

PACHHUNGA UNIVERSITY COLLEGE

**Department of Zoology
Institutional Biotechnology Hub**

REPORT ON INTER INSTITUTIONAL SUMMER SCHOOL

METHODS IN MOLECULAR GENETICS

Molecular genetics is a rapidly advancing field that investigates the structure, function, and organization of genes at the molecular level. The following report summarizes a five-day training program on Molecular Genetics held at Department of Zoology, Pachhunga University College, Aizawl Mizoram organized by DBT - NER Advance Level Biotech Hub from 19th June, 2023 – 23rd June, 2023 which aimed at providing participants with an in-depth understanding of key concepts, techniques, and applications in the field.

Training Objectives:

The primary objectives of the training program were as follows:

- To familiarize participants with the fundamental principles of molecular genetics.
- To provide hands-on training on various laboratory techniques used in molecular genetics research.
- To explore the applications of molecular genetics in diverse fields such as medicine, agriculture, and forensics.
- To enhance participants' critical thinking and problem-solving skills through group discussions.
- To foster collaboration and networking among participants and experts in the field.

Training Methodology:

The training program utilized a combination of lectures, interactive sessions, hands-on laboratory exercises, and field visit. Resource persons facilitated the sessions, providing theoretical knowledge and practical insights. The participants actively engaged in discussions, case studies, and laboratory experiments to reinforce their understanding of molecular genetics concepts and techniques.

There were a total of 18 participants, all from Science Colleges within Mizoram: 12 from Pachhunga University College, 2 from Govt. Kolasib College, 1 from Govt. Serchhip College, 2 from Govt. Zirtiri Residential Science College and 1 participant from Govt. Champhai College.

Sl. No	Name	College
1	Christina Lalmuanpuii	Pachhunga University College
2	VL Lawmsangi	Pachhunga University College
3	Biakhluzuali	Pachhunga University College
4	Elizabeth Lalthansangi	Pachhunga University College
5	Esther Lalthannguri	Pachhunga University College
6	Joshua Vanlalrengpuia	Pachhunga University College
7	Jacob Lalchhanchhuaha	Pachhunga University College
8	Vanlalsiamthari	Pachhunga University College
9	Lalhriatpuia Rokhum	Pachhunga University College
10	Vanlalruati	Pachhunga University College
11	R. Zothankima	Pachhunga University College
12	C. Lalbiakzuala	Pachhunga University College
13	Sabrina Sungoh	Govt. Kolasib College
14	Faustina Lalenkawli	Govt. Kolasib College
15	V. Lalrinkimi	Govt. Champhai College
16	VL Hruaitluangi Sailo	Govt. Serchhip College
17	Rebek VL Thapuii	GZRSC
18	Hmingthanzuala	GZRSC

Day 1 (19th June 2023):

- The training was inaugurated by the Principal of the College – Prof. H. Lalthanzara followed by an Introductory lecture on Molecular genetics by Dr. Vanramliana, Co-Ordinator.
- Another lecture on the Sterilisation Techniques was delivered by Mr. Albana.L. Chawngthu, Research Scholar, Dept. of Zoology, Pachhunga university College.

Day 2 (20th June 2023)

- Lecture on Molecular Genetics including DNA Extraction, Polymerase Chain Reaction, Gel electrophoresis by Dr. H.C. Lalramnghaki, DBT-RA, Pachhunga University College.
- There were practical sessions in the afternoon regarding the reagents and chemicals preparation for use in DNA extractions.

Day 3 (21st June, 2023)

- Practical Sessions on DNA extraction from fungi, PCR amplification of ITS1 region of fungi and gel electrophoresis of the amplified products.

Day 4 (22nd June, 2023)

- Practical sessions on Basic Statistical analysis- T-test, standard deviation and One way ANOVA, DAN Sequence analysis and Results interpretation were delivered by Ms. Mary Lalramchuani, Research Scholar, Dept. of Zoology, Pachhunga university College.

Day 5 (23rd June, 2023)

- Field visit to Innovation Facility Centre, MISTIC, Directorate of Mizoram , State Biotech HUB- Mizoram University, Natural History Museum- Mizoram University.

