

FORMAT FOR SUBMISSION OF PROGRESS REPORT (NOT EXCEEDING 3-4 PAGES)
STATE/INSTITUTIONAL LEVEL BIOTECH HUBS
(Format for biotech hubs sanctioned during 2010-11 and 2011-12)

Period under report **2017 - 2018**

1. Name & address of the institution: **Lady Keane College, Shillong**
2. Name & designation of the Coordinator: **Mr. G.G. Syngai, Assistant Professor & Head,
Department of Biochemistry,
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 which was established in 1935 is one of the premiere institutes for women's education in North East India. With an aim at providing excellent all round education; it strives to empower women for becoming future leaders of tomorrow and who will help shape society. Our commitment to quality found its stamp of approval from the National Accreditation and Assessment Council (NAAC), Bangalore when this apex autonomous agency reaccredited our institution and awarded 'A' Grade with our quality profile standing at 3.09 (CGPA) on a 4 point scale. The motto **"Excellence with Integrity"** is the driving force behind each endeavour of every single member –past and present- of this college, to impact the life of every young woman who wisely chooses to be nurtured and educated by it.

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

(Rs. In lakhs)

| Financial year | 2010-11 (1 st year) | 2011-12 (2 nd year) | 2012-13 (3 rd year) | 2013-14 (4 th year) | 2014-15 (5 th year) | 2015-16 (6 th year) | 2016-17 (7 th year) | 2017-18 (8 th year) | Total | Balance on 31/03/2018 |
|-----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------|-----------------------|
| Amount Received | 19.00 | 10.03 | 5.21 | 3.67 | 2.47 | 4.52 | - | - | 44.90 | 0.57269 |
| Amount Utilized | | | | | | | | | | |

8. Infrastructure created:

- (a) List of equipment procured: (Pl. list all the equipments procured under the biotech hub since its inception)

| Sl. No | Name of the equipment | Model No & Brand Name | Cost in Indian Rupees (in Lacs) | Date of Purchase | No. of researchers/ students utilized Equipments |
|--------|--|------------------------------------|---------------------------------|------------------|--|
| 1 | Refrigerated Centrifuge (17,500rpm) 1.5/2.0 ml micro tubes | 5430 R Eppendorf | 4.7 | 19/01/2011 | 16 |
| 2 | UV/ Vis Spectrophotometer | UV –1800 Shimadzu | 5.025 | 20/04/2011 | 86 |
| 3 | Digital Trinocular Microscope | Lx 400 Labomed | 0.78 | 20/04/2011 | 16 |
| 4 | Vertical Slab Gel Electrophoresis | 02 -00142 TechnoSource | 0.14 | 29/03/2011 | 2 |
| 5 | Submarine Electrophoresis Unit | 08 -00105 TechnoSource | 0.16 | 3/05/2011 | 2 |
| 6 | Electrophoresis Power Supply | PAGE-100 TechnoSource | 0.45 | 29/03/2011 | 2 |
| 7 | Western Blot System | MX – 246 – 01 Medox | 0.13 | 3/05/2011 | |
| 8 | Computer (1 No.) | p6338in HP Pavilion | 0.4559 | 21/01/2011 | 7 |
| 9 | Laser Printer | LBP 2900B Canon | 0.0659 | 21/01/2011 | 7 |
| 10 | Gel Rocker | MX – 1290 -02 Medox | 0.18 | 29/03/2011 | 2 |
| 11 | Electronic Balance | JA -310 Shinko | 0.35 | 29/03/2011 | 4 |
| 12 | Refrigerator (175 Litres) | 185RP3 LG | 0.099 | 20/04/2011 | 4 |
| 13 | Micropipettes | Proline-var. 0.1 – 3 µl BioLit | 0.105 | 29/03/2011 | 7 |
| 14 | Micropipettes | Proline-var. 2 – 20 µl BioLit | 0.05 | 29/03/2011 | 7 |
| 15 | Micropipettes | Proline-var. 10 – 100 µl BioLit | 0.05 | 29/03/2011 | 7 |
| 16 | Micropipettes | Proline-var. 20 – 200 µl BioLit | 0.05 | 29/03/2011 | 7 |
| 17 | Micropipettes | Proline-var. 100 – 1000 µl BioLit | 0.05 | 29/03/2011 | 7 |
| 18 | Micropipettes | Proline-var. 1000 – 5000 µl BioLit | 0.05 | 29/03/2011 | 7 |
| 19 | pH meter | CL 110 Chemiline | 0.07 | 29/03/2011 | 7 |
| 20 | Hot Air Oven | 143(OUA–2) NSW | 0.2019 | 20/04/2011 | 7 |
| 21 | Serological Water Bath | 125(SBS-1) NSW | 0.1298 | 20/04/2011 | 3 |

