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Admit

**No. BT/PR24723/NER/95/832/2017**  
GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY  
(NER-BPMC)

Appl. No.: Agri/ 2017/25

Block 2, 6-8th Floors  
CGO Complex, Lodhi Road,  
New Delhi- 110 003  
Dated: 23/08/2018

**ORDER**

Sanction of the President is hereby accorded, under Rule 18 of the Delegation of Financial Powers Rules, 1978, for the implementation of the project entitled: "**Deciphering the role of microbes in agarwood deposition and functional characterization of important key enzymes**" for a period of 3 Year 0 Month at a total cost of Rs. **7389988** (Rupees Seventy Three Lakhs Eighty Nine Thousand Nine Hundred and Eighty Eight Only) on the terms and conditions detailed here under:-

**2 The Project :**

**2.1 Title :** "Deciphering the role of microbes in agarwood deposition and functional characterization of important key enzymes"

**2.2 Details of the Investigators:**

**Project Coordinator**

**Dr. Sofia Banu Banu**  
Assistant Professor  
Dept of Bioengineering and Technology  
Gauhati University  
Guwahati Assam 781014

**Principal Investigators:**

**Dr. Sofia Banu Banu**  
Assistant Professor  
Dept of Bioengineering and  
Technology  
Gauhati University  
Gopinath Bordoloi Nagar, Guwahati  
Assam 781014

**Dr. Ram S Kulkarni**  
Assistant professor  
Symbiosis School of Biological  
Sciences  
Symbiosis International University  
Lavale, Pune, Maharashtra, 412115

Vaidah

**CO-PI:**

**Dr. Debrata Baishya**

Assistant Professor

Bioengineering and Technology

Gauhati University

Gopinath Bordoloi Nagar, Jalukbari, Guwahati -  
781014, Assam

**2.3 Objectives:**

**Overall Objectives:**

1. To study the role of jasmonic acid as regulator and role of genes involved in signalling in agarwood formation in *Aquilaria malaccensis*
2. To isolate the complete open reading frames of four cytochrome P450 genes involved in sesquiterpene biosynthesis in *Aquilaria malaccensis*
3. To isolate the complete open reading frames of two polyketide synthase genes involved in the biosynthesis of fragrant chemicals in *Aquilaria malaccensis*
4. Heterologous expression and enzymatic characterization of the recombinant cytochrome P450s and polyketide synthases using various substrates

**Institute wise Objectives:**

**Gauhati University**

1. To study the role of jasmonic acid as regulator and role of genes involved in signalling in agarwood formation in *Aquilaria malaccensis*
2. To isolate the complete open reading frames of four cytochrome P450 genes involved in sesquiterpene biosynthesis in *Aquilaria malaccensis*

**Symbiosis International University**

1. To isolate the complete open reading frames of polyketide synthase genes involved in the biosynthesis of fragrant chemicals in *A. malaccensis*
2. Heterologous expression and enzymatic characterization of the recombinant cytochrome P450s and polyketide synthases using various substrates

**2.4 Time Schedule:**

The duration of the project is 3 Year 0 Month from the date of this sanction order.

## 2.5 Project Cost:

The total cost of the project is Rs. **7389988/-** (Rupees Seventy Three Lakhs Eighty Nine Thousand Nine Hundred and Eighty Eight Only) as per details given below :

Institute	Year I	Year II	Year III	Total Cost(Rs.)
1. Gauhati University	2660000	1240000	822996	4722996
2. Symbiosis International University	940000	940000	786992	2666992
<b>Total (Rs.)</b>	<b>3600000</b>	<b>2180000</b>	<b>1609988</b>	<b>7389988</b>

Institute wise details are:

Budget Head	Year I	Year II	Year III	Total(Rs.)
<b>1. Gauhati University</b>				
Equipment	1500000.00			1500000.00
Manpower	360000.00	360000.00	402996.00	1122996.00
Consumables	600000.00	680000.00	220000.00	1500000.00
Overhead	100000.00	100000.00	100000.00	300000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Travel	50000.00	50000.00	50000.00	150000.00
<b>Total (Rs.)</b>	<b>2660000.00</b>	<b>1240000.00</b>	<b>822996.00</b>	<b>4722996.00</b>
<b>2. Symbiosis International University</b>				
Manpower	390000.00	390000.00	436992.00	1216992.00
Contingency	50000.00	50000.00	50000.00	150000.00
Travel	50000.00	50000.00	50000.00	150000.00
Consumables	400000.00	400000.00	200000.00	1000000.00
Overhead	50000.00	50000.00	50000.00	150000.00
<b>Total (Rs.)</b>	<b>940000.00</b>	<b>940000.00</b>	<b>786992.00</b>	<b>2666992.00</b>

