

Admit

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Appl. No.: MAP/2017/56

No. BT/PR25181/NER/95/1061/2017  
GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY  
(NER-BPMC)

Block 2, 6-8th Floors  
CGO Complex, Lodhi Road,  
New Delhi- 110 003  
Dated: 18/09/2018

**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: "**Quest for Cancer Drugs: Screening and Bioassay Guided Phytochemical Investigation of Selected Endemic Medicinal Plants of Eastern Himalaya**" for a period of 3 Year 0 Month at a total cost of Rs. **13533988** (Rupees One Crore Thirty Five Lakhs Thirty Three Thousand Nine Hundred and Eighty Eight Only) on the terms and conditions detailed here under:-

**2 The Project :**

**2.1 Title : "Quest for Cancer Drugs: Screening and Bioassay Guided Phytochemical Investigation of Selected Endemic Medicinal Plants of Eastern Himalaya"**

**2.2 Details of the Investigators:**

**Project Coordinator**

**Dr. Dwipen Kakati**

Assistant Professor

Chemistry

Rajiv Gandhi University

Rono Hills, Doimukh, Itanagar, Arunachal Pradesh, 791112

**Principal Investigators:**

Vandana

**Dr. Dwipen Kakati**  
Assistant Professor  
Chemistry  
Rajiv Gandhi University  
Rono Hills, Doimukh,  
Itanagar, Arunachal Pradesh,  
791112

**Dr. Asish K Bhattacharya**  
Senior Scientist  
Division of Organic Chemistry  
National Chemical Laboratory  
Dr. Homi Bhabha Road, Pune,  
Maharashtra, 411008

**Dr. Manas Kumar Santra**  
Scientist E  
Cancer Biology  
National Centre For Cell Science  
NCCS Complex, Ganeshkhind, Pune,  
Maharashtra, 411007

**Prof. Mohan Chandra Kalita**  
Professor  
Biotechnology  
Gauhati University  
Guwahati, Assam, 781014

**CO-PI:**

**Dr. Temin Payum**  
Assistant Professor  
Botany  
Jawaharlal Nehru College  
Hilltop, Pasighat - 791103, Arunachal Pradesh

**Dr. Jogen Chandra Kalita**  
Professor  
Zoology  
Gauhati University  
Gopinath Bordoloi Nagar, Jalukbari, Guwahati -  
781014, Assam

**Dr. Kandarpa Kumar Saikia**  
Associate Professor  
Department of Bioengineering and Technology  
Gauhati University  
Guwahati - 781014, Assam

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### 2.3 Objectives:

#### Overall Objectives:

1. Screening of selected endemic plants based on traditional knowledge in different districts of Arunachal Pradesh.
2. Identification, collection and extraction of the plant biomass.
3. In vitro anticancer activity study with the crude extract against human breast cancer, colon cancer, lung cancer and melanoma.
4. In vivo anticancer activity study against Ascites Dalton's lymphoma and human breast cancer cell line MCF-7 and MDA-MB-231.
5. Fractionation of active extracts and isolation of pure molecules, further bioassay in both in vitro and in vivo conditions and characterisation of the pure molecules.
6. Formulation of active extracts/ pure molecules for application as herbal drug.
7. Semisynthesis of the active molecules for lead identification.
8. Patents, publications.

#### Institute wise Objectives:

##### Gauhati University

1. In vivo anticancer activity study against Ascites Dalton's lymphoma and human breast cancer cell line MCF-7 and MDA-MB-231.
2. Formulation of active extracts/ pure molecules for application as herbal drug.

##### National Centre For Cell Science

1. In vitro anticancer activity study with the crude extract against human breast cancer, colon cancer, lung cancer and melanoma.

##### National Chemical Laboratory

1. Isolation of pure molecules from active fractions.
2. Characterisation of the active compounds by spectroscopic and crystallographic techniques.
3. Semisynthesis of the active molecules for lead identification

##### Rajiv Gandhi University

1. Screening, identification and collection of plants.
2. Processing, extraction and fractionation of active extracts.
3. Phytochemical screening and isolation of pure molecules from active fractions.
4. Patent, publications.

