CURRICULUM VITAE Elham Mohit

Born in April 4th 1980

Current Position:

Assistant Professer

Department of Pharmaceutical Biotechnology, School of Pharmacy

Shahid Beheshti University of Medical Sciences

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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:

- **Pharm.D. Courses:**
- Biology (2020-present)
- Biochemistry (2014)
- Medical Microbiology (2014-2015)
- Pharmaceutical Biotechnology (2015-present)
- Biological Products (2016-present)
- **Ph.D. Courses (Pharmaceutical Biotechnology):**
- Cellular and Molecular Biology (2015-present)
- Genetic Engineering (2015-present)
- Nanbiotechnology and Biomaterials (2015-present)
- Genetic Engineering and Fermentation (2015-present)
- Quality Control of Biological Products (2017-present)

Publications:

- Movahed Z, Sharif E, Ahmadzadeh M, Nezafat N, Jahandar H, **Mohit E***. Different strategies for expression and purification of the CT26-poly-neoepitopes vaccine in Escherichia coli. Molecular Biology Reports. 2022:1-15.
- Soltaninasab S, Ahmadzadeh M, Shahhosseini S, **Mohit E***. Evaluating the efficacy of immobilized metal affinity chromatography (IMAC) for host cell protein (HCP) removal from anti-HER2 scFv expressed in Escherichia coli. Protein Expression and Purification. 2022;190:106004.
- **Mohit E***, Rostami Z, Vahidi H. A comparative review of immunoassays for COVID-19 detection. Expert Review of Clinical Immunology. 2021;17(6):573-99.
- Ahmadzadeh M, Vahidi H, Mahboubi A, Hajifathaliha F, Nematollahi L, **Mohit E***. Different Respiratory Samples for COVID-19 Detection by Standard and Direct Quantitative RT-PCR: A Literature Review. Iranian Journal of Pharmaceutical Research: IJPR. 2021;20(3):285.

- Sharif E, Eftekhari Z, **Mohit E***. The Effect of Growth Stage and Isolation Method on Properties of ClearColi™ Outer Membrane Vesicles (OMVs). Current Microbiology. 2021;78(4):1602-14.

- Hajifathaliha F, Mahboubi A, Bolourchian N, **Mohit E**, Nematollahi L. Multilayer Alginate Microcapsules For Live Cell Microencapsulation; Is There Any Preference For Selecting Cationic Polymers? Iranian Journal of Pharmaceutical Research. 2021;20(2):173-82.

- Seyedi Moghadam Z, Nafissi-Varcheh N, Tabarzad M, Bolhassani A*****, **Mohit E***. Construction of GFP-expressing TC-1 cells for in vivo imaging. Research Journal of Biotechnology. 2021;16(3):1-10.

- Ahmadzadeh M, Farshdari F, Behdani M, Nematollahi L, **Mohit E***. Cloning, Expression and One-Step Purification of a Novel IP-10-(anti-HER2 scFv) Fusion Protein in *Escherichia coli*. International Journal of Peptide Research and Therapeutics. 2020:1-14.

- Ahmadzadeh M, Farshdari F, Nematollahi L, Behdani M, **Mohit E***. Anti-HER2 scFv Expression in *Escherichia coli* SHuffle® T7 Express Cells: Effects on Solubility and Biological Activity. Molecular Biotechnology. 2020;62(1):18-30.

- **Mohit E**, Tabarzad M, Faramarzi MA. Biomedical and Pharmaceutical-Related Applications of Laccases. Current Protein and Peptide Science. 2020;21(1):78-98.

- Farshdari F, Ahmadzadeh M, Nematollahi L, **Mohit E***. The improvement of anti-HER2 scFv soluble expression in *Escherichia coli*. Brazilian Journal of Pharmaceutical Sciences. 2020;56.

- Ahmadzadeh M, Farshdari F, Nematollahi L, Maleknia S, **Mohit E***. Optimization of HER2-based and cell-based ELISA for detection of trastuzumab biosimilar. Koomesh. 2020;22(2):341-50.

- Farshdari F, Ahmadzadeh M, Jahandar H, **Mohit E***. Enhanced solubility of anti-her2 scfv using bacterial pelb leader sequence. Iranian Journal of Pharmaceutical Sciences. 2020;15(1):1-16.

