

Analysis of the Phytochemical Content and Anti-Candida Activity of *Borago officinalis*

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Abstract

BACKGROUND: Medicinal plants are a source of great economic value all over the world. Antimicrobial properties of medicinal plants are being increasingly reported from different parts of the world. *Borago officinalis* is a large annual plant of the Boraginaceae family, which grows in most of Europe and in northern Iran.

OBSERVATIONS: In this research, the *in vitro* antimicrobial activity of crude ethanolic, methanolic and water extracts from flowers of *Borago officinalis* were investigated against clinical isolates and standard strain of *C.albicans*. Also, the extracts were subjected to phytochemical tests for plant secondary metabolites. The *in vitro* antifungal bioassay of the crude ethanolic and methanolic extracts was performed by agar tube dilution method. The effect of the extract on fungal isolates was compared with amphotericin B and miconazole at a concentration of 1 mg/ml. The extracts exhibited antimicrobial activities with zones of inhibition ranging from 5 to 12, 8 to 20 and 0 to 8 mm for ethanol, methanol and water extracts respectively. The minimum inhibitory concentration (MIC) of the ethanol extract was between 0.5 and 6.25 mgml⁻¹ while that of methanol extract ranged from 0.5 to 10 mgml⁻¹. The minimum fungicidal concentration (MFC) for ethanol extract ranged between 2.0 and 12.50 mgml⁻¹, while that of methanol ranged from 2.0 to 20 mgml⁻¹. Phytochemical screening revealed the presence of saponin, steroids, tannins, glycosides, alkaloids and flavonoids in the extracts.

CONCLUSIONS: The ability of the crude flower extracts of *Borago officinalis* to inhibit the growth of yeasts is an indication of its broad spectrum antimicrobial potential which may be employed in the management of microbial infections.