

CURRICULUM VITAE Elham Mohit

Born in April 4th 1980



Current position:

Assistant Professor

Department of Pharmaceutical Biotechnology, School of Pharmacy

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Education:

2012: Ph.D of Pharmaceutical Biotechnology, Pasteur Institute of Iran, Tehran, Iran.

2005: Pharm.D, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran.

1998: Diploma of Experimental Sciences, Shahid Mahdavi High School, Tehran, Iran.

Ph.D Thesis:

Title:

Preparation and evaluation of a preventive and therapeutic HPV DNA vaccine using HPV16 E7 co-linked to GP96 and the role of IP-10 as immunomodulator

Supervisors:

Prof. Sima Rafati, Prof. Mohammad Taghikhani, Dr. Katayoun Samimi Rad

Pharm.D Thesis:

Title:

Purification and characterization of uricase produced by *Mucor hiemalis* PTCC 5292

Supervisors:

Prof. Mojtaba Tabatabaie Yazdi, Dr. Mohamad Ali Faramarzi

Teaching experience:

2014-2015 "Biochemistry" for Pharm.D students (Shahid Beheshti University of Medical Science).

2014- Present "Medical Microbiology" for Pharm.D students (Shahid Beheshti University of Medical Science).

2015 "Pharmaceutical Biotechnology" for Pharm.D students (Shahid Beheshti University of Medical Science)

2015 "Cellular and Molecular Biology" for Ph.D students of Pharmaceutical Biotechnology (Shahid Beheshti University of Medical Science).

2015 "Genetic Engineering" for Ph.D students of Pharmaceutical Biotechnology (Shahid Beheshti University of Medical Science).

2015 "Nanobiotechnology and biomaterial" for Ph.D students of Pharmaceutical Nanotechnology (Shahid Beheshti University of Medical Science).

Fields of interest:

- Expression and purification of monoclonal antibodies and their fragments in prokaryote and eukaryote hosts.
- Expression of fusion proteins containing fragments of monoclonal antibodies and their *in vitro* and *in vivo* evaluation.
- Generation of stable cells expressing different receptors to evaluate the receptor's agonists and antagonists (with emphasis on breast cancer receptors).
- Design and generation of DNA, protein and peptide cancer vaccines and their evaluation (with emphasis on breast cancer).
- Targeted delivery systems for anticancer drugs and vaccines.

Publications:

- Breast cancer immunotherapy: monoclonal antibodies and peptide-based vaccines. Mohit E., Hashemi A. and Allahyari M. *Expert review of clinical Immunology*, 2014;10(7):927-61. (IF 2013: 3.342)

- Biological delivery approaches for gene therapy: Strategies to potentiate efficacy and enhance specificity. **Mohit E.**, Rafati S. *Molecular Immunology*, 2013;56(4):599-611. (IF 2013: 3.003)
- Enhancement of DNA vaccine potency by covalent linkage to Gp96, co-administration of IP-10 and PEI600-Tat delivery system against HPV infections. **Mohit E.**, Bolhasani A., Zahedifard F., Seyed N., Eslamifar A., Taghikhani M., Samimirad K. and Rafati S. *Molecular Immunology*; 2013;53(1-2):149-60. (IF 2013: 3.003)
- Recombinant *Leishmania tarentolae* Encoding the Human papillomavirus Type16 E7 Gene in Tumor Mice Model. Salehi M., Taheri T., **Mohit E.**, Zahedifard F., Seyed N., Taslimi Y., Sattari M., Bolhassani A. and Rafati S. *Immunotherapy*, 2012;4(11):1107-20. (IF 2011: 1.854)
- Chemokine-based immunotherapy: delivery systems and combination therapies. **Mohit E.** and Rafati S. *Immunotherapy*; 2012;4(8):807-40. (IF 2011: 1.854)
- The contribution of NT-gp96 as an adjuvant for increasing HPV16 E7 specific immunity in C57BL/6 mice model. **Mohit E.**, Bolhasani A., Zahedifard F., Taslimi Y. and Rafati S. *Scandinavian journal of Immunology*; 2012;75(1):27-37. (IF 2011: 2.23)
- Biotransformation of methyl testosterone by the filamentous fungus *Mucor racemosus*. Torshabi M., Badiie M., Faramarzi M.A., Rastegar H., Forootanfar H. and **Mohit E.** *Chemistry of Natural Compounds*, 2011;47(1):59-63. (IF 2011: 1.029)
- Enhancement of potent immune responses to HPV16 E7 antigen by using different vaccine modalities. Bolhassani A., **Mohit E.**, Ghasemi N., Salehi M., Taghikhani M. and Rafati S. *BMC Proceedings*, 2011;5(Suppl 1):19.
- Different spectra of therapeutic vaccine development against HPV infections. Bolhassani A., **Mohit E.** and Rafati S. *Human vaccine*, 2009;5(10):671-89.
- *Mucor hiemalis*: a new source for uricase production. Tabatabaei Yazdi M., Zarrini G., **Mohit E.**, Faramarzi M.A., Setayesh N., Sedighi N. and Aziz Mohseni F. *World Journal of Microbial Biotechnology* (Issue: Volume 22, Number 4 Date: Apr. 2006 Pages: 325–330).

