Abstract

Artemisia echegarayi Hieron. (Asteraceae) is commonly known in Argentina as “ajenjo”. Many studies report high efficacy of essential oils against food-borne pathogenic bacteria. The antibacterial activity and minimal inhibitory concentration of A. echegarayi essential oil were evaluated against seven bacterial species of significant importance in food hygiene, by using the disc diffusion assay and the micro-well dilution method, respectively. Volatile components of the extract were analyzed by gas chromatography-mass spectrometry and major components were determined. Furthermore, the essential oil was tested for its antioxidant activity. The essential oil inhibited the growth of gram-positive and gram-negative tested bacteria, with the exception of Proteus mirabilis. A. echegarayi essential oil presented the lowest minimal inhibitory concentration against Listeria monocytogenes and Bacillus cereus. Two terpenes, thujone and camphor, were identified from this essential oil as the principal constituents responsible for antibacterial activity. The oil showed a free radical scavenging activity equivalent to 50% of the reference compound. These preliminary studies showed promising results since this essential oil may provide an alternative to promote its use as a natural food additive.

Keywords

Artemisia echegarayi, Essential oil, Antibacterial activity, Antioxidant activity