- Hajifathaliha F, Mahboubi A, **Mohit E**, Bolourchian N, Khalaj V, Nematollahi L. Comparison of Linear Poly Ethylene Imine (LPEI) and Poly L-Lysine (PLL) in Fabrication of CHOK1 Cell-Loaded Multilayer Alginate Microcapsules. Advanced Pharmaceutical Bulletin. 2020;10(2):290.

- **Mohit E**, Nasr R, Ghazvini K, Bandegi AR, Eidgahi A, Reza M. Evaluation of the Effect of Promoter Type on the Immunogenicity of the Live Recombinant Salmonella Vaccines Expressing *Escherichia coli* Heat-labile Enterotoxins (LTB)(Special Issue-Autumn 2018). Iranian Journal of Pharmaceutical Research. 2018.

- Hajifathaliha F, Mahboubi A, Nematollahi L, **Mohit E**, Bolourchian N. Comparison of different cationic polymers efficacy in fabrication of alginate multilayer microcapsules. Asian Journal of Pharmaceutical Sciences. 2018.

- Namazi H, **Mohit E**, Namazi I, Rajabi S, Samadian A, Hajizadeh-Saffar E, Aghdami N, Baharvand H. Exosomes secreted by hypoxic cardiosphere-derived cells enhance tube formation and increase pro-angiogenic miRNA. Journal of cellular biochemistry. 2018;119(5):4150.

- Namazi H, Namazi I, Ghiasi P, Ansari H, Rajabi S, Hajizadeh-Saffar E, Aghdami N, **Mohit E***. Exosomes Secreted by Normoxic and Hypoxic Cardiosphere-derived Cells Have Anti-apoptotic Effect. Iranian journal of pharmaceutical research: IJPR. 2018;17(1):377.

- Motevalizadeh SF, Khoobi M, Babanejad N, **Mohit E**, Dehghankelishadi P, Akbari Javar H, Dorkoosh FA, Faramarzi MA, Shafiee A. Novel pH-responsive multilayer magnetic nanoparticles for controlled drug delivery. Journal of the Iranian Chemical Society. 2016;13(9):1653-66.

- Taslimi Y, Zahedifard F, Habibzadeh S, Taheri T, Abbaspour H, Sadeghipour A, **Mohit E***, Rafati S**.** Antitumor effect of IP-10 by using two different approaches: live delivery system and gene therapy. Journal of breast cancer. 2016;19(1):34-44.

- Allahyari M, **Mohit E***. Peptide/protein vaccine delivery system based on PLGA particles. Human Vaccines & Immunotherapeutics. 2016;12(3):806-28.

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

- **Mohit E**, Rafati S. Biological delivery approaches for gene therapy: strategies to potentiate efficacy and enhance specificity. Molecular immunology. 2013;56(4):599.

- **Mohit E**, Bolhassani A, Zahedifard F, Seyed N, Eslamifar A, Taghikhani M, Samimi-Rad K, Rafati S. Immunomodulatory effects of IP-10 chemokine along with PEI600-Tat

delivery system in DNA vaccination against HPV infections. Molecular immunology. 2013;53(1-2):149-60.

- Salehi M, Taheri T, **Mohit E**, Zahedifard F, Seyed N, Taslimi Y, Sattari M, Bolhassani A, Rafati S. Recombinant Leishmania tarentolae encoding the HPV type 16 E7 gene in tumor mice model. Immunotherapy. 2012;4(11):1107.

- **Mohit E**, Bolhassani A, Zahedifard F, Taslimi Y, Rafati S. The Contribution of NT-gp96 as an Adjuvant for Increasing HPV16 E7-Specific Immunity in C57BL/6 Mouse Model. Scandinavian journal of immunology. 2012;75(1):27-37.

- **Mohit E**, Rafati S. Chemokine-based immunotherapy: delivery systems and combination therapies. Immunotherapy. 2012;4(8):807-40.

- Bolhassani A, **Mohit E**, Ghasemi N, Salehi M, Taghikhani M, Rafati S, editors. Enhancement of potent immune responses to HPV16 E7 antigen by using different vaccine modalities. BMC proceedings; 2011: BioMed Central.

- Torshabi M, Badiee M, Faramarzi M, Rastegar H, Forootanfar H, **Mohit E**. Biotransformation of methyltestosterone by the filamentous fungus Mucor racemosus. Chemistry of natural compounds. 2011;47(1):59-63.