Congress Presentations:

- Expression and Purification of hBMP-7 (Human Bone Morphogenetic Protein-7) in *E.coli* using SUMO fusion partner. Nematollahi L., Sadipour G., Angaji SA., Khalaj V., **Mohit E.**, Farmand Azadeh S. *The 16th International and Iranian Congress of Microbiology*, 25-27 Aug. 2015, Tehran, Iran.
- Cloning and Expression of hBMP-7 (Human Bone Morphogenetic Protein-7) in Shuffle: a novel *E. coli* protein expression strain. Nematollahi L., Dugmehchi A., Sadipour G., **Mohit E.**, Jahandar H., Davami F., Bakhshandeh H. *The 16th International and Iranian Congress of Microbiology*, 25-27 Aug. 2015, Tehran, Iran.
- Recent peptide/protein vaccine delivery systems in breast cancer. **Mohit E.**, and Allahyari M. *Nanomedicine in diagnosis and treatment of refractory diseases*. 18-19 Feb. 2015, Tehran, Iran.
- Synergistic anti-tumor effect of IP-10 and PEI600-Tat in DNA vaccination against E7-expressing tumors. **Mohit E.**, Bolhasani A., Zahedifard F., Seyed N., Eslamifar A., Taghikhani M., Samimirad K. and Sima Rafati S. *The 11th International Congress on Immunology & Allergy of Iran*. 27-29 Apr. 2012, Tehran, Iran. **(Oral presentation)**
- Immuno-stimulatory effects of an electroporation-delivered DNA vaccine encoding HPV 16 E7 fused to the C-terminal of gp96 in a mouse model. Daemi A., Zahedifard F., Rafati S.; Bolhassani A., Doustdari F., Agi E.; Rajabi M., **Mohit E.** and Memarnejadian, A. *The 11th International Congress on Immunology & Allergy of Iran*. 27-29 Apr. 2012, Tehran, Iran.
- Linkage of antigen to immunostimulatory molecule, co-administration of chemokines and non-viral gene delivery systems: Different strategies to enhance DNA and protein-based vaccine potency against HPV. **Mohit E.**, Bolhasani A., Zahedifard F., Taslimi Y. and Rafati S. *Scientific Meeting of the Young researchers of Institute Pasteur and Institute Pasteur International Network*. Paris, 10 Nov. 2011, Paris, France.
- Gp96, IP-10 and PEI600-Tat: Combined strategy for HPV-vaccine potency enhancement. **Mohit E.**, Bolhasani A., Zahedifard F., Seyed N., Eslamifar A., Taghikhani M., Samimirad K. and Rafati S. **Travel awarded in 27th IPV Conference, Berlin, Germany**, 17-22 Sep. 2011, Berlin, Germany. **(Oral presentation)**

