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GC-MS characterisation and biological activity of essential oils from different vegetative organs of *Plectranthus barbatus* and *Plectranthus caninus* cultivated in north Italy.

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Abstract

Essential oils (EOs) from the roots, stems and leaves of *Plectranthus barbatus* (A) and *Plectranthus caninus* (B), cultivated in north Italy, were obtained by steam distillation and chemically characterised by gas chromatography-mass spectrometry. The highest yields were obtained from roots (268.15 and 673.60 mg/kg from A and B), followed by leaves (64.34 and 26.65 mg/kg) and stems (19.76 and 18.63 mg/kg). A total of 128 structures were identified in A and 121 in B. Fe(++) chelating and antiradical activities (DPPH and ABTS) were evaluated: root and stem EOs showed the strongest activities, while EOs from leaves did not show relevant activities. All EOs were tested for their in vitro antimicrobial activity, showing optimal growth-inhibition in antibiogram ($\phi > 35$ mm) and MIC tests (32-64 $\mu\text{g/mL}$) against *Candida albicans*, while EOs from leaves of both species showed a good activity ($25 < \phi < 34$ mm, MIC 64-128 $\mu\text{g/mL}$) against *Escherichia coli*.

KEYWORDS: GC-MS; *Plectranthus barbatus*; *Plectranthus caninus*; antimicrobial activity; essential oil

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