

Curriculum Vitae



Mahdi Ayyari (PhD. of Phytochemistry)

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Birthday: 05/26/1983 Marital Status: Married, two sons

Educational Background

Ph.D.: Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, Tehran, Iran, 2008- 2013.

Supervisor: Prof. Dr. Peyman Salehi **Adviser:** Dr. Mahdi Moridi Farimani

Visiting Scholar: Phytochemistry and Natural Products Lab, Facoltà di Farmacia Dipartimento di Scienze del Farmaco, Università del Piemonte Orientale, Novara, Italy, 2012-2013

Under supervision: Prof. Dr. Giovanni Appendino

M.Sc.: Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, Tehran, Iran, 2006- 2008.

Supervisor: Prof. Dr. Peyman Salehi **Adviser:** Dr. Ali Sonboli

B.Sc.: Pure Chemistry, Department of Chemistry, Sharif University of Technology, Tehran, Iran, 2001- 2006.

Title of the PhD Thesis

- 1- Phytochemical and Biological Investigation of *Moringa peregrina*
- 2- Semisynthesis of Natural Products from Dehydroabietylamine and Zerumbone

Degree: Excellent

Title of the M.Sc. Thesis

1- Application of 1-octyl-3-methyl imidazolium tetrafluoroborate ionic liquid for the analysis of essential oil components of *Rosmarinus officinalis* L. by hydrodistillation- headspace solvent micro extraction

2- Phytochemical investigation of *Thymus persicus* and its antioxidant activity

Degree: 19.64

Honors and Achievements and Visiting

- ❖ First ranked among my peers in M.Sc
- ❖ First ranked among my peers in comprehensive PhD exam
- ❖ Visiting Professor in SONAS, Phytochemical analysis and metabolite profiling, with **Prof. Pascal Richomme**, 20th January-8th March 2017, Angers, France.

Research Publications

1. Movahedi, R.; Shojaeiyan, A.; Falahati-Anbaran, M.; **Ayyari, M.**, Genetic variation and structure in natural populations of a medicinal vegetable, *satureja bachtiarica*, inferred from microsatellite markers developed using next-generation sequencing. *Plant molecular biology reporter* **2019**, *37*, 14-27.
2. Hosseini, S. H.; Masullo, M.; Cerulli, A.; Martucciello, S.; **Ayyari, M.**; Pizza, C.; Piacente, S., Antiproliferative cardenolides from the aerial parts of *pergularia tomentosa*. *Journal of natural products* **2019**, *82* (1), 74-79.
3. Ghiasy-Oskoe, M.; AghaAlikhani, M.; Mokhtassi-Bidgoli, A.; Sefidkon, F.; **Ayyari, M.**, Seed and Biomass Yield Responses of Blessed Thistle to Nitrogen and Density. *Agronomy Journal* **2019**, *111* (2), 601-611.
4. Shojaeiyan, A.; Rashidi Monfared, S.; **Ayyari, M.**, Quantitative assessment of diosgenin from different ecotypes of iranian fenugreek (*trigonella foenum-graecum* L.) by high-performance liquid chromatography. *International journal of horticultural science technology* **2018**, *5* (1), 115-121.
5. Seifi, R.; Moharramipour, S.; **Ayyari, M.**, Acaricidal activity of different fractions of *Moringa peregrina* on two spotted spider mite *Tetranychus urticae* (Acari: Tetranychidae). *Industrial Crops and Products* **2018**, *125*, 616-621.
6. Hosseini, S. H.; Azarnivand, H.; **Ayyari, M.**; Chahooki, M. A. Z.; Erfanzadeh, R.; Piacente, S.; Kheirandish, R., Modeling potential habitats for *Pergularia tomentosa* using maximum entropy model and effect of environmental variables on its quantitative characteristics in arid rangelands, southeastern Iran. *Journal of Ecology and Environment* **2018**, *42* (1), 27-40.
7. Ghiasy-Oskoe, M.; AghaAlikhani, M.; Sefidkon, F.; Mokhtassi-Bidgoli, A.; **Ayyari, M.**, Blessed thistle agronomic and phytochemical response to nitrogen and plant density. *Industrial crops and products* **2018**, *122*, 566-573.
8. Ghiasy Oskuee, M.; Aghaalikhani, M.; Sefidkon, F.; Mokhtassi Bidgoli, A.; **Ayyari, M.**, Influence of nitrogen rate and plant density on grain yield and the efficiency of nitrogen use in blessed thistle (*Cnicus benedictus* L.). *Crops Improvement* **2018**, *20*, 643-654.
9. Eftekhari, M.; Yadollahi, A.; Ahmadi, H.; Shojaeiyan, A.; **Ayyari, M.**, Development of an Artificial Neural Network as a Tool for Predicting the Targeted Phenolic Profile of Grapevine (*Vitis vinifera*) Foliar Wastes. *Frontiers in plant science* **2018**, *9*, 837.