## 2.6 Equipment:

The details of the equipment sanctioned for the implementation of the project at Annexure-I

## 2.7 Manpower:

The details of the manpower sanctioned for the implementation of the project at Annexure-II

**3. Head of Account:**

The **Non-Recurring** expenditure involved is debitable to:

<b>Demand No. 85</b>	<b>Department of Biotechnology</b>
<b>3425</b>	Other Scientific Research 2018-2019
<b>3425.60</b>	Others (Sub Major Head)
<b>3425.60.200</b>	Assistance to other Scientific Bodies (Minor Head)
<b>3425.60.200.29</b>	Biotechnology Research and Development
<b>3425.60.200.29.17</b>	Assistance for Research and Development
<b>3425.60.200.29.17.35</b>	Grants for creation of capital assets

The **Recurring** expenditure involved is debitable to:

<b>Demand No. 85</b>	<b>Department of Biotechnology</b>
<b>3425</b>	Other Scientific Research 2018-2019
<b>3425.60</b>	Others (Sub Major Head)
<b>3425.60.200</b>	Assistance to other Scientific Bodies (Minor Head)
<b>3425.60.200.29</b>	Biotechnology Research and Development
<b>3425.60.200.29.17</b>	Assistance for Research and Development
<b>3425.60.200.29.17.31</b>	Grants-in-Aid General

**4. Terms & Conditions:**

Additional Terms and Conditions specific for Twinning R and D program for NER:

- a. Both NER and Rest of India RoI Institutions scientists should work together for the objectives stated in the sanction of the project and any deviation from this would attract closure of the project at any point of time.
- b. In the project review meetings, both the PIs from NER and RoI Institutions should participate and make presentation.
- c. The outcomes of the project such as research papers, patents, copy rights etc. should be made jointly.
- d. The NER Scientists are to be trained at the collaborating institute appropriately to empower the NER Scientists.
- e. The project personal such as Research Associate, JRF or SRF, Research Assistant are also to be trained at least once in the collaborating national institute.
- f. The collaborating institute scientist should visit NER institutions more frequently to guide NER scientists in design and conduct of experiments.

*Handwritten signature*



- 4.1 The other terms and conditions governing this sanction are attached at Annexure- III.
- 4.2A Memorandum of Agreement (MoA) will be signed between the Department of Biotechnology and the grantee institution on Non-Judicial stamp paper Rs. 100/- in the enclosed format and the second release/installment will be made only after signing of MoA by the grantee institutions and its acceptance by DBT. In case of NGO or Private Institution, MOA signed is mandatory first release. A format of the MoA is enclosed in Annexure-IV
- 4.3The Institute/Agency will keep the whole of the grant in a Bank Account earning interest, and the interest so earned should be reported to DBT in the Utilisation Certificate and Statement of Expenditure. The Interest so earned will be treated as created to the institute/Agency and shall be adjusted towards further installment of the grant and or at the time of Final Settlement of Accounts.
- 5.No International Travel will be undertaken from the sanctioned project grant unless specified otherwise.
- 6.The Registrar, Symbiosis International University, Pune, Maharashtra and The Registrar, Gauhati University, Guwahati, Assam would be responsible for submission of Statements of Expenditure (SoE), utilization certificates (UC), Assets Certificates, Manpower staffing & expenditure details in prescribed DBT formats to DBT in respect of grants released in this project from time to time.
- 7.PI's of DBT sponsored projects can consider appointment of JRF from Category-II merit list of DBT-BET exam so that candidates can be paid fellowships at par with NET/GATE/BET qualified candidates as per DST OM No. A.SR/S9/Z-09/2012 dated on 21 Oct 2014. However, there is no compulsion on PI's to select candidates for JRF in their projects from Category-II of DBT-BET.
- 8.As per Rule 236 (1) of GFR 2017, the accounts of all Grantee Institutions or Organisations shall be open to inspection by the sanctioning authority and audit, both by the Comptroller and Auditor General of India under the provision of CAG(DPC) Act 1971 and internal audit by the Principal Accounts Office of the Ministry or Department, whenever the Institution or Organisation is called upon to do so.
- 9.If the Research Project involves biological resource, the obligations under the Biological Diversity Act 2002 as applicable shall be complied with by the Project Investigator, the details of such obligations can be accessed at [www.nbaindia.org](http://www.nbaindia.org)
- 10.This issues under the power delegated to this Department and with the concurrence of IFD vide their SAN No.102/IFD/SAN/1585/2018-2019 dated August, 14 2018.
- 11.This sanction order has been noted at serial no. 183-184 in the Register of Grants.