- HPV vaccine development using NT-gp96 adjuvant and PEI600-Tat delivery system. Bolhassani A., **Mohit E.**, Zahedifard F. and Rafati S. *27th IPV Conference*. 17-22 Sep. 2011, Berlin, Germany.
- Cloning of IP-10 and RANTES chemokines in eukaryotic expression vector and their expression evaluation in COS-7 cell line. **Mohit E.**, Bolhasani A., Zahedifard F. and Rafati S. **The best awarded in 7th National Biotechnology Congress of I.R. Iran**, 12-14 Sep. 2011, Tehran, Iran.
- E7-NT-gp96 fusion protein vaccine enhances specific immune responses in mice model. **Mohit E.**, Bolhasani A., Zahedifard F., Taslimi Y., Taghikhani M., Eslamifar A., Samimirad K. and Rafati S. *12th Iranian Congress of Biochemistry and 4th International Congress of Biochemistry & Molecular Biology*, 6-9 Sep. 2011, Mashhad, Iran. (**Oral poster presentation**)
- Construction of a Recombinant *Leishmania tarentolae* Expressing Human Papillomavirus Type 16 E7 Gene and Evaluation of its Immunogenicity in C57BL/6 Mice Model. Salehi M., Bolhassani A. Taheri T., **Mohit E.**, Seyed N., Zahedifard F., Taslimi Y., Sattari M. and Rafati S. *12th Iranian Congress of Biochemistry and 4th International Congress of Biochemistry & Molecular Biology*, 6-9 Sep. 2011, Mashhad, Iran.
- Generation of live recombinant parasitic vector expressing HPV16 E7 linked to C-terminal fragment of GRP94. Bolhasani A., Zahedifard F., **Mohit E.** and Taheri T. *12th Iranian Congress of Biochemistry and 4th International Congress of Biochemistry & Molecular Biology*, 6-9 Sep. 2011, Mashhad, Iran.
- Enhancement of vaccine potency against HPV using N-terminal of GP96 linked to E7 antigen in combination with IP-10 and TAT-PEI as gene delivery system. **Mohit E.**, Bolhassani A., Zahedifard F., Taslimi Y., Taghikhani M., Eslamifar A., Samimirad K. and Rafati S. *14th International Congress of Immunology*, 22-27 Aug. 2010, Kobe, Japan.
- Fused Recombinant protein production of N-terminal GP96 plus E7 antigen and its evaluation in COS-7 cell line. **Mohit E.**, Bolhasani A., Zahedifard F., Taslimi Y., Taghikhani M., Eslamifar A., Samimirad K. and Rafati S. *10th International Congress of Immunology & Allergy of Iran*, 18-20 May 2010, Tehran, Iran.
- Production of uricase by a new source *Mucor hiemalis*. Tabatabaie Yazdi M., Zarrini G., **Mohit E.**, Faramarzi M.A., Setayesh N., Jahandar H. and Aziz Mohseni F. **The**

best awarded in *The 4th National Biotechnology Congress Islamic Republic of Iran*, 15-17 Aug. 2005, Kerman, Iran.

- Studies on biotransformation of androst-1,4-dien-3,17-dione by *Acremonium strictum*. Tabatabaie Yazdi M., Faramarzi M.A., Jahandar H., Amini M. and **Mohit E.** *The 10th Pharmacy Students Seminar*, 6-8 Oct. 2004, Mashhad, Iran.
- Natural products. **Mohit E.**, Jahandar H., Ataee S., Zahedi M., Afshari A. and Azizian H. *The 9th Pharmacy Students Seminar*, 28-30 May 2003, Tabriz, Iran.
- Microbial transformation of nandrolone decanoate by *Neurospora crassa*. Tabatabaie Yazdi M., Faramarzi M.A., **Mohit E.**, Amani A. and Amini M. *3rd International Congress of Health, Environment and Natural Products*, 25-28 Sep. 2004, Mashhad, Iran.

Research projects:

- Construction a recombinant expressing vector containing single chain variable fragment (scFv) against HER2 linked to IFN-gamma inducible protein of 10 kDa (IP-10) chemokine
- Cloning of estrogen receptor alpha (ER α) in GFP containing plasmid and evaluation of its expression in COS-7 cells, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2014.
- The evaluation of green fluorescent protein (GFP) gene expression in GFP-transfected TC-1 cells by *in vitro* and *in vivo* studies, Shahid Beheshti University of Medical Sciences, 2015.
- Construction of an expression vector encoding single chain variable fragment (scFv) against Human Epidermal Growth receptor 2 (HER2), Protein technology research center, Shahid Beheshti University of Medical Sciences, 2015.
- Expression and purification of single chain variable fragment (scFv) against (Human Epidermal Growth 2 receptor (HER2), Shahid Beheshti University of Medical Sciences, 2015.
- Generation of GFP-expressing cancerous TC-1 cells for using in immunological assays. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2012.

