International Food Research Journal 24(3): 1233-1238 (June 2017)
Journal homepage: *http://www.ifrj.upm.edu.my*

Green extraction and simultaneous inclusion complex formation of *Sideritis scardica* polyphenols

[1]Korompokis, K., [1]Igoumenidis, P. E., [2*]Mourtzinos, I. and [1]Karathanos, V.T.

[1]Laboratory of Chemistry - Biochemistry - Physical Chemistry of Foods, Department of Nutrition and Dietetics, Harokopion University, 70 El. Venizelou Str., Kallithea, 17671, Athens, Greece
[2]Department of Food Science and Technology, Faculty of Agriculture, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece

Article history

Received: 24 March 2016
Received in revised form: 28 June 2016
Accepted: 1 July 2016

Keywords

Tea
Cyclodextrin
Antioxidants
Thermal analysis

Abstract

Sideritis spp. (also known as Mountain tea), is a very common herb in Mediterranean basin, rich in bioactive polyphenolic ingredients. In this study, extraction from *Sideritis scardica* (SS) and concomitant inclusion complex formation of polyphenols in aqueous solutions of cyclodextrins (CDs) was investigated, by estimating the total phenolic content (TPC) and the antioxidant capacity of the extracts. Our results showed that the utilization of cyclodextrins boost the extraction yield of polyphenols. Both TPC and antioxidant capacity of SS aqueous extracts, containing CDs, presented greater values compared to pure SS aqueous extracts. Furthermore, the implementation of differential scanning calorimetry (DSC), conducted under inert and oxidative conditions, suggested the potential formation of inclusion complexes. The green extraction of Sideritis using cyclodextrins could pave the road for herb's more effective extraction and use in food and nutraceutical industry.