Antioxidant property, thymoquinone content and chemical characteristics of different extracts from Nigella sativa L. seeds

Abstract

In this study, Nigella sativa L. seeds were extracted using supercritical carbon dioxide (SC-CO2) and Soxhlet. Chemical characteristics, fatty acid composition, antioxidant activity and thymoquinone content of N. sativa L. extracts obtained through different methods were investigated and compared. It was revealed that antioxidant activity and thymoquinone content could be significantly different for SC-CO2 and Soxhlet extracts. The results for fatty acid composition indicated that linoleic acid, palmitic acid and oleic acid were the main fatty acids in both extracts. The SC-CO2 extraction could provide an extract with higher quality and antioxidant activity compared to Soxhlet extraction method and can be considered a more appropriate method for attaining a high-quality extract.

Keyword: Antioxidant activity; Fatty acid composition; Nigella sativa L. extract; SC-CO2 extraction; Thymoquinone