MOHSEN AMIN



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Career interests: Entrepreneurship positions blending academic expertise and knowledge transfer activities

Education

April, 2009 – December 2011 Post-doctoral Fellow

 Department of Molecular Genetics

 Faculty of Medicine, University of Toronto

 Research title: Humanized mouse models of

 gonococcal infections

September 2002 – June 09 PhD in Medical Microbiology

 University of Toronto

 Supervisor: Dr. Richard P. Ellen

 Thesis: Identifying actin-perturbing peptide

 domains of *Treponema denticola* major outer

 sheath membrane protein

September 1995 – September 1998 Master of Science in Medical Microbiology

 Tehran University of Medical Sciences

 Tehran, Iran

 Supervisor: Dr. Saeed Eshraghi

 Thesis: The study of *nocardial* infection in

 pulmonary patients

Academic and Research Experience

September 2013 – Present Assistant Professor

 Department of Drug and Food Control

 Faculty of Pharmacy

 Tehran University of Medical Sciences

December 2011 – September 2013 Faculty member

 Institute of Holistic Nutrition

 Toronto, Canada

January 2012 – September 2013 Research Scientist

 Matrix Dynamics Group, University of Toronto

 Toronto, Canada

March, 1998 – September 2001 Research Scientist (Department of Biological

 Products)

 Food and Drug Control Laboratories

 Ministry of Health

 Tehran, Iran

May, 1995 – January 1998 Lab Technician (Microbiology laboratory)

 Central Clinical Diagnostic Laboratory

 Tehran, Iran

Executive Experience

Head of commercialization group, Tehran University of Medical Sciences

Chief Adviser of Industry Partnership Office, Tehran University of Medical Sciences

Chief coordinator of International Exchange Programs, Faculty of Pharmacy, Tehran University of Medical Sciences

Entrepreneurship Experience

Co-founder and member of board of directors at Yas Daru Pharmaceutical Company in Tehran, Iran (since 1998). Yas Daru Herbal Pharmaceutical Company was founded in 1998 and has grown to a wide-range of capacities including conducting basic science research, manufacturing plant-based medications, food supplements and cosmetics. Our company is also capable of developing medicinal products and feed additives for animals. Through a knowledge transfer strategy, we have succeeded to develop and transfer our research knowledge to the pharmaceutical industry and to formulate our ideas into finished products (www.yasdaru.com).

Founder of AVA Phytoceuticals in Toronto, Canada (since 2009). In Ava Phytoceuticals we develop novel Natural Health Products (NHP) to help different health conditions including depression, hormonal imbalances in women, cold and flu symptoms, gum diseases and chronic inflammation. Comprehensive research has been conducted at the University of Toronto to get a better understanding of the effect of certain Natural Health Products such as turmeric, ginger and green tea extract along with their bioactive components on the inflammatory reactions. Our products have Canadian licenses and are manufactured in collaboration with Natures Formula which is a progressive Canadian product development and manufacturing company with over 30 years in Natural Health Products. Banting Medical is the major shareholder of Ava Phytoceuticals company (http://www.bantingmedical.ca/ava-phytoceuticals.html).

United States Patent

Peptide with putative role in cytoskeletal protection. U.S. patent No. US 7,659,366 B2. Date of patent: February 9, 2010; Inventors: Richard P. Ellen and Mohsen Amin. The The invention relates to a novel peptide conjugate useful for stabilizing the actin cytoskeleton of mammalian cells. More particularly, the invention relates to a conjugate of a peptide found within the sequence of a bacterium’s major outer sheath protein and bovine serum albumin (BSA), and the use of this conjugate for stabilizing the actin cytoskeleton of mammalian cells, and for preventing or controlling the migration of mammalian cells.

Granted Fundings

Principal investigator in Research Council Grant of Tehran University of Medical Sciences. Granted in 2016. Project title: Investigation of the impact of recombinant arazyme on inflammation and cancer using animal model and cancer cell lines.

