

6th Edition of International Conference on
**Pharmacognosy and
Medicinal Plants****KNOWLEDGE OF TRADITIONAL MEDICINE TOWARD ENHANCEMENT OF
COGNITIVE PERFORMANCE****Hamid-Reza Adhami**

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Enhancement of cholinergic function by inhibition of acetylcholinesterase (AChE) is considered as a rational approach for the treatment of neurological disorders such as Alzheimer's disease and senile dementia. During the last two decades, the use of herbal medicinal substances in dementia therapy has been studied well. Iran is among those countries which has a long and rich history in traditional medicine. In this eight year project, 40 herbal drugs reported in Iranian traditional medicine (ITM) for the treatment of cognitive disorders were examined. In the first step, the bioactivities of the polar methanol and the non-polar dichloromethane extracts of all selected herbal samples were studied on AChE inhibition by TLC bioautography and in a microplate assay. The 8 most active herbal drugs were selected for further study. In detailed investigations, the active compounds were identified and isolated using several chromatographic techniques such as TLC, VLC, LC, SEC, SPE, HPLC, HPCCC and HPTLC. In total, from the selected herbal drugs, 25 active compounds were identified and isolated. The structures of the active components were characterized by one and two-dimensional NMR spectroscopy (COSY, TOCSY, HSQC, HMBC, NOESY), mass spectrometry and some other analytical methods. The IC₅₀ values for active compounds were determined by a quantitative colorimetric assay. Additionally, the concentrations of active components in their sources were determined by HPLC analysis. The IC₅₀ values of the isolated compounds were in correlation with their contents in their original sources. The achieved results confirmed that the compounds considerably contribute to the effects of these drugs and underline the plausibility of their use in the treatment of cognitive deficits in ITM.

Recent Publications

1. Kanama S K, Viljoen A M, Kamatou G P P, Chen W, Sandasi M, et al. (2015) Simultaneous quantification of anthrones and chromones in *Aloe ferox* ("Cape aloes") using UHPLC-MS. *Phytochemistry Letters* 13:85-90.
2. Adhami H R, Zehl M, Dangl C, Dorfmeister D, Stadler M, et al. (2015) Preparative isolation of major phenolic compounds from extra virgin olive oil by HPCCC. *Food Chemistry* 170:154-159.
3. Adhami H R and Viljoen A M (2015) Isolation of bio-markers from the leaf exudate of *Aloe ferox* (aloe bitters) by high performance counter-current chromatography. *Phytochemistry Letters* 11:321-325.
4. Adhami H R, Fitz V, Lubich A, Kaehlig H, Zehl M, et al. (2014) Acetylcholinesterase inhibitors from galbanum, the oleo gum-resin of *Ferula gummosa* Boiss. *Phytochemistry Letters* 10:32-87.
5. Adhami H R, Lutz J, Kaehlig H, Zehl M and Krenn L (2013) Compounds from gum ammoniacum with acetylcholinesterase inhibitory activity. *Scientia Pharmaceutica* 81(3):793-805.

Biography

Hamid-Reza Adhami graduated from the Faculty of Pharmacy, Tehran University of Medical Sciences with a PharmD Degree and worked for some years in the field of Health and Research Management. In 2008, he started his PhD study at the Department of Pharmacognosy, University of Vienna. After graduation, he passed short term research projects in Switzerland and UK and finally moved to South Africa for a one year Post-Doc Fellowship at Tshwane University of Technology in Pretoria. Since 2014, he is working as Assistant Professor at the Department of Pharmacognosy, Faculty of Pharmacy, Tehran University of Medical Sciences. His research interests include isolation, characterization and purification of biological active secondary metabolites from natural sources.

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