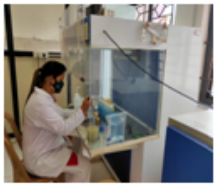
Trainers

Prof. Pradeep K. Naik,
Coordinator RCOE-NPT
Dept. of Biotechnology
and Bioinformatics
Sambalpur University

Research Scholars

Dr. Subhaswaraj Pattnaik
Dr. Prajna Parimita Mohanta
Dr. Jitesh Kumar Maharana
Dr. Pratyush Pragyandipta
Dr. Lilesh Kumar Pradhan
Mr. Dibya Ranjan Sahoo
Mr. Srichandan Rath
Mr. Swaraj Kumar Babu
Ms. Monika Mishra
Mrs. Mamta Naik
Mrs. Namita Bhoi
Mr. Abhijit Sahu
Ms. Eeshara Naik
Ms. Sajna Sameekshya Hota
Ms. Reshma Pradhan
Mr. SK Mustaq Ali
Mr. Tapan Kumar Behera
Ms. Tapasa Mishra
Ms. Archana Pradhan
Ms. Baishali Basundhara Naik
Ms. Manini Hansda
Ms. Pragati Prava Rath
Ms. Tanuja Sahu
Ms. Priyanka Gartia

LABORATORY FACILITIES


Animal cell culture | Microbial culture | Parasite culture



Plant tissue culture | Analytical Lab | Green House

Registration and Contact Details

Interested participants must register and only selected candidates would be invited for the National Internship Training Programme. For selected candidates Lodging and Fooding will be will be provided by Sambalpur University out of the Grant received from the Odisha State Higher Education Council (OSHEC).

Link for Registration:
https://docs.google.com/forms/d/e/1FAIpQLSc5zJWXncVoB3IkgG3lEYteGnEbF4yc4s-1NgLYRfKOuNaYkA/viewform?usp=pp_url.

Registration Deadline: 31st January 2024
Short listed candidates will be intimated by email latest by 29th February 2024.

Eligibility Criteria

Minimum qualification: Continuing Post Graduate/M.Tech in Biological Sciences (Botany, Zoology, Life Sciences, Biotechnology, Bioinformatics, Microbiology, Marine Biology, and allied subjects)

For more Information

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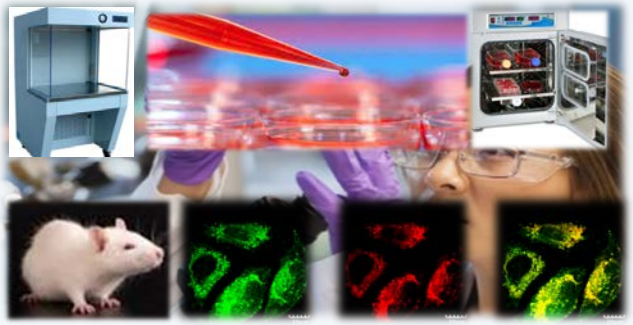
One Month National Internship on NATURAL PRODUCTS DEVELOPMENT AND PRECLINICAL TRIALS

From 6th May to 5th June, 2024



Odisha State Higher Education Council (OSHEC), Dept. of Higher Education, Govt. of Odisha Funded

Higher Education Department
Government of Odisha

Organized by:

Research Centre of Excellence Natural Products and Therapeutics (RCOE-NPT)
Department of Biotechnology & Bioinformatics
Sambalpur University
Jyoti Vihar, Sambalpur - 768019, Odisha

Overview of Program

RCOE-NPT welcomes participants to the National Internship Training Program on **Natural Products Development and Preclinical Trials.** Engage in interdisciplinary learning within the vibrant setting of the RCOE-NPT by exploring the traditional knowledge for developing natural products. Join us in advancing research excellence and gaining hands-on experience in the realm of natural products development and preclinical trials.