### 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. **13533988/-** (Rupees One Crore Thirty Five Lakhs Thirty Three Thousand Nine Hundred and Eighty Eight Only) as per details given below :

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Institute	Year I	Year II	Year III	Total Cost(Rs.)
1. Gauhati University	1006000	1060000	1152996	3218996
2. National Centre For Cell Science	870000	670000	926992	2466992
3. National Chemical Laboratory	962000	852000	904004	2718004
4. Rajiv Gandhi University	3130000	1030000	969996	5129996
<b>Total (Rs.)</b>	<b>5968000</b>	<b>3612000</b>	<b>3953988</b>	<b>13533988</b>

Institute wise details are:

Budget Head	Year I	Year II	Year III	Total(Rs.)
<b>1. Rajiv Gandhi University</b>				
Equipment	2000000.00			2000000.00
Manpower	330000.00	330000.00	369996.00	1029996.00
Consumables	600000.00	500000.00	400000.00	1500000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Overhead	100000.00	100000.00	100000.00	300000.00
Travel	50000.00	50000.00	50000.00	150000.00
<b>Total (Rs.)</b>	<b>3130000.00</b>	<b>1030000.00</b>	<b>969996.00</b>	<b>5129996.00</b>
<b>2. Gauhati University</b>				
Manpower	360000.00	360000.00	402996.00	1122996.00
Consumables	450000.00	500000.00	550000.00	1500000.00
Overhead	96000.00	100000.00	100000.00	296000.00
Contingency	50000.00	50000.00	50000.00	150000.00
Travel	50000.00	50000.00	50000.00	150000.00
<b>Total (Rs.)</b>	<b>1006000.00</b>	<b>1060000.00</b>	<b>1152996.00</b>	<b>3218996.00</b>
<b>3. National Chemical Laboratory</b>				
Manpower	390000.00	390000.00	437004.00	1217004.00
Consumables	400000.00	300000.00	300000.00	1000000.00
Overhead	92000.00	82000.00	87000.00	261000.00

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Contingency	50000.00	50000.00	50000.00	<b>150000.00</b>
Travel	30000.00	30000.00	30000.00	<b>90000.00</b>
<b>Total (Rs.)</b>	<b>962000.00</b>	<b>852000.00</b>	<b>904004.00</b>	<b>2718004.00</b>
<b>4. National Centre For Cell Science</b>				
Manpower	390000.00	390000.00	436992.00	<b>1216992.00</b>
Contingency	50000.00	50000.00	50000.00	<b>150000.00</b>
Travel	30000.00	30000.00	40000.00	<b>100000.00</b>
Consumables	400000.00	200000.00	400000.00	<b>1000000.00</b>
<b>Total (Rs.)</b>	<b>870000.00</b>	<b>670000.00</b>	<b>926992.00</b>	<b>2466992.00</b>

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### 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:

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

The Recurring expenditure involved is debitable to:

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

### 4. Terms & Conditions:

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

- 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.
- In the project review meetings, both the PIs from NER and RoI Institutions should participate and make presentation.
- The outcomes of the project such as research papers, patents, copy rights etc. should be made jointly.

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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.

**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

**4.3** The 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 Director, National Centre For Cell Science, Pune, Maharashtra and The Director, National Chemical Laboratory, Pune, Maharashtra and The Registrar, Gauhati University, Guwahati, Assam and The Registrar, Rajiv Gandhi University, Itanagar, Arunachal Pradesh 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/2215/2018-2019 dated September, 13 2018.




11. This sanction order has been noted at serial no. 268-269 in the Register of Grants.

  
(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. Dwipen Kakati (Project Co-ordinator), Department of Chemistry, Rono Hills, Doimukh Arunachal Pradesh 791 112
- 3 The Director, National Centre For Cell Science, NCCS Complex, Ganeshkhind, Pune - 411007, Maharashtra
- 4 The Director, National Chemical Laboratory, Dr. Homi Bhabha Road, Pashan, Pune - 411008, Maharashtra
- 5 The Registrar, Gauhati University, Gopinath Bordoloi nagar, Guwahati - 781014, Assam
- 6 The Registrar, Rajiv Gandhi University, C/O H.N. SARMA, Doimukh, RONO HILLS, Itanagar - 791112, Arunachal Pradesh
- 7 Dr. Asish K Bhattacharya, Senior Scientist, Division of Organic Chemistry, National Chemical Laboratory, Dr. Homi Bhabha Road, Pune - 411008, Maharashtra
- 8 Dr. Dwipen Kakati, Assistant Professor, Chemistry, Rajiv Gandhi University, Rono Hills, Doimukh, Itanagar - 791112, Arunachal Pradesh
- 9 Dr. Jogen Chandra Kalita, Professor, Zoology, Gauhati University, Gopinath Bordoloi Nagar, Jalukbari, Guwahati - 781014, Assam
- 10 Dr. Kandarpa Kumar Saikia, Associate Professor, Department of Bioengineering and Technology, Gauhati University, Guwahati - 781014, Assam
- 11 Dr. Manas Kumar Santra, Scientist E, Cancer Biology, National Centre For Cell Science, NCCS Complex, Ganeshkhind, Pune - 411007, Maharashtra
- 12 Dr. Temin Payum, Assistant Professor, Botany, Jawaharlal Nehru College, Hilltop, Pasighat - 791103, Arunachal Pradesh
- 13 Prof. Mohan Chandra Kalita, Professor, Biotechnology, Gauhati University, Guwahati - 781014, Assam
- 14 Cash Section, DBT (2 copies).
- 15 Sanction Folder.
- 16 File Copy.