10. Aminkara, S.; Shojaeiyan, A.; Monfaredb, S.; **Ayyari, M.**, Special effect of ionic liquids on extraction of diosgenin from fenugreek (*Trigonella foenum-graecum* L.) by ultrasonic assistance. *Natural products chemistry and research* **2018**, *6* (322), 2.
11. Alirezalu, A.; Salehi, P.; Ahmadi, N.; Sonboli, A.; Aceto, S.; Hatami Maleki, H.; **Ayyari, M.**, Flavonoids profile and antioxidant activity in flowers and leaves of hawthorn species (*Crataegus* spp.) from different regions of Iran. *International journal of food properties* **2018**, *21* (1), 452-470.
12. Ahmadian, M.; Ahmadi, N.; Babaei, A.; Naghavi, M. R.; **Ayyari, M.**, Comparison of volatile compounds at various developmental stages of tuberose (*Polianthes tuberosa* L. cv. Mahallati) flower with different extraction methods. *Journal of Essential Oil Research* **2018**, *30* (3), 197-206.
13. Pahlavan, S.; Tousi, M. S.; **Ayyari, M.**; Alirezalu, A.; Ansari, H.; Saric, T.; Baharvand, H., Effects of hawthorn (*Crataegus pentagyna*) leaf extract on electrophysiologic properties of cardiomyocytes derived from human cardiac arrhythmia-specific induced pluripotent stem cells. *The FASEB Journal* **2017**, *32* (3), 1440-1451.
14. Minaei, S.; Kiani, S.; **Ayyari, M.**; Ghasemi-Varnamkhashti, M., A portable computer-vision-based expert system for saffron color quality characterization. *Journal of applied research on medicinal aromatic plants* **2017**, *7*, 124-130.
15. Kiani, S.; Minaei, S.; Ghasemi-Varnamkhashti, M.; **Ayyari, M.**, An original approach for the quantitative characterization of saffron aroma strength using electronic nose. *International journal of food properties* **2017**, *20* (sup1), S673-S683.
16. Hosseini Kahnouj, S.; **Ayyari, M.**; Azarnivand, H.; Piacente, S.; Zare Chahouki, M., *Pergularia tomentosa*, from Traditional Uses to Ecology and Phytochemistry. *Journal of Medicinal Plants* **2017**, *16* (63), 108-118.
17. Eftekhari, M.; Yadollahi, A.; Ford, C. M.; Shojaeiyan, A.; **Ayyari, M.**; Hokmabadi, H., Chemodiversity evaluation of grape (*Vitis vinifera*) vegetative parts during summer and early fall. *Industrial Crops and Products* **2017**, *108*, 267-277.
18. Amirahmadi, Z.; Abdollahi, H.; **Ayyari, M.**, Variations in flavonoid compounds of the leaves and fruits of quince (*Cydonia oblonga* Mill.) genotypes from northern regions of Iran. *Iranian journal of horticultural science* **2017**, *48* (2), 329-337.
19. Zaringhalam, J.; Khanizadeh, A. M.; Manaheji, H.; Nazemian, V.; Sonboli, A.; **Ayyari, M.**, Treatment by hydroalcoholic and chloroformic extracts of *salvia candidissima* reduced hyperalgesia, edema and serum TNF-alpha level in arthritis model. *Entomology applied science letters* **2016**, *3*, 13-22.
20. Mirjalili, M.; **Ayyari, M.**; Bakhtiar, Z.; Moridi Farimani, M.; Sonboli, A., Quantification of betulinic, oleanolic and ursolic acids as medicinally important triterpenoids in some *Thymus* species from Iran. *Research journal of pharmacognosy* **2016**, *3* (1), 23-28.
21. Sonboli, A.; **Ayyari, M.**; Mirjafari, S., Effects of hydroalcoholic and chloroformic extracts of *Salvia candidissima* on hyperalgesia and Edema during adjuvant-induced arthritis. *Koomesh* **2015**, *16* (2), 239-245.
22. Salehi, P.; Abedini, N.; Sonboli, A.; Aliahmadi, A.; **Ayyari, M.**, Chemical composition and antimicrobial activity of *Ajania semnanensis* essential oil in two growing stages. *Journal of Essential Oil Research* **2015**, *27* (2), 96-100.
23. Ghasemi, M.; Mirlohi, A.; **Ayyari, M.**; Shojaeiyan, A., *Kelussia odoratissima* Mozaff. as a rich source of essential fatty acids and phthalides. *Journal of HerbMed Pharmacology* **2015**, *4*, 115-120.
24. Fattahi, F.; Shojaeiyan, A.; Askari, H.; Naghdi Badi, H.; **Ayyari, M.**; Mokhtassi-Bidgoli, A., Quantitative assessment of hyoscyamine and scopolamine tropane alkaloids in root and shoot of *hyoscymaus* spp. from iran. *Journal of medicinal plants* **2015**, *4* (56), 105-114.
25. Appendino, G.; Minassi, A.; Collado, J. A.; Pollastro, F.; Chianese, G.; Tagliatela-Scafati, O.; **Ayyari, M.**; Garcia, V.; Muñoz, E., The thia-michael reactivity of zerumbone and related cross-conjugated dienones: Disentangling stoichiometry, regiochemistry, and addition mode with an nmr-spectroscopy-based cysteamine assay. *European journal of organic chemistry* **2015**, *2015* (17), 3721-3726.
26. Salehi, P.; **Ayyari, M.**; Bararjanian, M.; Ebrahimi, S. N.; Aliahmadi, A., Synthesis, antibacterial and antioxidant activity of novel 2, 3-dihydroquinazolin-4 (1H)-one derivatives of dehydroabietylamine diterpene. *Journal of the Iranian Chemical Society* **2014**, *11* (3), 607-613.
27. Esmaeili, A.; Moaf, L.; Rezazadeh, S.; **Ayyari, M.**, Antioxidant and antibacterial activity of various extracts of *malcolmia africana* (L.) R. Br. *Zahedan Journal of Research in Medical Sciences* **2014**, *16* (3), 6-11.

