 2beta against physical instability***

State Organization for Registration of Deeds and Properties: Intellectual Property Center  
Salmannejad F, Nafissi N, Shafaati A, **Aboofazeli R.**

- ***Preparation and characterization of single-walled carbon nanotubes containing cyclosporine for the improvement of its effectiveness***

State Organization for Registration of Deeds and Properties: Intellectual Property Center  
Hadidi N, Nafissi N, Kobarfard F, **Aboofazeli R.**