

**FORMAT FOR SUBMISSION OF CONSOLIDATED REPORT**  
**BY THE DBT BIOTECH HUBS IN NER (Since inception)**

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1. **Name & Address of the Institution:** Tezpur University, Napaam, Pin: 784028, Tezpur, Assam
2. **Name & Designation of the Coordinator:** Dr. Shashi Baruah, Professor
3. **Name & Designation of the Co-Coordinator:** Dr. S.K. Ray, Professor
4. **Telephone, Mobile, and Email of the Coordinator & Co-Coordinator:**

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5. **Level of the Biotech Hub:** Institutional
6. **Date & Year of the sanction of biotech hub with DBT's Sanction Order No:** 2011 (30/11/2011) vide sanction No. BT/22/NE/2011
7. **A brief on your organization/institution along with the role played by the Biotech Hub for its development (not exceeding 20 lines):**

Tezpur University was established on 21<sup>st</sup> January in 1994 by an Act of Parliament of India, the Tezpur University Act, 1993 (Act No. 45), as a non-affiliating and residential Central University. The academic programmes offered in the University have a distinct focus on science, technology and humanities, reflecting the objective of the University. The Department of Molecular Biology and Biotechnology (MBBT) was inaugurated on July 24, 1997. The Department offers two-year M.Sc. degree in Molecular Biology and Biotechnology, 5year Integrated M.Sc. in Bioscience and Bioinformatics and Ph.D. in Molecular Biology and Biotechnology. The objective of the Department is to contribute to the advancement of the emerging areas of basic and applied Life Sciences and to create trained manpower in the field of Molecular Biology and Biotechnology. Accordingly, establishment of Institutional Level Biotech Hub at the Department has contributed to creation of trained manpower by conducting trainings and workshops for students of the Department. In addition, enhancement of the infrastructure of the Department by Biotech Hub has contributed to the ongoing teaching and research programs. Institutional Biotech Hub fund was also used to activate Plant Tissue Culture Laboratory of the Department. A total of eleven M.Sc. students have completed their dissertation work with support from Institutional Biotech Hub. Training programs of the Biotech Hub have added another dimension to the activities of the Department by its training programs. Facilities created by Biotech Hub have also assisted research of other Departments of University by collaborative research. Biotech Hub facilitated support with technical expertise to DNA club, Star

Biotechnology. Notably, Faculty, Clinicians, Technical Staff Research scholars and Students of other Colleges and Universities participated in the training programs and thus enhancing manpower training and growth of the region.

## 8. Details of Grant received so far:

(a) Total Grant received and utilized so far:

(Rs. In lakhs)

Year	1 <sup>st</sup> (11-12)	2 <sup>nd</sup> (12-13)	3 <sup>rd</sup> (13-14)	4 <sup>th</sup> (14-15)	5 <sup>th</sup> (15-16)	6 <sup>th</sup> (16-17)	7 <sup>th</sup> (17-18)	8 <sup>th</sup> (18-19)	9 <sup>th</sup> (19-20)	Total (Till 29th February 2020)
<b>Total Grant Received</b>	15 lakhs	CF	5 lakhs	nil	nil	nil	10 lakhs	nil	nil	30 lakhs
a. Non-Recurring	4 lakhs	CF	4.14 lakhs	4.43 lakhs	4.59 lakhs	5.30 lakhs	18.19 lakhs	14.92 lakhs	nil	55.57 lakhs
b. Recurring										
<b>Grant Utilized</b>	nil	48181 lakh	10,50,657 lakhs	4,99,423 lakhs	nil	nil	nil	10,15,542.34 lakhs	nil	30,47,441.34 lakhs
a. Non-Recurring	nil	26185 lakh	400150 lakhs	4,97,257 lakhs	4,97,661 lakhs	4,93,176 lakhs	7,41372 lakhs	10,13,429 lakhs	8,24,968 lakhs	47,29,870.00 lakhs
b. Recurring										

(b) List of equipments' procured under the biotech hub since its inception

Sl. No.	Name of the equipment	Model No. & Brand Name	Cost in Indian Rupees	Date of Purchase	No. of researchers/students utilized Equipments
1	Autoclave	LabTech; Model LAC 5050S	3,49,225.00	18-06-2012	Ph.D students – 70 M.Sc.- 168 Int. M.Sc.- 120
2.	LCD Projector	SHARP, Model VPL-EX 145	77,500.00	07-08-2012	Ph.D students – 70 M.Sc.-168 Int. M.Sc.-120
3.	PC for LCD	HP, Model:DX 2000 (2 Nos)	55,094.00	07-08-2012	M.Sc.- 168 Int. M.Sc.- 140
4.	SDS PAGE gel running and transfer apparatus	BioRad (1 nos)	1,93,171.00	07-02-2013	M.Sc.-168 Int. M.Sc.- 120
5.	Purification system for ultrapure water	Milli Q	3,60,494.00	10-05-2013	Ph.D students – 70 M.Sc.-168 Int. M.Sc.- 120
6.	Freeze Dryer	HAHNTECH; Model:LYOHAHN 112N-G	4,64,161.00	01-08-2013	Ph.D students – 100 M.Sc.-168 Int. M.Sc.- 60
7.	UPS (7 Nos), SMF battery (22 Nos.),		4,99,423.00		The facility is used by the whole Department

	solar system (4 Nos.)				
	Real Time PCR	Thermofisher Scientific Quantstudio -3	10,15,542.34 lakhs	25-04-18	The facility is available for the department with prior information
<b>Total expenditure (2012-19):</b>				<b>30,47,44 lakhs</b>	

(c) recruitment Details in respect to DBT sanctioned position (since inception):

Sl. No.	Name	Designation	Specialization	Period of engagement
1.	Manash Deep Day	JRF	M.Sc. in Biotechnology	From 30/5/2012 to 30/6/2013
2.	Neelanjana Sarmah	SRF	M.Sc. in Biotechnology	30/12/2013 to present
3.	Dipankar Saikia	Field Assistant	M.Sc. Zoology	14/09/2016 to 14/12/2016
4.	Pawan Kumar	RA	MD	14/10/2017 to 05/04/2018
4.	Akash Protim Gogoi	SRF	M.Sc. in Biotechnology	23/04/18 to 30/09/18
5.	Dr. Johirul Islam	RA	PhD	05/07/18 to 05/04/19
6.	Dr. Anuj Singh	RA	PhD	10/07/2019 to 23/10/2019

**9. How the Biotech Hub has facilitated Human Resource development at the host institute:**

**a. How the Biotech hub extended its support to execute different teaching labs (course name and number) of the UG/PG programs in Life Sciences and how many awarded degrees so far and their placement status.**

- TU Institutional Biotech Hub has supported teaching program of the Department. Plant tissue culture laboratory was activated, and one hands on training on plant tissue culture was successfully conducted. Three students completed their M.Sc. dissertations using the plant tissue culture facility.  
M.Sc students who did their dissertation with support of Biotech Hub either joined Ph.D program at different National Institutes like IIT, IGIB, DU , NERIST, TU or joined jobs in allied areas as teachers or research fellows.  
Dr Anusree Mahanta, who was partially supported by Biotech Hub for her Ph.D program, is placed at InStem, NCBS Bangalore after completing PDF at Edinburgh.
- Four practical courses that is Plant Biotechnology (BI - 406) and Immunology (BT- 417, & BI-334) were conducted with chemicals and consumables procured through DBT Hub project.

indirectly contributed to higher number of students qualifying NET, GATE, DBT, ICMR amongst others and students were placed in different reputed Institutes IISC, IGIB, NII, IITs and in some reputed companies

- M.Sc students who did their dissertation with support of Biotech Hub either joined Ph.D program at different National Institutes like IIT, IGIB, DU , NERIST, TU or joined jobs in allied areas as teachers or research fellows.
- Dr Anusree Mahanta, who was partially supported by Biotech Hub for her Ph.D program, is placed at InStem, NCBS Bangalore after completing PDF at Edinburgh.

**b. Details of Ph.Ds. produced by using the facilities of biotech hub including the other departments of the parent institution.**

- The following JRFs/SRFs on Biotech Hub are pursuing/ pursued PhD with the complete or partial support of Biotech Hub
- Ms Neelanjana Sarmah, SRF, pursuing Ph.D has submitted her PhD thesis.
- Mr Manash Deep, JRF has successfully defended his thesis and has been awarded Doctoral degree.
- Dr Anusree Mahanta was partially supported by Biotech Hub and was awarded Ph.D
- Mr Akash P. Gogoi, partially supported by Biotech Hub has submitted his Ph.D thesis
- Instruments procured from Biotech Hub like Freeze dryer, Autoclave and Water purification system are general and used by all the students and the PhD scholars of the Department.
- Ph.D scholars from the Departments of Food Engineering Technology, Environmental Sciences, Dept. of Chemical Sciences, Physics ( Nanosciences) have utilized the facilities created under Biotech Hub for experimentation.

**c. How many life science department's students and individual faculty members are getting involved in the biotech hub activities over a period of time both in terms of use of infrastructural facilities and output in terms of acknowledgment in research publications and technical reports. (Feedback of from the heads of science departments of parent institute to be enclosed)**

Apart from the Dept. of MBBT, students of departments of Food Engineering and Technology, Physics, Environmental Sciences, Energy and Chemical Sciences are using the Biotech Hub facilities which are placed in Central Instrumentation facility of the Department (feedback forms submitted).

**d. How the Biotech Hub facilities have been integrated with similar in-house facility for larger utilization**

The instruments and equipment procured under Biotech Hub facility are placed in the Central Instrumentation Facility of the Department and in Teaching Laboratory for integration with the activities of the Department.

Departments as well, and thus giving access to larger number of students and faculty of the University.

❖ **Trainings and workshops:**

- Seven hands on trainings were successfully conducted in different fields of Biotechnology. A total of 132 participants comprising of UG, PG, PhD scholars, Clinicians Technical staff and Faculty members were trained and exposed to various techniques related to gene cloning, animal and plant cell culture, gene expression studies, microbiology, food technology and immunotechniques. The workshops also included theoretical lectures by faculty of the Dept. of Molecular Biology and Biotechnology, Food Technology and Environmental Sciences which helped to enhance knowledge of participants.
- Outreach trainings were also conducted for various Schools and Colleges of neighboring areas to expose the students to advanced facilities and instrumentation. Workshops were found to be successful as per feedback received from the participants.
- TU Biotech Hub also supported summer and winter training programs for undergraduate students and post graduate students in the Department by providing infrastructure, facility and expertise.
- Int. M.Sc. students of the Department were trained in Immunotechniques using chemicals and consumables obtained from DBT Hub fund and the SRF employed in the project was involved in the training program.