28. Bakhtiar, Z.; Mirjalili, M.; Sonboli, A.; Farimani, M.; **Ayyari, M.**, In vitro propagation, genetic and phytochemical assessment of *Thymus persicus*—a medicinally important source of pentacyclic triterpenoids. *Biologia* **2014**, *69* (5), 594-603.
29. **Ayyari, M.**; Salehi, P.; Ebrahimi, S. N.; Zimmermann, S.; Portmann, L.; Krauth-Siegel, R. L.; Kaiser, M.; Brun, R.; Rezadoost, H.; Rezazadeh, S., Antitrypanosomal isothiocyanate and thiocarbamate glycosides from *Moringa peregrina*. *Planta medica* **2014**, *80* (01), 86-89.
30. Raiesi, S.; Nadjafi, F.; Hadian, J.; Kanani, M. R.; **Ayyari, M.**, Autecological and phytochemical studies of *Kelussia odoratissima* Mozaff. an endangered ethnomedicinal plant of Iran. *Journal of Biologically Active Products from Nature* **2013**, *3* (4), 285-294.
31. Esmaili, M. A.; Sonboli, A.; **Ayyari Noushabadi, M.**, Antioxidant and protective properties of six *Tanacetum* species against hydrogen peroxide-induced oxidative stress in K562 cell line: A comparative study. *Food chemistry* **2010**, *121* (1), 148-155.
32. Pourjavadi, A.; **Ayyari, M.**; Amini-Fazl, M., Taguchi optimized synthesis of collagen-g-poly (acrylic acid)/kaolin composite superabsorbent hydrogel. *European Polymer Journal* **2008**, *44* (4), 1209-1216.
33. Pourjavadi, A.; Amini-Fazl, M.; **Ayyari, M.**, Optimization of synthetic conditions CMC-g-poly (acrylic acid)/Celite composite superabsorbent by Taguchi method and determination of its absorbency under load. *Express Polymer Letters* **2007**, *1*, 488-494.

