

Key Features

- Exposure on *In vitro* culture of medicinal plants for propagation
- Callus and suspension culture for secondary metabolite production
- Molecular docking for *in silico* studies

Registration & Guidelines

The course will be completely free of cost for the short listed participants.

- The participants will be limited to 5 candidates at PG level (as per SERB norms)
- The applicants shall produce (I) Endorsement letter from their Head of the department indicating their enrolment with the institute and (II) No Objection Certificate (NOC) for permitting to under go Research Internship, if selected and a Self undertaking letter is available in the Google form
- Please fill Google form for Registration: tinyurl.com/39xnuj8x
- TNAU reserves the right to devise a well defined short listing criteria for selection of candidates based on the basic eligibility criteria laid out by SERB and as formulated guidelines for this Research Internship.

Course Assessment & Feedback

Active participation in lectures & discussion / interaction sessions, submission of assignments along with a basic level evaluation shall fetch the participant the VRITIKA Course Completion Certificate. As per SERB guidelines, mandatory anonymous course feedback shall be taken in the stipulated format.

Important Dates

Last date for registration	:	28.09.2021, 05.00 PM
Notification to selected participants	:	02.10.2021
Internship start date	:	04.10.2021
Internship end date	:	29.10.2021

Contact us

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Scan QR
Registration Link



'VRITIKA' Online Training and Skill Internship under Mission 'ABHYAAS'
On



Medicinal plants tissue culture and *in silico* analysis of phytochemicals

Time line : 04.10.2021 to 29 .10.2021



Organised by
Department of Plant Molecular Biology & Bioinformatics
Centre for Plant Molecular Biology and Biotechnology
Tamil Nadu Agricultural University, Coimbatore - 641003

Funded by
Science and Engineering Research Board (SERB) under Accelerate Vigyan scheme

About the Institute

The Tamil Nadu Agricultural University (TNAU) has its genesis as early as 1868 and it is located at Coimbatore. TNAU assumed full responsibilities of Agricultural Education and Research and supporting the State Agricultural Department by delivering research products. The University has 39 Agricultural research stations spread over seven agro-climatic zones of Tamil Nadu with more than 1270 scientists and teaching faculty. The team approach resulted in the outcome of 763 crop varieties, 152 farm implements and more than 1500 management technologies which have been released from time to time for the benefit of farming community. As many as 14 Constituent and 29 Affiliated colleges are involved towards inculcating Agricultural Education in the state. Students from all over India and overseas seek admission for PG and Ph. D studies. The Directorate of Extension Education coordinates the extension activities through 14 Krishi Vigyan Kendras.

About the Directorate

Centre for Plant Molecular Biology and Biotechnology (CPMB&B), TNAU has been one among a few front-runners to initiate “Biotechnology” teaching. The Department of Biotechnology (DBT), Government of India is extending the financial support for the cause of manpower development since 1988. The CPMB&B was established in 1990 to take up research in plants based on cues from the science of Plant Molecular Biology. The centre has state of art facilities to carry out research and training in plant tissue culture, genetic and genome engineering, molecular markers, molecular ecology, NGS, Bioprospecting and other Bioinformatics research.



About the Department:

Bioinformatics activity in TNAU dates back to 1989 with the inception of the Biotechnology Information System (BTIS) program of the DBT, Government of India and the bioinformatics centre at the CPMB&B is one among the Sub-Distributed Information Centre (DISC) of the BTIS network to foster research, education and training in Bioinformatics. The Department of Plant Molecular Biology & Bioinformatics (DPMB&B) has high end servers, paid soft ware's for molecular docking, *in silico* and NGS analysis. Some of the achievements include development of Databases for crop specific germplasm, Marker Database, Tools and NGS analysis. So far, 268 students got graduated in B. Tech. (Bioinformatics) and 35 Nos. of training was offered to 500 trainees (students and faculty at national level)

About the Internship

This course will be conducted under Accelerate Vigyan scheme intended towards “**Mission 'ABHYAAS'-'VRITIKA- Training and Skill Internship**” on “Medicinal plants tissue culture and *in silico* analysis of phytochemicals” which can sharpen the focus and provide opportunities to promising PG students from universities and colleges to get an exposure on research experience. The internship is great way to get connected with professors experienced in tissue culture and bioinformatics and it teaches life skills like critical thinking, responsibility, management and assertiveness among the PG students. The valuable coaching, support and feedback from the internship will be much useful infor the interns in developing future science scholars. The course shall be conducted through virtual mode for a period of 4 weeks. During this period the interns investigate an unfamiliar field in the sciences, exploring possible career paths and develop a sense of confidence in tissue culture and bioinformatics analysis

Chief Coordinator

Dr. S. Mohan Kumar,
Director
CPMB&B
Tamil Nadu Agricultural University
Coimbatore – 641003

Internship Coordinator/ Event Organizer

Dr. R. Gnanam
Professor and Head
DPMB&B, CPMB&B
Tamil Nadu Agricultural University
Coimbatore – 641003

Target Participants

Motivated PG level students pursuing their studies in any disciplines of life science as defined under the Scheme 'AccelerateVigyan' by DST-SERB who is desirous to nurture and develop hands on experience in medicinal plant tissue culture and Molecular docking analysis.

Support Team

Dr. K. Rajamani, Professor and Head (Medicinal and Aromatic Crops)
Dr. J. Suresh, Professor (Medicinal and Aromatic Crops)
Dr. N. Senthil, Professor (DPMB&B)
Dr. N. Saranya, Asst. Professor (DPMB&B)
Dr. M. Jayakanthan, Asst. Professor (DPMB&B)
Mrs. N. Bharathi, Asst. Professor (DPMB&B)

Objective of the Course

DST-SERB VRITIKA- Training and Skill Internship is intended towards Mission 'ABHYAAS'

- The course shall introduce the interns the different aspects of research knowledge and internship skills in important medicinal plants, their mode of propagation, phytochemicals of pharmaceutical value.
- This internship will also elaborate and improve their technical knowledge of the interns in the field of tissue culture-Establishment of tissue culture laboratory, medium preparation, inoculation and multiplying plants through tissue culture, establishment of callus and suspension and monitoring them.
- This internship train them in identifying different targets for some important diseases, identification of phytochemicals as suitable ligands, docking to understand the molecular interactions so that these phytocompounds could be suggested for future herbal drug development.

Course Outline

- Laboratory organization for plant tissue culture, Different sterilization techniques used in plant tissue culture, Medium formulations used in plant tissue culture and their compositions, Preparation of stock solutions and medium for *in vitro* culture
- An over view of medicinal plants, propagation methods and their pharmacological significance
- Micropropagation of medicinal plants-shoot and nodal culture
- Establishment and callus and suspension culture and growth measurements
- Data base searches, similarity searches and protein modelling
- Identification of targets
- Ligand preparation
- Protein preparation
- Molecular docking and analysis of results