❖ **Teaching activity:**

- TU Institutional Biotech Hub had also supported teaching program of the Department. Plant tissue culture laboratory was activated with support of minor instruments and consumables. One hands on training on plant tissue culture was successfully conducted. Three students completed their M.Sc. dissertations using the plant tissue culture facility and is currently being used by faculty Dr Jyoti Saikia among others for practical courses and M.Sc Dissertation studies.
- Four practical courses i.e Plant Biotechnology (BI - 406) and Immunology (BT- 417, BT- 421 & BI-334) were conducted with chemicals and consumables procured through DBT Hub project.
- PCs and projector obtained from DBT Hub fund is used by UG, PG and PhD students during classes and for progress presentations and seminars.
- Laboratory facilities together with conduct of Seminars and Training programs under the Biotech Hub actively supported the teaching program and research activities of the department. which contributed to increased number of students qualifying NET, GATE, DBT, ICMR etc.
- Faculty members of the Department also visited other Biotech Hubs of nearby Colleges for teaching.

❖ **Research activity:**

- Research activity and infrastructure of the Department has improved with Biotech Hub support. As mentioned in point No. 12, **seven** papers were already published and **seven** papers were presented in national seminars, besides M.Sc dissertations and Ph.D thesis.
- Instruments like autoclave, freeze dryer, water purification system and SDS PAGE gel running apparatus procured through Hub are being used by all the students of the Department for their research work. A total of eleven M.Sc. final year dissertations were completed with the help the chemicals and consumables procured through DBT Hub project.
- One PhD student is pursuing her PhD with the support of Institutional Biotech Hub. One student defended her PhD with partial support from DBT Hub.
- Eleven M.Sc. students completed their final year dissertations using chemicals/consumables procured through DBT Hub fund.
- DBT Hub also helped in research activity of other Departments by providing infrastructure and facilities.

**e. Details of any periodic orientation programs on the hands-on equipment and methodology to the students (for UG/PG and newly admitted PhD students) are being offered by the Hub.**

A demonstration and theoretical lecture for FLOW CYTOMETRY was arranged for PhD students, M.SC as well as Integrated M.Sc students where students were exposed to the technical applications of the instrument. Flow cytometry expert also delivered a theoretical lecture which helped students to clear their doubts.

**f. Any networking with BLiSS Schools, STAR colleges or any other DBT funded programs in NER**

TU IBT Hub has been actively supporting Biotech Hub, Darrang College by helping with teaching and practical classes as well as technical expertise. A seminar on Careers in Science and Biotechnology and an out reach program on oral health was conducted where students of Darrang College also participated. Faculty members of the Department of MBBT visited Darrang College Biotech Hub many times for theoretical lectures. Faculty from the department also visited Biotech Hub, ADP College, Biotech Hub, B. Baruah. College, Biotech Hub, Kaliabor College and Biotech Hub, Bodoland University for teaching and theoretical lectures. Students of the neighboring

and instrumentation. Also, one workshop on Microbiology was arranged for the B.Sc students of Darrang College.

TU, Biotech Hub is also mentoring Kendriya Vidyalaya Tezpur University by providing teaching, technical and practical support in the form of outreach program.

**10. How Biotech Hub has facilitated R&D activities in the Institute, please provide the following details:**

The broad area of research of IBT Hub is disease biology and the specific areas are given below in brief

**(a) Specific Research areas of working:**

**A. Study of malarial pathology:**

Comparative study of cytokine regulation in severe falciparum malaria in comparison with disease resolution were determined to identify the key dysregulated pathways /transcription. We observed a negative correlation of IL-10 expression with parasitemia and proinflammatory cytokines, suggesting IL-10 to be the key cytokine in tilting the balance to an inflammatory response. Longitudinal analysis revealed that the key cytokines associated with disease were TNF-a, IL-1b, IFN-g, IL-12a, RANTES and TGF-b, while TNF-a, IL-10 and TGF-b discriminated between SM and UM. A higher neutrophil count in SM and its positive association with parasite density, IL-1b and IL-8 provided support for neutrophils in inflammation in malaria ( **published in Innate Immunity**) Type 1 Interferon pathway together with T-Bet/GATA-3 levels differed between severe and uncomplicated malaria ( **published in CTI** ).

**(No. of publications – 03, one in *Innate Immunity*, one in *Clinical and Translational Immunology* and one in *Frontiers in Immunology*)**

**B. Effect of silver nano particle on germination of *Vigna radiata* seeds and fruit extract of *Dillena indica* and *Vigna mungo*:**

*Vigna radiata* is an agro economically important plant of the India. *Vigna radiata* germination experiment has initiated in Plant Tissue Culture Laboratory with the support of Biotech Hub and proposed study is to screen the effect of silver nanoparticle on its germination. Colloidal nanoparticles were synthesized using fruit extract of *Vigna mungo* and *Dillena indica* and their bioactivities were evaluated. Estimation of protein and polyphenols are also started from the seed exudates of *Oryza sativa*, *Vigna mungo* and *Vigna radiata* (**No. of publication -01, *Indian Journal of Biology***).

### **C. Assessment of plant derived anti-inflammatory compounds:**

Main objective of this study is to find anti-inflammatory compounds of natural sources with negligible side-effects and their mechanism of action. Mouse macrophage cell line RAW 264.7 have been used as model to induce LPS-mediated inflammation. Inflammation was induced in these cells by treatment with bacterial lipopolysaccharide to induce key inflammatory marker genes tumor necrosis factor alpha (TNF- $\alpha$ ), cyclooxygenase -2 (COX-2) and macrophage chemoattractant protein -1 (MCP-1). Treatment of cells with various concentrations of chrysin for 3 hours prior to LPS induction showed significant reduction of TNF-  $\alpha$  (up to 90% of induced expression), COX-2 (up to 75% of induced expression) and MCP-1 (up to 70% of induced expression). These results confirm that chrysin, a flavonoid found in most common vegetables and fruits, possesses anti-inflammatory properties and can be used as a preventive anti-inflammatory compound.

### **D. Toll like receptor (TLR 7) polymorphism, expression and regulation in HNSCC:**

The association of TLR7(rs179008) SNP with HNSCC in the population of Assam was determined using PCR-CTPP approach. The study revealed high frequency of T allele. C allele seemed to be protective against the disease. Analysis of expression of TLR7 and downstream signalling molecules, TRAF3, IFN- $\alpha$  and IFN- $\beta$  showed high expression of IFN- $\alpha$  and IFN- $\beta$  and were weakly correlated with levels of TRAF-3 (**M.Sc. Thesis, Integrated M. Sc. In Biosciences and Bioinformatics**).

### **E. Study of CTL4 gene expression and regulation in SLE:**

CTLA-4 + 49 A/G polymorphism (SNPrs231775) is a potential genetic factor for lupus susceptibility. The study was undertaken to analyze the frequency of SNPrs231775 and the expression levels along with foxp3 and IL 10 in the SLE patients of Assam. It was observed that both the alleles (A to G) has frequency almost equal to 50% and most of CTLA-4. Fox p3 and IL 10 were found to be downregulated (**M.Sc. Thesis, Integrated M. Sc. In Biosciences and Bioinformatics**).

### **F. Understanding of immune suppression in HNSCC and association of HPV with the disease:**

This work was initiated to understand immunosuppression in tumor microenvironment, particularly in reference to HPV and to tumor associated macrophages and natural killer(NK) cells. Tumor cells modulate the microenvironment by down regulating immune cell cytokine



HNSCC. The study showed that expression of TNF- $\alpha$ , TGF- $\beta$  and IL-10 were down regulated indicating immune suppression. Association of HPV subtypes (HPV 16 and 18) were studied in patient samples using PCR-SSP approach. The amplicons of HPV 16 and 18 typing were validated by sequencing to confirm the specificity of band amplification. Sequencing results showed 99% similarity. HPV protein expression was also determined and HPV presence was confirmed using ELISA and IHC. Since HPV tumors are reported to be radiosensitive, the work has direct relevance to disease management and patient care (**No. of Publication -01, *Frontiers in Oncology*, No. of Conference presentation-02, work has clinical applications as HPV status is shared with Clinician for appropriate treatment**)

#### **G. IL1R1 receptor polymorphism, signaling and expression in Head & Neck Squamous Cell Carcinoma (HNSCC):**

The study suggested that rs3917328 of IL1RI was associated with HNSCC. Genotyping of the population for IL1RI SNP was performed where CC genotype was seen at higher frequency in control while in cancer CT was seen to be positively associated with HNSCC. In the expression study of the downstream signaling molecules of IL1RI pathway TRAF6 and NF- $\kappa$ B was seen to have upregulation in their expression level by 2 folds and MyD88 showed a 6-fold upregulation. MAPK14 showed a very high expression level with a 16-fold change. The upregulation of MAPK14 might be due to other factors as well because MAPK14 is involved in several other pathways. This might also be the effect of the decoy receptor IL1RII. The observations suggested that IL1B might be signaling through the TRAF6 pathway as upregulation in IL1B, TRAF6, MyD88 and NF- $\kappa$ B was observed (**M.Sc. Thesis, M. Sc. In Molecular Biology and Biotechnology**).

#### **H. Effect of plant derived polyphenols on type 2 diabetes:**

Obesity-associated chronic low-grade inflammation in adipose tissue is a focal point in the pathogenesis of insulin resistance and type 2 diabetes. Subsequent studies demonstrated that prevention of macrophage M1 polarization state improved insulin sensitivity providing a potential link between inflammation and insulin resistance. From the study it was found that a plant derived polyphenol, Ferulic acid (FRL), effectively suppressed the palmitate induced macrophage M1 polarization in RAW264.7 macrophages.

#### **I. Activation of Neutrophils in Systemic Lupus Erythematosus (SLE) Patients in Assam:**

Neutrophils extracellular traps(NETs) contain chromatin decorated with granule enzymes that can act as new epitopes and thus have the potential to break immune tolerance and result in

Control participants & their activation status studied by determining ROS and cytokine secretion and release of NETs. Evidence of Neutrophil activation with increased NETosis and IFN were found in patients of SLE. The study supports a pathogenic role for neutrophils in SLE and hence need to be targeted for immune therapy (**M.Sc. Thesis, Integrated M. Sc. In Biosciences and Bioinformatics**).