Accepted, submitted and under revision manuscripts:

1. Biocontrol properties of some agricultural waste extracts on three nematode species in *in vitro* and *in vivo* conditions, *Nematology* (Accepted, 2019)
2. Volatile constituents and antioxidant capacity of Seven *Tussilago farfara* L. Populations in Iran, *Scientia Horticulturae* (Submitted, 2019)

Oral Presentations

1. Biodiscovery Platform, a Promising Step toward New Bioactive Natural Products (The 2nd One-Belt and One-Road International Conference on Traditional Medicine, **November 2018, Wuhan, China**)
2. *Kelussia Odoratissima* Mozaff. (Apiaceae): Insights from Ethnobotany to Phytochemistry and Biological Activity (**November 2018, IMPLAD, Beijing**)
3. A wide diversity in the application of natural products (**November 2018, IMPLAD, Beijing**)
4. *Kelussia Odoratissima* Mozaff. (Apiaceae): Insights from Ethnobotany to Phytochemistry and Biological Activity (**May 2018, 7th NCMP, Shiraz, Iran**)
5. Secondary metabolite profiling in Horticultural crops, Advantages and disadvantages (**September 2017, IrHC2017, Tehran, Iran**)
6. Antitrypanosomal isothiocyanate and thiocarbamate glycosides from *Moringa peregrina* (Forssk.) Fiori, (**The 1st One-Belt and One-Road International Conference on Traditional Medicine, November 2016, Wuhan, China**)
7. Antitrypanosomal isothiocyanate and thiocarbamate glycosides from *Moringa peregrina* (**May 2014, 3rd NCMP, Mashad, Iran**)

Published abstracts (International conferences)

11th International Symposium on Chromatography of Natural Products, Lublin, Poland, June 4-7th, 2018

- 1- Identification of phthalides in different parts of *kelussia odoratissima* mozaff. with GC/MS
- 2- Royan biodiscovery initiative using zebrafish in vivo and other in vitro assays for identification of bioactive natural products

The 5th AFERP International Conference, 17-19th July 2017 Angers, France

3- Secondary metabolite profiling and isolation of an antiangiogenic phthalide from the Iranian medicinal plant *kelussia odoratissima* mozaff. (apiaceae): insights from zebrafish and HUVEC bioassays

First International Conference & 10th National Horticultural Science Congress of Iran (IrHC2017), 4-7 September 2017, Tehran, Iran

4- The Use of ESTs-database for identification of NIC gene in trigonelline pathway in *Trigonella foenum-graecum* L.

5- Isolation and characterization of CYC1 gene by expressed sequence tag mining in Fenugreek (*Trigonella foenum-graecum* L.)

6- Different Drying Methods Affect the Quality of Hyssop (*Hyssopus officinalis* L.)

9th Joint Natural Products Conference, Copenhagen, Denmark, 2016 (Poster and published in *Planta Medica* 81, S 01)

7- Enhancement of diosgenin extraction from Fenugreek (*Trigonella foenum-graecum*) with a new ionic liquid-based assisted method

8- Fungicidal activity of phthalides isolated from *Kelussia odoratissima* against *Macrophomina phaseolina* (Tassi) Goid.

9- Effects of *Crataegus pentagyna* on Cardiomyocytes (CMs) differentiated from CPVT1 patient-derived induced pluripotent stem cells (iPSCs)

Published abstracts (National conferences)

8th National Congress of Medicinal Plants, Tehran, Iran, 2019

1. *Descurainia sophia* L. Webb. Extract: insight from nematocidal activity, metabolite profiling and nanocomposite formulation (Oral presentation by Mr. Roshanbakhsh)
2. Comparison of water soluble and non-soluble of *nepeta crispa* L. Volatile components
3. Comparison of volatile oil in wild and cultivated *nepeta crispa* L.
4. Essential oil analysis of three different accessions of *eryngium thyrsoideum* Boiss. From Iran
5. Chemical composition of essential oils in *eryngium billardieri* F. Delaroché from three different regions in Iran
6. Effect of chemical characteristics of soil on total phenol and flavonoid content of *clematis iapahanica* in Bavanat and Mehriz regions of Fars and Yazd provinces
7. Analysis of *tussilago farfara* smoke by GC/MS: a phytochemical approach to a traditional remedy
8. Comparison of chemical composition of essential oils and floral water in the leaves, roots and flowering organs of *ferula gummosa* Boiss.

7th National Congress of Medicinal Plants, Shiraz, Iran, 2018

- 10- Leaves and Flowers of *Tussilago Farfara* from Seven Region of Iran as a Source of Antioxidant and Phenolic Compounds
- 11- Packaging Methods and Storage Duration Affect Essential Oil Content and Composition of Hyssop (*Hyssopus officinalis* L.)

