

Primary information

- Hossein Hadavand Mirzaei
- Researcher and Ph.D. Student of Medicinal Chemistry
- h_hadavand@abrii.ac.ir

Experiences

Laboratory Skills

NMR, GC/MS, preparative HPLC, HPLC, IC, Atomic absorption, Flamephotometer, open column chromatography

Computer Skills

Various internet-based searches and using databases

Assessment of mechanism of bioactive compound from natural source by computational methods

Determination of absolute configuration of isolated compound from natural source with computational approach

Familiar with several molecular modeling software including Gaussian, ADT, Chimera, Molegro, MOE, Spartan, Pymol, ...

Techniques

Some techniques in isolation and purification of natural compounds including preparative HPLC, TLC, column chromatography, SPME

Biological evaluation of cytotoxic compounds by MTT reduction assay

Assessment of cell cycle by flow cytometry

Research Interests

- ✓ Discovery of bioactive compounds from natural sources
- ✓ Structure elucidation of purified compounds from natural sources by spectroscopy data
- ✓ Biological evaluations of the isolated compounds
- ✓ Assessment of mechanism of bioactive compounds
- ✓ Using computational approach to study therapeutic action of bioactive compounds

Award

- ✓ Prize as the best researcher of Agriculture Biotechnology Research Institute of Iran (ABRII). 2008
- ✓ Prize as the best student of Shiraz University of Medical Sciences. 2014
- ✓ 5th national congress on medicinal plant, Esfahan, Iran, 2016, Awarded prize for the best poster.

- ✓ 6th national congress on medicinal plant, Tehran, Iran, 2017, Awarded prize for the best poster.

Overview

Iran is big country in term of land area, with 1.6 million km². The specific geographical situation of Iran, with its variable climates, makes it a unique place with different ecosystems. Due to the great number of its ecosystems and special climates, the Iranian flora consists of over 8000 plant species belonging to 167 families and 1200 genera. From these plants about 22% are endemic species belonging to 85 families. In total there are over 1700 endemic taxa in the country. This high endemism and great plant diversity give great opportunity to investigate for phytochemical properties.

Selected Papers

- ✓ Hossein Hadavand Mirzaei, Omidreza Firuzi, Bernd Schneider, Ian T Baldwin, Amir Reza Jassbi. (2017). Cytotoxic diterpenoids from the roots of *Salvia lachnocalyx*. *Revista Brasileira de Farmacognosia*. In press.
- ✓ Parisa Koobaz, Faezeh Ghanati, Ghasem Hosseini Salekdeh, Foad Moradi, Hossein Hadavand Mirzaei. (2016). Drought tolerance in four-day-old seedlings of a drought-sensitive cultivar of wheat. 40: 574-583
- ✓ Rezgar F., M. Bigdelo, K. Rezaei, F. Hooshidari and H. H. Mirzaei. (2016). "Essential Oil Composition of *Leutea kurdistanica* (Mozaff.) at the Vegetative and Flowering Stages." *Journal of Essential Oil Bearing Plants*, 19:1, 223-228
- ✓ Bahman K., A. I. Darbandei, F. Khodaieyan, H. H. Mirzaei, J. hadian. (2015). "Chemical characterization of *foeniculum vulgare* Mill. landrace from divers agro-ecological zones of iran". *Journal of essential oil*. Accepted.
- ✓ Parisa Koobaz, P., F. Ghanati, G. H. Salekdeh, F. Moradi, and H. H. Mirzaei. (2015). "Drought tolerance in four-day old seedlings of a drought sensitive cultivar of wheat". *Journal of plant nutrition*. Accepted
- ✓ Jaafari, N., H. H. Mirzaei, T. Hasanloo and Ebrahim Hadavi. (2015). "Manipulating Essential Oil Composition of Dill (*Anethum graveolens* L.) by Using Preharvest Foliar Sprays of Citric Acid and Malic Acid" *Journal of Essential Oil Bearing Plants* 18(3): 556-560.
- ✓ Ghanbari M., M.K. Sourji, R. Omidbaigi and H. Hadavand Mirzaei. (2014). "Evaluation of some ecological factors, morphological traits and essential oil productivity of *Achillea millefolium* L." *Iranian Journal of Medicinal and Aromatic Plants*. 30(5): 692-701.
- ✓ Sadeghi, A., B. M. Soltani, M. K. Nekouei, G. S. Jouzani, H. H. Mirzaei and M. Sadeghizadeh (2014). "Diversity of the ectoines biosynthesis genes in the salt tolerant *Streptomyces* and evidence for inductive effect of ectoines on their accumulation." *Microbiological research*. 169(9): 699-708.
- ✓ Ebrahimi, M., M. Farajpour, H. Hadavand, K. Bahmani and F. Khodaiyan (2014). "Essential oil

variation among five *Achillea millefolium* ssp. *elbursensis* collected from different ecological regions of Iran." *Annals of Biological Research*. 3 (7):3248-3253.

