## FORMAT FOR SUBMISSION OF PROGRESS REPORT STATE/INSTITUTIONAL LEVEL BIOTECH HUBS

(Format for biotech hubs sanctioned during 2010-11 and 2013-14)

Period under report: 2015 - 2016

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 (1st year)	2011-12 (2 <sup>nd</sup> year)		2013-14 (4 <sup>th</sup> year)	2014-15 (5 <sup>th</sup> year)	2015-16 (6 <sup>th</sup> year)	Total	Balance on 31/03/2016
Amount Received	19.00	10.03	5.21	3.67	2.47	-	40.38	(-)1.15065

## 8. Infrastructure created:

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

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	12
2	UV/ Vis Spectrophotometer	UV –1800 Shimadzu	5.025	20/04/2011	78
3	Digital Trinocular Microscope	Lx 400 Labomed	0.78	20/04/2011	15
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
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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
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
22	Autoclave	229 NSW	0.0979	20/04/2011	19
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
			I I	I I
1	Fifteen-Day Training Programme for Biotechnology students of St. Edmund's College, Shillong on "Biological Techniques"	Fifteen days 5 <sup>th</sup> – 20 <sup>th</sup> May 2015	5	B.Sc. 3 <sup>rd</sup> year (Honours)
2	Five – Day Training Programme for students of Lady Keane College, Shillong on "Significance of Biomolecules in Clinical Diagnosis".	Five days 30 <sup>th</sup> Nov – 4 <sup>th</sup> Dec 2015	35	B.Sc. 3 <sup>rd</sup> year Life sciences

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

Total No. of	No. & percentage of participants assigning score of					
participants	5	4	3	2	1	
40	12 (30%)	25 (62.5%)	2 (5%)	-	-	

<sup>\*</sup>Mention percentages in parenthesis

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

Serial	Topic	Duration	No. of
No.		and Date	participants
1	Talk cum Awareness Programme On "How are		
	the various drug formulations (tablet,	Two hours.	
	capsule, etc.) manufactured?" for the BSc	29 <sup>th</sup> February,	
	2nd Semester Students of Lady Keane College,	2016	59
	Shillong.		

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

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

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

Sl.	Level	Name of the Course/Study programme	Nature of support
No.	(UG/PG/PhD)		
1.	UG	Biochemistry Honours	Provided equipments for conducting the practicals
2	Ph.D	Ph.D programme	Provided equipments, chemicals and other miscellaneous items

### (f) Outreach programmes conducted:

				ı
Serial	Topic	Name of the	Duration	Level of
No.		institution where	and Date	participants
		conducted		
1	Outreach Awareness		One-Day	
	Programme On			
	"Biotechnology and its	Laban Bengalee	15 <sup>th</sup>	Class XI
	importance in human	Boys Higher	October	Science
	welfare".	Secondary	2015	students
		School, Shillong		
2	Outreach Awareness		One hour.	
	Programme On			<b>a.</b>
	"Biotechnology and	Army Public	29 <sup>th</sup>	Class XI
	sustainable	School, Shillong	October,	Science
	development".		2015	students
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3	Outreach Awareness Programme On "Microbes as biotools"	Army Public School, Shillong	One hour.  2 <sup>nd</sup> November,  2015	Class XII Science students
4	Outreach Awareness Programme On "Environmental Biotechnology - its role in environment protection and restoration"	Gorkha Pathshala Higher Secondary School, Shillong.	One day. 20 <sup>th</sup> November, 2015	Class XI Science student

### (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.	Title of the research	Persons involved	Status
No.			(Ongoing/completed)
1	"Acute toxicity of ethanolic extract of Zingiber officinale rhizomes on common carp (Cyprinus carpio carpio 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

# (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., Gopi, R., Bharali, R., Dey, S., Lakshmanan, G.M.A., Ahmed, G. (2016) Probiotics – the versatile functional food ingredients. *J. Food Sci. Technol.* 53(2): 921-933. DOI: 10.1007/s 13197 – 015-2011-0.[Springer Journal]
 Impact factor - 2.203 H Index – 59 Scopus – 0.71