*Vaishali Panjabi*  
(Dr. Vaishali Panjabi)  
Scientist 'E'

To,  
The Pay & Accounts Officer,  
Department of Biotechnology,  
New Delhi - 110 003.

**Copy to:**

- 1 The Principal Director of Audit (Scientific Departments), DACR Building, New Delhi- 110 002.
- 2 Dr. Sofia Banu (Project Co-ordinator), Department of Bioengineering and Technology, Gopinath Bordoloi Nagar, Jalukbari, Guwahati, Assam PIN: 781014
- 3 The Registrar, Symbiosis International University, Gram: Lavale; Tal-Mulshi, Pune - 411042, Maharashtra
- 4 The Registrar, Gauhati University, Gopinath Bordoloi nagar, Guwahati - 781014, Assam
- 5 Dr. Debrata Baishya, Assistant Professor, Bioengineering and Technology, Gauhati University, Gopinath Bordoloi Nagar, Jalukbari, Guwahati - 781014, Assam
- 6 Dr. Ram S Kulkarni, Assistant professor, Symbiosis School of Biological Sciences, Symbiosis International University, Lavale, Pune - 412115, Maharashtra
- 7 Dr. Sofia Banu Banu, Assistant Professor, Dept of Bioengineering and Technology, Gauhati University, Gopinath Bordoloi Nagar, Guwahati Assam - 781014, Assam
- 8 Cash Section, DBT (2 copies).
- 9 Sanction Folder.
- 10 File Copy.

*Vaishali Panjabi*

**(Dr. Vaishali Panjabi)  
Scientist 'E'**

Annexure -I

Details of the Equipment sanctioned for the implementation of the project titled "**Deciphering the role of microbes in agarwood deposition and functional characterization of important key enzymes**":

<b>Gauhati University</b>			
<b>SNo.</b>	<b>Name of Equipment</b>	<b>No.</b>	<b>Cost(Rs.)</b>
1.	Refrigerated Incubator shaker	1	609000.00
2.	Gel documentation system	1	597000.00
3.	PCR machine	1	294000.00
<b>Total</b>			<b>1500000.00</b>

*Vaishali Panjabi*

**(Dr. Vaishali Panjabi)  
Scientist 'E'**

## Annexure -II

Details of the manpower sanctioned for the implementation of the project titled "**Deciphering the role of microbes in agarwood deposition and functional characterization of important key enzymes**":

Head	No. of Position	Year I	Year II	Year III	Total (Rs.)
<b>1. Gauhati University</b>					
Junior Research Fellow Rs.25,000/- + HRA=75000(@30%) =Rs 32500 pm for 2 years	1	360000.00	360000.00		<b>720000.00</b>
Senior Research Fellow Rs.28,000/- + HRA=75000(@30%) =Rs 32500 pm for 2 years	1			402996.00	<b>402996.00</b>
<b>Total(Rs.)</b>		<b>360000.00</b>	<b>360000.00</b>	<b>402996.00</b>	<b>1122996.00</b>
<b>2. Symbiosis International University</b>					
Junior Research Fellow (Rs. 25,000/- + 30% HRA) = Rs 32500/- pm for 2 years	1	390000.00	390000.00		<b>780000.00</b>
Senior Research Fellow (Rs. 28,000/- + 30% HRA) = Rs 32500/- pm for 3rd years	1			436992.00	<b>436992.00</b>
<b>Total(Rs.)</b>		<b>390000.00</b>	<b>390000.00</b>	<b>436992.00</b>	<b>1216992.00</b>

Emoluments detail of research personal(s) mentioned in table(s) of Annexure-II shall be applicable only if candidate(s) met educational qualification and eligibility criteria as per DST OM No.SR/S9/Z-09/2012 dated 21.10.2014.

*Vaishali Panjabi*

(Dr. Vaishali Panjabi)  
Scientist 'E'