#### **J. Expression and regulation of HLA-G in HNSCC:**

PCR reaction was standardized for exon 2, exon 3 and exon 4 to amplify the exonic regions of HLA-G gene using cDNA as the template. After optimization of PCR conditions, expression study of HLA-G isoforms was carried out in 80 HNSCC tissue samples and their adjacent normal tissues. Soluble isoforms of HLA-G (G5, G6, and G7) were predominant as compared to membrane-bound isoforms (G1, G2, G3, and G4). HLA-G7 was found to be the most frequent isoform with the frequency of 36.25% and HLA-G1, the full-length membrane-bound form of HLA-G was the least abundant isoform (2.5%). HLA-G was found to be upregulated in tumor tissue. However, mean relative expression of HLA-G gene was higher in HPV positive tumors (Student's t-test  $p = 0.002$ ) compared to HPV negative tumors. Soluble isoforms (87.5%) were seen more frequently in HPV positive tumors than membrane-bound isoforms (12.5%) with HLA-G7 (81.25%). HPV and HLA-G have been reported to modulate immune responses by altering cytokine profiles and manipulating the signaling pathways in cancer. We were interested to see how the interaction between HPV and HLA-G changes the expression pattern of the immunoregulatory genes. We compared the expression profiles of regulatory molecules (IL-10, PD1, TGF- $\beta$ , IFN- $\gamma$ , SOCS1, and SOCS3) with HPV and HLA-G7 status as HLA-G7 was the most frequent isoform found in HPV positive tumors. Our data revealed that when HPV was present with HLA-G7, all the immune regulatory molecules (IL-10, PD1, TGF- $\beta$ , SOCS1, and SOCS3) were downregulated whereas, inflammatory IFN- $\gamma$  was overexpressed. In contrast, HPV without HLA-G7 was contributed to downregulation of IFN- $\gamma$ . When HLA-G7 expression was seen with HPV negativity, increased expression of all the molecules was observed in the tumor. This data suggested that HPV was involved in downregulation of immune checkpoint molecules while the presence of HLA-G7 leads to increased expression of IFN- $\gamma$  (**No. of Publication -01, *Frontiers in Oncology*, No. of Conference presentation- 03**)

**(b) Details of extramural grants received by the Institute (ongoing/completed):**

S. No.	Title of the project	Name of the PI/Co-PIs	Funding agency	Sanctioned budget	Project duration (Dates)	
					From	to
1.	Diagnosis and Immunopathogenesis of Dengue Virus Infections; a longitudinal investigation into genotype diversity, diagnosis and immune response to dengue infections in Assam, Northeast India	Dr. S. Baruah	DRDO	61,59,727 lakhs	2017	2020
2.	Polymorphism of Toll like and Nod like receptors and their role in inflammasome activation in Head and Neck Squamous Cell Carcinoma	Dr. S. Baruah	ICMR	49,81,130 lakhs	2016	2019
3.	Systemic Lupus Erythematosus (SLE) - An investigation into diagnostics and disease pathogenesis	Dr. S. Baruah	DBT	206.84 lakhs	2015-	2017
4.	Longitudinal analysis of changes in cytokine profile of malarial patients at different stages of treatment and disease resolution: Understanding molecular basis of cure and malarial pathology	Dr. S. Baruah	DBT	67.06 Lakhs	2011	2014

	activation of Natural Killer cells in cancer	Baruah				
6.	Understanding the molecular interaction between NK receptor diversity and activation with diverse malignancy in HNSCC prevalent in the population of Assam	Dr. S. Baruah	DBT	49.59 Lakhs	2011	2014
7.	Protein Folding Kinetics is a Selection Force on Shaping Codon Usage Bias in the High Expression Genes	Dr. S. K. Ray	DBT	24.72 lakhs	2014	2016
8.	Sequencing genomes of some bacteria that invade/resides in tomato plant	Dr. S. K. Ray	DBT	127.63 lakhs	2013	2016
9.	Studying the role of <i>rpoN</i> , the alternative sigma factor, in the pathogenicity of <i>R. solanacearum</i> , the causal agent of bacterial wilt in plants	Dr. S. K. Ray	IFCPAR	44.17 lakhs	2013	2016
10..	Characterization of a potential auto transporter adhesion function in <i>Ralstonia solanacearum</i> , the causal agent of bacterial wilt in plants	Dr. S. K. Ray	DBT	35.66 lakhs	2012	2015
11.	Understanding causes of codon usage bias in organisms	Dr. S. K. Ray	DBT	15.50 lakhs	2012	2014

**(c) Measurable achievements in terms of publication/ patents/ technology transfer etc. under the R & D work undertaken, since inception:**

**(i) Details of papers published (directly from the Hub) in peer reviewed journals, citing bibliographic references. Give only papers emerged out of biotech hub support with acknowledgement of biotech hub/DBT**

S.No	Title	Authors	Journal	Impact Factor
1	Heightened inflammation in severe malaria is associated with decreased IL-10 expression levels and neutrophils.	Mahanta, A., Kar, S.K., Kakati, S. & Baruah, S.	Innate immunity	2.459
2	Lower expression of T-bet and GATA3 explains down regulated levels of IL-10 in severe falciparum malaria.	Mahanta, A. & Baruah, S.	Clinical and Translational Immunology	7.27
3	Synthesis of Colloidal Silver Nanoparticle (SNP) Using <i>Vigna Radiata</i> Seed Exudate: A Novel Green Method	Saikia, J.P.	Indian Journal of Biology	
4	<i>Vigna mungo</i> seed non-destructive based colloidal silver nanoparticle synthesis and toxicity	Saikia, J.P.	Indian Journal of Biology	
5	Antibacterial and toxicity of <i>Dillenia indica</i> L. based green colloidal silver nanoparticle (CSNP)	Saikia, J.P.	Indian Journal of Biology	
6	Integrative Approaches to Understand the Mastery in Manipulation of Host Cytokine Networks by Protozoan Parasites with Emphasis on Plasmodium and Leishmania Species	Mahanta, A, Ganguly, P, Sarkar, R, Borah, P, Sarmah, N, Phukan, S, Bora, M, Baruah, S	Frontiers in Immunology	4.7

7	Immune modulation in HLA-G expressing Head and Neck Squamous Cell Carcinoma in relation to Human Papilloma Virus positivity: a study from North-East India.	Sarmah, N., Baruah, M.N., Baruah, S.	Frontiers in Oncology, Section- Head & Neck Cancer,	4.1

**(ii) Papers published through other extramural projects which were the result of using the biotech hub with acknowledgement of the hub**

S.No	Title	Authors	Journal
1	Protein arginylation regulates cellular stress response by stabilizing HSP70 and HSP40 transcripts.	Deka K, Singh A, Chakraborty S, Mukhopadhyay R, Saha S.	Cell Death Discovery
2	Arginylation: a new regulator of mRNA stability and heat stress response	Deka K, Saha S	Cell Death and Disease
3	Inflammation-induced mTORC2-Akt-mTORC1 signaling promotes macrophage foam cell formation	Banerjee, D, Sinha, A, Saikia, S, Gogoi, B, Rathore, A, Das, A, Pal, D, Buragohain, A, Dasgupta, S	Biochimie
4			

**(iii) Research leads generated along with their translational aspects, if any:**

Not applicable

**(iv) Whether any patent application filed/grant by the biotech hub. Pl. provide details**

Not applicable

**(v) Technologies developed/transferred/commercialized, if any:**

**(d) Has any collaborative research been initiated with neighboring institutions, including Biotech Hubs, if yes details be provided?**

Sl. No.	Dept./Institution collaborated	Nature of collaboration	Duration
1.	North-East Cancer Hospital & Research Institute	Clinical research	8 years (ongoing)
2.	Tezpur Medical College & Hospital (TMCH)	Clinical Research	2 year (ongoing)
3.	Dept. of Food Engineering & Technology	Teaching and Research	1 year (ongoing)

**11. Contribution of Biotech Hubs in terms of Capacity Building at the Host/neighboring NER institutions:**

(a) Hands on trainings/workshops conducted for host / neighboring schools or institutions:

Seri al No.	Topic	Duration and Date	No. of Partici pants	Level of Participants	Target participants
01	Basic Genetic Engineering Techniques for Gene Cloning	December 17-21, 2012 (For 5 days)	21	Faculty members, Research Scholars and Clinicians	From different Colleges, R&D Institutes, Universities, Medical Colleges
02	Plant Cell Culture Techniques	March 28-31, 2014 (For 4 days)	25	UG & PG students of the Department	Dept. of MBBT, TU
03	Animal Cell Culture Techniques	March 28-31, 2014 (For 4 days)	20	UG & PG students of the Department	Dept. of MMBT, TU

	PCR based Gene Expression Studies	28, 2015 (For 2 days)		Technicians	neighboring Colleges and Downtown University and Technical staff from Defence research Laboratory
05	Immunotechniques	November 3-6, 2015 (For 4 days)	10	UG & PG students of different Institutes	Different Universities and TU
06	Basic Techniques in Microbiology	November 11-16, 2016 (For 6 days)	09	UG students of TU and other Institutes	TU and other Institutes
07	Finishing school on Trends in Food and Biotechnology: Analytical Approach	March 19th - 24 <sup>th</sup> , 2018	41	M.Sc and M. Tech students	TU and other Institutes
08	Workshop on Ethics in Research and Biosafety aspects	October, 11 <sup>th</sup> -12 <sup>th</sup> , 2019	105	B.Sc, M.Sc, PhD Scholars, Clinicians, Technical staffs, Faculty	TU and other Institutes including medical colleges



	program on “Sustainable Bio-waste Management through Vermitechno logy” as a step towards Swachh Bharat Abhiyan Initiative	2019		Social Workers, PhD scholars, Technical staffs	neighboring villages
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**(b) Seminars/symposium/awareness/outreach programs conducted for host / neighboring schools or institutions:**

