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Administrative  
App. No. MED/2017/59

No. BT/PR24978/NER/95/938/2017  
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: 11/10/2019

**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: "Development of Drug-seeds that target TFF3 in mammary, gastric, and hepatocellular Carcinoma" for a period of 3 Year 0 Month at a total cost of Rs. 9580240 (Rupees Ninety Five Lakhs Eighty Thousand Two Hundred and Fourty Only) on the terms and conditions detailed here under:-

**2 The Project :**

**2.1 Title :** "Development of Drug-seeds that target TFF3 in mammary gastric, and hepatocellular Carcinoma"

**2.2 Details of the Investigators:**

**Project Coordinator**

**Dr. Atanu Bhattacharjee**  
Assistant Professor  
Department of Biotechnology & Bioinformatics,  
North Eastern Hill University,  
Umshing, Shillong, Meghalaya, 793022

**Principal Investigators:**

**Dr. Atanu Bhattacharjee**  
Assistant Professor  
Department of Biotechnology & Bioinformatics,  
North Eastern Hill University, Shillong, Meghalaya, 793022

**Dr. Basappa Salundi**  
Assistant Professor  
Department of Studies in Organic Chemistry,  
University of Mysore, Manasagangotri,  
Mysore, Karnataka, 570006

**CO-PI:**

**Dr. Mohan Dhananjaya Chakrabhavi**  
Assistant Professor  
Department of Studies in Molecular Biology  
University of Mysore  
Manasagangotri, Mysore - 570006, Karnataka

**Dr. Shobith Rangappa**  
Director  
Adichunchanagiri Institute for Molecular Medicine  
University of Mysore  
BG Nagara, Nagamangala Taluk, Mandya - 571448, Karnataka

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Vaibala . Page No. [ 1 / 8 ]

Dr. Vaibala / Dr. VAIBALA PAMMEI  
Superior / Assistant  
Department of Biotechnology  
Department of Biotechnology  
Department of Biotechnology

Department of Biotechnology  
CGO Complex, Lodhi Road  
New Delhi- 110 003

### 2.3 Objectives:

#### Institute wise Objectives:

##### North-Eastern Hill University, Shillong:

1. Functional screening of KP7/inhibitors and determination of IC50 concentrations in various carcinoma cell line
2. Establishment of interaction of key residue like Cys57 of TFF3 with the inhibitors
3. Functional in vitro anti-cancer effect of small molecules on TFF3 expressing cells
4. Evaluation of the effect of upstream/downstream signaling molecules against the oncogenic functions of TFF3 pathway proteins by inhibitors.
5. Effect of inhibitors on In vivo tumor growth and dissemination in xenograft models with TFF3 responsive carcinoma cells.

##### University of Mysore:

1. Starting from the high-throughput screening hit KP7, novel TFF3 inhibitors will be developed based on a chromene attached nitrile scaffold.
2. Synthesis and characterization of active analogues that targets TFF3
3. The in vitro metabolic stability of TFF3 inhibitors; Determination of the Effective Permeabilities (Pe) of TFF3 inhibitors, The kinetic solubility of TFF3 inhibitors.
4. Acute toxicity studies of novel lead TFF3 inhibitors; PK/PD studies of novel lead TFF3 inhibitors.

### 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. 9580240/- (Rupees Ninety Five Lakhs Eighty Thousand Two Hundred and Fourty Only) as per details given below :

Institute	Year I	Year II	Year III	Total Cost (Rs.)
1. North-Eastern Hill University, Shillong	5225000	325000	225000	5775000
2. University of Mysore	2231520	786520	787200	3805240
<b>Total (Rs.)</b>	<b>7456520</b>	<b>1111520</b>	<b>1012200</b>	<b>9580240</b>

Vinod

Dr. VASANT K. P. MISHRA  
Principal / Secretary  
Department of Chemistry / Dept. of Chemistry  
North Eastern Hill University / North Eastern Hill University  
Shillong / Shillong

Include your details on:

Budget Head	Year 1	Year 2	Year 3	Year 4
<b>1 North Western Hill Historical Society, WINNING</b>				
Equipment	10000.00			10000.00
Personnel		1000.00	1000.00	1000.00
Materials	2000.00	2000.00	2000.00	2000.00
Travel	2000.00	2000.00	2000.00	2000.00
Construction	2000.00	2000.00	2000.00	2000.00
Contingency	2000.00	2000.00	2000.00	2000.00
Total (No. 1)	18000.00	7000.00	7000.00	7000.00
<b>2 Historical Society of Mysore</b>				
Equipment	10000.00			10000.00
Personnel	2000.00	2000.00	2000.00	2000.00
Materials	2000.00	2000.00	2000.00	2000.00
Travel	2000.00	2000.00	2000.00	2000.00
Construction	2000.00	2000.00	2000.00	2000.00
Contingency	2000.00	2000.00	2000.00	2000.00
Total (No. 2)	18000.00	7000.00	7000.00	7000.00