- Expression of hBMP-7 (Human Bone Morphogenetic Protein-7) in *E.coli* using SUMO fusion protein and evaluation of its biological activity, Pasteur institute of Iran, 2014.
- Transfection methods: definition, comparison and their efficacy evaluation, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2014.
- Effects of silver nanoparticles on the expression of selected reference genes in breast cancer cell line, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2014.
- Selection of reliable reference genes in hepatic cell line for silver nanotoxicity analysis, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, 2015.
- Construction of recombinant vector harboring gene encoding extracellular part of epithelial cell adhesion molecule, Protein technology research center, Shahid Beheshti University of Medical Sciences, 2015.
- Design of recombinant non-pathogenic *Leishmania tarentolae* vaccines expressing HPV16 E7 linked to Gp96 and their immunostimulatory potential in C57BL/6 mice model. Approved by Iran National Science Foundation, Iran.

Supervisor of Ph.D Thesis:

- Evaluation of Therapeutic Potential of Exosomes Secreted by Hypoxia Preconditioned Human Cardiosphere-Derived Cells (CDCs)
- Expression of a fusion protein containing scFv against HER2 linked to IP-10 and *in vitro* evaluation of its biological activity

Supervisor of M.Sc and Pharm.D Thesis:

- Evaluation of antitumor effect of IP-10 encoding *Leishmania tarentolae* by determination of arginase activity in mice with 4T1 breast cancer
- Construction of recombinant plasmid encoding estrogen receptor alpha (ER α) and evaluation of its expression in COS-7 cells
- Construction of an expression vector containing scFv against HER2 and optimization of its expression in *Escherichia coli*

Advisor of Ph.D Thesis:

- Fabrication of different alginate-based polyelectrolyte complexes (PECs) and evaluation of their characteristics in cell microencapsulation

Advisor of M.Sc and Pharm.D Thesis:

- Evaluation of reliable reference genes for qualitative analysis of silver nanotoxicity using realtime PCR in HepG2 cell line.

Awards:

- 2011 **Travel award** in the **27th IPV Conference**, Berlin, Germany
- 2011 **Best poster** in the **7th National Biotechnology Congress** of Islamic Republic of Iran, Tehran
- 2005 **Best poster** in the **4th National Biotechnology Congress** of Islamic Republic of Iran, Kerman

Summary of Qualification:

- Place in the **First ranking category** of outstanding talented student by **Ministry of Health and medical education**.
- The **3rd** in Ph.D. entrance examination.

Microbial registration:

- 2004 *Mucor hiemalis* in Persian Type Culture Collection (PTCC), Tehran, Iran, as PTCC 5292

Memberships:

- 2001-2004 The Natural Products research group of pharmacy faculty.
- 2006-present Iranian Society of Pharmacists.
- 2006-present Medical council I.R.IRAN.

Workshops:

- Professional Ethics, School of traditional medicine, Shahid Beheshti University of Medical Sciences, 2014.
- Teaching methods, School of traditional medicine, Shahid Beheshti University of Medical Sciences, 2014.
- Cytation 3 cell Imaging Multi-Mode Reader, Biochemistry Department of Tarbiat Modares University, 2014.
- Scholarship of Teaching, School of Pharmay, Shahid Beheshti University of Medical Sciences, 2013.
- Student assesment, School of Pharmay, Shahid Beheshti University of Medical Sciences, 2012.
- Clean Room and containment, Rah Avaran Afagh Sanat, Tehran, Iran, 2012.
- SPSS programm, Pasteur Institute of Iran, Tehran, Iran, 2011.
- Flowcytometry: Royan Institue, Tehran, Iran, 2010.
- Immunohistochemistry: Avicenna Research institute. Tehran, Iran, 2009.
- PCR: Funded by toxicology department of pharmacy faculty of Tehran medical science university, Tehran, Iran, 2004.