Serial No.	Topic	Duration and Date	No. of participants	Level of participants
1.	Assessment of quality of instruments	One day (17-07-2012)	20	UG, Darrang College
2.	Lecture on working of instruments	One day, (17-07-2012)	20	UG, Darrang College
3.	Recombinant DNA technology	One day	25	PG, Bodoland University
4.	Introduction to genetic engineering	One day	25	UG, N.L.College
5.	Isolation of bacterial plasmid	One day, 13 <sup>th</sup> may 2014	15	UG, Darrang College
6.	Demonstration of casting of agarose gel and DNA extraction from gel.	One day, 13 <sup>th</sup> May, 2014	18	B.Sc. Zoology D.K. College, Mirza

	isolation and isolation of genomic DNA followed by casting of agarose gel	23 <sup>rd</sup> December, 2014		J.N. College, Boko
8.	Demonstration and hands on training on Dot-blot immunoassay	One day, 27 <sup>th</sup> March, 2015	43	B.Sc. Biotechnology University of Sc. & Tech. Meghalaya
9.	Molecular Microbiology	One day, 25 <sup>th</sup> march, 2017	45	UG, PG and PhD scholars of the Department
10.	Careers in Science and Biotechnology	27 <sup>th</sup> March, 2018	110	UG, PG and PhD scholars of the Department
11	Applications of Biotechnology in Oral health	30 <sup>th</sup> January 2018 One day	80	Class VIII - Class X Kendriya Vidyalaya, TU
12	Applications of Biotechnology in Oral health	24 <sup>th</sup> March, 2018 One day	40	B,Sc. Biotechnology, Darrang College
13.	Basic techniques in Molecular Biology	11 <sup>th</sup> -13 <sup>th</sup> February, 2019	19	Class XI and Class XII students of KV, TU

(c) Invited lectures offered at host/neighboring schools or institutions:

Sl. No.	Name of the resource person	Topic	Organized by
1.	Dr. S. K. Ray	Introduction to Genetic Engineering	Biotech Hub, N.L. College
2.	Dr. S.K Ray	Recombinant DNA Technology	BiotechHub, Bodoland University
3.	Dr. N.K. Bordoloi	Assessment of quality of instruments	Kaliabor College
4.	Dr. K. Hazarika	Lecture on working of instruments	Darrang College
5.	Dr. S.P.G.Ponnam	Bioinstrumentation and Biological methods	Darrang College
6.	Dr. S. Baruah	Mucosal Immunology	Darrang College
7.	Dr. S. Baruah	Practical aspects of Immunology	University of Sc.& Tech. Meghalaya
8.	Dr. R. Doley	Biochemistry and Molecular Biology Techniques	Dibrugarh University
9.	Dr. R. Doley	Techniques of Molecular Biology	Biotech Hub, A.D.P. College
10.	Dr. R. Doley	Prospects of Biotechnologist. Career Orientation Talk on Biotechnology	Biotech Hub, Darrang College

		and reality	
	Dr. Rupak Mukhopadhyay	PCR and its Applications	Darrang College

**(d) Whether any consultancy and mentoring services are being provided to other institutional Biotech hubs, BLiSS, Star College programme etc. in DBT.**

TU IBT Hub actively supporting Biotech Hub, Darrang College by helping with teaching and practical classes. A seminar on Careers in Science and Biotechnology and a out reach program on oral health was conducted for students of Darrang College. Faculty members of the department were visited Darrang College Biotech Hub many times for theoretical lectures. Faculty from the department also visited Biotech Hub, ADP College, Biotech Hub, B. Baruah. College, Biotech Hub, Kaliabor College and Biotech Hub, Bodoland University for teaching and theoretical lectures. Students of the neighbouring Colleges including Darrang College and Kaliabor College were exposed to advanced facilities and instrumentation. Also, one workshop on microbiology was arranged for the B.Sc students of Darrang College. TU, Biotech Hub is also mentoring Kendriya Vidyalaya Tezpur University by providing teaching, technical and practical support in the form of out reach program.

**12. Whether any entrepreneurship trainings have been conducted/activities initiated in neighboring NER areas:**

1. The **Seminar on ‘Careers in Science and Biotechnology-** Dr. *Suman Govil*, Former Senior Adviser, DBT and Dr. Smita Jain, Associate Director, India BioSciences, NCBS delivered the invited lectures focusing various career opportunities for students. Interactive session was also organized and students were actively participated. The seminar helped the students to know about **various career opportunities.**

2. Biotech Hub TU has conducted a training program on **“Sustainable Bio-waste Management through Vermitechnology” as a step towards Swachh Bharat Abhiyan Initiative** on 2nd October 2019 for the local farmers, students, entrepreneurs and social workers. The program focused on the basics of vermicomposting followed by technical aspects and implementation it as a replacement of commercial manures. The training program was initiated in collaboration with the Department of Environmental Science, Tezpur University. The participants were

initiate the process as their profession.

### **13. Impact on socio-economy of Biotech Hub in the State/Region for last 10 years:**

- ✓ Trained manpower in diagnostics and hence employability
- ✓ Trained manpower in plant tissue culture expertise that has relevance to regions horticulture development
- ✓ Expertise in genetic engineering tools through workshops conducted by the Hub, which enhances the teaching and research capability of faculty and clinicians
- ✓ By conducting a seminar in career opportunities in biotechnology and related areas, the undergraduate students were exposed to job opportunities in areas other than R&D
- ✓ Out reach programs for school children (Health camps, teaching and training) provided a better insight into the learning opportunities in various aspects of Science

### **14. Difficulties/hurdles faced in the implementation of the program.**

No major hurdle faced

### **15. Future action plan of the Biotech Hub (500 words):**

#### **(i) Research Activities (please provide specific research plan relevant to the state specific needs, its objectives and intended outcomes)**

The broad area is disease biology and specific area is Cancer Biology and Genomics of disease with focus on cancer and autoimmunity immunotherapy/chemotherapy. This will be in cooperation with three departments of the university, MBBT, Chemical Sciences and Computer Sciences.

The preliminary study on HPV and HLA-G mediated immunoregulation in Head and Neck cancer (**published**) evidenced increased ectopic expression of HLA-G with HPV positivity. Our findings hint that HPV positive tumors manipulate the expression of SOCS and IL-10 for immune evasion and to support the growth of HNSCC tumors. Also, HPV harnessed HLA-G modulated pathways to drive inflammatory mechanism for its growth and regulate the expression of SOCS to mediate immune subversion. Hence, we propose to investigate the mechanism of immunoregulatory pathways through which viruses, more specifically the HPV dysregulate SOCS expression. Considering the role of miRNAs in regulation of SOCS and HLA-G, it will be interesting and to speculate the role of different miRNAs in SOCS regulation and HPV mediated regulation of miRNA expression to manipulate SOCS pathway. Type I interferons play an important role in SOCS regulation and expression. Considering this, we are also interested in looking at type 1 IFN pathway in Head and Neck tumors with respect to HPV positivity and in Autoimmunity.

**(ii) Training / outreach / workshops**

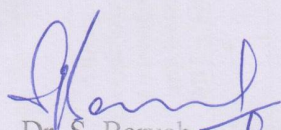
- ❖ The focus will be on advanced trainings in theoretical and advanced areas of genomics, transcriptomics and proteomics of cancer and other diseases. Topics like recombinant protein expression, gene cloning and gene expression will be taken for the training programs and workshops to be conducted for undergraduate and post graduate students and the topics like fluorescent microscopy, gene expression, flow cytometric techniques for characterization of cells, methylation informatics and NGS data analysis will be taken for the training programs and workshops to be conducted for the research scholars and faculty.

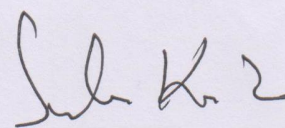
**(iii) Any plan of Net-working with other DBT supported programs**

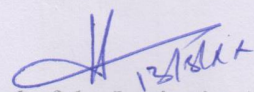
We will continue to work with DBT supported teaching program operational at Department of MBBT, STAR Colleges, Biotech Hubs and BLISS Schools of the region.

**(iv) Support to the neighboring institutions**

Biotech Hub, Tezpur University will be continuously supporting the neighboring Biotech Hubs, Neighboring Colleges, Schools and other Institutes by providing infrastructure and facility and organizing various outreach and training programs. Biotech Hub, TU will also extend its support to teaching and training activities of neighboring Institutions as per the mandate.

  
Dr. S. Baruah  
(Coordinator) 27/02/2020.

  
Dr. S. K. Ray  
(Co-Coordinator)

  
(Name & signature of the Head of the Institution/Organization with seal)

Registrar I/C  
Tezpur University  
Napaam, Tezpur



DEPARTMENT OF FOOD ENGINEERING & TECHNOLOGY  
TEZPUR UNIVERSITY  
(A Central University established by an Act of Parliament)  
Napaam, Tezpur - 784 028, Assam

Dr. Nandan Sit  
Professor and Head of the Department

Email: nandan@tezu.ernet.in  
Tel : +91-03712-275701  
Mob : +91-9864362377  
Fax : 03712-267005

No.

Date: 26<sup>th</sup> February, 2020

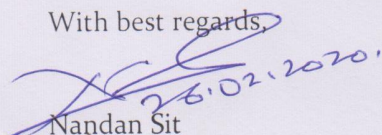
To  
The Coordinator  
DBT Institutional Biotech Hub  
Tezpur University

**Subject:** Feedback on facilities provided by DBT Institutional Biotech Hub-reg

Dear Madam,

The facilities provided by DBT Institutional Biotech Hub, particularly the Freeze Dryer was of immense help to the research scholars of our department i.e. Food Engineering and Technology at a time when the equipment was not available in our department. The scholars did not face any problem for using the equipment and the freeze drying of the samples were done in timely manner. The department remains grateful to the DBT Institutional Biotech Hub for providing the required facilities.

With best regards,

  
Nandan Sit

To,  
Dr. S. Baruah  
Professor & Coordinator  
DBT Institutional Biotech Hub  
Tezpur University

27-02-2020

Reference No.: TU/MBBT/DBH/84/12/M-2020-002 dated, 04-02-2020

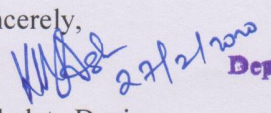
Madam,

Research scholars of Department of Environmental Science had utilized the facilities of Biotech Hub in the Dept. of MBBT like Autoclave, Lyophilizer, Milli-Q water purification system. The scholars are allow to use the facilities and department of Environmental Science is thankful to DBT Institutional Biotech Hub for extending services for larger benefits to the students.

We do believe the service will extend in future also.

