



### **Personal information**

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Department of Immunology

### **Education**

#### **Ph.D. in Medical Immunology**

Mashhad University of Medical Sciences, Iran.

Dissertation title: **"The Effects of Adipose Derived Mesenchymal Stem Cells (AT-MSCs) on Secondary Progressive Multiple Sclerosis"**.

Advisor: Dr. Mahmoud Mahmoudi

Advisor: Dr. Karim Nikhkhah

#### **M.Sc. in Medical Immunology**

My thesis was **"Assessment of vitamin D effects on Tregulatory cells and their related molecules in lupus-like syndrome induced murine model"**, at Immunology Research Center, BuAli Research Institute, Mashhad University of Medical Sciences, Iran.

Advisor: Dr. Mahmoud Mahmoudi

#### **BSc: Biology**

### **Teaching Assistantship**

#### **1-Assistant professor of immunology in Mashhad university of medical sciences**

**2-2016-2017:** Teaching assistant for training "Lab Tech" for Medical Students in Mashhad University of Medical Mashhad, Iran.

### **Awards and Distinctions**

- 1. August 2017:** Ranked **1st** in terms of comprehensive exam among Medical Immunology Ph.D. students.
- 2. May 2018:** Best poster presentation in the **"25th International Congress of Neurology and Clinical Electrophysiology"**

3. **June 2019:** Competition WINNER "**3th Internatinal Neuroinflammation Congress and student Festival of Neuroscience**"
4. **November 2018:** Received acknowledgment for participating as member of the executive committee in the, "**International Congress of Airway & Interstitial Lung Diseases**" (Announcer of Congress)
5. **April 2016:** Received acknowledgment for participating as member of the executive committee in the, "**3rd International congress of Immunology, Asthma and Allergy & the First symposium on Food and Drug Allergy**" (Announcer of Congress)
6. **July 2016:** Received acknowledgment for participating as member of the executive committee in the "**2th Interventional Pulmonology Seminar**" (Announcer of Seminar)
7. **October 2015:** Received acknowledgment for participating as member of the executive committee in the "**First International Nastran Cancer Symposium**"
8. **August 2018:** Received acknowledgment for participating as member of the executive committee in the "**Allergy and Immunology Seminars**" (Announcer of Seminar)
9. **May2017:** Received acknowledgment for participating as member of the executive committee in the, "**Allergy and Immunology Seminars**" (Announcer of Seminar)
10. **October 2019:** Received acknowledgment for participating as member of the executive committee in the, "**Allergy Emergencies Seminars**" (Announcer of Seminar)

## **Publication**

1. Yousefi F, **Fahime Lavi Arab**, Saeidi K, Amiri H, Mahmoudi M. Various strategies to improve efficacy of stem cell transplantation in multiple sclerosis: focus on mesenchymal stem cells and neuroprotection. Journal of neuroimmunology. 2018. (Co-First author)
2. Yousefi F, **Fahime Lavi Arab**, Nikkhah K, Amiri H, Mahmoudi M. Novel approaches using mesenchymal stem cells for curing peripheral nerve injuries. Life sciences. 2019. (Co-First author)
3. Yousefi F, **Fahime Lavi Arab**, Jaafari MR, Rastin M, Tabasi N, Hatamipour M, et al. Immunoregulatory, proliferative and anti-oxidant effects of nanocurcuminoids on adipose-derived mesenchymal stem cells. EXCLI journal. 2019;18:405. (Co-First author)
4. Yousefi F, **Fahime Lavi Arab**, Jaafari MR, Rastin M, Tabasi N, Comparative assessment of immunomodulatory, proliferative and anti-oxidant activities of crocin and crocetin on mesenchymal stem cells. Journal of Cellular of Biochemistry 2019. (Co-First author) (Accepted).
5. **Fahime Lavi Arab**, Rastin M, Faraji F, Zamani Taghizadeh Rabe S, Tabasi N, Khazaei M, et al. Assessment of 1, 25-dihydroxyvitamin D3 effects on Treg cells in a mouse model of systemic lupus erythematosus. Immunopharmacology and immunotoxicology. 2015;37(1):12-8