Principal investigator in Research Council Grant of Tehran University of Medical Sciences. Granted in 2015. Project title: Cloning and expression of antigenic determinants of the periodontal pathogen, *Treponema denticola.*

Principal investigator in Research Counsil Grant of Tehran University of Medical Sciences. Granted in 2015. Project title: The investigation of *in vitro* effects of essential oils of *Mentha pulegium* and *Zataria multifora* on antigenic determinants of *Helicobacter pylori.*

Co-investigator in BioDiscovery Toronto Grant. Granted in 2007. Project title: Therapeutic application by modulating neutrophil chemotaxis in acute pneumonia.

Co-investigator in MaRS Innovation Proof of Principle Grant. Granted in 2012. Project title: Impact of P34BSA, a novel anti-inflammatory bacterial-derived peptide: Effectiveness in preventing periodontal disease in a murine model.

Teaching and Instruction Experience

Undergraduate instruction (Sep. 2005-June 2008): Teacher assistant, Oral Microbiology (DEN124Y). University of Toronto, Faculty of Dentistry

Undergraduate/graduate instruction (Sep. 2004-June 2006): Research project instructor of undergraduate and graduate students. University of Toronto, Faculty of Dentistry

Faculty member at the Institute of Holistic Nutrition (May 2012 – Sep. 2013): Course instructor: Biological Chemistry BC001, Body Metabolism 002, Advanced Nutrition Research NR006

Assistant Professor at Tehran University of Medical Sciences (September 2013 – present): Systematic bacteriology for pharmacy students, oral microbiology for PhD students of bacteriology program, research methodology for PhD students of Traditional Medicine

Attended Workshops and Trainings

January, 2015 International Training Course on Food Safety

 and Quality Standards for Market Access

 Held by National Productivity Organization (APO)

 Islamabad, Pakistan

June, 2014 e-learning Course on Risk Management of

 Foodborne Pathogens

 Held by National Productivity Organization (APO)

 Tehran, Iran

February, 2012 Workshop on Good Manufacturing Practices

 Held by Natural Health Products Directorate

 Health Canada, Toronto, Canada

April, 2009 Training Course on Animal Care

 Held by Division of Comparative Medicine

 Faculty of Medicine, University of Toronto

 Toronto, Canada

August, 2007 Training on Laboratory Biosafety

 Held by Office of Environmental Health and Safety

 University of Toronto, Toronto, Canada

May, 2007 Workshop on Real-Time PCR for the Clinical

 Microbiology Laboratory

 Held by American Society for Microbiology

 Metro Toronto Convention Centre, Toronto, Canada

February, 2000 Workshop on HLA Typing

 Held by the Department of Immunology

 Faculty of Medicine, Tehran University of Medical

 Sciences, Tehran, Iran

October, 2000 Workshop on the Current Good Manufacturing

 Practice

 Held by UNDP/World Bank/WHO special

 programme for Research and Training in Tropical

 Disease (TDR)

 Pasture Institute of Iran, Tehran, Iran

November, 2000 Training Course on Capillary Electrophoresis

 Held by Bio-Rad

 Food and Drug Control Laboratories

 Ministry of Health, Tehran, Iran

Professional Memberships

American Society for Microbiology, since 1992

International Association for Dental Research, 2002-08

Cell Signaling in Mucosal Inflammation & Pain (a strategic research training program of the Canadian Institute of Health Research), 2005-09

Health and Safety Committee, Faculty of Dentistry, University of Toronto, 2004-09

Health and Safety Committee, Faculty of Pharmacy, Tehran University of Medical Sciences, 2015

Iranian Society for Bacteriology, since 2013

Scholarships and Fellowships

U of T open fellowship, Toronto, Canada (2002 and 2003)

Harron scholarship, Toronto, Canada (2004)

CIHR strategic training fellowship, Toronto, Canada (2005)

Laboratory Skills

Antibiotic susceptibility testing; quality control of antibacterial and antifungal agents