  
(Dr. Vaishali Panjabi)  
Scientist 'E'

**Annexure -I**

Details of the Equipment sanctioned for the implementation of the project titled "**Quest for Cancer Drugs: Screening and Bioassay Guided Phytochemical Investigation of Selected Endemic Medicinal Plants of Eastern Himalaya**":

<b>Rajiv Gandhi University</b>			
<b>SNo.</b>	<b>Name of Equipment</b>	<b>No.</b>	<b>Cost(Rs.)</b>
1.	Rotary evaporator with Vacuum pump, vacuum control and recirculatory chiller	1	550000.00
2.	Freeze dryer with required accessories and vacuum pump	1	997000.00
3.	Low temperature freezer (-20 °C to -40 °C)	1	284000.00
4.	Hot air oven	1	64000.00
5.	Wiley Mill	1	58000.00
6.	Overhead Stirrer	1	47000.00
<b>Total</b>			<b>2000000.00</b>

  
(Dr. Vaishali Panjabi)  
Scientist 'E'

## Annexure -II

Details of the manpower sanctioned for the implementation of the project titled "Quest for Cancer Drugs: Screening and Bioassay Guided Phytochemical Investigation of Selected Endemic Medicinal Plants of Eastern Himalaya":

Head	No. of Position	Year I	Year II	Year III	Total (Rs.)
<b>1. Gauhati University</b>					
Junior Research Fellow One Junior research fellow will be engaged for the in vivo studies on animal models and other works of the project. Monthly Emolument may be 25,000 + 20% HRA or as per DBT norms.	1	360000.00	360000.00		<b>720000.00</b>
Senior Research Fellow One Junior research fellow will be engaged for the in vivo studies on animal models and other works of the project. Monthly Emolument may be 25,000 + 20% HRA or as per DBT norms.	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. National Centre For Cell Science</b>					
Junior Research Fellow The fellow will carry out the in vitro studies on the plant products The fellowship amount may be 25,000 + 30% HRA or as per the norms.	1	390000.00	390000.00		<b>780000.00</b>
Senior Research Fellow The fellow will carry out the in vitro studies on the plant products The fellowship amount may be 25,000 + 30% HRA or as per the norms.	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>
<b>3. National Chemical Laboratory</b>					
Junior Research Fellow The fellow will carry out the isolation of pure	1	390000.00	390000.00		<b>780000.00</b>

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molecules from extracts and semisynthesis. The fellowship amount may be 25,000 + 30% HRA or as per the norms.					
Senior Research Fellow The fellow will carry out the in vitro studies on the plant products The fellowship amount may be 25,000 + 30% HRA or as per the norms.	1			437004.00	<b>437004.00</b>
<b>Total(Rs.)</b>		<b>390000.00</b>	<b>390000.00</b>	<b>437004.00</b>	<b>1217004.00</b>
<b>4. Rajiv Gandhi University</b>					
Junior Research Fellow The fellow will carry out the collection, processing, extraction and isolation of pure molecules from the plant biomass along with semisynthesis of the active compounds for activity studies.	1	330000.00	330000.00		<b>660000.00</b>
Senior Research Fellow The fellow will carry out the in vitro studies on the plant products The fellowship amount may be 25,000 + 30% HRA or as per the norms.	1			369996.00	<b>369996.00</b>
<b>Total(Rs.)</b>		<b>330000.00</b>	<b>330000.00</b>	<b>369996.00</b>	<b>1029996.00</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'**