Thanking you and best regards,

Sincerely,

  
Ashalata Devi  
Associate Professor & HoD  
Department of Environmental Science

**Head**  
**Dept. of Environmental Science**  
**Tezpur University**  
**Napaam : Tezpur**



No. TU/MBBT/Misc/69/105

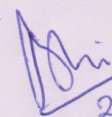
Date : 28.02.2020

To  
The Coordinator  
DBT Institutional Biotech Hub

Sub: Contribution of Biotech Hub on the teaching and research activities of Department of MBBT

Dear Prof. Baruah

The facilities created in the Department of Molecular Biology and Biotechnology through the Institutional Biotech Hub was of immense help and support to the department. Instruments like autoclave, freeze dryer, water purification system and SDS PAGE gel running apparatus procured under Biotech Hub facility are placed in the Central Instrumentation Facility of the Department and in Teaching Laboratory for integration with the activities of the Department. Integrated M.Sc. and M.Sc. final year students have been completing their dissertations with the help the chemicals and consumables procured through DBT Hub project since its inception in the Department. Further, the projector and UPS purchased from the financial support of Biotech Hub also contributed towards the development of infrastructure and enhancement of teaching and research facilities of the department. TU Institutional Biotech Hub has supported teaching program of the Department by supporting the Plant Biotechnology and immunology practical Plant tissue culture laboratory was activated through the financial support of IBT Hub. Institutional Biotech Hub has active contribution towards the overall development of infrastructure, facilities and teaching and research activities and thereby contributing to the development of trained manpower from the department.

  
2/3/2020

H.o.Di/c, MBBT

**Head, i/c**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028

STATEMENT SHOWING REFERRED TO PARA 8 OF THE UTILIZATION CERTIFICATE SHOWING GRANTS RECEIVED FROM THE DEPARTMENT OF BIOTECHNOLOGY for ESTABLISHMENT OF "INSTITUTIONAL LEVEL BIOTECH HUBS" AND EXPENDITURE INCURRED DURING THE PERIOD FROM 1ST JANUARY, 2012 TO 31st March, 2012

Sl. No.	Name	Unspent balance carried forward from previous yr.	Grants received from DBT during 2011-12	(Rs. in lakh)				
				Other receipt/ interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the year	Balance	Remarks
	1	2	3	4	5	6	7	8
<b>I. Non-recurring</b>								
(i)	Equipment, accessories & site preparation/ renovation	0.000	15.000		15.000	0.000	15.000	
<b>II. Recurring</b>								
(i)	Man Power-one JRF/SRF	0.000	2.500		2.500	0.000	2.500	
(ii)	Operational Expenditure (Contingency & Consumables)	0.000	0.500		0.500	0.000	0.500	
(iii)	Travel	0.000	0.500		0.500	0.000	0.500	
(iv)	Training/Workshop	0.000	0.500		0.500	0.000	0.500	
	<b>Total</b>		<b>19.000</b>		<b>19.000</b>	<b>0.000</b>	<b>19.000</b>	

*[Signature]*  
Coordinator  
Dept. of MBBT, TU  
(with rubber stamp)

*[Signature]*  
Finance / Accounts Officer  
Tezpur University  
(with rubber stamp)

*[Signature]*  
Registrar  
Tezpur University  
(with rubber stamp)

Details of expdr. beyond 1-4-2012	Balance as on 1-4-2012 (in lakh)		Utilised till 31.10.2012 (in lakh)	Committed Expenditure
Equipment:	15.000		1.326	13.674
Manpower:	2.500		0.650	1.850
Operational expenditure:	0.500		0.000	0.500
Travel:	0.500		0.168	0.332
Training/Workshop:	0.500		0.000	0.500
<b>Total:</b>	<b>19.000</b>		<b>2.144</b>	<b>16.856</b>

*[Signature]*  
Coordinator  
Dept. of MBBT, TU  
(with rubber stamp)

**UTILIZATION CERTIFICATE**  
**(For the Financial year ending 31<sup>st</sup> March, 2012)**

1. Title of the Programme / Scheme : Institutional Level Biotech Hubs  
Dept. of Molecular Biology & Biotechnology
2. Name of the Organisation : Tezpur University
3. Course Coordinator : Dr. Shashi Baruah  
Head, Dept. of MBBT, TU
4. Dept. of Biotechnology sanction order No. & date of sanctioning the Project / programme : BT/22/NE/2011  
Date: 30-11-2011
5. Amount brought forward from the previous financial year quoting DBT letter No. & date in which the authority to carry forward the said amount was given : -
6. Amount received from DBT during the financial year (Please give No. & dates of sanction orders showing The amount paid) : Rs. 19.00 lakh  
Order No. BT/22/NE/2011  
Date: 30-11-2011
7. Other receipts / interest earned, if any, on DBT grants : -
8. Total amount that was available for expenditure during the financial year (Sl. No. 5,6 and 7) : Rs. 19.00 lakh
9. Actual expenditure (excluding commitments) incurred the financial year (statement of expenditure is enclosed) : -
10. Unspent balance refunded, if any (Please give details of cheque no. etc.) : NIL
11. Balance amount available at the end of the financial Year 2011-12 : Rs. 19.00 lakh
12. Amount allowed to be carried forward to the next financial year vide letter No. & date : NIL

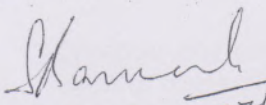
1. Certified that the no amount has been utilized on the programme / scheme for the purpose for which it was sanctioned and that the balance of Rs. 19.00 lakh remaining unutilized at the end of the year has been

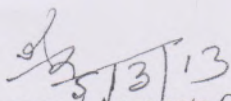
surrendered to Govt. (vide no. ....dated ..... ) will be adjusted towards the grants-in-aid payable during the next year.

2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled /are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of checks exercised:

3. Accounts audited by qualified chartered Accountant appointed by this University as Internal Auditor.
4. The A.G. (Audit), Guwahati will Audit the account shortly.
5. All the chemicals, consumables, equipments etc. purchased from the grant are entered in the log book.

  
Course Coordinator <sup>27/02/13</sup>  
(with rubber stamp)

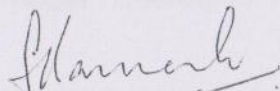
  
Finance / Accounts Officer  
(with rubber stamp)  
OSD Finance  
Tezpur University

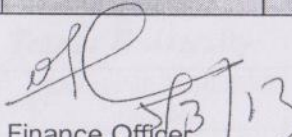
## Statement of Expenditure referred to in para 9 of the Utilisation Certificate

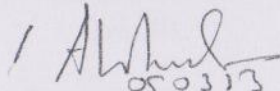
Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1st April 2012 to 31st December 2012

(Rs. in lakh)

Sl. No.	Name	Unspent balance carried forward from previous yr.	Grants received from DBT during 2011-12	Other receipt/ interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the year	Balance	Remarks
	1	2	3	4	5	6	7	8
<b>I. Non-recurring</b>								
(i)	Equipment, accessories & site preparation/ renovation	0.000	15.000		15.000	4.818	10.182	Committed Order placed
<b>II. Recurring</b>								
(i)	Man Power-one JRF/SRF	0.000	2.500		2.500	0.970	1.530	
(ii)	Operational Expenditure (Contingency & Consumables)	0.000	0.500		0.500	0.000	0.500	Committed; bills submitted for the workshop conducted during 17-21 Dec, 2012
(iii)	Travel	0.000	0.500		0.500	0.168	0.332	
(iv)	Training/Workshop	0.000	0.500		0.500	0.000	0.500	Committed; bills submitted for the workshop conducted during 17-21 Dec, 2012
Total			19.000		19.000	5.957	13.043	

  
 (PROJECT INVESTIGATOR)  
 Dept. of MBBT  
 Tezpur University  
 Head,  
 Dept. of MBBT, T.U.

  
 Finance Officer  
 Tezpur University  
 OSD Finance  
 Tezpur University

  
 (HEAD OF THE INSTITUTE)  
 Tezpur University  
 Registrar  
 Tezpur University

## Statement of Expenditure referred to in para 9 of the Utilisation Certificate

Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1st January 2012 to 31st March 2012

(Rs. in lakh)

Sl. No.	Name	Unspent balance carried forward from previous yr.	Grants received from DBT during 2011-12	Other receipt/ interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the year	Balance	Remarks
	1	2	3	4	5	6	7	8
<b>I. Non-recurring</b>								
(i)	Equipment, accessories & site preparation/ renovation	0.000	15.000		15.000	0.000	15.000	
<b>II. Recurring</b>								
(i)	Man Power-one JRF/SRF	0.000	2.500		2.500	0.000	2.500	
(ii)	Operational Expenditure (Contingency & Consumables)	0.000	0.500		0.500	0.000	0.500	
(iii)	Travel	0.000	0.500		0.500	0.000	0.500	
(iv)	Training/Workshop	0.000	0.500		0.500	0.000	0.500	
	<b>Total</b>		<b>19.000</b>		<b>19.000</b>	<b>0.000</b>	<b>19.000</b>	

*Shanmugam*  
27/02  
(PROJECT INVESTIGATOR)  
Dept. of MBBT, TU  
Tezpur University

*27/3/13*  
Finance Officer  
Tezpur University  
USD Finance  
Tezpur University

*27/02/13*  
(HEAD OF THE INSTITUTE)  
Tezpur University  
Tezpur University

Details of expdr. beyond 1-4-2012	Balance as on 1-4-2012 (in lakh)	Utilised till 31.10.2012 (in lakh)	Committed Expenditure
Equipment:	15.000	1.326	13.674
Manpower:	2.500	0.650	1.850
Operational expenditure:	0.500	0.000	0.500
Travel:	0.500	0.168	0.332
Training/Workshop:	0.500	0.000	0.500
<b>Total:</b>	<b>19.000</b>	<b>2.144</b>	<b>16.856</b>

*Shanmugam*  
27/02/13  
(PROJECT INVESTIGATOR)  
Dept. of MBBT, TU  
Tezpur University

**Utilisation Certificate**  
(for the financial year ending 31<sup>st</sup> March 2014 )

(Rs. in Lakh)

1. Title of the Project/Scheme: **Institutional Level Biotech Hubs**  
Department of Molecular Biology & Biotechnology
2. Name of the Organisation: **Tezpur University**
3. Principal Investigator: **Prof. (Mrs) Shashi Baruah**
4. Deptt. of Biotechnology sanction order **BT/22/NB/2011 dated: 30-11-2011** and  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 02-07-2013**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 11,56,324.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Rs 9,14,000.00**  
**vide order No. BT/22/NB/2011 dated: 02-07-2013**
7. Other receipts/interest earned, if any,  
on the DBT grants: **Nil**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5,6 and 7): **20,70,324.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **14,50,807.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **6,19,517.00**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

1. Certified that the amount of **Rs.14,50,807.00** mentioned against col. 9 has been utilised on project/scheme for the purpose for which it was sanctioned and that the balance of **6,19,517.00** remaining unutilized\* at the end of the year has been surrendered to Govt. (v No. \_\_\_\_\_ dated \_\_\_\_\_)/will be adjusted towards the grants-in-aid payal during the next year.
2. Certified that I have satisfied myself that the conditions on which the grants-in-aid v sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the follow checks to see that the money was actually utilised for the purpose for which it was sanctioned

Kinds of checks exercised:

1. Accounts audited by Internal Audit Officer of Tezpur University.
2. The team of C.A.G. audited the account.
3. All the chemicals, consumables, equipment etc purchased from the grant were entered in the stock book prior to payment of respective bills
4. The physical verification team verified the physical existence of various equipment.