Overview of the RCOE-NPT

Sambalpur University's "Research Centre of Excellence in Natural Products and Therapeutics (RCOE-NPT)" thrives on a Rs. 4.0 crore grant from the Department of Higher Education, Govt. of Odisha, through the World Bank. Established on September 25, 2018, it delves into interdisciplinary research on medicinal plants in the biodiversity of the Gandhamardan. Utilizing traditional healers' insights, the center aims to uncover plant chemical properties and identify bioactive molecules for developing effective natural and synthetic products against diseases. In collaboration with the Department of Biotechnology & Bioinformatics and the School of Chemistry, RCOE-NPT aspires to be a hub of knowledge and innovation, excelling in education and research. It endeavors to become a distinguished Research Centre of Excellence by advancing herbal products development, conducting preclinical evaluations, providing training, supporting local livelihoods, offering affordable services, contributing significantly to the field of natural products and therapeutics.

Training Modules of Internship

1. Analytical Training Modules

- Introduction to Pharmacognosy and understanding the traditional method of Drug Screening.
- Basics of different extraction techniques and chromatographic techniques
- Basics of spectroscopic instruments, qualitative and quantitative analysis using UV and FTIR.
- Basics of chromatographic instruments, qualitative and quantitative analysis by TLC, HPTLC, HPLC, UPLC, GC.
- Basics of mass spectroscopy, qualitative and quantitative analysis using LC-HRMS and GC-MS.

2. Animal handling and research training module

- Handling of animals, care and management
- Day to day observation on body weight, water intake
- Experimental Approaches in laboratory animals
- Animal behavioural study and observation
- Animal model for different diseases and experiments
- Toxicity profiling , histopathology and animal testing

3. Molecular Modeling and Drug Design training module

- Protein modeling, validation and simulation
- DNA, Proteins and chemical databases,
- Representation of chemical structure, and database search
- Ligand based drug design (QSAR and Pharmacophore modeling)
- Structure based drug design (molecular docking, MD simulation, Ligplot analysis, Binding affinity calculation)
- ADME and Toxicity property analyhsis

4. Animal cell culture experiments training module

- Introduction to basics of Animal cell culture, Media and Reagent Preparation & Sterilization, Cell Counting
- Processing of cells and preparations of chemicals for evaluation of cell viability, cytotoxicity & proliferation assay, FACS analysis, Fluorescence imaging
- Preparation of Chemicals and processing of genomic DNA isolation from cancer cell lines.
- Preparation of Chemicals and processing of Reverse Transcription-PCR from cDNA.
- Preparation of Chemicals and processing of Agarose gel electrophoresis of PCR product

5. Microbiology training module

- Overview of basic microbiology, emphasizing laboratory practices, aseptic conditions, and SOPs.
- Media preparation, sterilization, bacterial inoculation, and culture maintenance.
- Morphological and biochemical identification,
- Antibiotic susceptibility testing, determination of antibacterial activities, and minimum inhibitory concentration calculations are explored.
- Introduction of biofilms in bacterial pathogens, highlighting their role in antibiotic resistance and techniques for detection and inhibition.
- Impact of medicinal plants on biofilm formation using assays like Congo red agar.
- Explores exopolysaccharides production and microscopic methods for biofilm detection in bacterial pathogens.

6. Parasite research training module

- Maintaining Sterility in Parasite Laboratory
- Preparation of Culture media and Filtration techniques
- In vitro Culture and Maintenance of parasites
- In vitro screening of antiparasitic drug agents
- In vitro toxicity screening of antiparasitic drug agents
- Gene expression analysis of marker gene
- FACS analysis and fluorescence imaging

7. Plant tissue culture research training module

- Introduction to basics of Plant tissue culture.
- Media and Stock Preparation & Sterilization.
- Selection of explants for formation of multiple shoots, Incubation of explants
- Selection of specific plant growth regulator for formation of multiple shoots and Preparation of soil, transfer of plantlet to for primary hardening with specific temperature and humidity.
- Transfer to Net house or field condition for secondary hardening

After the training is over there will be Evaluation of trainees and certification.