- Bolhassani A, **Mohit E**, Rafati SR. Different spectra of therapeutic vaccine development against HPV infections. Human Vaccines. 2009;5(10):671-89.

- Yazdi MT, Zarrini G, **Mohit E**, Faramarzi MA, Setayesh N, Sedighi N, Aziz Mohseni F. Mucor hiemalis: a new source for uricase production. World Journal of Microbiology and Biotechnology. 2006;22(4):325.

Congress Presentations:

- Influence of lyophilization on biological activity of anti-HER2 scFv. Bozorgchami N, Shahhosseini S, Ahmadzadeh M and **Mohit E***. 5th International Congress on Pharmacy Updates & 4rd Annual Congress of IPharmS. Feb. 2022.
- Evaluating the effect of culture media on the expression and solubility of scFv against HER2 protein in *Escherichia coli*. Mobasheri T, Sharafi A, Sharif E and **Mohit E***. 5th International Congress on Pharmacy Updates & 4rd Annual Congress of IPharmS. Feb. 2022.

- The effect of mild solubilization process on anti-HER2 scFv recovery from inclusion body of *Escherichia coli*. Hosseinkhani S, Nemati F, **Mohit E***. 5th International Congress on Pharmacy Updates & 4rd Annual Congress of IPharmS. Feb. 2022.
- Investigation of anti-HER2 scFv expression in ClearColi™ BL21(DE3), an endotoxin-free host. Keshavarz-Fathi M, **Mohit E***. 5th International Congress on Pharmacy Updates & 4rd Annual Congress of IPharmS. Feb. 2022.
- 0Organic solvent-based solubilization of anti-HER2 scFv inclusion bodies. Esmian M, Sharif E and **Mohit E**. 4th International Congress on Pharmacy Updates & 3rd Annual Congress of IPharmS. Feb. 2021.
- Radiolabeling of Anti-HER2 scFv with 99m-Tc tricarbonyl through His-tag. Bozorgchami N, Ahmadzadeh M, **Mohit E***, Shahhosseini S. 4th International Congress on BioMedicine (ICB2020). Nov. 2020.
- Evaluation of Immobilized- Metal Affinity Chromatography (IMAC) for host cell proteins (HCPs) removal from anti-HER2 scFv expressed in *E.coli*. **Mohit E***, Ahmadzadeh M, Saba Soltaninasab S. 4th International Congress on BioMedicine (ICB2020). Nov. 2020.
- Recent Progress in Cancer Immunotherapy. **Mohit E.** 3rd International Congress on Pharmacy Updates. Feb. 2020.
- Outer membrane vesicles (OMVs) isolation from *Escherichia coli* during various stages of bacterial growth. Hosseini Zadeh ZS, Sharif E, Nemati, **Mohit E**. 3rd International Congress on Pharmacy Updates. Feb. 2020.
- Expression of a polyepitopic colon carcinoma vaccine in *Escherichia coli*. Movahed Z, **Mohit E**, Sharif E, Ahmadzadeh M, Jahandar H, Nezafat N. 3rd International Congress on Pharmacy Updates. Feb. 2020.
- Optimization of HER2-based ELISA immunoassay using trastuzumab. Ahmadzadeh M, **Mohit E**, Nematollahi L, Farshdari F. 14th International Congress of Immunology and Allergy. Apr. 2018.
- Expression and optimization of anti-HER2 scFv in *E. coli*. Farshdari F, **Mohit E** , Ahmadzadeh M. 14th International Congress of Immunology and Allergy. Apr. 2018.