*\* Non recurring grant of Rs 5.00 lakhs released in the second year grant for procurement generator/UPS/power backup only is being utilized. Copy of purchase order TU/2/Pur/MBBT/2014/4709 dt 03/02/14 of value Rs 4,99,423.00 enclosed. Items have been supplied per order and bills will be cleared after completion of installation.*

**\*\* Advance of Rs 50,000.00 drawn from the head Training/Workshop during 2013-14 has been adjusted on 26/05/2014.**

(PROJECT INVESTIGATOR)

(FINANCE OFFICE)

(HEAD OF THE INSTITUTE)

(To be countersigned by the DBT Officer-in-charge)



## Statement of Expenditure referred to in para 9 of the Utilisation Certificate

Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1st April 2013 to 31st March 2014

(Rs. in lakh)

Sl. No.	Name	Unspent balance carried forward from previous yr.	Grants received from DBT during 2013-14	Other receipt/ interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the year	Balance	Remarks
	1	2	3	4	5	6	7	8
<b>I. Non-recurring</b>								
(i)	Equipment, accessories & site preparation/ renovation	10,18,181.00	5,00,000.00		15,18,181.00	10,50,657.00	4,67,524.00	*Committed Expenditure 4,99,423.00
<b>II. Recurring</b>								
(i)	Man Power-one JRF/SRF	1,04,968.00	97,000.00		2,01,968.00	1,00,387.00	1,01,581.00	
(ii)	Operational Expenditure (Contingency & Consumables)	0.00	2,50,000.00		2,50,000.00	2,45,339.00	4,661.00	
(iii)	Travel	33,175.00	17,000.00		50,175.00	54,424.00	-4,249.00	
(iv)	Training/Workshop	0.00	50,000.00		50,000.00	-	50,000.00	** Committed
	Total	11,56,324.00	9,14,000.00		20,70,324.00	14,50,807.00	6,19,517.00	

*Shannak*  
27/05/14  
(PROJECT INVESTIGATOR)  
Dept. of MBBT  
Tezpur University

*B. Prasad*  
27/05/14  
Finance Officer  
Tezpur University  
Finance Officer  
Tezpur University

*D. Prasad*  
27/05/14  
(HEAD OF THE INSTITUTE)  
Tezpur University  
Registrar  
Tezpur University

\* Non recurring grant of Rs 5.00 lakhs released in the second year grant for procurement of generator/UPS/power backup only is being utilised.  
Copy of purchase order TU/11-2/Pur/MBBT/2014/4709 dt 03/02/14 of value Rs 4,99,423 enclosed

Committed for 2013-14 which has been paid on 26/05/2014

*Shannak*  
27/05/14  
(PROJECT INVESTIGATOR)  
Dept. of MBBT, TU  
Tezpur University

## Utilisation Certificate

(For the financial year ending 31<sup>st</sup> March, 2015)

Appendix B  
(Rs. in Lakhs)

1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 6,19,517.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Rs. 4,43,000.00**
7. Other receipts/interest earned, if any,  
on the DBT grants: **Nil**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 10, 62, 517.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 9,96,680.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 65, 837.00**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**  
 Showing grants received and the expenditure incurred during the period from 1<sup>st</sup> April 2014 to 31<sup>st</sup> March 2015

(Rs in Lakhs)

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2014-15	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April 2014 – 31 <sup>st</sup> March 2015	Balance	Remarks
	1	2	3	4	5	6	8	9
<b>1. Non-recurring</b>								
	Equipment, accessories & site preparation/ renovation	4,67,524.00	Nil	Nil	4,67,524.00	4,99,423.00	- 31,899.00	
<b>2. Recurring</b>								
(i)	Man power- one JRF/SRF	1,01,581.00	1,48,000.00	Nil	2,49,581.00	1,44,000.00	1,05,581.00	
(ii)	Operational expenditure contingency & consumables)	4,661.00	2,45,000.00	Nil	2,49,661.00	2,51,209.00	-1,548.00	
(iii)	Travel	-4,249.00	50,000.00	Nil	45,751.00	52,048.00	-6,297.00	
(iv)	Training / workshop	50,000.00	Nil	Nil	50,000.00	50,000.00	0.00	
	<b>Total</b>	<b>6,19,517.00</b>	<b>4,43,000.00</b>	<b>Nil</b>	<b>10,62,517.00</b>	<b>9,96,680.00</b>	<b>65,837.00</b>	

*Shamuk*  
 Coordinator 18-6-15  
 DBT Institutional Biotech Hub  
 Dept. Of MBBT  
 Tezpur University  
 S. Baruah  
 Professor  
 Dept. of Mol. Bio. & Biotech  
 Tezpur University

*B. Lamma*  
 Finance Officer 19-6-15  
 Tezpur University  
 Finance Officer  
 Tezpur University

*D*  
 Head of the Institute  
 Tezpur University  
 Registrar  
 Tezpur University

## Utilisation Certificate

(For the financial year ending 31<sup>st</sup> March, 2016)

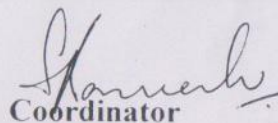
Appendix B  
(Rs. in Lakhs)

1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 65,837.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Rs. 4,59,000.00**
7. Other receipts/interest earned, if any,  
on the DBT grants: **Rs.4,750.00**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 5,29,587.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 4,97,661.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 31,926.00**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

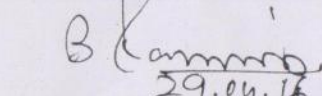
**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**

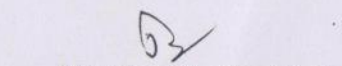
Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1<sup>st</sup> April 2015 to 31<sup>st</sup> March 2016

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2015-16	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April, 2015- 31 <sup>st</sup> March, 2016	Balance	Remarks	(Rs in Lakhs)
	1	2	3	4	5	6	8	9	
<b>1. Non-recurring</b>									
	Equipment, accessories & site preparation/ renovation	-31,899.00	Nil	Nil	-31,899.00	0.00	- 31,899.00		
<b>2. Recurring</b>									
(i)	Man power- one JRF/SRF	1,05,581.00	1,09,000.00	Nil	2,14,581.00	1,50,000.00	64,581.00		
(ii)	Operational expenditure contingency & consumables)	-1,548.00	2,50,000.00	Nil	2,48,452.00	2,48,452.00	0.00		
(iii)	Travel	-6,297.00	50,000.00	Nil	43,703.00	39,250.00	4,453.00		
(iv)	Training / workshop	Nil	50,000.00	4,750.00	54,750.00	59,959.00	-5,209.00		
	<b>Total</b>	65,837.00	4,59,000.00	4,750.00	5,29,587.00	4,97,661.00	31,926.00		

  
Coordinator

DBT Institutional Biotech Hub  
Dept. Of MBBT Professor  
Tezpur University Dept. of Mol. Bio. & Biotech  
Tezpur University

  
29.04.16  
Finance Officer  
Tezpur University  
Finance Officer  
Tezpur University

  
Head of the Institute  
Tezpur University  
Registrar  
Tezpur University

## Utilisation Certificate

(For the financial year ending 31<sup>st</sup> March, 2017)

Appendix B  
(Rs. in Lakhs)

1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 31,926.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Rs. 5,30,000.00**
7. Other receipts/interest earned, if any,  
on the DBT grants: **Nil**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 5,61,926.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 4,93,176.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 68,750.00**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

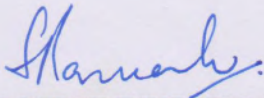


Certified that the amount of **Rs. 4,93,176.00.00** mentioned against col. 9 has been utilised on the project/scheme for the purpose for which it was sanctioned and that the balance of **Rs. 68,750.00** remaining unutilized at the end of the year will be adjusted towards the grants-in-aid payable during the next year.

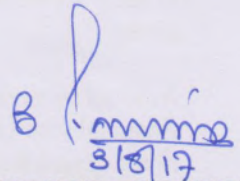
2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilised for the purpose for which it was sanctioned.

Kinds of checks exercised:

1. Accounts audited by Internal Audit Officer of Tezpur University.
2. The team of C.A.G. audited the account.
3. All the chemicals, consumables, equipments etc purchased from the grant were entered in the stock book prior to payment of respective bills.
4. The physical verification team verified the physical existence of various equipments.

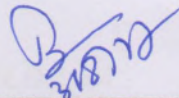


**(PROJECT INVESTIGATOR)**



**(FINANCE OFFICER)**

**Finance Officer  
Tezpur University**



**(HEAD OF THE INSTITUTE)**

**Registrar  
Tezpur University  
Napaam, Tezpur**

*(To be countersigned by the DBT Officer-in-charge)*

**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**  
 Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1<sup>st</sup> April 2016 to 31<sup>st</sup> March 2017

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2016-17	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April, 2016- 31 <sup>st</sup> March, 2017	Balance	Remarks	(Rs in Lakhs)
	1	2	3	4	5	6	8	9	
<b>1. Non-recurring</b>									
	Equipment, accessories & site preparation/ renovation	-31,899.00	Nil	Nil	-31,899.00	0.00	- 31,899.00		
<b>2. Recurring</b>									
(i)	Man power- one JRF/SRF	64,581.00	1,85,000.00	Nil	2,49,581.00	1,87,500.00	62,081.00		
(ii)	Operational expenditure contingency & consumables)	0.00	2,50,000.00	Nil	2,50,000.00	2,48,658.00	1,342.00		
(iii)	Travel	4,453.00	45,000.00	Nil	49,453.00	17,007.00	32,446.00	Committed Expenditure Rs. 9,392.00	
(iv)	Training / workshop	-5,209.00	50,000.00		44,791.00	40,011.00	4,780.00		
	<b>Total</b>	31,926.00	5,30,000.00	Nil	5,61,926.00	4,93,176.00	68,750.00		

