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### Screening of endophytes from *Centella asiatica* L. for antimicrobial compounds

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A wide variety of bioactive secondary metabolites produced by endophytes are used in agriculture, industries and medicine. Several novel antimicrobial compounds have been isolated from endophytes in cultures. Occasionally, they produce compounds similar to those produced by their respective host plants. A few reports on the antimicrobial activity of the extracts of *Centella asiatica* L, prompted a preliminary investigation to isolate endophytic microorganisms from leaves of *Centella asiatica* L. and screen for potential antimicrobial activity against selected bacteria under *in vitro* conditions. Six species of endophytic fungi and two species of actinomycetes were isolated from the leaves of four morphotypes of *C. asiatica* L. growing in Sri Lanka. Two fungi, including *Aspergillus* sp. (SG-GWF<sub>2</sub>), were identified as the members of the sub division Ascomycotina based on colony characters and morphological characters. Of the six fungi, three species, SG-GWF<sub>2</sub>, NG-WF<sub>1</sub> and SG-BWF<sub>1</sub>, showed promising antagonistic features on at least one representative of Gram-positive and Gram-negative test bacteria. The test was performed in triplicate and the antimicrobial activity was determined by measuring the mean growth inhibition zones on culture disk method using 10<sup>6</sup> Colony Forming Units of test bacteria. The highest mean inhibition zone, 23.0±0.8 mm was shown by *Aspergillus* sp. against *E. coli*. The fungus NG-WF<sub>1</sub> exhibited positive antibacterial activity on all tested bacteria species. When crude ethyl acetate extract of culture broth derived from the submerged fermentation of *Aspergillus* sp. was further evaluated against *E. coli*, the highest antimicrobial activity was shown by the extract derived from 25 ml Potato Sucrose Broth volume fermented for 14 days. The antimicrobial compound produced by *Aspergillus* sp. is heat stable at 100 °C while those produced by the other two positive fungi are heat labile at 100 °C. However, ethyl acetate extract of only two of the four *C. asiatica* L. morphotypes showed a poor antimicrobial activity on *E. coli* in the Kirby-Bauer disk diffusion test. This study reinforced the assumption that endophytes of *C. asiatica* L. could be a promising source of antimicrobial substances.