FORMAT FOR SUBMISSION OF PROGRESS REPORT OF STATE/INSTITUTIONAL LEVEL_BIOTECH HUBS

(Sanctioned during 2010-11 and 2011-12)

Period under report – 2014 - 2015

1. Name & address of the institution: Lady Keane College, Shillong

2. Name & designation of the Coordinator: Mr. G.G. Syngai, HOD, Biochemistry Department,

Lady Keane College, Shillong.

3. Telephone, Mobile, Fax and Email of the Coordinator: +919856007518 (M)

ggsyngai@gmail.com

4. Level of the Biotech Hub: Institutional

5. Year of sanction with DBT's sanction no.: BT/04/NE/2009 dated September 21, 2010

6. A brief write up about your organization/institution (not exceeding 10 lines):

Lady Keane College, the first women's college in North Eastern India was established in 1935, in the heart of Shillong city, the capital of Meghalaya. The tribal students of the North Eastern region make up for 80% of the present student's strength. Students from all parts of India are also admitted and this brings about an integration of traditions and cultures of the region. This is in keeping with the objectives set by the founders: "To do whatever necessary and legitimate for the spread of liberal education in all branches among women irrespective of religion, caste, creed or nationality". Reaccredited with an 'A' grade by NAAC in 2014 with a CGPA of 3.09 on a four point scale, the college is dedicated towards providing quality and all-round education to women and is striving hard in establishing itself as one of the premiere and distinguished institutions in the country.

7. Total funding received so far (Rupees in lakhs):

| Financial year | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Total |
|--------------------|------------|------------|------------|------------------------|------------------------|----------------|
| | (1st year) | (2nd year) | (3rd year) | (4 th year) | (5 th year) | (Rs. In lakhs) |
| Amount Received | 19.00 | 10.03 | 5.21 | 3.67 | - | 37.91 |

8. Infrastructure created:

(a) List of equipment procured:

| Sl. No | EQUIPMENTS | Brand Name | Model No | Rupees (in Lacs) |
|-----------|---|--------------|--------------------------------|---------------------|
| 1 | Refrigerated Centrifuge (17,500rpm) 1.5/2.0 ml micro tubes | Eppendorf | 5430 R | 4.7 |
| 2 | UV/ Vis Spectrophotometer | Shimadzu | UV -1800 | 5.025 |
| 3 | Digital Trinocular Microscope | Labomed | Lx 400 | 0.78 |
| 4 | Vertical Slab Gel Electrophoresis | TechnoSource | 02 -00142 | 0.14 |
| 5 | Submarine Electrophoresis Unit | TechnoSource | 08 -00105 | 0.16 |
| 6 | Electrophoresis Power Supply | TechnoSource | PAGE-100 | 0.45 |
| 7 | Western Blot System | Medox | MX - 246 - 01 | 0.13 |
| 8 | Computer (1 No.) | HP Pavilion | p6338in | 0.4559 |
| 9 | Laser Printer | Canon | LBP 2900B | 0.0659 |
| 10 | Gel Rocker | Medox | MX – 1290 -02 | 0.18 |
| 11 | Electronic Balance | Shinko | JA -310 | 0.35 |
| 12 | Refrigerator (175 Litres) | LG | 185RP3 | 0.099 |
| 13 | Micropipettes | BioLit | Proline-var. | 0.105 |
| 14 | Micropipettes | BioLit | Proline-var. | 0.05 |
| 15 | Micropipettes | BioLit | Proline-var. | 0.05 |
| 16 | Micropipettes | BioLit | Proline-var. | 0.05 |
| 17 | Micropipettes | BioLit | Proline-var. 100 – 1000 μl | 0.05 |
| 18 | Micropipettes | BioLit | Proline-var. 1000 – 5000 μl | 0.05 |
| 19 | pH meter | Chemiline | CL 110 | 0.07 |
| 20 | Hot Air Oven | NSW | 143(OUA-2) | 0.2019 |
| 21 | Serological Water Bath | NSW | 125(SBS-1) | 0.1298 |
| 22 | Autoclave | NSW | 229 | 0.0979 |
| 23 | UPS | Foxin | FPS 600 | 0.02 |
| 24 | Online UPS with 16 Nos. Batteries | SUKAM | IntelliQ Series | 3.95 |
| 25 | Inverter with 8 Nos. Batteries | SUKAM | IntelliQ Series | 1.95 |