Syngai, G.G., Dey, S., Bharali, R. (2016) Evaluation of toxixity levels of the aqueous extract of *Allium sativum* and its effect on the behaviour of juvenile common carp (*Cyprinus carpio* L.,1758). *Asian J. Pharm. Clin. Res.* 9(3): 417-421. H Index – 13 Scopus – 0.4

#### (c) Collaboration with other departments/institutions:

Sl.	Dept./Institution collaborated	Nature of collaboration	Duration
No.			
1	Department of Biochemistry, Lady Keane College, Shillong	Training programmes on: "Biological Techniques" & "Significance of Biomolecules in Clinical Diagnosis"	9(nine)+5(five) days
2	Department of Botany, Lady Keane College, Shillong	Training programme on: "Biological Techniques"	2(two) days
3	Department of Zoology, Lady Keane College, Shillong	Training programme on: "Biological Techniques"	2(two) days
4	Department of Chemistry, Lady Keane College, Shillong	Training programme on: "Biological Techniques"	1(one) day

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

- 176 students could be familiarized with the different aspects of Biotechnology through the 4 Outreach Awareness Programmes conducted for Class XI & XII Science students of different schools in the city.
- A total of 40 students could be trained to enhance their practical skills through the 2 Training Programmes conducted; with one being of 15- day duration for students of a neighboring institution and the other of 5-day duration for the students of the host institution.
- Conducted 1 in-house Awareness Programme which saw the participation of 59
   B.Sc students of the college.
- Publication of Papers in peer reviewed journals.
- Publication of the 1<sup>st</sup> issue of the Keanean Bio Connect Newsletter.
- Observed the **National Science Day -2016** by organizing a popular talk.
- Standard Operating Protocols of 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.

## 12. Manpower Recruitment Details:

Sl.	Name	Designation	Specialization	Period of
No.				engagement
1.	Mr. Badaplang Sohkhlet	SRF	Biochemistry	From 16 <sup>th</sup> May 2011 till 9 <sup>th</sup> July 2014
2.	Ms. Abigail Majaw Laloo	JRF	Biochemistry	From 16 <sup>th</sup> October 2014 till 31 <sup>st</sup> December 2015
3	Ms. Melarihun Shisha Lyngkhoi	JRF	Biotechnology	From 6 <sup>th</sup> April 2016 till date
4	Mr. Banmanbha Tymthai	Lab. Assistant	-	On a monthly basis