- Anti-HER2 scFv expression in sHuffle. Farshdari F, **Mohit E**, Ahmadzadeh M, Nematollahi L. 18th International and Iranian Congress of Microbiology. Aug. 2017, Tehran, Iran.
- Influence of the bacterial leader sequence on the solubility of scFvs. Ahmadzadeh M, **Mohit E**, Farshdari F, Nematollahi L. 18th International and Iranian Congress of Microbiology. Aug. 2017, Tehran, Iran.
- Transfection optimization for TC-1 cells. Seyedi Moghadam Z, **Mohit E**, Bolhassani A. 2nd International and 10th National Biotechnology Congress of Islamic Republic of Iran. Aug. 2017, Tehran, Iran.
- DCs-targeted Nanoparticles as a potent vaccine delivery system. Kardani K, **Mohit E**. 2nd International and 10th National Biotechnology Congress of Islamic Republic of Iran. Aug. 2017, Tehran, Iran.
- Improving soluble recombinant proteins formation by expression at reduced temperature in specialized *E. coli* strain. Farshdari F, **Mohit E**, Ahmadzadeh M, Nematollahi L. 2nd International and 10th National Biotechnology Congress of Islamic Republic of Iran. Aug. 2017, Tehran, Iran.
- Influence of the temperature on the solubility of antiHER2 scFvs. Ahmadzadeh M, **Mohit E**, Farshdari F. 2nd International and 10th National Biotechnology Congress of Islamic Republic of Iran. Aug. 2017, Tehran, Iran.
- Influence of the *Escheichia Coli*'s Host on the Solubility of Recombinant Proteins. Farshdari F, **Mohit E**, Ahmadzadeh M, Nematollahi L, Jahandar H. 17th International and Iranian Congress of Microbiology. Aug. 2016, Tehran, Iran.
- Non pathogenic *Leishmania tarentolae* encoding IP-10: as a weapon against mice 4T1 breast cancer model. Taslimi Y, Zahedifards F, Habibzadeh S, Taheri T, Abbaspour H, Gholami E, **Mohit E**, Rafati S. ICGEB Workshop "Molecular Biology of Leishmania". Oct. 2016, Trieste, Italy.
- Immunoliposomes, A Novel Strategy For Targeted Drug Delivery. Gorji Bahri G, **Mohit E.** IPSC2015. Dec. 2015, Tehran, Iran.
- Evaluation of antitumor effect of IP-10 encoding Leishmania tarentolae by determination of arginase activity in mice with 4T1 breast cancer. Taslimi Y, Zahedifard

F, Habibzadeh S, Abbaspour H, Sadeghipour A, **Mohit E**, Rafati S. International Scientific Symposium Institute Pasteur International Network. Oct. 2015, Paris, France.

- Construction of a recombinant non-pathogenic Leishmania tarentolae expressing Th1 directing chemokine (IP-10). Taslimi Y, **Mohit E**, Abbaspour H, Sima Rafati S. **The best awarded in** 2nd National Conference of New Cellular and Molecular Biotechnology. Nov. 2015, Parand, Iran.
- Cell-penetrating peptides and their biological application. **Mohit E**, Nematollahi L, Rashidi E. IPSC2015. Dec. 2015, Tehran, Iran.
- 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. 16th International and Iranian Congress of Microbiology. 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. 16th International and Iranian Congress of Microbiology. Aug 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 Rafati S. The 11th International Congress on Immunology & Allergy of Iran. Apr. 2012, Tehran, Iran.
- Recent Peptide/Protein Vaccine Delivery System in Breast Cancer. **Mohit E.***, Allahyari M. Nanomedicine in Diagnosis and Treatment of Hard to Treat Disease. Feb. 2015, Tehran, Iran.
- 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. 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 ., Taslimi

Y and Rafati S. Scientific Meeting of the Young researchers of Institute Pasteur and Institute Pasteur International Network. Paris, 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**, Sep. 2011, Berlin, Germany.
- HPV vaccine development using NT-gp96 adjuvant and PEI600-Tat delivery system. Bolhassani A, **Mohit E**, Zahedifard F and Rafati S. 27th IPV Conference. 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**, 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 4 th International Congress of Biochemistry & Molecular Biology, Sep. 2011, Mashhad, Iran.
- 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 4 th International Congress of Biochemistry & Molecular Biology, 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, 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, Samimifard K and Rafati S. 14th International Congress of Immunology, 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, May 2010, Tehran, Iran.
- Production of uricase by a new sourse *Mucor hiemalis*. Tabatabaie Yazdi M, Zarrini G, **Mohit E**, Faramarzi MA, Setayesh N, Jahandar H and Aziz Mohseni F. **The best awarded in** The 4th National Biotechnology Congress Islamic Republic of Iran, Aug. 2005, Kerman, Iran.
- Studies on biotransformation of androst-1,4-dien-3,17-dione by *Acremonium strictum.* Tabatabaie Yazdi M, Faramarzi MA, Jahandar H, Amini M and **Mohit E.** *The 10th Pharmacy Students Seminar*, Oct. 2004, Mashhad, Iran.
- Natural products. **Mohit E**, Jahandar H, Ataee S, Zahedi M, Afshari A and Azizian H. *The 9th Pharmacy Students Seminar*, May 2003, Tabriz, Iran.
- Microbial transformation of nandrolone decanoate by Neurospora crassa. Tabatatabaei Yazdi M, Faramarzi MA, **Mohit E**, Amani A and Amini M. 3rd International Congress of Health, Environment and Natural Products, Sep. 2004, Mashhad, Iran.