9. Teaching/training activities taken up during the period of report:

(a). Trainings conducted:

| Serial No. | Торіс | Duration and Date | No. of participants |
|---------------|--|---|---------------------|
| 1. | Outreach Training programme for class X-students of MeECL Secondary School, Sumer on the theme "Immune system - A biological defence mechanism against infective agents" | Two days 12 th – 13 th June 2014 | 20 |
| 2. | Three-Day Training Programme for the BSc III year (Honours) students on "Chromatography techniques in the separation of bio-molecules" | Three days $1^{\text{st}} - 3^{\text{rd}}$ December, 2014 | 21 |
| 3. | Three-Day Training Programme for School teachers on "Plant tissue culture techniques" | Three days $8^{th} - 10^{th}$ December, 2014 | 10 |

1. Outreach Training programme for class X-students of MeECL Secondary School, Sumer on the theme, "Immune system - A biological defence mechanism against infective agents"

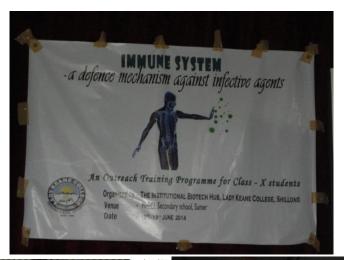




Fig1: Students during the lecture on, "Immune system - A biological defence mechanism against infective agents"



Fig2: Students perform different experiments on, "Immune system - A biological defence mechanism against infective agents"

2. Three-Day Training Programme for the BSc III year (Honours) students on: "Chromatography techniques in the separation of bio-molecules"



Fig.3: Students during the lecture on, Chromatography as a separation Technique.



Fig.4: Students performing Paper Chromatography Technique.

3. Three-Day Training Programme for School teachers on: "Plant tissue culture techniques"







Fig.5: Participants during the lecture on Plant Tissue Culture Techniques.



Fig.6: Participants performing Plant Tissue Culture Techniques.

(b). Overall score of the training programmes according to participants as per feedback taken in the prescribed format:

| Total No. of participants | N | o. & percentage o | f participants ass | signing score of | |
|---------------------------|-----------|-------------------|--------------------|------------------|---|
| | 5 | 4 | 3 | 2 | 1 |
| 51 | 24{47.1%} | 19{37.2%} | 6{11.8%} | - | - |

(c). Workshop/seminars/awareness programmes conducted:

| Sl. No. | Торіс | Duration and Date | No. of participants |
|---------|--|--|---------------------|
| 1. | Lecture Sessions for the Class- XII science students of Lady Keane Girls' HSS on: "An Overview of DNA as the Genetic Material" | One day 25 th September 2014 | 31 |
| 2. | Panel Discussion for the BSc III year students on "Medicinal Plants & Their Various Uses" | Two hours 16 th October 2014 | 56 |
| 3. | Practical Demonstrations for Class IX/X students on the "Use Of Basic Scientific Instrumentation" | One day 11 th November 2014 | 14 |

1. Lecture Sessions for the Class- XII science students of Lady Keane Girls' HSS on: "An Overview of DNA as the Genetic Material"

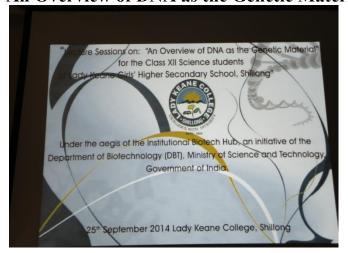






Fig.7: Students during a lecture on: "An Overview of DNA as the Genetic Material".

2. Panel Discussion for the BSc III year students on "Medicinal Plants & Their Various Uses"







Fig.8: Students and Teachers during the Panel Discussion on "Medicinal Plants & Their Various Uses

3. Practical Demonstrations for Class IX/X students on: "The Use of Basic Scientific Instrumentation"







Fig.9: Students performing in the use of different basic Scientific Instrumentation.

