



A.V.V.M. Sri Pushpam College (Autonomous)

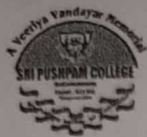
Poondi– 613 503, Thanjavur-Dt, Tamilnadu

(Affiliated to Bharathidasan University, Tiruchirappalli – 620 024)

**3.7.1 Number of Collaborative activities per year
for research/ faculty exchange/ student
exchange/ internship/ on –the-job training/
project work**

Collaborating Agency:

**Dr.SelvanathanLatha Associate Professor, Dept. of Microbiology,
School of Life Sciences, Bharathidasan University, Tiruchirapalli.**



Dr. A. PANNEERSELVAM
Associate Professor and Head (Rtd.,)
PG & Research Department of Botany and
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Department of Microbiology,
School of Life Sciences
Bharathidasan University
Tiruchirapalli – 24



Date: 23.09.2019.

LINKAGE
For the year 2019-2020

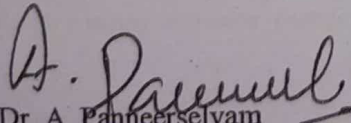
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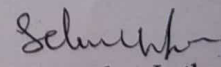
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| 1. Dr.A.Panneerselvam,
Associate Professor and Head (Rtd.,)
PG & Research Department of Botany
and Microbiology
A.V.V.M Sri Pushpam College
(Autonomous), Poondi – 613 503. | & | 2. Dr. Selvanathan Latha
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Department of Microbiology
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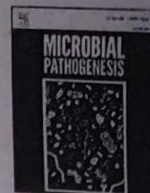
Considering the significance of the noble cause for the student community, we have come forward to collaborate with each other to exchange research knowledge, expertise, laboratory and library facilities to the process of scientific research and education in the field of Biological science. The parties (mentioned above as 1. & 2.) have had preliminary discussion in this matter and have ascertained areas of broad consensus. The parties now therefore agreed to enter in writing these avenues of consensus, under a flexible linkage, and this project aims to fill the gap between knowledge demand and subject expertise related to the mentioned field.

Joint Responsibilities

- Sharing of laboratory facilities, library resources, database etc.,
- Joint Publication of research articles, books, magazines, bulletins etc.,
- Jointly organizing conferences, seminars, symposia and workshops.
- Submitting joint proposals for research funding from agencies like UGC, CSIR, DST and TNSCST.
- Patenting Microbes, Plants patents Procedure, Product development and Novel equipments in Biological sciences (Indian and Foreign Patenting)


Dr. A. Panneerselvam


Dr. Selvanathan Latha



Taxonomic identification and bioactive compounds characterization of *Psilocybe cubensis* DPT1 to probe its antibacterial and mosquito larvicidal competency



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ABSTRACT

Mushrooms have an important role in sustainability since they have long been used as valuable food source and traditional medicine around the world. Regrettably, they are among the most rigorously affected populations, along with several plants and animals, due to the destructive activities of mankind. Thus the authentication and conservation of mushroom species are constantly needed to exploit the remarkable potential in them. In this perspective, an attempt has been made to identify and assess the biological attributes of psychedelic mushrooms collected from Kodaikanal, Tamil Nadu, India. The macromorphological features of the psychedelic mushroom DPT1 helped its presumptive identification and the molecular characters depicted by DNA marker revealed its close relationship with the genus *Psilocybe*. Accordingly, the psychedelic mushroom was identified as *Psilocybe cubensis* DPT1 and its crude ethyl acetate extract on analysis revealed the occurrence of phytoconstituents like alkaloids, flavonoids, tannins, saponins and carbohydrates. Moreover, it exhibited 80% larvicidal activity against *Culex quinquefasciatus* mosquito at 800 ppm concentration and an array of antibacterial effects with utmost susceptibility of *Proteus vulgaris*, and the identification of bioactive compounds by different analytical techniques substantiate that the bioactivities might be due to the presence of phytochemicals. The results of the study indicated that the extract of *P. cubensis* DPT1 having notable antibacterial and mosquito larvicidal efficacies which could be probed further for the isolation of medicinally important as well as bio-control compounds.

1. Introduction

The fungi with neurotropic properties, universally known as psychedelic, hallucinogenic or magic mushrooms, are extensively used as entheogens and recreational psychotropic drugs for thousands of years in view of their psychotomimetic properties [1]. There are more than 200 species of psychodysleptic compounds producing sacred mushrooms which are highly diverse and mostly belong to the genera *Agrocybe*, *Conocybe*, *Gymnopilus*, *Hypholoma*, *Inocybe*, *Panaeolus*, *Pluteus*, *Psilocybe* and *Stropharia* [2–5]. Nevertheless, many traditionalists insist that *Psilocybe* mushrooms are the “true” magic mushrooms, which grow naturally under a variety of climatic conditions and on every continent

excluding Antarctica [6]. These mushrooms are generally not toxic and are considered safe when consumed in doses ranging from 3.5 to 5 g and 10–50 g of dried mushrooms and fresh mushrooms, respectively depending on the genus and species, individual strength and growth conditions. When thus consumed they cause visual, auditory and other delusions, and profound changes in perception of time and emotions. These narcotic effects can also extend to euphoria, appetite, and alterations of thought or mood concurrently with lucid awareness and minimal effects on memory and orientation (<http://www.emcdda.europa.eu/publications/drug-profiles/mushrooms>).

The mind-altering effects usually set-in within 30 min of ingestion and extend for a period of 4–6 h, varying greatly between individual

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