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Analysis of chemical composition of *Cupressus torulosa* (D.Don) essential oil and bioautography guided evaluation of its antimicrobial fraction

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Cupressus torulosa D. Don, known as the Himalayan or Bhutan cypress, is one of the medicinal plants commonly used in the Indian System of Medicine for various ailments. The present study evaluates the chemical composition and inhibitory potential of the essential oil and three different extracts (chloroform, methanol and aqueous) of aerial parts of *C. torulosa*. Chemical composition of essential oil was determined by GC-MS that showed the presence of four major components *viz*., α-pinene (45.44%), 3-carene (38.34%), terpinolene (5.36%) and aromadendrene (6.32%). Essential oil showed significant inhibitory activity against *Bacillus subtilis, Pseudomonas alcaligenes*, *Micrococcus luteus* and *Bacillus cereus* in comparison to the different extracts. Essential oil also showed good antifungal activity against the three fungal pathogens *viz., Alternaria alternata, Curvularia lunata* and *Bipolaris specifera*. TLC-bioautography was used to screen the antibacterial components of the essential oil. Analysis showed the presence of four zones of inhibition on bioautography plate at R_f values 0.80, 0.70, 0.61 and 0.46. This study has demonstrated the presence of four potential antibacterial compounds in the essential oil of *Cupressus torulosa*.

Keywords: *Alternaria alternata*, Antimicrobial, Antifungal, *Bipolaris specifera*, *Curvularia lunata*, 3-Carene, *Cupressus*, Essential oil, Fungal pathogens, GC-MS, Himalayan cypress, α-Pinene