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## Chemical constituents of endophytic fungus associated with *Citrus aurantiifolia* and their α-amylase inhibitory activity

<u>A.M.N.A. Atapattu</u><sup>1</sup>, N.K.B. Adikaram<sup>1</sup>, L. Jayasinghe<sup>1\*</sup>, H. Araya<sup>2</sup>, Y. Fujimoto<sup>1, 2</sup> <sup>1</sup>National Institute of Fundamental Studies, Kandy, Sri Lanka

<sup>2</sup>School of Agriculture, Meiji University, Kawasaki, Japan <sup>\*</sup>lalith.ja@nifs.ac.lk

Endophytes can act as a reliable source of bioactive compounds. The objective of this study was to investigate the endophytic fungi isolated from the leaves of Citrus aurantiifolia which is commonly known as lime, for their chemistry and bioactivity. C. aurantiifolia leaves are used as a flavouring agent and mashed leaves are consumed for headaches and colds. Fresh and healthy leaves of *C. aurantiifolia* were collected from the Central Province of Sri Lanka. Small segments  $(5 \times 5 \text{ mm}^2)$  of the tripled sterilized leaves were placed on Potato Dextrose Agar plates and were incubated in the dark at room temperature (27 °C) for seven days until the appearance of fungal mycelium. The grown fungus was subcultured to obtain pure cultures. The pure fungus was cultured large scale and kept for 21 days in shakers at room temperature. After 21 days the medium was filtered and the filtrate was extracted using EtOAc. Mycelium was crushed and extracted with EtOAc and MeOH sequentially. EtOAc extract of the filtrate and the EtOAc and MeOH extracts of mycelium were subjected to  $\alpha$ -amylase inhibitory assay. EtOAc extract of the filtrate showed the highest activity with an IC<sub>50</sub> value of  $522.45 \pm 46.23 \text{ mg l}^{-1}$  and EtOAc and MeOH extracts of mycelium did not show any  $\alpha$ -amylase inhibitory activity. The chromatographic separation of (silica gel column followed by Sephadex LH-20 and PTLC) of EtOAc extract of filtrate resulted in succinic acid (1, 4-butanedioic acid) and 4-methoxy-4-oxobutanoic acid. The bioactivity studies of pure compounds are in progress.

**Keywords:**  $\alpha$  -amylase inhibition, Citrus aurantiifolia, endophytic fungus, 4-methoxy-4oxobutanoic acid, succinic acid