Profiling of Chemical Constituents of Indian Wintergreen Oil and their Antibacterial Efficacy

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Abstract

Belonging to family Ericaceae, *Gaultheria fragrantissima* is an aromatic and medicinal shrub that holds significant ethnobotanical importance. Commonly known by the name of Indian Wintergreen, this plant possesses multifaceted medicinal properties owing to their secondary metabolites, especially essential oil i.e., Oil of Wintergreen with a major volatile component, methyl salicylate in it. The oil exhibits diverse pharmacological activities as antibacterial, anti-inflammatory agents. Biochemical profiling of oil was performed by HPLC and GC-FID that highlighted the presence of methyl salicylate (97.13%) with significant peak area. This study also investigated the inhibitory potential of wintergreen oil against the selected gram-negative bacterial strains and in vitro assay was performed using paper-disc diffusion method and the results revealed that the natural wintergreen oil exhibited notable inhibitory action against *Pseudomonas aeruginosa* and *Escherichia coli* producing zone of inhibition of 6.1 and 6.5 mm respectively as compared to commercial wintergreen oil that showed comparatively less anti-bacterial potential.

Keywords

Gaultheria fragrantissima, oil of wintergreen, methyl salicylate, *Escherichia coli, Pseudomonas aeruginosa*, antibacterial agent.