Potency and safety tests of bacterial and viral vaccines

Identification and measurement of ingredients of bacterial and viral vaccines

Cellulose acetate electrophoresis, western blotting, capillary electrophoresis, isoelectric focusing, and densitometry image analysis

ELISA

Immunodiffusion techniques

Identification of bacteria by biochemical, molecular and serological methods

Animal cell culture techniques

Laser confocal microscopy and deconvolution microscopy

Protein purification from bacteria

DNA/RNA extraction and PCR techniques

Image analysis by computer software (NIH-Image, Image-Pro Plus, Image J)

Laboratory animal handling/animal experimentation

Immunohistochemistry

Publications

 Book chapter

**Jobin MC, Amin M, RP Ellen. 2008. Chapter 8: The molecular biology of the survival and virulence of *Treponema denticola*.** In A. H. Rogers (Ed.), *Molecular oral microbiology* (pp. 177-194). Adelaide, Australia: Caister Academic Press

 Research Articles

Maspi H, Mahmoodzadeh Hosseini H, Amin M, Imani Fooladi AA. 2016. High prevalence of extensively drug-resistant and metallo beta-lactamase-producing clinical Acinetobacter baumannii in Iran. *Microb Pathog*. 98:155-9.

Mahmoodzadeh Hosseini H, Kiyani N, Amin M, Hedayati Ch M, Imani Fooladi AA. 2016. Distribution of high-level mupirocin resistance among clinical MRSA. *J Chemother*. 4 :1-5.

Javad Nasiri M, Chirani AS, Amin M, Halabian R, Imani Fooladi AA. 2016. Isoniazid-resistant tuberculosis in Iran: A systematic review. *Tuberculosis*. 98: 104-9.

Hedayati Ch M, Amani J, Sedighian H, Amin M, Salimian J, Halabian R, Imani Fooladi AA. 2016. Isolation of a new ssDNA aptamer against staphylococcal enterotoxin B based on CNBr-activated sepharose-4B affinity chromatography. *J Mol Recognit*. 29(9): 436-45.

Imani Fooladi AA, Ch MH, Amin M, Amani J. 2016. Applications and modifications of aptamers: Potential tool for medical microbiology. *Rev Medical Microbiol*. 27(3): 107-120

Farid-Afshar F, Saffarian P, Mahmoodzadeh-Hosseini H, Sattarian F, Amin M, Imani Fooladi AA. 2016. Antimicrobial effects of Ferula gummosa Bioss gum against extended-spectrum beta-lactamase producing Acinetobacter isolates. *Iran J Microbiol*. 8(4): 263-273

Ghadaksaz A, Imani Fooladi AA, Mahmoodzadeh Hosseini H, Amin M. 2015. The prevalence of some Pseudomonas virulence genes related to biofilm formation and alginate production among clinical isolates. *J App Biomed*. 13: 61-68

Koh A, Amin M, Visser MB, Sima C, Ellen RP, Glogauer M. 2015. Inhibition of neutrophil chemotaxis by a multivalent reagent based on a short peptide sequence in *Treponema denticola* major outer sheath protein. *J Pharm Biol*. 5(2) : 56-65.

Mahmood zadeh Hosseini H, Halabian R, Amin M, Imani Fooladi AA. 2015. Texosome-based drug delivery system for cancer therapy : From past to present. *Cancer Biol Med*. 12(3) : 150-162

Imani Fooladi AA, Ashrafi E, Tazandareh SG, Koosha RZ, Rad HS, Amin M, Soori M, Larki RA, Choopani A, Hosseini HM. 2015. [The distribution of pathogenic and toxigenic genes among MRSA and MSSA clinical isolates.](http://www.ncbi.nlm.nih.gov/pubmed/25778391) *Microb Pathog*. Apr; 81: 60-6.