Contd.....

| Sl. No | Name of the equipment | Model No & Brand Name | Cost in Indian Rupees (in Lacs) | Date of Purchase | No. of researchers/ students utilized Equipments |
|---------------------|-----------------------------------|-----------------------|---------------------------------|------------------|--|
| 22 | Autoclave | 229 NSW | 0.0979 | 20/04/2011 | 25 |
| 23 | UPS | FPS 600 Foxin | 0.02 | 21/01/2011 | |
| 24 | Online UPS with 16 Nos. Batteries | IntelliQ Series SUKAM | 3.95 | 26/03/2014 | |
| 25 | Inverter with 8 Nos. Batteries | IntelliQ Series SUKAM | 1.95 | 27/03/2014 | |
| Total cost = | | | 19, 31, 045 | | |

9. Detail of hands on training programmes/workshops organized during the period of report:

(a) Hands on trainings conducted:

| Serial No. | Topic | Duration and Date | No. of participants | Level of participants |
|------------|---|---|---------------------|---|
| 1 | A Fifteen-Day Training Programme for Biotechnology students of St. Edmund's College, Shillong on "The Basics of Biotechnology Applications" | 7th – 22nd of August 2017 | 5 | B.Sc. 5 th Semester Biotechnology students |
| 2 | A Three-Day Training Programme for Biochemistry students of Lady Keane College, Shillong on "An Introduction to Bioinformatics" | 30th November – 2nd December, 2017 | 17 | B.Sc. 6 th Semester Biochemistry students |
| 3 | Research Training Programme for M.Sc. Biotechnology students of St. Anthony's College, Shillong | September – November 2017 | 3 | M. Sc (passed) Biotechnology students |

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

| Total No. of participants | No. & percentage of participants assigning score of | | | | |
|---------------------------|---|-------------|------------|---|---|
| | 5 | 4 | 3 | 2 | 1 |
| 25 | 5 (20%) | 12 (48%) | 8 (32%) | - | - |

*Mention percentages in parenthesis

(c) Workshop/seminars/awareness programmes conducted:

| Serial No. | Topic | Duration and Date | No. of participants |
|------------|---|-------------------|---------------------|
| 1 | Talk cum Awareness Programme on "Type 2" | One hour | 49 |

| | | | |
|--|---|--------------------------------------|--|
| | Diabetes Mellitus in youth: epidemiology, underlying pathophysiology & laboratory diagnosis” for the BSc 4 th Semester students of Lady Keane College, Shillong | 28 th February 2018 | |
|--|---|--------------------------------------|--|

(d) No. of students doing project works using biotech hub facility:

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

(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), Botany (Honours), Zoology (Honours) | Provided equipments for conducting the practicals |
| 2. | Ph.D | Ph.D programme | Provided equipments, chemicals and other miscellaneous requirements |

(f) Outreach programmes conducted:

| Serial No. | Topic | Name of the institution where conducted | Duration and Date | Level of participants |
|------------|--|---|--|-------------------------|
| 1 | Impact of Biotechnology in Health Sciences and Medicine | Arya Kanta Vidyalaya Secondary School, Shillong | One hour 08 th September, 2017 | Class IX and X students |
| 2 | Biotechnology in the New Age | Army Public School, Shillong | One hour 11 th October, 2017 | Class XI students |
| 3 | Green Biotechnology – Its Impact on Agricultural Production | Me. E. C. L. Secondary School, Sumer | One hour 13 th October, 2017 | Class X students |
| 4 | Facts about Biotechnology | Mawmihthied RMSA Secondary School, Sohra | One hour 26 th March, 2018 | Class IX and X students |