5th National Congress of Medicinal Plants, Isfahan, Iran, 2016. (Posters)

- 12- Comparison the chemical composition of essential oil from fresh and dried *plectranthus amboinicus* L.
- 13- Ionic liquid assisted extraction of diosgenin from fenugreek (*Trigonella foenum-graecum* L.)
- 14- Ionic liquid assisted extraction of trigonelline from fenugreek (*Trigonella foenum-graecum* L.)
- 15- Effects of *crataegus pentagyna* on the electrophysiological properties of cardiomyocytes derived from lqts3-ips
- 16- Antifungal activity of some plant extracts against a plant pathogen *macrophomina phaseolina* (Tassi) Goid.
- 17- A computer vision system and computational intelligence techniques for color-based saffron quality characterization
- 18- Quantification of pentacyclic triterpenoids in some *thymus* species from Iran
- 19- Optimized techniques for mitotic studies in holy thistle (*Cnicus benedictus* L.)
- 20- Cytogenetic study of *cnicus benedictus* as a medicinal plant

4th National Congress of Medicinal Plants, Tehran, Iran, 2015.

- 21- Genetic, phytochemical and morphological evaluation of hawthorn (*Crataegus* spp.) Grown in Iran, (Oral presentation by Dr. Alirezalu).
- 22- Quantification of seven phenolic compounds in *Crataegus azarolus* var. aronia fruits, leaves and flowers by HPLC
- 23- Antibacterial activity of isolated compounds from *Moringa peregrina*
- 24- Artecenin a sesquiterpene lactone from the aerial part of *Ajania semnanensis* sonboli
- 25- Cytotoxicity of novel 2, 3-dihydroquinazolin-4(1h)-one derivatives of dehydroabietylamine diterpene against k562 and hl60 cancer cell line
- 26- Essential oil composition of three ecotypes of *Kelussia odoratissima* mozaff.
- 27- Comparative *kelussia odoratissima* essential oils obtained from the various parts of the cleverger-type apparatus
- 28- Comparative analysis of the phthalide components of *kelussia odoratissima* mozaff. using hydrodistillation and HS-SPME techniques
- 29- Comparison the effects of antibiotic and medicinal plants, on immune system, blood biochemical parameters, microbial population and performance of broilers

3rd National Congress of Medicinal Plants, Mashad, Iran, 2014

- 30- Chemical composition and antimicrobial activity of *Ajania semnanensis* essential oil in two growing stages
- 31- Phenolic acids extract of *prosopis farcta*: composition identification by HPLC, biologically activities investigation

2nd National Congress of Medicinal Plants, Tehran, Iran, 2013

- 32- Recent Advances in Semi-Synthesis of Natural Compounds, (Oral presentation by Prof. Salehi).
- 33- Cell Suspension Culture Establishment of *Thymus Persicus* for the Production of Medicinally Important Triterpenoids, (Oral presentation by Dr. Mirjalili).
- 34- In vitro callus induction and production of antitumor triterpenoids in callus culture of *salvia sahendica*
- 35- In vitro radical scavenging activity of *Zataria multiflora* accessions in relation to their rosmarinic acid content,
- 36- Variability in concentration of phenolic acid derivatives among wild *Zataria multiflora* accessions from Iran.

37- Determination and quantification of pentacyclic triterpenoids in wild mature and in vitro regenerates of *Thymus persicus*: a comparative study

38- HPLC Determination of Phenolic Acids In Four *Salvia* Species With Their Antioxidant Activities

1st National Congress of Medicinal Plants, Kish Island, 2012

39- HPLC analysis of phenolic acids in aerial parts and root of *Thymus persicus*

40- Essential oil composition of different plant parts of *kelussia Odoratissima* mozaff. From Iran