## 13. Service provided:

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

Students-40

 $Faculty-4 (Botany), 1 (Zoology) \ and \ 3 (Biochemistry)$ 

## (Must have documentary evidence)

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12/1 20/1 20/1 20/1 20/1 20/1 20/1 30/1 31/1 5/1 6/1 1/2/1	9/15 9/15 9/2015 10/2015 10/2015 10/2015 10/2015 10/2015 10/2015 1/2015 1/2015 1/2015 1/2015 1/2015 1/2015 1/2015 1/2015	TINE FROM LOSP M 1. 100 pm 1/15 pm 1/1	1 30 pm 1 3	ub, Lady Kenne C PPENDORF INTRIFIGE (434 R) I RECINTER  M CLASSEN  Sec D	ollege, Shill	GENATORE SALL	V. Spool Scot Good Good Good Good Good Good Good Go	04-2014  - 04-2014  - 04-2014  - 04-2014	TITEROM ID ISAM ID ISAM ID OD AN	12.00.	CAAL R CAAL R CLASH R CAAL R CLASH R C	GITYE COMPAN  EXPERIMEN  MITOTAL  NO PRIORI  RECT TISS  CARCAMANON OF  CARCAMANON OF  CHECOMPANE  MITOTAL  MITOTAL  MITOTAL  REC CREM  PRIC COUNT	Significant State of	Good. Good. Good. Good. Good.
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12/3 20/1 20/1 20/1 20/1 23/1 24/1 24/1 24/1 25/1 24/1 24/1 24/1 24/1 24/1 24/1 24/1 24	9/15 9/15 9/15 9/15 9/15 9/15 9/15 9/15	Tath Fram 1.00pm 1.10pm 1.15pm 1.15pm 1.15pm 1.23cm	1 : Sqn 10: SAM 1: Sqn 10: Sqn	uh, Lady Kenne C PPENDORF INTRIFIGE (\$43 R)  I FEGINTER  M - CLASSEN  B - C M  - LASSEN  - LASSE	ollege, Shill be a construction of the constru	PULL STATUTE S	V. Acad Ased V. Acad Anop. Good. Goo	64 - 08 - 2014  17 - 04 - 2014  18 - 08 - 2014  19 - 08 - 2014  19 - 08 - 2014  20 - 08 - 2014  20 - 08 - 2014  21 - 2014  22 - 2014  23 - 2014  24 - 2014  24 - 2014	TILE FROM  10 - 15AM  21 - 10 - 15AM  11 - 15AM  12 - 155 - 11 - 15AM  13 - 13 - 13 - 14  13 - 13 - 13 - 14  13 - 13 - 13 - 14  13 - 13 - 13 - 14  13 - 13 - 13  13 - 13 - 13  13 - 13 -	12:00. 4:00pm 4:00pm 4:00pm 11:00m 2:30Pm 11:00m 2:30Pm 11:00m 2:10Pm 2:10Pm	CLAN - X TOTAL AND THE BOOK OF	GITTE COMENTS  EXPERIMENT MITDELS FOR EVALUATION EXPERIMENT FOR EVALUATION EXPERIMENT FOR EVALUATION EXPERIMENT MATERIAL EXPERIMENT FOR EXPERIMENT REC COUNT	Significant States of Stat	Good.
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12/2 20/1 20/1 20/1 20/1 20/1 20/1 20/1	9/15 9/15 9/15 9/15 9/15 9/15 9/15 9/15	Tath Fram Loopin 1.00pm 1.10pm	1:50pm 1:30pm	b. Lady Kenne C PPENDORF INTRIFIGE (639 R) G. BFCINTER  M. Challen Bsc B <sup>-1</sup> Bsc B <sup>-1</sup> A. Maja  6. G. Swoig G. G. Syrois	ollege, Shill  Jean  N Engle  Sant	STENATURE STATES	V. Acad Ased V. Acad Good Good Good Good Good Good Good Go	24 - 08 - 2014  1 - 04 - 2014  1 - 08 - 2014  2 - 08 - 2014  2 - 08 - 2014  2 - 08 - 2014  2 - 08 - 2014  3 - 2014  4 - 2014  5 - 2014  5 - 2014  6 - 2014	TILLERM  ID. ISAM  ID. ISA	12:00). 12:00). 14:50 pm. 14:50 pm. 11:00 m. 11:	USER  CLAIL - K TO BE CONTROLLED - THE PROPERTY OF PARTY	GITTE COMENT CONTROL OF THE CONTROL	Signature	Good.
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#### (b) Services provided to other Biotech Hubs/Sr secondary schools:

(Please specify the nature of service)

 Organized a Fifteen-Day Training Programme On "Biological Techniques "for the B.Sc. 3<sup>rd</sup> year Biotechnology students of St. Edmund's College, Shillong.

### 14. Future activities and proposed action plan:

- To further organize Training Programmes for enhancing the practical skills of the students.
- To further organize Outreach and Awareness Programmes so as to familiarize the students about the field of Biotechnology in particular and Biological Sciences in general.
- To make efforts for publication of research papers which will be an index of the Research activities undergoing in the Hub.
- To continue publication of the next issue of the Keanean Bio Connect Newsletter.

#### 15. Additional Details

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