Research Projects:

As Principal Investigator:

- Comparison of outer membrane vesicles (OMVs) and alum as an adjuvant for colon carcinoma vaccine containing CT-26 neoepitopes in murine colon carcinoma model, Iran National Science Foundation (INSF) (2022-continued).
- Evaluating the effect of ethanol stress on the expression and solubility of anti-HER2 scFv expressed in *Escherichia coli* Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2022-continued).
- The comparison of efficacy of different refolding methods for fusion protein containing scFv against HER2 receptor and IP-10 chemokine. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2021-continued).
- Designing polyepitope vaccine against colon carcinoma via immunoinformatics based approach. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2020-2021).

- Determining the optimum time and method for outer membrane vesicle (OMV) isolation from LPS- engineered *Escherichia coli* strain. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2020-2021).
- Evaluating Outer Membrane Vesicles (OMVs) release by *Escherichia coli* strain containing genetically modified LPS under various thermal and chemical stress conditions. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2019-2021).
- Cloning and expression of a polytopic vaccine containing neoepitopes of mouse colon carcinoma cell line (CT-26) in *Escherichia coli*. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2019-2021).
- Evaluation of immobilized metal affinity chromatography (IMAC) for the separation of HCP from the recombinant Anti HER2-scFv protein produced in *Escherichia coli*. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2018-2020).
- Measurement of Host Cell Proteins (HCPs) in different strains of *E. coli* host, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2018-2020).
- Assessment of anti-apoptotic effect of exosomes secreted by human cardiac stem cells. Protein technology research center, Shahid Beheshti University of Medical Sciences, (2017-2018).
- Optimization of exosomes isolation secreted by cardiac stem cells. Protein technology research center, Shahid Beheshti University of Medical Sciences, (2017).
- Expression of IP-10 in *E. coli* host. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2017).
- Characterization of Anti HER2 scFv using ELISA and western blot. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2017).
- Expression optimization of anti-HER2 scFv in SHuffle host. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2016-2018).
- Expression, purification and *in vitro* characterization of a fusion protein containing scFv against HER2 linked to IP-10, Iran National Science Foundation (INSF) (2016-2018).
- 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. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2015-2016).

- 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, (2015-2016).
- Expression and purification of single chain variable fragment (scFv) against Human Epidermal Growth 2 receptor (HER2). Shahid Beheshti University of Medical Sciences, (2015-2016).
- 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).
- Cloning of estrogen receptor alpha (ERα) in GFP containing plasmid and evaluation of its expression in COS-7 cells. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2014-2016).
- **As Participant:**

- A metabolic network model based approach for engineering of *Escherichia coli* to improve single chain antibody fragment production. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2021-continued).

Comparison of HIV-1 Vif and Vpu accessory proteins for delivery of polyepitope constructs harboring Nef, Gp160 and P24 using various cell penetrating peptides. Shahid Beheshti University of Medical Sciences, (2020).

B1 protein: a novel cell penetrating protein for in vitro and in vivo delivery of HIV-1 multi-epitope DNA constructs. Shahid Beheshti University of Medical Sciences, (2020).

- Comparison of the solubility of a single-chain antibody fragment against EpCAM between three *Escherichia coli* hosts, Protein technology research center, Shahid Beheshti University of Medical Sciences, (2020).
- Solubility optimization of recombinant single-chain antibody fragment against extracellular domain of epithelial cells adhesion molecule in two E.coli strains using response surface methodology, Shahid Beheshti University of Medical Sciences, (2020-2021).
- Effect of arcA and pka genes knockout on the expression of a single-chain antibody fragment against extracellular domain of EpCAM. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2020-continued).