6. Faraji F, Rastin M, **Fahime Lavi Arab**, Kalantari MR, Rabe SZT, Tabasi N, et al. Effects of 1, 25-dihydroxyvitamin D3 on IL-17/IL-23 axis, IFN- $\gamma$  and IL-4 expression in systemic lupus erythematosus induced mice model. Iranian journal of basic medical sciences. 2016;19(4):374.
7. Heidari AR, Boroumand-Noughabi S, Nosratabadi R, **Fahime Lavi Arab**, Tabasi N, Rastin M, et al. Acylated and deacylated quillaja saponin-21 adjuvants have opposite roles when utilized for immunization of C57BL/6 mice model with MOG35-55 peptide. Multiple sclerosis and related disorders. 2019;29:68
8. Khorasani S, Mahmoudi M, Kalantari MR, **Fahime Lavi Arab**, Esmaceli SA, Mardani F, et al. Amelioration of regulatory T cells by Lactobacillus delbrueckii and Lactobacillus rhamnosus in pristane-induced lupus mice model. Journal of cellular physiology. 2019;234(6):9778-86.
9. Maryam Khoshkhui, Maryam Emadzadeh, Seyed Eshagh Hashemi, Reza Farid, **Fahime Lavi Arab**, Farahzad Jabbari "The effect of Substance P on the pathogenesis of chronic urticaria and its correlation with the severity of disease" Journal of The Iranian Journal of Allergy, Asthma and Immunology
10. Zahra Navi, Maryam Rastin, Mozhdeh Jafari rad, Nafise Tabasi, **Fahime Lavi Arab**, Elham Moghaddas Immunomodulation of Th1-Th2 cytokines in experimental autoimmune encephalomyelitis by Dicricoelium ova immunization Journal of Parasite Immunology
11. Mozhdeh Jafari rad, Maryam Rastin, Zahra Navi, Nafise Tabasi, **Fahime Lavi Arab**, Elham Moghaddas Evaluation of immunoregulatory effect of Dicrocoelium dendriticum eggs on Th-17 and Treg cells on EAE model Journal of International Immunopharmacology
12. Shokouh-zaman soleymanifard, Mohammad Taghi Bahreyni Toossi, Afsaneh Kasiri, Sepehr Torabinejad, Mojtaba sankian, seyed Amir Aledavood, **Fahimeh Lavi arab**, Fazileh Hoseini shamili "Investigation the effects of localized high-dose radiotherapy combined with total body low-dose irradiation on tumor growth and stimulating the immune system in tumor-bearing mice" Journal of Radiation and Environmental Biophysics
13. Sahar Khorasani<sup>1#</sup>, Nadia Boroumand<sup>2,3#</sup> **Fahimeh Lavi Arab**<sup>3</sup>, Seyed Isaac Hashemy<sup>4</sup> "The Immunomodulatory Effects of Tachykinins" Journal of Cellular of Biochemistry
14. Evaluation of cytokine levels as possible predicting elements in patients with chronic lymphocytic leukemia
15. Boswellic acids as promising agents for the management of brain diseases