Research Projects

1. HPLC analysis of phenolic acids in aerial parts and root of *Thymus persicus*, Research and Technology Council of Shahid Beheshti University, Contract No. 600/1126, Aug 2012.
2. Investigation the effect of herbal Immunosupport drug in comparison with similar compounds on immune system, intestinal morphology and microflora and performance of broiler chickens, Tarbiat Modares University, 2014.
3. Optimization of anticancer drug ursolic acid production in cell suspension culture of *Thymus persicus*, Iran National Science Foundation, 92013885, Coworker of executive: Dr. Mirjalili, 2014.
4. In vitro study of cardiac pharmacological effects of indigenous Iranian *Crataegus* species using cardiomyocytes derived from Catecholaminergic Polymorphic Ventricular Tachycardia-specific induced pluripotent stem cells, Royan Institute, 2014 ing).
5. Investigation of active components of *Centella asiatica* (L.) Urban. in different growth stages to evaluate the production of wound healing drug, Islamic Azad University, 2015
6. Screening of herbal extracts in beta cell regeneration using transgene ins GFP.NTR zebrafish model, Royan Institute, 2014
7. Antiarrhythmic Effects of Some Iranian native *Crataegus* Species Extract on LQTS3-induced pluripotent stem cell-derived cardiomyocytes, Royan Institute, 2015

Published abstracts: (in Persian)

Medicinal Plant National Congress, Sari, 2011

Chemical composition and antimicrobial activity of rich in isothiocyanates essential oil of *Moringa peregrina* (Forssk.) Fiori

Antioxidant and antimicrobial activity of *Ajania semnanensis* and isolation of 3 flavonoids from chloroform extract

Teaching Courses

- ❖ 2017 till now: Phytochemistry and Pharmacognosy (PhD students), Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran
- ❖ 2017 till now: Extraction and Identification methods of active compounds in medicinal plants (MSc students), Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran
- ❖ 2016-2017: Phytochemistry (PhD students), Faculty of Agriculture and food Industry, Shahrekord Azad University.
- ❖ 2014 till now: Plant Biochemistry (PhD student), Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran

- ❖ 2014 till now: Plant Growth Regulators (MSc student, with Prof. Arzani), Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran
 - ❖ 2015 till now: Physiology of Medicinal Plants (MSc students with Dr. Ebadi) Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran
 - ❖ 2015 to now: Plant Hormones and culture differentiation (MSc students with Dr. Soltani) Department of Plant Biotechnology, Tarbiat Modares University, Tehran, Iran
 - ❖ 2015: Secondary metabolites in the cell culture and micropropagation (MSc student, with Dr. Babaei), Department of Horticultural Science, Tarbiat Modares University, Tehran, Iran.
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Teaching Workshop

- ❖ 2012: Gas Chromatography (GC) Workshop; Food, Drugs and Natural Products Department, Measurement Unit Laboratory, Sharif University of Technology
 - ❖ 2012: High Performance Liquid Chromatography (HPLC) Workshop; Food, Drugs and Natural Products Department, Measurement Unit Laboratory, Sharif University of Technology
 - ❖ 2011: Endnote Reference Manager Software Workshop; Food, Drugs and Natural Products Department, Measurement Unit Laboratory, Sharif University of Technology and Shahid Beheshti University
 - ❖ 2015 and 2018: Endnote Reference Manager Software Workshop; Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran.
 - ❖ 2016: Scientific writing; Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran.
 - ❖ 2016: Essential oil analysis and interpretation, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran,
 - ❖ 2017: Essential oil analysis, interpretation and GC/MS; IrHC2017, 8 September 2017.
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Attending Workshop

- ❖ 2006: Natural products separation and identification, Research Institute for Islamic and Complementary Medicine, Tehran, Iran
 - ❖ 2008: Nanotechnology in Liquid Chromatography and Mass Spectrometry, Iran polymer and petrochemical Institute
 - ❖ 2009: Good Laboratory Practice (GLP), New Technologies and Energy Engineering, Shahid Beheshti University
 - ❖ 2010: Ultra Pressure Liquid Chromatography (UPLC) Workshop, Behan Co, Shahid Beheshti University
 - ❖ 2010: Scientific Writing Workshop, ACECR, Tehran
 - ❖ 2011: Preparative HPLC for isolation of natural products, YMC Co., Shimi Tajzie Sina, Tehran
 - ❖ 2012: Chiral and Preparative HPLC in natural products, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, Tehran
 - ❖ 2013: Application of medicinal plants in cosmetic industries, Shahid Beheshti University, Tehran
 - ❖ 2015: Natural cream and ointment preparation workshop, Research Institute of Forests and Rangelands, Tehran
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Research Area

- ❖ Natural Products Drug Discovery using zebrafish *in vivo*
- ❖ Metabolite profiling of natural compounds with LC/MS techniques and Dereplication
- ❖ Natural smokes in traditional remedies