- Systems biology approach in the development of chemically-defined minimal media for optimization of anti-EpEX scFv in *Escherichia coli.* Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2021-continued).
- *In vitro* study of antioxidant and cytotoxic effects of Lactobacillus probiotic bacterial cell extracts against HT-29 Cell Line. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2019-continiued).
- Validation of reference exomiRs for RT-qPCR Analysis in two breast cancer cell lines. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2019-2021).
- Identification of stable exosomal miRNAs as endogenous reference genes in HCC cell line. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2018-2020).
- Optimization of antiEpEX-scFv Expression in SHuffle expression host. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2018-continiued).
- Construction of recombinant vector harboring gene encoding scfv against EpEX and Pichia pastoris transformant isolation. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2017-2018).
- Expression and purification of scfv against EpEX in *Escherichia coli*. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2017-2018).
- Expression of the epithelial cell adhesion molecule extracellular domain in Pichia pastoris and purification of recombinant protein. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2016-2017).
- Cloning and expression of single chain variable fragment against epithelial cell adhesion molecule extracellular domain in *Escherichia coli*. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2016-2018).
- Construction of recombinant vector harboring gene encoding extracellular part of epithelial cell adhesion molecule and Pichia pastoris transformant isolation, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2016).
- Efficacy comparison of different cationic polymers in production of multilayer alginate microcapsules Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2015-2017).

- Expression of the epithelial cell adhesion molecule extracellular domain in *Escherichia coli,* Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2016-2015).
- 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).
- Selection of reliable reference genes in hepatic cell line for silver nanotoxicity analysis, Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (201-2016).
- Generation of GFP-expressing cancerous TC-1 cells for using in immunological assays. Faculty of pharmacy, Shahid Beheshti University of Medical Sciences, (2012-2013).
- 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, (2014-2015).
- 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, (2014-2015).

Supervisor of Ph.D Thesis:

- Employing two types of strategies based on *Escherichia coli*-derived outer membrane vesicles as an adjuvant for enhancement of immunogenicity of HIV-1 Nef and Nef-Tat antigens in BALB/c mice (Leila Sadeghi, 2021-continued).
- Construction of recombinant OMV carrying neoepitopes of CT-26 cell line and its evaluation in murine colon carcinoma model (Elham Sharif, Shahid Beheshti University of Medical Sciene, 2018-2022).
- Expression of a fusion protein containing scFv against HER2 linked to IP-10 and *in vitro* evaluation of its biological activity (Maryam Ahmadzadeh, Shahid Beheshti University of Medical Sciene, 2015-2019).

- *In Vitro* Assessment of the Pro-angiogenic and Anti-apoptotic Potential of Exosomes Secreted by Hypoxia Preconditioned Human Cardiosphere Derived Cells (CDCs) (Helia Namazi, Shahid Beheshti University of Medical Sciene, 2015-2017).

Supervisor of M.Sc and Pharm. D. Thesis:

- Preparation of recombinant outer membrane vesicles (OMV) displaying single chain fragment variable (scFv) against HER2 (Melika Abbasi, Islamic Azad University Pharmaceutical Sciences Branch, 2022-continuied).
- Evaluation of soluble anti-HER2scFv recomombinant protein recovery from *Escherchia coli* inclution body by detergent-based solubibilization process (Solmaz Hosseinkhan, Islamic Azad University Pharmaceutical Sciences Branch, 2020-2022).
- Evaluating the effect of ethanol stress on the expression of scFv against HER2 protein in *Escherichia coli* (Taranom Mobasheri, Zanjan University of Medical Sciences, -2022).
- Optimization of induction conditions for expression of single-chain fragment variable antibody against HER2 receptor in endotoxin-free *Escherichia coli* strain (Mahdis Keshavarz, Shahid Beheshti University of Medical Sciene, 2020-continiued).
- Evaluating the efficacy of organic solvent-based solubilization process in recovery of soluble anti-HER2 scFv from inclusion body (Melika Esmian, Shahid Beheshti University of Medical Sciene, 2019-2021).
- Cloning and expression of a polytopic vaccine containing neoepitopes of mouse colon carcinoma cell line (CT-26) in *Escherichia coli* (Zahra Movahed, Islamic Azad University Pharmaceutical Sciences Branch, 2019-2020).
- Evaluating the effect of chemical and thermal stresses on OMV production by *Escherichia coli* strain containing genetically modified LPS (Zohre Sadat Hosseinizadeh, Islamic Azad University Pharmaceutical Sciences Branch, 2019-2020).
- Evaluating the efficacy of purification process using immobilized metal affinity chromatography (IMAC) on the separation of host cell protein (HCP) from the recombinant anti-HER2 scFv in *Escherichia coli* (Saba Soltaninasab, Shahid Beheshti University of Medical Sciene, 2019-2021).