Badmasti F, Shahcheraghi F, Siadat SD, Bouzari S, Ajdary S, Amin M, Halabian R, Imani Fooladi AA. 2015. [Heterologous expression of 3-O-deacylase in *Acinetobacter baumannii* modulates the endotoxicity of lipopolysaccharide.](http://www.ncbi.nlm.nih.gov/pubmed/25677974) *J Mol Microbiol Biotechnol*. 25(1): 37-44.

Mahmoodzadeh Hosseini H, Soleimanirad J, Mehdizadeh Aghdam E, Amin M, Imani Fooladi AA. 2015. [Texosome-anchored superantigen triggers apoptosis in original ovarian cancer cells.](http://www.ncbi.nlm.nih.gov/pubmed/25452173) *Med Oncol*. Jan; 32(1): 409.

Imani Fooladi AA, Bagherpour G, Khoramabadi N, Fallah Mehrabadi J, Mahdavi M, Halabian R, Amin M, Izadi Mobarakeh J, Einollahi B. [Cellular immunity survey against urinary tract infection using pVAX/fimH cassette with mammalian and wild type codon usage as a DNA vaccine.](http://www.ncbi.nlm.nih.gov/pubmed/25003092) *Clin Exp Vaccine Res*. Jul; 3(2): 185-93.

Yahaghi E, Imani Fooladi AA, Amin M, Mirnejad R, Nezamzade R, Amani J. 2014. [Detection of class I integrons in *Staphyloacoccus aureus* isolated from clinical samples.](http://www.ncbi.nlm.nih.gov/pubmed/25763211) *Iran Red Crescent Med J*. Nov 10;16(11).

Qaraaty M, Kamali SH, Dabaghian FH, Zafarghandi N, Mokaberinejad R, Mobli M, Amin G, Naseri M, Kamalinejad M, Amin M, Ghaseminejad A, HosseiniKhabiri SJ, Talei D. 2014. Effect of myrtle fruit syrup on abnormal uterine bleeding: a randomized double-blind, placebo-controlled pilot study. Daru. 2(22): 45.

Sintsova A, Sarantis H, Islam EA, Sun CX, Amin M, Chan CH, Stanners CP, Glogauer M, Gray-Owen SD. 2014. [Global analysis of neutrophil responses to *Neisseria gonorrhoeae* reveals a self-propagating inflammatory program.](http://www.ncbi.nlm.nih.gov/pubmed/25188454) *PloS Pathogen*. Sep 4;10(9):

[Yousefbeyk](https://www.researchgate.net/researcher/2020190661_Fatemeh_Yousefbeyk/) F, [Gohari](https://www.researchgate.net/researcher/2006193254_Ahmad_Reza_Gohari/) AR, [Hashemighahderijani](https://www.researchgate.net/researcher/2041527421_Zeinabsadat_Hashemighahderijani/) Z, [Ostad](https://www.researchgate.net/researcher/2041521665_Sayed_Nasser_Ostad/) SN, [Salehi Sourmaghi](https://www.researchgate.net/researcher/2041513174_Mohamad_Hossein_Salehi_Sourmaghi/) MH, [Amini](https://www.researchgate.net/researcher/38976950_Mohsen_Amini/) M, [Golfakhrabadi](https://www.researchgate.net/researcher/2041567991_Fereshteh_Golfakhrabadi/) F, **Amin M,**  [Jamalifar](https://www.researchgate.net/researcher/15405060_Hossein_Jamalifar/) H, [Amin](https://www.researchgate.net/researcher/38865019_Gholamreza_Amin/) GR. 2014. Bioactive terpenoids and flavonoids from *Daucus littoralis* Smith subsp. *hyrcanicus* Rech.f, an endemic species of Iran. *Daru J of Pharm Sci*. 22(1): 12

Chege D, Higgins SJ, McDonald CR, Shahabi K, Huibner S, Kain T, Kain D, Kim CJ, Leung N, Amin M, Geddes K, Serghides L, Philpott DJ, Kimani J, Gray-Owen S, Kain KC, Kaul R. 2014. Murine *Plasmodium chabaudi* malaria increases mucosal immune activation and the expression of putative HIV susceptibility markers in the gut and genital mucosa. *J Acquir Immune Defic Syndr*. 15;65(5):517-25