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

| Sl. No. | Name of the resource person | Topic | Organised 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 aqueous extract of <i>Zingiber officinale</i> rhizomes on common carp (<i>Cyprinus carpio carpio</i> L., 1758)” | G.G.Syngai S.Dey R. Bharali | Ongoing |
| 2. | “Acute toxicity of aqueous extract of <i>Allium sativum</i> on juvenile common carp (<i>Cyprinus carpio</i> L., 1758)” | G.G.Syngai S.Dey R. Bharali | Completed |
| 3. | “Study on the effect of automobile pollution on the abundance of soil arthropods and a simultaneous analysis of the chlorophyll content, catalase activity and heavy metal accumulation in <i>Oxalis corniculata</i> ” | Dr.D.G.Marbaniang, Dr. P.Law, Dr.S.Dohling, Dr.D.Nongbri, Mr.R.Decruse, Mr.L.Pyngrope, Mrs.W.Lyngdoh, Mr.G.G.Syngai, Mr.B.Sohkhlet | Completed |

(b) No. of papers published/presented with impact factor **(please mention only those arising out of biotech hub support):**

(Provide a list on a separate sheet, if necessary. Papers with due acknowledgements to the Biotech Hub should only be listed.)

- Syngai, G.G., Kharwanlang, B., Sohkhlet, B., Laloo, A.M., Nongbri, D., Challam, M., Mawroh, H. (2016) **Effect of automobile pollution on the chlorophyll content of *Oxalis corniculata* L. leaves.** *Poll. Res.* 35(4): 739-747.
H Index – 18 Scopus – 0.14

(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: “ Biological Techniques ” | 5 (five) days |
| 2. | Department of Botany, Lady Keane College, Shillong | Training programmes on: “ Biological Techniques ” & “ Plant Tissue Culture ” | 4 (four) days |
| 3. | Department of Zoology, Lady Keane College, Shillong | Training programme on: “ Biological Techniques ” | 2(two) days |

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

- **Outreach Awareness Programmes** were conducted for school students of **Class IX and Class X** and also to higher secondary students of **Class XI Science** in **4 different schools** in the city and outskirts with the participation of **146 students**.

- **Training Programmes** conducted were **3** in all and with a total number of **25 students** who could be trained.
- An **in-house Awareness Programme** was organized for **49 BSc student participants** from the college.
- We came up with the **3rd Issue** of the **Keanean Bio Connect Newsletter**.
- **National Science Day -2018** was observed in the College by organizing an awareness programme with Dr Alice A. Ruram, Associate Professor & I/C, Department of Biochemistry, NEIGRIHMS, Shillong as the Resource Person.
- Provided **infrastructural support** to the **Undergraduate Life Science Programmes**.
- **Standard Operating Protocols** for the experiments conducted during the training programmes have been compiled in the form of manuals.
- **Standard Operating Procedures (SOPs)** of the high-end equipment's continues to be maintained in the Institutional Biotech Hub Laboratory.

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 31 st December 2015 |
| 3 | Ms. Melarahun Shisha Lyngkhoi | JRF | Biotechnology | From 6 th April 2016 till 12 th April 2017 |
| 4 | Ms. Baphilinia Jones Myllemngap | JRF | Bioinformatics | From 1 st August 2017 till date |
| 5 | Mr. Banmanbha Tymthai | Laboratory Attendant | - | On a monthly basis |

13. Service provided:

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

(Must have documentary evidence)

(b) Services provided to other Biotech Hubs/Sr secondary schools:

(Please specify the nature of service)

- Organized a Fifteen-Day Training Programme On “The Basics of Biotechnology” for the B.Sc. 5th Semester Biotechnology students of St. Edmund’s College, Shillong.

14. Future activities and proposed action plan:

- Training Programmes will be conducted for enhancing the practical skills of the students.
- Outreach and Awareness Programmes will be organized for familiarizing students with the fields Biotechnology and Biological Sciences.

- Publication of Research Papers.
- Publication of the 4th Issue of the Keanean Bio Connect Newsletter.
- Invited Lectures by Scientists/Academicians.

15. Additional Details

- (i) Name of the Co-coordinator : **Mrs. W. Lyngdoh, Assistant Professor**
 Address: **Dept. of Zoology, Lady Keane College, Shillong – 793001, Meghalaya**
 Tel., fax & mobile no. : **09436102535 (M)**
 Email: **lyngdohwanda@rediffmail.com**
- (ii) Name of the Co-coordinator : **Dr. S. Dohling, Assistant Professor**
 Address: **Dept. of Botany, Lady Keane College, Shillong – 793001, Meghalaya**
 Tel., fax & mobile no. : **09863085923 (M)**
 Email: **staddohling@yahoo.co.in**

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