Abstract

In an effort to develop local productions of aromatic and medicinal plants, a comprehensive assessment of the composition and biological activities of the essential oils (EOs) extracted from the aerial flowering parts of wild growing Lavandula stoechas L. collected from eleven different locations in northern Algeria was performed. The oils were characterized by GC-FID and GC/MS analyses, and 121 compounds were identified, accounting for 69.88-91.2% of the total oil compositions. The eleven oils greatly differed in their compositions, since only 66 compounds were common to all oils. Major EO components were fenchone (2; 11.27-37.48%), camphor (3, 1.94-21.8%), 1,8-cineole (1; 0.16-8.71%), and viridiflorol (10; 2.89-7.38%). The assessed in vitro biological properties demonstrated that the DPPH-based radical-scavenging activities and the inhibition of the β-carotene/linoleic acid-based lipid oxidation differed by an eight-fold factor between the most and the least active oils and were linked to different sets of molecules in the different EOs. The eleven EOs exhibited good antimicrobial activities against most of the 16 tested strains of bacteria, filamentous fungi, and yeasts, with minimum inhibitory concentrations (MICs) ranging from 0.16 to 11.90amg/ml