**Amin M, Magnusson KE, Kápus A, Glogauer M, Ellen RP. 2008. *Treponema denticola* Msp-deduced peptide conjugate, P34BSA, promotes RhoA-dependent actin stress fiber formation independent of its internalization. *Cell* *Motility and the Cytoskeleton*. 65(5): 406-21**

**Amin M, Grove DA, Kápus A, Glogauer M, Ellen RP. 2007. An actin-stabilizaing peptide conjugate deduced from the major outer sheath protein of the bacterium *Treponema denticola*. *Cell Motility and the Cytoskeleton*. 64(9): 662-674**

**Amin M, Ho AC, Lin JY, Batista da Silva AP, Glogauer M, and Ellen RP**. 2004. Induction of *de novo* subcortical actin filament assembly by *Treponema denticola* major outer sheath protein. *Infection and Immunity*. 72(6): 3550-3654

Amin GR,  Dehmoobed Sharifabadi A,  Salehi Surmaghi MH,  Yasa N,  Aynechi Y,  Emami M,  Shidfar MR,  Amin M,  Moghadami M,  Kordbacheh P,  Zeini F. 2002. Screening of Iranian plants for antifungal activity: Part 1. *DARU* *J Pharm Sci*. 10(1) : 34-37

Eshraghi S, Amin M. 2004. Pulmonary Nocardiosis associated with Cushing’s syndrome. *Pakistan Journal of Medical Sciences*. 20 (1): 18-23

Conference Presentations

 Biointerfaces International Conference

 Zurich, Switzerland, August, 2016

16th International and Iranian Congress of Microbiology

Tehran, Iran, August, 2015

 Seminar on the Role of Bacterial Infections in Cancer Patients

 Anzali, Iran, September, 2014

 14th International Iranian Congress of Microbiology

 Tehran, Iran, August, 2013

 9th Annual Natural Health Product Conference

 Kelowna, British Columbia, May, 2012

 International Pathogenic Neisseria Conference

 Banff, Alberta, September, 2010

 Gordon Research Conference on Biology of Spirochetes

 Ventura, Califronia, January, 2008

 107th American Society for Microbiology General Meeting

 Toronto, Ontario, May, 2007

4. Gordon Research Conference on Biology of Spirochetes

 Il Ciocco, Tuscany, April, 2006

 5. ASM Conference on Cell-Cell Communication in Bacteria

 Banff, Alberta, July, 2004

6. Gordon Research Conference on Biology of Spirochetes

 Ventura, California, January, 2004

7. 101st American Society for Microbiology General Meeting

 Orlando, Florida, May, 2001

References

Dr. Richard P. Ellen. Professor emeritus. Faculty of Dentistry, University of Toronto, Room 450, 124 Edward Street, Toronto, Ontario, Canada M5G 1G6.Email: richard.ellen@dentistry.utoronto.ca

Dr. Michael Glogauer. Professor. Matrix Dynamics Group, Faculty of Dentistry. University of Toronto, Fitzgerald Building 150 College Street, Room 221, Toronto, Ontario M5S 3E2. Email: michael.glogauer@utoronto.ca

Dr. Scott Gray-Owen. Professor. Department of Molecular Genetics. Medical Sciences Building, University of Toronto, Room 4381, 1 King's college circle, Toronto, Ontario, M5S 1A8. Email: scott.gray.owen@utoronto.ca

Dr. Saeed Eshraghi. Associate Professor. Faculty of Public Health. Tehran University of Medical Sciences. Tehran, Iran. Email: eshraghs@tums.ac.ir

Dr. Mohammad Reza Fazeli. Professor. Faculty of Pharmacy, Tehran University of Medical Sciences. Email: fazelimo@tums.ac.ir