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Supervised pattern recognition of different coffee products

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Introduction: There is a lot of coffee types around the world. The more popular types of coffee are: Espresso (strong black coffee), Turkish coffee, Arabic mildly roasted coffee... etc. The aim of this study was to compare 4 different brands of coffee with different strengths with respect to the alignment of the chemical content with the strength (taste).

Arabic coffee, or "Al-Qahwa", Wild coffee, Nescafé and Turkish coffee are the four types of coffee selected for our study

Methods and materials: Coffee samples (Arabic coffee and wild coffee) were purchased from the market. 200 mg commercial coffee (Total 4 samples) have been extracted three times each with boiling water. The samples were then filtered through 0.22 filter and analysed. LC-QTOF (Agilant 6540) with C18 Zorbax column (100 mm, 1.8 um particle size) have been used. The samples have been analyzed in triplicate using the mobile phase consisting of 100% methanol (A) and 1% formic acid in water (B). The results were analysed using Masshunter software 5.0 and multivariate analysis was done using MPP.

Results: PCA shows clearly the different pattern of the different types of coffee. Analysis of these compounds revealed a list of potential differentiating compounds. The metbolomics study showed that caffeine has no role in determining the taste strength.

Conclusion: The study shows clear difference between Arabic coffee and wild coffee in terms of certain chemical constituents, caffeine is not one of them. The taste has no correlation with any biological active chemical constituents.

Biography

Mohamed F AlAjmi is an Associate Professor of pharmacognosy in College of Pharmacy, King Saud University. He is the Director of the medicinal plants research group in the college. He has published more than 20 papers in reputed journals and international conferences and serving as a reviewer to many journals in the field of pharmacy and technology.

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