Research Journal of Pharmacognosy (RJP) 4(Supplement), 2017: 121

First Iranian Pharmacognosy Congress; Nov 29-30, 2017

Abstract

Chemical composition of two samples of *Humulus lupulus* flowers (vernalized and wild hops)

P. Bajelani[1], S. Hamedeyazdan[2], S. Asnaashari[3], H. Nazemiyeh[2,4*]

[1]*Student's Research Committee, Faculty of Pharmacy, Tabriz University of Medical sciences, Tabriz, Iran.*
[2]*Department of Pharmacognosy, Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran.*
[3]*Biotechnology Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.*
[4]*Research Center for Pharmaceutical Nanotechnology, Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran.*

Background and objectives: *Humulus lupulus*, a plant belonging to the family Cannabaceae, is used as a medicinal plant with therapeutic applications in different nations. In this study, two samples of *H. lupulus* (vernalized and wild hops) were selected for further analysis about differences of their essential oils. **Methods:** The essential oils from the flowers of two *H. lupulus* (vernalized and wild hops) were achieved through hydrodistillation and analyzed via gas chromatography-mass spectrometry. Retention indices for all compounds were determined according to the kovats retention indices using *n*-alkanes series as standards. The components of the essential oils were identified by comparison of the retention indices and mass spectral data with those for the standards. **Results:** Analysis of the vernalized hops essential oil resulted in the identification of 64 components, representing 87.04 % of the total essential oil that principally contained β-caryophyllene (25.3%), β-bisabolole (16.7%) and β-elemene (5.3%). In the case of wild hops, 49 components were identified, representing 80.9% of the essential oil, among them β-bisabolole (35.2%), β-myrcene (13.3%) and β-sesquiphellandrene (11.3%) were the main compounds. Overall, both vernalized and wild hops possessed sesquiterpene hydrocarbons in higher contents, followed by non-terpenoid compounds, oxygenated sesquiterpenes and finally monoterpenoids in less amounts. **Conclusion:** Concerning the results of this study we found some similarities and differences among vernalized and wild hops and also in comparison with other species of the genus *Humulus*. Generally, mentioned similarities and differences might be attributed to both intrinsic and extrinsic factors affecting both the quality and quantity of the obtained essential oils.

Keywords: β- bisabolole, cannabaceae, β-caryophyllene

Available at: http://rjpharmacognosy.ir
*Corresponding author: Nazemiyehh@yahoo.com, Tel: +98413-3372250