

Proceedings of the

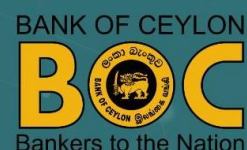
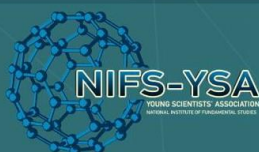
# YSCMR 2022

VIRTUAL INTERNATIONAL CONFERENCE 2022

*YOUNG SCIENTISTS'  
CONFERENCE ON  
MULTIDISCIPLINARY RESEARCH*

November 10, 2022

ORGANIZED BY THE YOUNG SCIENTISTS' ASSOCIATION,  
NATIONAL INSTITUTE OF FUNDAMENTAL STUDIES, SRI LANKA



Paper ID:  
CMT-093**Bioassays and enzyme inhibitory activities of *Alysicarpus vaginalis* and *Biophytum reinwardtii***T.D.A.D.K. Kulathunge<sup>1</sup>, J.M.N. Marikkar<sup>1</sup>, N.K.B. Adikaram<sup>1</sup>, L. Jayasinghe<sup>1\*</sup><sup>1</sup>National Institute of Fundamental Studies, Kandy, Sri Lanka\*  
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Sri Lankan traditional medicine utilizes mainly herbal preparations for the treatment of diseases. They have a broad literature on 2000 species, but only a few of these have been examined for bioactivities and chemical compositions. This research is directed towards the discovery of the bioactivities of *Alysicarpus vaginalis* and *Biophytum reinwardtii*. Whole plants of both species were selected for the study. The plants were collected from the Central province of Sri Lanka, washed, air-dried and finely powdered. Extracts obtained using *n*-hexane, ethyl acetate (EtOAc) and methanol (MeOH) were subjected to phytotoxic activity against Lettuce seeds, cytotoxicity against brine shrimp, antifungal activity against *Cladosporium cladosporioides*, DPPH (2,2- diphenyl-1-picrylhydrazyl) radical scavenging antioxidant activity,  $\alpha$ -amylase inhibitory activity and lipase enzyme inhibitory activity. None of the crude extracts showed any significant phytotoxicity or cytotoxicity. MeOH extract of *B. reinwardtii* (BM) exhibited the highest antioxidant activity ( $IC_{50}$  43.7 mg l<sup>-1</sup>) compared to ascorbic acid ( $IC_{50}$  2.21 mg l<sup>-1</sup>) and other extracts also showed antioxidant activity  $IC_{50}$  in the range of (43-665) mg l<sup>-1</sup>. None displayed any inhibition zone against *C. cladosporioides*. MeOH extracts of both plants showed  $\alpha$ - amylase enzyme inhibitory activity where BM ( $IC_{50}$  743.43 mg l<sup>-1</sup>) and MeOH extract of *A. vaginalis* (AM) ( $IC_{50}$  1015.98 mg l<sup>-1</sup>). EtOAc extract of *A. vaginalis* (AE) ( $IC_{50}$  332 mg l<sup>-1</sup>), exhibited lipase enzyme inhibition. This study revealed that both plants contain compounds with adequate properties which can further focus on the isolation of bioactive compounds responsible for these bioactivities.

**Keywords:**  *$\alpha$ -amylase, antifungal, antioxidant, cytotoxicity, lipase, phytotoxicity*