

Fungi from Medicinal Plants as a Source of Bioactive Compounds

M.V.K. Munasinghe^a, G.R.N. Rathnayake^a, D. Thanabalasingam^a,
M.M. Qader^a, C.B. Gunawardhana^a, K.G.N. Piyasena^a, N.K.B. Adikaram^a,
N.S. Kumar^a, L. Jayasinghe^{a*}, H Araya^b and Y. Fujimoto^{a,b}

^aNational Institute of Fundamental Studies, Kandy, Sri Lanka; ^bSchool of
Agriculture, Meiji University, Kawasaki, Kanagawa 214-8571, Japan.
(ulbj2003@yahoo.com)

Fungi play an important role in our lives and some fungi, such as mushrooms, have been used by humans as food from time immemorial. Endophytes are microorganisms that live in the intercellular spaces of stems, petioles, roots and leaves of plants causing no discernible manifestation of their presence and have typically remained unnoticed. They can be categorized mainly into two groups, epiphytic fungi and endophytic fungi. Epiphytic fungi grow on the surface of the host. Some endophytic fungi have the ability to produce the same compounds that are produced by their host plant. Camptothecin, huperzine A, podophyllotoxin, taxol, vinblastine and vincristine are examples of such compounds. Medicinal plants have been a source of bioactive compounds which are used in the treatment of infectious and various diseases in humans for many centuries. A large number of Sri Lankan plants are being used for medicinal purposes.

We have been studying medicinal plants and the chemistry and bioactivity of endophytic fungi from Sri Lankan medicinal plants. These studies have led to the isolation and characterization of several secondary metabolites with interesting structural features and bioactivities. Some popular medicinal plants of Sri Lanka that were investigated include *Amaranthus viridis*, *Coccinia grandis*, *Costus speciosus*, *Passiflora edulis* and *Piper nigrum*. Results indicated that some metabolites produced by endophytes in these plants have the potential to be used for applications in health and in agricultural crop protection.

Financial support from the NSF research grants No RG/2014/BS/02 & RG/2012/BS/06 are gratefully acknowledged