**Papers are under review**

**Conferences and presentations**

<b>Best poster</b>	2018	Iran, Tehran	25th International Congress of neurology & Clinical Electrophysiology of Iran, Tehran	The effect of adipose-derived mesenchymal stem cells on depression, anxiety tension/stress by dass questionnaire in secondary progressive multiple sclerosis patients.
<b>Best oral</b>	2012	Mashhsad, Iran	4 <sup>th</sup> Graduate Student Research Festival of Mashhad University of Medical Sciences	Hypothes of Effects of Vitamin D on mouse model of systemic lupus erythematosus and related cytokines.
oral	2018	Iran, <i>Tehran</i>	(ICIA2018) <i>14<sup>th</sup> International Congress of Immunolog and Allergy</i>	The effects of mesenchymal stem cells on clinical scores of multiple sclerosis patients
oral	2013.	Mashhsad, Iran	5 <sup>th</sup> Graduate Student Research Festival of Mashhad University of Medical Sciences	Effects of Vitamin D on Treg cells in a mouse model of systemic lupus erythematosus
poster	2013	Milan, Italy	15th International Congress of Immunology (ICI) Milan, Italy	Assessment of vitamin D effects in lupus- like syndrome induced mice model.
poster	2019	Mashhad, Iran	16th Iranian International congress on multiple sclerosis	Immunoregulatory, proliferative and anti-oxidant effects of nanocurcuminoids on adipose-derived mesenchymal stem cells
poster	2017	Mashhad, Iran	<i>The 2nd National Festival and International Congress on Stem Cells and Regenerative Medicine</i>	Effects of vitamin D on proliferation and anti-inflammatory potential of adipose-derived mesenchymal stem cells from multiple sclerosis patients
poster	2017	Tehran, Iran	The 2nd National Festival and the International Congress on Stem cells and regenerative medicine	Effects of 1 $\alpha$ , 25-Dihydroxyvitamin D3 on T regulatory population in co-culture of PBMCs and adipose-derived mesenchymal stem cells from multiple sclerosis patients
poster	2019	Mashhad, Iran	16th Iranian International congress on multiple sclerosis	Effect of probiotics on the expression levels of inflammatory and anti-

				inflammatory cytokines of adipose derived mesenchymal stem cells from Multiple sclerosis patients
poster	2019	Mashhad, Iran	16th Iranian International congress on multiple sclerosis	Assessment of the effects of autologous adipose-derived mesenchymal stem cells for treatment of secondary progressive multiple sclerosis patients
poster	2019	Mashhad, Iran	16th Iranian International congress on multiple sclerosis	Effects of vitamin D on proliferation and anti-inflammatory and immunomodulatory potential of adipose-derived mesenchymal stem cells from multiple sclerosis patients.
poster	2019	Mashhad, Iran	16th Iranian International congress on multiple sclerosis	Comparison of Immunoregulatory and proliferative effects between st. john's wort extract of callus culture and field-growing plant on adipose-derived mesenchymal stem cells from Multiple sclerosis patients
poster	2019	Mashhad, Iran	3th Internatinal Neuroinflammation Congress and student Festival of Neuroscience	Effect of Adipose-derived mesenchymal stem cells on treatment of secondary progressive multiple sclerosis patients
poster	2018	Iran, Tehran	25th Congress of neurology & Clinical Electrophysiology Of Iran	The effect of adipose-derived mesenchymal stem cells on quality of life (Qol) in secondary progressive multiple sclerosis
poster	2017	Mashhad, Iran	<i>The 2nd National Festival and International Congress on Stem Cells and Regenerative Medicine</i>	Effects of nano-cucurcumin on proliferation and anti-inflammatory potential of adipose-derived mesenchymal stem cells from multiple sclerosis patients

poster	2013	Milan, Italy.	15th International Congress of Immunology(ICI)	Induction of SLE- like syndrome in Balb/c mice by immunization with active chromatin
poster	2014	Tehran, Iran	12 <sup>th</sup> International Congress of Immunology and Allergy	Effects of vitamin D on Th17 cells and some related molecules in systemic lupus erythematosus induced by active chromatin in BALB/c mice
poster	2019	Mashhad, Iran	16th Iranian 16th Iranian International congress on multiple sclerosis	Assessment of Immunomodulatory, Proliferative and of Crocin and Crocetin on Mesenchymal Stem Cells derived multiple sclerosis patients
poster	2019	Mashhad, Iran	16th Iranian 16th Iranian International congress on multiple sclerosis	Evaluation of immunoregulatory effect of Dicrocoelium dendriticum eggs on Th-17 and Treg cells on EAE model Journal of International Immunopharmacology
poster	2018	Mashhad, Iran	2nd International and 10th National Iranian Neurogenetic	effect of mesenchymal stem cells on expanded disability score status(EDSS) and neurological metrics in multiple sclerosis patients
poster	2018	Tehran, Iran	14th International Congress of Immunology and Allergy (ICIA2018)	The Effect of Lactobacillus Probiotics on Frequency of Th1 and Th17 Cells in Mouse Model of SLE Induced by Pristane
poster	2017	Tehran, Iran	The 2nd National Festival and the International Congress on Stem cells and regenerative medicine	Effects of nano-cucurcumin on T regulatory population in co-culture of PBMCs and adipose-derived mesenchymal stem cells from multiple sclerosis patients.
poster	2013	Milan, Italy	15th International Congress of Immunology (ICI)	Effects of Vitamin D on Regulatory T cells in lupus patients

