

Fungi from Sri Lankan medicinal plants as a sustainable source of bioactive compounds

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The discovery and isolation of Penicillin, a broad spectrum antibiotic, from the fungus *Penicillium notatum*, during World War II led to the study of fungal fermentation as a source of bioactive compounds. Fungal fermentation is widely used, e.g. that of *Aspergillus terreus* in the production of the cholesterol lowering drug lovastatin. The immunosuppressant drug cyclosporine and the fungicide strobilurus are also obtained from fungi. Endophytic fungi are microorganisms that live in the intercellular spaces of plants causing no discernible manifestation of their presence and have typically remained unnoticed. Endophytic fungi have proven to be an excellent source of bioactive natural products with diverse chemical structures. Some endophytic fungi have the ability to produce the same compounds that are produced by their host plant. Medicinal drugs produced by endophytic fungi include camptothecin, huperzine A, podophyllotoxin, taxol, vinblastine and vincristine.

Medicinal plants have been a source of bioactive compounds which are used in the treatment of infectious and non communicable diseases in humans for many centuries. A large number of Sri Lankan plants are being used for medicinal purposes. We have been studying the chemistry and bioactivity of medicinal plants and associated fungi (both endophytic and epiphytic) which has led to the isolation and characterization of several secondary metabolites with interesting structural features and bioactivities^{1,2}. The results of our study on some popular medicinal plants of Sri Lanka such as *Artocarpus altilis*, *Averrhoa carambola*, *Camellia sinensis*, *Carica papaya*, *Coccinia grandis*, *Costus speciosus*, *Flacourtia inermis*, *Garcinia mangostana*, *Manilkara zapota*, *Musa sp.*, *Piper nigrum* and *Pouteria campechiana* will be discussed. Results suggest that some of them could be used as sustainable sources of extracts/compounds with potential for development as food additives, food supplements and crop protection agents.

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References:

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