- ❖ Drug discovery and development using stem cells
 - ❖ Stem cells and natural product toxicity
 - ❖ Bioassay guided fractionation
 - ❖ Extraction, separation, isolation and structure elucidation of natural products
 - ❖ Essential oil extraction and analysis
 - ❖ Medicinal plants research and their activities
 - ❖ Iranian Traditional Medicine
 - ❖ Chromatography, analytical and preparative
 - ❖ Semisynthesis on some natural product and study on their biological activities
 - ❖ Glucosinolate derivatives compounds, especially isothiocyanate and thiocarbamate
 - ❖ Quantification of compounds with the HPLC and GC
 - ❖ Microextraction, SPME, LPME
 - ❖ Ionic liquids and their effect in natural product analysis
 - ❖ Column Chromatography and Vacuum Liquid Chromatography
 - ❖ NMR Spectroscopy
 - ❖ Superabsorbent hydrogel polymers
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Laboratory Research Skills

- ❖ **GC-MS** (Gas chromatography- Mass Spectrometry)
 - ❖ **GC-FID** (Gas chromatography- Flame Ionization Detector)
 - ❖ **IMS** (Ion Mobility spectrometry)
 - ❖ **HPLC** (High Performance Liquid Chromatography)
 - ❖ **Prep- HPLC** (Preparative High Performance Liquid Chromatography (Prep- HPLC)
 - ❖ **Flash Chromatography**
 - ❖ **HPTLC** (High Performance Thin Layer Chromatography)
 - ❖ **FTIR** (Fourier transform infrared spectroscopy)
 - ❖ **UV-vis spectrophotometer**
 - ❖ **Polarimetry**
 - ❖ **Powerwave Microplate spectrophotometer**
 - ❖ LC/MS interpretation for metabolite profiling
 - ❖ Synthesis and semisynthesis
 - ❖ Column chromatography
 - ❖ Vacuum Liquid chromatography
 - ❖ Thin Layer Chromatography
 - ❖ Preparative Thin Layer Chromatography
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Reviewer of Journals

- ❖ Natural product Research

- ❖ Pharmaceutical Biology
 - ❖ Journal of Crop Protection
 - ❖ Journal of Agricultural Science and Technology (JAST)
 - ❖ Iranian Journal of Medicinal and Aromatic Plants
 - ❖ Journal of Crop Improvement (Journal of Agriculture)
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Other Scientific and organizing works

- ❖ Royan Biodiscovery Initiative, Royan Institute for Stem Cell Biology and Technology (RI-SCBT)-2015 till now
 - ❖ Representative of Department of Horticultural Science in the Research Council of Faculty of Agriculture, Tarbiat modares University, October 2014 till 2016.
 - ❖ Organizing member of Faculty of Agriculture section in the Second Festival of Medicinal Plants, Natural Products and Traditional Medicine of Iran, 29 Sep-2 Oct 2014 Tehran.
 - ❖ Member of Organizing Committee for 1st to 8th National Congress of Medicinal Plants, 2012-2019
 - ❖ Head of Food, Drugs and Natural Product Department, Laboratory measurement Unit, Sharif University of Technology, 2010-2012
 - ❖ Cooperation in audit of Phytochemistry, Medicinal Plants and Drugs Research Institute, Shahid Beheshti University, 2012
 - ❖ Scientific member of Institute of Medicinal Plants, ACECR, 2010-2011
 - ❖ Holding of HPLC, GC and Endnote workshops, Sharif University of technology, 2011-2012
 - ❖ Essential oil Analysis of several plant species in academic and industrial projects.
 - ❖ Assay analysis of different plant extract for pharmaceutical companies.
 - ❖ Cooperation in Basic Science (Chemistry branch) Strategic Document, Shahid Beheshti University, 2012.
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Theoretical Courses were passed in M.Sc and PhD

Separation and Identification of Natural Products	Advance Analytical Chemistry
Advance in Mass Spectrometry	Plant Biochemistry
Pharmacognosy	Chemistry of Natural Products
Advance Organic Chemistry	Stereochemistry
	Plant Physiology

Other Skills

- ❖ Endnote Reference Manager
 - ❖ Microsoft Office
 - ❖ MestReNova software for the analysis of NMR files
 - ❖ Chem Office
 - ❖ Pharmacopeia
 - ❖ DMF preparation
 - ❖ Scientometry
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References

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