- Radiolabeling of anti-HER2 scFv with 99m-Tc and determination of its stability and radiochemical purity (Negar Bozorgchami, Shahid Beheshti University of Medical Sciene, 2018-2020).
- Generation of stable GFP-expressing cancerous TC-1 cells and evaluation of GFP expression in these cells by *in vitro* studies (Zahra Seyedi Mogadam, Islamic Azad University Pharmaceutical Sciences Branch, 2015-2016).
- Construction of an expression vector containing scFv against HER2 and optimization of its expression in *Escherichia coli* (Farzaneh Farshdari, Islamic Azad University Pharmaceutical Sciences Branch, 2015-2016).
- Evaluation of antitumor effect of IP-10 encoding *Leishmania tarentolae* by determination of arginase activity in mice with 4T1 breast cancer **(**Yasaman Taslimi, Islamic Azad University Damghan Branch, 2013-2015).
- Construction of recombinant plasmid encoding estrogen receptor alpha (ERα) and evaluation of its expression in COS-7 cells (Elham Rashidi, Shahid Beheshti University of Medical Sciene, 2014-2017).

Advisor of Ph.D Thesis:

- Reconstruction of the *E. coli* K-12 RV04 context-specific metabolic network model and effect of strain engineering based on the reconstructed model predictions on acetate accumulation (Vida Ebrahimi, Shahid Beheshti University of Medical Sciene, 2020-continued).
- Fabrication of different alginate-based polyelectrolyte complexes (PECs) and evaluation of their characteristics in cell microencapsulation (Fariba Hajifathaliha, Shahid Beheshti University of Medical Sciene, 2015-continued).
- Metabolic engineering of *Escherichia coli* based on system biology for the evaluation of its effect on anti EpCAM scFv expression (Aidin Behravan, Shahid Beheshti University of Medical Sciene, 2016-continued).

Advisor of M.Sc and Pharm. D. Thesis:

- Effect of temperature and inducer concentration on the expression of anti-EpEX Single Chain Fragment Variable in *Escherichia coli* SHuffle strain (Parissa Aghamollaei, Shahid Beheshti University of Medical Sciene, 2019- continued).

- Identification of stable exomiRs as endogenous reference genes in two breast cancer cell lines using the GeNorm and NormFinder algorithms (Niloofar Tabrizi, Shahid Beheshti University of Medical Sciene, 2018-continued).
- Comparison of anti-EpEX Scfv solubility between three *Escherichia coli* expression hosts (Fatemeh Javadian, Shahid Beheshti University of Medical Sciene, 2018-continued).
- Optimization of single chain variable fragment of antibody against EpEX Expression in *Escherichia coli* (Seyyed Ali Mohammady, Shahid Beheshti University of Medical Sciene, 2017-2018).
- Construction of recombinant Pichia pastoris expressing single-chain antibody fragment against EpEX (Fatemeh Gholizad, Shahid Beheshti University of Medical Sciene, 2017-2018).
- Reference gene evaluation for nanosilver cytotoxicity analysis using quantitative real-time PCR in HepG2 cell line (Zahra Pourani, Shahid Beheshti University of Medical Sciene, 2014-2016).

Awards:

- 2011 **Travel award** in the **27 th 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 outsanding talented student by **Ministry of Health and medical education**.
- The **5th** in Ph.D. entrance examination.

Microbial Registeration:

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

Memberships:

- The Natural Products Research Group of Pharmacy Faculty (2001-2004).
- Iranian Society of Pharmacists (2006-present)
- Medical Council I.R.IRAN (2006-present)

Active Research Area:

- Vaccine Research (In terms of Prevention and Therapy)
- Recombinant Protein Expression and Purification (SDS-PAGE, Western blot analysis, FPLC)
- Adjuvants and Vaccine Delivery Systems
- Cloning
- Cell culture
- Enzyme Extraction and Purification
- Targeted Delievery Systems
- Therapeutic Effects of Natural Products

Workshops:

- Professional Ethics, School of Traditional Medicine, SBMU, Tehran, Iran, 2015.
- Scholarship of Teaching and Learning, School of Pharmacy, SBMU, Tehran, Iran, 2014.
- Student Assessment Methods, School of Pharmacy, SBMU, Tehran, Iran, 2014.
- 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.
- 2009 Immunohistochemistry, Avicenna Research institute, Tehran, Iran.
- 2004 PCR, Toxicology Department, School of Pharmacy, Tehran Medical Science University, Tehran, Iran.