poster	2013	Milan, Italy	15 <sup>th</sup> International Congress of Immunology (ICI)	Effects of Vit D on Th17 cells and related cytokines in lupus erythematosus patients
poster	2014	Tehran, Iran	12 <sup>th</sup> International Congress of Immunology and Allergy	Effects of vitamin D on regulatory T cells and related cytokines in lupus erythematosus Patients
poster	2014	Tehran, Iran	12 <sup>th</sup> International Congress of Immunology and Allergy	Influence of Vitamin D on the cell cycle and apoptosis in patients with systemic lupus Erythematosus
poster	2014	Tehran, Iran	12 <sup>th</sup> International Congress of Immunology and Allergy	Effects of vitamin D on Th17 cells and related cytokines in systemic lupus erythematosus Patients
poster	2012	Tehran, Iran	11 <sup>th</sup> International Congress of Immunology and Allergy	CD4+CD25+ FOXP3 Regulatory T cells in Systemic lupus Erythematosus Patient
oral	2012	Tehran, Iran	11 <sup>th</sup> International Congress of Immunology and Allergy	Immune Modulatory Effect of Vitamin D on Patients with Systemic Lupus Erythematosus
poster	2014	Tehran, Iran	12 <sup>th</sup> International Congress of Immunology and Allergy	M Effects of vitamin D on Treg cells and Foxp3 molecules in systemic lupus erythematosus induced by active chromatin in BALB/c

## Projects

1. The effects of culture-expanded, non-cryopreserved adipose tissue mesenchymal stem cells (AT-MSCs) on neurological and immunological paradigms in females with secondary progressive multiple sclerosis: a phase 1/2 clinical trial. Mashhad University of Medical Sciences, Iran **Code:921082 (Co-First author)**
2. In vitro assessment of Crosin/Crocetin effects on mesenchymal stem cells and their inflammatory and anti-inflammatory cytokines production. Mashhad University of Medical Sciences, Iran **Code: 971733 (Co-First author)**
3. assessment of Nanocurcumin effects on mesenchymal stem cells and their inflammatory and anti-inflammatory cytokines production. Mashhad University of Medical Sciences, Iran. **Code: 951769**
4. The effect of Substance P on the pathogenesis of chronic urticaria and its correlation with the severity of disease. Mashhad University of Medical Sciences, Iran **Code: 960483(Co-author)**