- ✓ Hadavand Mirzaei, H., Hasanloo, T., (2014) " Assessment of chemical composition of essential oil of *Ferula assa-foetida* oleo-gum-resin from two different sites of Yazd province in center of Iran. *Research Journal of pharmacognosy*", 1, 2, 51-54.
- ✓ Talebi, A. F., S. K. Mohtashami, M. Tabatabaei, M. Tohidfar, A. Bagheri, M. Zeinalabedini, H. Hadavand Mirzaei, M. Mirzajanzadeh, S. Malekzadeh Shafaroudi and S. Bakhtiari (2013). "Fatty acids profiling: A selective criterion for screening microalgae strains for biodiesel production." *Algal Research*.
- ✓ Ahmad, S. T., N. A. K. K. Sima and H. H. Mirzaei (2013). "Effects of Sodium Chloride on Physiological Aspects of *Salicornia persica* Growth." *Journal of Plant Nutrition* 36(3): 401-414.
- ✓ Gholami, M., B. A. Boughton, A. R. Fakhari, F. Ghanati, H. H. Mirzaei, L. Y. Borojeni, Y. Zhang, Z. S. Breitbach, D. W. Armstrong and U. Roessner (2013). "Metabolomic study reveals a selective accumulation of L-arginine in the D-ornithine treated tobacco cell suspension culture." *Process Biochemistry*. 49(1):140-147.
- ✓ Ebrahim Sharafi, Seyyed Mojtaba Khayam Nekoei, Mohamad Hossein Fotokian , Dariush Davoodi Hossein Hadavand Mirzaei and Tahereh Hasanloo. (2013) "Improvement of Hypericin and Hyperforin Production Using Zinc and Iron Nano-oxides as Elicitors in Cell Suspension Culture of St John's wort *Hypericum perforatum* L.)" *Journal of Medicinal Plants and By-products* 2: 177-184
- ✓ Mirzaei, H. H., R. Faraji, F. Hooshidari, M. Bigdelo and K. Rezaei (2013). "Evaluation Of Phytochemical Composition Of *Opsicarpium insignis* Mozaff. From Iran By Nano Scale Injection Techniques." *Chem. Tech research* 5(4): 1911-1914.
- ✓ Mirzaei, H. H. and T. Hasanloo (2012). "Chemical Compositions of the Essential Oils of *Ferula assa-foetida* Seeds from Two Iranian Ecotypes." *Journal of Essential Oil Bearing Plants* 15(1): 84-88.
- ✓ Mirzaei, H. H. and T. Hasanloo (2009). "Essential oil composition of root of *Ferula assa-foetida* from two Iranian localities (Gonabad and Tabas)." *Asian journal of chemistry* 21(8): 6354-6358.
- ✓ Sima, N. A. K. K., H. Askari, H. H. Mirzaei and M. Pessarakli (2009). "Genotype-dependent differential responses of three forage species to calcium supplement in saline conditions." *Journal of Plant Nutrition* 32(4): 579-597.
- ✓ Mirzaei, H. H. and Z. Ramezani (2008). "Volatile components of the essential oil *prangos asperula* from west of Iran." *Asian Journal of Chemistry* 20(5): 3763-3766.
- ✓ Hadavand Mirzaei, H., M. Hadi Meshkatsadat and S. Soheilvand (2007). "Determination of Essential Oil Composition of *Prangos acaulis* (DC) Bornm Obtained by Hydrodistillation and Supercritical Fluid Extraction Methods." *Journal of Applied Sciences* 7: 2535-2538.
- ✓ Meshkatsadat, M. H. and H. H. Mirzaei (2007). "Chemical compositions of the essential oils of stems, leaves and flowers of *Prangos acaulis* (Dc) Bornm." *Pak J Biol Sci* 10(16): 2775-2777.