Antimicrobial activity and phytochemical screening of *Arbutus unedo* L.

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*Arbutus unedo* L.; Phytochemical screening; Water and methanol extract; Phenolic fractions; Antimicrobial activity

**Abstract** In this study, antimicrobial activities of water and methanol extract, and three phenolic fractions of the roots of *Arbutus unedo* L. were investigated. Poor antibacterial activity against both *Staphylococcus aureus* and *Pseudomonas aeruginosa* bacteria was shown with water and methanol extract. However moderate antibacterial activity was shown by water extract and phenolic fractions against *Escherichia coli* and *S. aureus*, respectively. The phytochemical screening of roots of *A. unedo* revealed the presence of quinones, anthraquinones reducteurs compounds, anthocyanins, tannins and flavonoids. Quantitative analysis showed that the roots were strongly dominated by anthocyanin compounds (3.65 mg g⁻¹) followed by total flavonoids (0.56 mg g⁻¹) and flavones & flavonols (0.17 mg g⁻¹).

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1. Introduction

In the Mediterranean region and North Africa, *Arbutus unedo* L. is traditionally used as an alternative medicine for its biological properties. The fruit has antiseptic, diuretic and laxative effects, and the leaves have astringent, urinary tract antiseptic, anti-diarrheal and depurative properties (Ziyyat et al., 1997; Kivcak and Mert, 2001; Pabucuoglu et al., 2003; Mariotto et al., 2008; Afkir et al., 2008). Ziyyat and Boussairi, 1998 and Ziyyat et al., 2002 showed that an aqueous extract of *A. unedo* exhibited antihypertensive (Haouari et al., 2007) and vasorelaxant properties (Rosato et al., 2001). Furthermore, an *in vitro* study indicated that diethylether and ethyl acetate extracts of *A. unedo* leaves have an anti-agregating effect on human platelets (Redondo et al., 2005a,b). This effect is likely mediated by its antioxidant activity, which may inhibit protein tyrosine phosphorylation and Ca²⁺ influx into platelets (Redondo et al., 2005a,b; Oliveira et al., 2009). Several compounds have been isolated from *A. unedo*, including aromatic acids, iridoids, monoterpenoids, phenylpropa-

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