*Shamsh*  
**Coordinator**

DBT Institutional Biotech Hub  
 Dept. Of MBBT  
 Tezpur University

*B. K. Manna*  
**Finance Officer**

Tezpur University

*Finance Officer*  
 Tezpur University

*P. Barua*  
**Head of the Institute**

Tezpur University

*Registrar*  
 Tezpur University

18/10

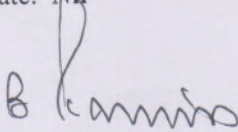


## Utilisation Certificate

(For the financial year ending 31<sup>st</sup> March, 2018)

Appendix B  
(Rs. in Lakhs)

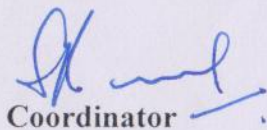
1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 68,750.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Rs. 28,19,000.00**
7. Other receipts/interest earned, if any,  
on the DBT grants: **Nil**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 28,87,750.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 7,41,372.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 21,46,378.00**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

  
**Finance Officer**  
**Tezpur University**

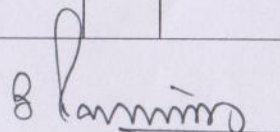
**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**


Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1<sup>st</sup> April 2017 to 31<sup>st</sup> March 2018

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2017-18	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April, 2017- 31 <sup>st</sup> March, 2018	Balance	Remarks	(Rs in Lakhs)
	1	2	3	4	5	6	8	9	
<b>1. Non-recurring</b>									
	Equipment, accessories & site preparation/ renovation	-31,899.00	10,00,000.00	Nil	9,68,101.00	0.00	9,68,101.00	Committed expenditure of 15,600 USD Purchase order copy was sent to the Company	
<b>2. Recurring</b>									
(i)	Man power- one JRF/SRF	62,081.00	11,76,000.00	Nil	12,38,081.00	3,83,884.00	8,54,197.00		
(ii)	Operational expenditure contingency & consumables)	1,342.00	3,99,000.00	Nil	4,00,342.00	2,66,594.00	1,33,748.00		
(iii)	Travel	32,446.00	17,000.00	Nil	40,028.00	36,336.00	3,692.00		
					49446	13	13110		
(iv)	Training / workshop	4,780.00	95,000.00	Nil	99,780.00	54,558.00	45,222.00		
(v)	Overhead		1,32,000.00		1,32,000.00				
	<b>Total</b>	68,750.00	28,19,000.00		28,87,750.00	7,41,372.00	21,46,378.00		

  
Coordinator

DBT Institutional Biotech Hub  
Tezpur University

  
Finance Officer  
Tezpur University  
Finance Officer  
Tezpur University

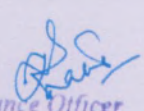
  
Head of the Institute  
Tezpur University  
Registrar  
Tezpur University

### Utilisation Certificate

(For the financial year ending 31<sup>st</sup> December, 2018)

Appendix B  
(Rs. in Lakhs)

1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 21,46,378.00**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **Nil**
7. Other receipts/interest earned, if any,  
on the DBT grants: **RS. 10,000.00**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 21,56,378.00**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 18,00,042.34**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 3,56,335.66**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

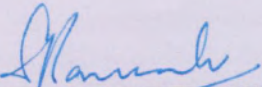
1  
  
Finance Officer  
Tezpur University

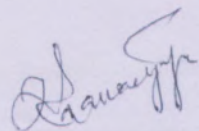
Certified that the amount of **Rs. 18,00,042.34** mentioned against col. 9 has been utilised on the project/scheme for the purpose for which it was sanctioned and that the balance of **Rs. 3,56,335.66** remaining unutilized at the end of the year will be adjusted towards the grants-in-aid payable during the next year.


2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilised for the purpose for which it was sanctioned.

Kinds of checks exercised:

1. Accounts audited by Internal Audit Officer of Tezpur University.
2. The team of C.A.G. audited the account.
3. All the chemicals, consumables, equipments etc purchased from the grant were entered in the stock book prior to payment of respective bills.
4. The physical verification team verified the physical existence of various equipments.

  
(PROJECT INVESTIGATOR)

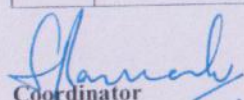
  
(FINANCE OFFICER)  
Finance Officer  
Tezpur University

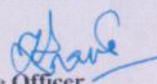
  
(HEAD OF THE INSTITUTE)  
Registrar  
Tezpur University


(To be countersigned by the DBT Officer-in-charge)

**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**  
 Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1<sup>st</sup> April 2018 to 31<sup>st</sup> December, 2018  
 (Rs in Lakhs)

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2018-19	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April, 2018- 31 <sup>st</sup> December, 2018	Balance	Remarks
	1	2	3	4	5	6	8	9
<b>1. Non-recurring</b>								
	Equipment, accessories & site preparation/ renovation	9,68,101.00	Nil	Nil	9,68,101.00	10,15,542.34	-47,441.34	
<b>2. Recurring</b>								
(i)	Man power- one JRF/SRF	8,54,197.00	Nil	Nil	8,54,197.00	4,91,956.00	3,62,241.00	
(ii)	Operational expenditure contingency & consumables)	1,33,748.00	Nil	Nil	1,33,748.00	1,22,836.00	10,912.00	
(iii)	Travel	13,110.00	Nil	Nil	13,110.00	23,074.00	-9,964.00	
(iv)	Training / workshop	45,222.00	Nil	10,000.00 (workshop)	55,222.00	64,134.00	-8,912.00	
	Overhead	1,32,000.00	Nil	Nil	1,32,000.00	82,500.00	49,500.00	Committed expenditure of 48,069.00
	<b>Total</b>	21,46,378.00	Nil	10,000.00	21,56,378.00	18,00,042.34	3,56,335.66	

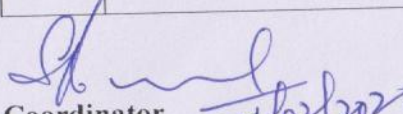
  
**Coordinator**  
 DBT Institutional Biotech Hub

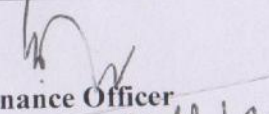
  
**Finance Officer**  
 Tezpur University  
 Finance Officer  
 Tezpur University


  
**Head of the Institute**  
 Tezpur University  
 Registrar  
 Tezpur University

**Statement of Expenditure of Institutional Biotech Hub, Dept. of MBBT, Tezpur University**  
 Showing grants received the Department of Biotechnology and the expenditure incurred during the period from 1<sup>st</sup> April 2019 to 29<sup>th</sup> February, 2020  
 (Rs in Lakhs)

S. No.	Name	Unspent balance carried forward from previous year	Grants received from DBT during 2018-19	Other receipt/interest earned if any from DBT grant	Total of column (2+3+4)	Expenditure incurred during the period 1 <sup>st</sup> April, 2019- 29 <sup>th</sup> February, 2020	Balance	Remarks
	1	2	3	4	5	6	8	9
<b>1. Non-recurring</b>								
	Equipment, accessories & site preparation/ renovation	-47,441.34	Nil	Nil	-47,441.34	Nil	-47,441.34	
<b>2. Recurring</b>								
(i)	Man power- one JRF/SRF	2,12,989.00	8,76,000.00	Nil	10,88,989.00	2,65,503.00	8,23,486.00	
(ii)	Operational expenditure contingency & consumables)	-581.00	3,90,000.00	Nil	389,419.00	3,77,119.00	12,300.00	
(iii)	Travel	-30,199.00	50,000.00	Nil	19,801.00	21,155.00	-1,354.00	
(iv)	Training / workshop	-8,912.00	1,00,000.00	Nil	91,088.00	90,642.00	446.00	
	Overhead	1551.00	76,000.00	Nil	77,551.00	70549.00	7002.00	
	<b>Total</b>	127,406.66	14,92,000.00	Nil	16,19,406.66	8,24,968.00	7,94,438.66	

  
**Coordinator**  
 DBT Institutional Biotech Hub  
 27/02/2020

  
**Finance Officer**  
 Tezpur University  
**Finance Officer**  
 Tezpur University

  
**Head of the Institute**  
 Tezpur University  
**Registrar**  
 Tezpur University

## Utilisation Certificate

(For the financial year ending 29<sup>th</sup> February, 2020)

Appendix B  
(Rs. in Lakhs)

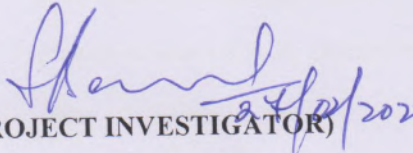
1. Title of the Project/Scheme: **Establishment of Institutional Biotech Hub  
Department of Molecular Biology & Biotechnology**
2. Name of the Organization: **Tezpur University**
3. Principal Investigator: **Prof. Shashi Baruah**
4. Deptt. of Biotechnology sanction order  
No. & date of sanctioning the project: **BT/22/NB/2011 dated: 30-11-2011**
5. Amount brought forward from the  
previous financial year quoting DBT  
letter No. & date in which the authority  
to carry forward the said amount was  
given: **Rs. 127,406.66**
6. Amount received from DBT during the  
financial year (*please give No. and  
dates of sanction orders showing the  
amounts paid*): **14,92,000.00**
7. Other receipts/interest earned, if any,  
on the DBT grants: **NA**
8. Total amount that was available for  
expenditure during the financial year  
(Sl. Nos. 5, 6 and 7) **Rs. 16,19,406.66**
9. Actual expenditure (excluding commitments)  
incurred during the financial year (statement  
of expenditure is enclosed): **Rs. 8,24,968.00**
10. Unspent balance refunded, if any  
(*Please give details of cheque No. etc.*): **Nil**
11. Balance amount available at the end  
of the financial year: **Rs. 7,94,438.66**
12. Amount allowed to be carried forward to the  
next financial year vide letter No. & date: **Nil**

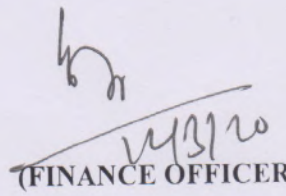
Certified that the amount of **Rs. 8,24,968.00** mentioned against col. 9 has been utilised on the project/scheme for the purpose for which it was sanctioned and that the balance of **Rs. 7,94,438.66** remaining unutilized at the end of the year will be adjusted towards the grants-in-aid payable during the next year.

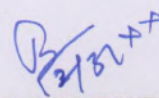
2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilised for the purpose for which it was sanctioned.

Kinds of checks exercised:

1. Accounts audited by Internal Audit Officer of Tezpur University.
2. The team of C.A.G. audited the account.
3. All the chemicals, consumables, equipments etc purchased from the grant were entered in the stock book prior to payment of respective bills.
4. The physical verification team verified the physical existence of various equipments.