5. In vitro assessment of Nanosilimarin effects of mesenchymal stem cells and their inflammatory and anti-inflammatory cytokines production. Mashhad University of Medical Sciences, Iran. 971733 (**First Author**)
6. The effect of 1-25-Dihydroxyvitamin D3 on in vitro proliferation and production of inflammatory and anti-inflammatory cytokines in mesenchymal stem cells from MS patients. Mashhad University of Medical Sciences, Iran. **Code:** 951828 (**First Author**)
7. In vitro assessment of Nanoresreratrol effects on mesenchymal stem cells and related anti-inflammatory cytokines. Mashhad University of Medical Sciences, Iran (**First Author**)
8. Effect of probiotics on the expression levels of inflammatory and anti-inflammatory cytokines of adipose derived mesenchymal stem cells from Multiple sclerosis patients. Mashhad University of Medical Sciences, Iran (**First Author**)
9. Comparison of Immunoregulatory and proliferative effects between st. john's wort extract of callus culture and field-growing plant on adipose-derived mesenchymal stem cells from Multiple sclerosis patients Mashhad University of Medical Sciences, Iran (**First Author**)
10. Effect of *Fingolimod*, Interferon beta and Glatiramer *Acetate* on the expression levels of inflammatory and anti-inflammatory cytokines of adipose derived mesenchymal stem cells from Multiple sclerosis patients. Mashhad University of Medical Sciences, Iran (**First Author**)
11. A double-blind, placebo-controlled, randomized phase II trial to assess the Safety and Efficacy of *Hypericum Perforatum* extract loaded gold nanoparticleon added to standard primary therapy in multiple sclerosis patients. Pre-Proposal for NIMAD **Code:** 978996 (**First Author**)
12. Evaluation of the effects of transfer of regulatory T cells (T regs) induced by pregnancy and treated with vitD on abortion rate, gene expressions and cytokines related to T reg and Th17 in Recurrent Spontaneous Abortion model. Mashhad University of Medical Sciences, Iran **Code:**961399 (**Co-author**)
13. Evaluation of autologous adipose driven stem cells (stromal vascular fraction-SVF) in treating generalized plaque psoriasis. Mashhad University of Medical Sciences, Iran **Code:** 961687 (**Co-author**)
14. Evaluation of immunoregulatory effect of Dicrocoelium dendriticum eggs on Th-17 and Treg cells on EAE model Journal of International Immunopharmacology. Mashhad University of Medical Sciences, Iran. **Code:** 951683
15. In vitro assessment of Chemical Compounds Effect of Microbial Cytotoxicity and Interaction of Cinnamon Essential Oil with Nammoxic Acid Carbophenic Acid Antibiotics on Some Pathogenic Microorganisms. Ferdowsi University of Mashhad. **Code:**50185 (**Co-author**)
16. Roles of treg cells in mesenchymal stem cells therapy in multiple sclerosis. Mashhad University of Medical Sciences, Iran. (Review article, (**First Author**)).

#### **Workshops:**



1. **2019** Scientific principles presented at international conferences and congresses. Mashhad University of Medical Sciences
2. **2019** Entrepreneurship and MBTI
3. **2019:** Principles of working with laboratory animals. Mashhad University of Medical Sciences
4. **2018:** Reviewing Medical articles. Mashhad University of Medical Sciences
5. **2018:** Good Cell culture practice and Global cell culture problem: mycoplasma contamination at organized by International congress of immunology and allergy. Tehran, Iran
6. **2015:** Use of RAST and CAP test in the diagnosis of food and drug allergy. Mashhad University of Medical Sciences
7. **2015:** Cytodiagnostic and Circulating Tumor Cells (CTC) First International Nastran Cancer Symposium (NCCP). Mashhad University of Medical Sciences
8. **2015:** HTLV-1 and related Disease. Mashhad University of Medical Sciences
9. **2015:** Techno job opportunities for graduate students. Mashhad University of Medical Sciences
10. **2015:** First Stem cell therapies in neurological disease. Mashhad University of Medical Sciences
11. **2012:** SPSS Statistical Software, Prism Statistical Software, Reference management (Endnote). Mashhad University of Medical Sciences.
12. **2014:** Scientific writing; Mashhad University of Medical Sciences
13. **2013:** Research Idea, Dental Research Committee of Mashhad University of Medical Sciences
14. **2013:** Review of Medical Articles, School of Nursing and Midwifery, Mashhad University of Medical Sciences
15. **2014:** Plagiarism, School of Nursing and Midwifery, Mashhad University of Medical Sciences
16. **2013:** Introduction to SPSS, Faculty of Pharmacy, Mashhad University of Medical Sciences
17. **2012:** Article writing in Persian and English language Mashhad University of Medical Sciences
18. **2012:** Introduction to the Structure of Research Articles and Optimized Methods of Internet Search, Mashhad University of Medical Sciences
19. **2013:** Research Idea, Dental Research Committee of Mashhad University of Medical Sciences
20. **2017:** Start up "Multinational Interdisciplinary Entrepreneurship". Ferdowsi University of Mashhad
21. **2017:** Reviewing articles. Research Committee of Mashhad University of Medical Sciences
22. **2016:** Webinar: Seasonal Conference of Iranian Society of Immunology and Allergy "Stem Cells and their Applications in Medical Sciences"

## **References:**

**Dr. Mahmoud Mahmoudi, M.D, PhD** (*Master and PhD thesis supervisor*)

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