

Antibacterial Activity and Essential Oil Composition of *Satureja spicigera* from Iran

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Z. Naturforsch. **64c**, 20–24 (2009); received March 3/August 4, 2008

The aerial parts of *Satureja spicigera* were collected at full flowering stage at Gazvin, Iran. The essential oil was isolated by hydrodistillation and analyzed by a combination of capillary GC and GC-MS. Fourteen compounds were identified, of which carvacrol (53.74%) and thymol (36.03%) were the main constituents, representing 99.12% of the total oil. The *in vitro* antibacterial activity of the essential oil was determined against six ATCC standard bacterial strains (*Bacillus subtilis*, *Enterococcus faecalis*, *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*) using disc diffusion as well as measurement of minimum inhibitory concentrations. The disc diffusion results and MIC values indicated high inhibitory activity against the test bacteria. The most susceptible organisms were the Gram-positive *B. subtilis* and *S. aureus* followed by *E. faecalis*, usually resistant to most common antibiotics. Among the Gram-negative bacteria, *E. coli* and *K. pneumoniae* were highly sensitive to the different oil concentrations in the disc diffusion method. Finally, *P. aeruginosa*, a highly resistant organism to most antibiotics, showed moderate susceptibility to *Satureja spicigera* essential oil.

Key words: Antibacterial Activity, Essential Oil Composition, *Satureja spicigera*