(d). No. of students doing project works under biotech hubs facility:

UG: PG: Ph.D.: 1 (One)

(e). Courses/Study programmes supported (by biotech hub infrastructure & facilities):

| Sl. No. | Level (UG/PG/PhD) | Name of the Course/Study programme | Nature of support |
|---------|----------------------|------------------------------------|---|
| 1. | UG | Biochemistry Honours | Provided equipments for conducting the practicals |

(f). Outreach programmes conducted:

| Sl. No. | Торіс | Name of the institution | Duration | Level of |
|---------|---------------------------------------|-------------------------|---------------------|--------------|
| | | where conducted | and Date | participants |
| 1. | Outreach Training programme for class | | | |
| | X-students on the theme: | MeECL Secondary | Two days | Class X |
| | "Immune system - A biological | School, Sumer | $12^{th} - 13^{th}$ | students |
| | defence mechanism against | • | June 2014 | |
| | infective agents" | | | |
| | | | | |

(g). Invited lectures/hands-on trainings offered at other institutions:

| Sl. No. | Name of the resource person | Topic | Organized by | Duration & Date |
|---------|-----------------------------|-------|--------------|-----------------|
| | | | | |

10. Research activities (please provide details of only those research activities being carried out at biotech hub):

(a) Type of work carried out:

| Sl. No. | Title of the research | Persons involved | Status (Ongoing/completed) |
|---------|--|------------------|----------------------------|
| 1. | "Acute toxicity of ethanolic extract of Zingiber officinale rhizomes on common carp (Cyprinus carpio carpio L., 1758)" | Mr. G.G.Syngai | Ongoing |

(b) No. of papers published/presented with impact factor (please mention only those have been arising out of biotech hub support): (Provide a list on a separate sheet, if necessary. Papers with due acknowledgement to the Biotech Hub should only be listed.)

(c) Collaboration with other departments/institutions:

| Sl. No. | Dept./Institution collaborated | Nature of collaboration | Duration |
|---------|---|--|----------------|
| 1. | Department of Biochemistry, Lady Keane College, Shillong | Training programme on: "Chromatography techniques in the separation of bio-molecules" | 3 (three) days |
| 2. | Department of Botany, Lady Keane College, Shillong | Training programme on: "Plant tissue culture techniques" | 3 (three) days |

11. Major achievements of the Biotech Hub during the year:

- a. Through the various training and awareness programmes, the Biotech Hub has succeeded in inspiring and encouraging students to join the science stream after their schooling, as well as in generating a genuine interest and awareness amongst the participants about how science and scientific technologies play an important role in day to day issues related to health care, food production, new discoveries and so forth.
- b. Standard Operating Protocols of the experiments conducted during the training programmes are available in the form of manuals.
- c. Standard Operating Procedures (SOPs) of the equipments available in the Biotech Hub has been prepared.
- d. The Biotech Hub was duly acknowledged by the respected Principal of the college for its contribution in the college being awarded an 'A' grade by NAAC.

12. Manpower Recruitment Details:

| Sl. No. | Name | Designation | Specialization | Period of engagement |
|---------|----------------------------|----------------|----------------|---|
| 1. | Mr. Badaplang Sohkhlet | SRF | Biochemistry | From 16 th May 2011 till 9 th July 2014 |
| 2. | Ms. Abigail Majaw Laloo | JRF | Biochemistry | From 16 th October 2014 till date |
| 3. | Mr. Banmanbha Tymthai | Lab. Assistant | | On a need basis |

13. Service provided:

(a). No. of students/workers utilizing the facilities:

Students-40

Faculty – 5

(Documentary evidences attached)

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(b). Services provided to other Biotech Hubs/Sr secondary schools: (*Please specify the nature of service*)

14. Future activities and proposed action plan:

The Institutional Biotech Hub, Lady Keane College, Shillong further plans to continue with the work of:

- (i) Organizing Training and Awareness programmes.
- (ii) Organizing Outreach Programmes.
- (iii) Extending support to other Biotech Hubs, institutions, and also other departments and faculty of the college.

15. Additional Details

(i). Name of the Co-coordinator: Mrs. W. Lyngdoh

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Mobile no.: 09436102535 (M)

Email: lyngdohwanda@rediffmail.com

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Address: Dept. of Botany, Lady Keane College, Shillong – 793001, Meghalaya

Mobile no.: 09863085923 (M) **Email:** staddohling@yahoo.co.in

Mr. G.G. Syngai Co-ordinator Institutional Biotech Hub Lady Keane College