Training Outcomes:

The five-day training program successfully achieved its objectives, as evidenced by the following outcomes:

- Participants gained a comprehensive understanding of molecular genetics principles, techniques, and applications.
- Hands-on laboratory exercises enhanced participants' proficiency in key molecular genetics techniques.
- Participants developed critical thinking skills through case studies and group discussions.
- Networking opportunities facilitated collaboration and knowledge exchange among participants and experts.
- The training program received positive feedback from participants, who expressed increased confidence and motivation to apply molecular genetics in their respective fields.

Conclusion:

The five-day training on molecular genetics provided participants with a solid foundation in the field, equipping them with essential knowledge and skills for further exploration and application of molecular genetics in their professional endeavors. The program successfully met its objectives by combining theoretical sessions with practical experiences, enabling participants to understand the underlying principles

ATTENDANCE SHEET

ATTENDANCE SHEET SUMMER SCHOOL- METHODS IN MOLECULAR GENETICS, 19-23th June 2023

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TRAINING PROGRAMME

PACHHUNGA UNIVERSITY COLLEGE SUMMER SCHOOL – METHODS IN MOLECULAR GENETICS

Day 1 (19th June, 2023)

(THEORY)

1:00 PM – 2:00 PM

: INTRODUCTION TO MOLECULAR GENETICS- Dr. Vanramliana

2:00 PM – 4:00 PM

: STERILISATION TECHNIQUES – Albana. L. Chawngthu

Day 2 (20th June, 2023)

(THEORY)

10:00 AM – 12:00 PM

: MOLECULAR TECHNIQUES – Dr. HC Lalramnghaki

12:00 PM – 1:00 PM

: LUNCH

1:00 PM – 4:30

: STERILISATION AND REAGENT PREPARATION (PRACTICAL)

Day 3 (21st June, 2023)

(PRACTICAL)

10:00 AM – 12:00 PM

: MOLECULAR TECHNIQUES

DNA Extraction, PCR & Gel Electrophoresis

12:00 PM – 1:00 PM

: LUNCH

1:00 PM – 4:30 PM

: MOLECULAR TECHNIQUES

Day 4 (22nd June, 2023)

(THEORY & PRACTICAL)

10:00AM – 12:00 PM

: BASIC STATISTICAL ANALYSIS – Mary Lalramchuani

12:00 PM – 1:00 PM

: LUNCH

1:00 PM – 4:30PM

: SEQUENCE ANALYSIS AND INTERPRETATION

- Mary Lalramchuani

Day 5 (23rd June, 2023)

: FIELD VISIT

1. State Biotech HUB, MZU

2. Innovation Facility Centre, MISTIC





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SUMMER SCHOOL - METHODS IN MOLECULAR GENETICS

This certificate is presented to

Lalthialfua Bethum
PUC

for his/her participation at the **Summer School - Methods in Molecular Genetics** held at Department of Zoology, Pachhunga University College from 19 - 23 June, 2023 organised by DBT - NER Advance - Level Biotech HUB, Department of Zoology, Pachhunga University College.

Dr. VANRAMLIANA
Co- Ordinator

Prof. LALRAMLIANA
Head
Dept. of Zoology
Pachhunga University College

Prof. H. LALTHANZARA
Principal
Pachhunga University College

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Nandaliamthari
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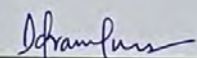
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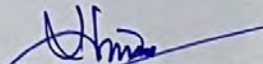
This certificate is presented to

Esther Lalthanzara
Pachhunga University College

for his/her participation at the **Summer School - Methods in Molecular Genetics** held at Department of Zoology, Pachhunga University College from 19 - 23 June, 2023 organised by DBT - NER Advance - Level Biotech HUB, Department of Zoology, Pachhunga University College.


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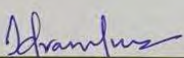
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R. Lethankimi

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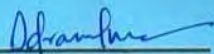
This certificate is presented to

VL Lawmsangi

Pachhunga University College.

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Elizabeth Lalthansangi
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N. Lalriakuala
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Christina Lalmuanpuii
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Joshua Vanlalengpuia
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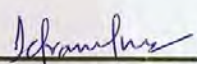
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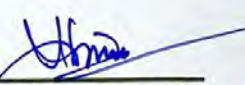
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Jacob Lalchhanchhuaha
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Biakhluzali
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