EuroSciCon

6th Edition of International Conference on

Pharmacognosy and Medicinal Plants

April 16-17, 2018
Amsterdam, Netherlands

Mahmoodreza Moein, Am J Ethnomed 2018, Volume 5
DOI: 10.21767/2348-9502-C1-006

EXAMINATION OF THE ANTIOXIDANT POTENTIALS OF PHENOLIC EXTRACTS OF IRANIAN HONEY BY DIFFERENT METHODS

Mahmoodreza Moein
Shiraz University of Medical Sciences, Iran

Statement of the Problem: Honey is a natural substance produced by bees and from ancient times, this compound has been consumed by people. In oldest civilizations, honey was consumed for both nutritional and medical purposes. Honey, prevents lipid oxidation in meat and retardations oxidation reactions in food, caused by light, heat and metals.

Objective: In the present study, four phenolic extracts of Iranian honey were examined for antioxidant potentials by DPPH and NO radicals scavenging, reducing power and determination of phenolic and flavonoid contents.

Methodology & Theoretical Orientation: For preparation of phenolic extracts of honey, Amberlite XAD-2 resin was used. For DPPH radical scavenging, honey samples at different concentration levels were mixed with DPPH. For evaluation of NO radical scavenging, nitroprusside was used. For evaluation antioxidants potential by FRAP method, FeCl3, acetate buffer, and TPTZ solution was used. For determination phenolics, Folin-Ciocalteu was used as a reagent. Flavonoid content of the samples was determined using NaNO2.

Findings: With respect to antioxidant properties, Gavan sample presented the highest phenolic (3817±1.52 mg GAE/100 g) and flavonoid contents (3.1±0.005 mg QE/100 g) and DPPH radical scavenging (IC50= 2± 0.003 mg/ml). Bahareh honey possessed the maximum NO radical scavenging (IC50=0.0403 ± 0.0009 mg/ml) and Meymand honey presented the highest reducing power by FRAP method (IC50= 0.0018± 0.000003 mg/ml).

Conclusion & Significance: Honey samples presented antioxidant potentials especially by NO radical scavenging.

Table 1: Antioxidant potentials of 4 honey phenolic extracts by different methods in comparison with antioxidant standards.

Samples	DPPH radical scavenging (IC_{50}, mg/ mL)	Nitric oxide scavenging ability% (200 mg/mL)	Antioxidant potential by FRAP method (IC_{50}, mg/ mL)
Gavan, bee	2± 3.09	0.054 ± 0.002	0.652± 0.002
Zataria	>3.200	0.045± 0.0017	0.294± 0.0014
Bahare	>3.200	0.0403 ± 0.0009	>3.200
Meymand	>3.200	0.05± 0.0014	0.0018± ± 0.000003
Quercetin	0.0265± 0.00006	0.07± 0.0016	0.009 ± 0.00003

*Results are given as mean± SD values.

Table 2: Total phenolic and flavonoid contents of four honeys phenolic extracts.

Sample	Phenolic content (mg GAE/100g honey)[b]	Total flavonoids(mg QE/100g honey)[c]
Gavan	3817± 1.52	3.1± 0.005
Zataria	102± 1	2.3± 0.015
Bahare	58± 1.06	1± 0.0015
Meymand	866± 1.15	2.7± 0.005

aValues are expressed as mean± SD of three parallel measurements (p<0.05); bGAE: Gallic acid equivalent; cQE: Quercetin equivalent.

Recent Publications

1. Devarajan S and Venugopal S (2012) Antioxidant and α-amylase inhibition activities of phenolic compounds in the extracts of Indian honey. Chinese journal of Natural Medicines 10:255–259.
2. Jaromír L C N, Alenahe J N V and Jan S (2010) Contents of major phenolic and flavonoid antioxidants in selected Czech honey. Czech Journal of Food Science 28:412–426.
3. Meda A, Lamien C E, Romito M, Millogo J and Nacoulma O G (2005) Determination of the total phenolic, flavonoid and proline contents in Burkina Fasan honey, as well as their radical scavenging activity. Food Chemistry 91:571–577.
4. Gheldof N and Engeseth N J (2002) Antioxidant capacity of honeys from various floral sources based on the determination of oxygen radical absorbance capacity and inhibition of *in vitro* lipoprotein oxidation in human serum samples. Journal of Agricultural and Food Chemistry 50:3050–3055.
5. McKibben J and Engeseth N J (2002) Honey as a protective agent against lipid oxidation in ground turkey. Journal of Agricultural and Food Chemistry 50:592–595.

mrezamoein@yahoo.com