  
(PROJECT INVESTIGATOR)

  
(FINANCE OFFICER)  
Finance Officer  
Tezpur University

  
(HEAD OF THE INSTITUTE)  
Registrar  
Tezpur University

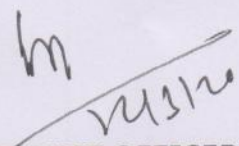
*(To be countersigned by the DBT Officer-in-charge)*

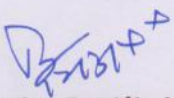


**Details of Assets acquired wholly or substantially out of Govt. grants  
Register to be maintained by Grantee Institution (From 1<sup>st</sup> April 2019 to 29<sup>th</sup> February, 2020)**

Name of the Sanctioning Authority:	<b>DEPARTMENT OF BIOTECHNOLOGY</b>
1. Sl. No.	74
2. Name of the Grantee Institution	<b>TEZPUR UNIVERSITY</b>
3. No. & Date of sanction order	<b>BT/22/NE/2011 dated: 30/11/2011 and BT/22/NB/2011 dated: 02/07/2013</b>
4. Amount of the sanctioned grant	<b>Rs. 19,00,000.00 , 9,14,000.00, 4,43,000.00, 4,59,000.00 5,30,000.00 28,19,000.00 and 14,92,000.00 respectively out of which non recurring grant were Rs. 15,00, 000.00, 5,00,000.00 and 10,00,000.00</b>
5. Brief purpose of the grant:	<b>To establish an Institutional Level Biotech Hubs at the Dept. of Molecular Biology &amp; Biotechnology, Tezpur University</b>
6. Whether any condition regarding the right of ownership of Govt. in the Property or other assets acquired out of the grant was incorporated in the grant-in-aid sanction order.	<b>NA</b>
7. Particulars of assets actually credited or acquired:	
	<b>NA</b>
8. Value of the assets as on 29 <sup>th</sup> February, 2020	<b>NA</b>
9. Purpose for which utilized at present	<b>NA</b>
10. Encumbered or not	<b>NA</b>
11. Reasons, if encumbered	<b>N/A</b>
12. Disposed of or not	<b>N/A</b>
13. Reasons and authority, if any, for	<b>N/A</b>
14. Amount realized on disposal	<b>N/A</b>
15. Remarks	-----

  
(PROJECT INVESTIGATOR) 24/02/2020

  
(FINANCE OFFICER)  
Finance Officer  
Tezpur University

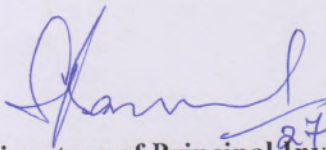
  
Head of the Institute

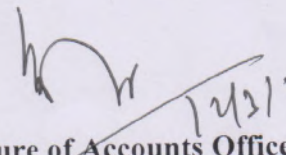
Registrar  
Tezpur University

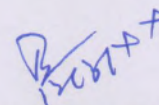
\* List of equipment purchased indicating the item wise costs may please be provided.

Manpower Staffing Details (from 1st April, 2019 to 29<sup>th</sup> February, 2020)

NAME OF THE PERSON	NAME OF THE POST	DATE OF JOINING	DATE OF LEAVING	TOTAL MONTHLY SALARY	TOTAL SALARY PAID DURING THE FINANCIAL YEAR	TOTAL SALARY PAID DURING PROJECT PERIOD
Neelanjana Sarmah	SRF	30/12/2015	NA	14,000.00	1,12,000.00	9,46,387.00
Dr. Johirul Islam	RA	05-07-18	05-04-2019	39,600.00	6600.00	3,97,490.00
Dr. Anuj Singh	RA	10-07-2019	25-10-19	39,600.00	1,27,742.00	1,27,742.00

  
 (Signature of Principal Investigator) 27/02/2020

  
 (Signature of Accounts Officer) 12/3/20  
 Finance Officer  
 Tezpur University

  
 (SIGNATURE OF HEAD OF THE INSTITUTE)  
 Registrar  
 Tezpur University

***Final Consolidated Statement of Expenditure***  
***(for final Settlement of accounts)***

- 1.. Title of the Project: Establishment of Institutional level Biotech Hubs**
- 2. Sanctioned Project Cost: 85.57 lakhs**
- 3. Revised cost, if any: NA**
- 4. Duration of the project: 8 years**
- 5. Sanction Order No. & Date: BT/22/NE/2011, date: 30-11-2011**
- 6. Date of commencement of Project: 30-11-2011**
- 7. Extension, if any: NA**
- 8. Date of completion of project: 29-11-2011**

S. No.	Heads	Sanctioned Cost	Year-wise Releases made								
			1 <sup>st</sup> yr 2011-12	2 <sup>nd</sup> yr 2012-13	3 <sup>rd</sup> yr 2013-14	4 <sup>th</sup> yr 2014-15	5 <sup>th</sup> yr 2015-16	6 <sup>th</sup> yr 2016-17	7 <sup>th</sup> yr 2017-18	8 <sup>th</sup> yr 2018-19	9 <sup>th</sup> yr 2019-20
	<b>A. Non recurring</b>										
1	Equipment	<b>30 lakhs</b>	15 lakhs	CF	5 lakhs	nil	nil	nil	10 lakhs	nil	nil
	<b>B. recurring</b>	<b>55.57 lakhs</b>	4 lakhs	CF	4.14 lakhs	4.43 lakhs	4.59 lakhs	5.30 lakhs	18.19 lakhs	14.92 lakhs	nil
1	Manpower	<b>28.41 lakhs</b>	2.50 lakhs	CF	0.97 lakhs	1.48 lakhs	1.09 lakhs	1.85 lakhs	11.76 lakhs	8.76 lakhs	nil
2	Consumables/contingency	<b>18.34 lakhs</b>	0.50 lakhs	CF	2.50 lakhs	2.45 lakhs	2.50 lakhs	2.50 lakhs.	3.99 lakhs	3.90 lakhs	nil
3	Travel	<b>2.79 lakhs</b>	0.50 lakhs	CF	0.17 lakhs	0.50 lakhs	0.50 lakhs	0.45 lakhs	0.17 lakhs	0.50 lakhs	nil
4	Overhead	<b>2.08 lakhs</b>	nil	CF	nil	nil	nil	nil	1.32 lakhs	0.76 lakhs	nil
5	Training/workshop	<b>3.95 lakhs</b>	0.50 lakhs	CF	0.50 lakhs	nil	0.50 lakhs	0.50 lakhs	0.95 lakhs	1 lakh	nil
	<b>Total</b>	<b>55.57 lakhs</b>	<b>4 lakhs</b>	<b>CF</b>	<b>4.14 lakhs</b>	<b>4.43 lakhs</b>	<b>4.59 lakhs</b>	<b>5.30 lakhs</b>	<b>18.19 lakhs</b>	<b>14.92 lakhs</b>	nil
	<b>Grand total (A+B)</b>	<b>85.57 lakhs</b>	<b>19 lakhs</b>	<b>CF</b>	<b>9.14 lakhs</b>	<b>4.43 lakhs</b>	<b>4.59 lakhs</b>	<b>5.30 lakhs</b>	<b>28.19 lakhs</b>	<b>14.92 lakhs</b>	nil

S. No.	Heads	Year-wise expenditure incurred									
		1 <sup>st</sup> yr 2011-12	2 <sup>nd</sup> yr 2012-13	3 <sup>rd</sup> yr 2013-14	4 <sup>th</sup> yr 2014-15	5 <sup>th</sup> yr 2015-16	6 <sup>th</sup> yr 2016-17	7 <sup>th</sup> yr 2017-18	8 <sup>th</sup> yr 2018-19	9 <sup>th</sup> yr 2019-20	Balance
	<b>A. Non recurring</b>	nil	4,81,819 lakhs	10,50,657 lakhs	4,99,423 lakhs	0.00	0.00	0.00	10,15,542 lakhs	0.00	- .47441.34 lakhs
	<b>B. recurring</b>	nil	2,61,857 lakhs	4,00,150 lakhs	4,97,257 lakhs	4,97,661 lakhs	4,93,176 lakhs	7,41,372 lakhs	10,13,429 lakhs	8,24,968 lakhs	8,27,130 lakhs
1	Manpower	nil	145,032 lakhs	1,00,387 lakhs	1,44,000 lakhs	1,50,000 lakhs	1,87,500 lakhs	3,83,884 lakhs	6,41,208 lakhs	2,65,503 lakhs	8,23,486 lakhs
2	Consumables/contingency	nil	0.50 lakhs	2,45,339 lakhs	2,51,209 lakhs	2,48,452 lakhs	2,48,658 lakhs	2,66,594 lakhs	1,34,329 lakhs	3,77,119 lakhs	0.12300 lakhs
3	Travel	nil	0.33175 lakhs	0.54424 lakhs	0.52048 lakhs	0.39250 lakhs	0.17007 lakhs	0.36336 lakhs	0.43309 lakhs	0.21155 lakhs	-0.01354 lakhs
4	Overhead	nil	0.00	0.00	0.00	0.00	0.00	0.00	1,30,449 lakhs	0.70549 lakhs	0.07002 lakhs
5	Training/workshop	Nil	0.16825 lakhs	0.00	0.50 lakhs	0.59959 lakhs	0.40011 lakhs	0.54558 lakhs	0.64134 lakhs	0.90642 lakhs	0.00446 lakhs
	<b>Total</b>	<b>nil</b>	<b>2,61,857 lakhs</b>	<b>4,00,150 lakhs</b>	<b>4,97,257 lakhs</b>	<b>4,97,661 lakhs</b>	<b>4,93,176 lakhs</b>	<b>7,41,372 lakhs</b>	<b>10,13,429 lakhs</b>	<b>8,24,968 lakhs</b>	<b>8,27,130 lakhs</b>

	<b>Grand total (A+B)</b>	nil	<b>7,43,676 lakhs</b>	<b>14,50,807 lakhs</b>	<b>9,96,680 lakhs</b>	<b>4,97,661 lakhs</b>	<b>4,93,176 lakhs</b>	<b>7,41,372 lakhs</b>	<b>20,28,971 .34 lakhs</b>	<b>8,24,968 lakhs</b>	<b>7,94,438.66 lakhs</b>
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**PROJECT INVESTIGATOR)**

**(FINANCE OFFICER)**

**(HEAD OF THE INSTITUTE)**