

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: Permanent Professor of Pharmaceutics

Affiliation: Department of Pharmaceutics, School of Pharmacy, 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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EDUCATION AND QUALIFICATIONS

Pharm. D. (Pharmacy Doctorate)

Tehran University of Medical Sciences, IRAN

Tehran, 1983-1988

Pharm.D. Thesis:

Synthesis of α -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

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)

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**
- 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

- 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

PUBLISHED BOOKS

- 1) Physical Pharmacy and Pharmaceutical Sciences (Physical, Chemical and Biopharmaceutical Principles in Pharmaceutical Sciences), 2019 (In Farsi)
- 2) Solutions to Question and Problems, in accompany to Physical Pharmacy and Pharmaceutical Sciences (Physical, Chemical and Biopharmaceutical Principles in Pharmaceutical Sciences), 2019 (In Farsi)
- 3) Physicochemical Principles of Pharmacy and Problem Solving, 2004 (in Farsi).
- 4) Iranian National Formulary (INF), 1st (1999); 2nd (2001); 3rd (2004); 4th (2007) and 5th (2010) Editions (in Farsi).
- 5) Physical Pharmacy and Pharmaceutical Sciences (in Farsi), Vol. 1, 2019
- 6) Solutions to Questions and Problems to accompany Physical Pharmacy and Pharmaceutical Sciences (in Farsi), Vol. 1, 2019

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. 2nd 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
- 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

- ***Measurement of Hansen Solubility Parameters of third-degree burn eschar (2021) Burns, In Press (2021).***
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, SF., 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.

SUPERVISED PH.D. THESES

- i. Preparation and in vivo characterization of posaconazole lipidic nanoparticles and evaluation of their efficacy in enhancing oral bioavailability in rat.
- ii. Preparation of PEGylated nanoparticles of erythropoietin alfa by using supramolecular technology and their physicochemical characterization
- iii. Synthesis of dipeptide KT fatty acid derivatives and investigation into the polarity, self-association and transdermal absorption
- iv. Measurement of HSP in 3rd degree burn and design of a HSP-based nanoemulsion for optimization of peptide delivery in burned skin.

- v. Measurement of Hansen solubility parameters in stratum corneum and its application as a novel tool in the design of nanoemulsions and their skin absorption
- vi. Preparation and characterization of Brinzolamide-loaded nanoemulsions and evaluation of its efficacy as a novel ophthalmic delivery system
- vii. Study on the aggregation of Interferon alpha in various conditions and evaluation of the influence of selective excipients for the prevention of aggregation.
- viii. Preparation and characterization of polymeric micelles containing Nimodipine and evaluation of their penetration capability into Blood Brain Barrier.
- ix. Preparation and Characterization of Rapamycin-Containing Nanoemulsions and Evaluation of its Anti-Proliferative Activities in Cellular Medium.
- x. Study on the biocatalytic activity and stability of laccase in water-in-oil microemulsion systems.
- xi. 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.
- xii. Design and Development of an oligonucleotide aptamer as a specific ligand to human coagulation factor VIII", (Research Advisor)
- xiii. Preparation and evaluation of cyclosporine-loaded carbon nanotubes with optimized physicochemical properties and increased efficiency.
- xiv. Preparation and characterization of biodegradable microspheres containing recombinant human growth hormone (rhGH) as an approach to design an oral protein delivery system.
- XV. 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, Thermodynamics, Non-electrolyte, Electrolyte Solutions, Ionic Equilibria , Buffered and Isotonic Solutions
- **Physical Pharmacy**, course 2:
Chemical Kinetics and Stability, Interfacial Phenomenon, Colloidal Dispersions, Coarse Dispersions
- **Statistics** (Pharmaceutical & Medical Statistics)
- **Pharmaceutics**, course 3 (Dispersed and colloidal systems)

2) Postgraduate Pharmacy Students

- Advanced Physical Pharmacy, Advance Pharmaceutics, Protein and Peptide Drug Delivery Systems

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.**