**6.6 Expenditures:**

The details of the expenditure incurred for the implementation of the project at Bangalore is

**6.7 Receipts:**

The details of the receipts received for the implementation of the project at Bangalore is

**8. Head of Account:**

The Major Receipting expenditure incurred is detailed as:

10000.00	Department of Archaeology
2000.00	Historical Society - Mysore
2000.00	Historical Society - Mysore
2000.00	Historical Society - Mysore (Historical Society)
2000.00	Historical Society - Mysore
2000.00	Historical Society - Mysore
2000.00	Historical Society - Mysore

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10000.00 / 2000.00 / 2000.00 / 2000.00 / 2000.00 / 2000.00 / 2000.00

The Recurring expenditure involved is debitable to:

<b>Demand No. 87</b>	<b>Department of Biotechnology</b>
<b>3425</b>	Other Scientific Research 2019-2020
<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&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.
- g. The Non-Recurring items must be procured and installed within 18-months of the sanction of the project, failing which the PIs have to return the remaining/unutilized Non Recurring grant with 10% of Interest.
- h. In case the amount of grant-in-aid is refunded, the whole or a part amount of the grant, with an interest at 10% per annum there on shall be recovered.

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 between the grantee institutions and DBT. In case of NGO's and Private Institution's, execution of MOA is mandatory before 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.

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Joint Director (Biotech) / Joint Director (Biotech)  
Department of Biotechnology  
Ministry of Science & Technology  
Government of India, New Delhi

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- 5.No International Travel will be undertaken from the sanctioned project grant unless specified otherwise.
- 6.The Registrar, University of Mysore, Mysore, Karnataka and The Registrar, North-Eastern Hill University, Shillong, Meghalaya 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-08/2018 dated on 30 Jan 2019. 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 resources, 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.If this project works requires any Statutory Clearance (such as Ethical Committee Clearance, Informed Consent, Animal Ethics Committee Clearance, Institutional Bio-safety Committee Clearance, National Biodiversity Authority approval etc.), Project Investigator(s) and Host Institution(s) shall compulsory comply the same before undertaking such activities.
- 11.This issues under the power delegated to this Department and with the concurrence of IFD vide their SAN No.102/IFD/SAN/2348/2019-2020 dated October, 04 2019.
- 12.This sanction order has been noted at serial no. 166-167 In the Register of Grants.

*Vaishali*

(Dr. Vaishali Panjabi)  
Scientist 'E'

To,

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

श्री. वैशाली पंजाबी/Dr. VAISHALI PANJABI  
विभागीय अधिकारी/Scientist 'E'  
आनुवंशिकता एवं जीव विज्ञान विभाग/Dept. of Biotechnology  
नई दिल्ली-110 003, नई दिल्ली/110 003 New Delhi  
एन.डी.ए.डी. सं. 102/IFD/SAN/2348/2019-2020

*[Handwritten Signature]*

Copy to:

- 1 The Principal Director of Audit (Scientific Departments), DACR Building, New Delhi- 110 002.
- 2 Dr. Atanu Bhattacharjee (Project Co-ordinator), Department of Biotechnology & Bioinformatics, North Eastern Hill University, Shillong 793022, India
- 3 The Registrar, University of Mysore, Vishwavidyalaya Karyasoudha, Crawford Hall, Mysore - 570005, Karnataka
- 4 The Registrar, North-Eastern Hill University, Shillong, NEHU Permanent Campus, Shillong - 793022, Meghalaya
- 5 Dr. Atanu Bhattacharjee, Assistant Professor, Department of Biotechnology & Bioinformatics, North Eastern Hill University, Shillong - 793022, Meghalaya
- 6 Dr. Basappa Salundi, Assistant Professor, Department of Studies in Organic Chemistry, University of Mysore, Manasagangotri, Mysore - 570006, Karnataka
- 7 Dr. Mohan Dhananjaya Chakrabhavi, Assistant Professor, Department of Studies in Molecular Biology, University of Mysore, University of Mysore, Manasagangotri, Mysore - 570006, Karnataka
- 8 Dr. Shobith Rangappa, Director, Adichunchanagiri Institute for Molecular Medicine, University of Mysore, Adichunchanagiri Institute for Molecular Medicine, BG Nagara, Nagamangala Taluk, India, Mandya - 571448, Karnataka
- 9 Cash Section, DBT (2 copies).
- 10 Sanction Folder.
- 11 File Copy.

*Vaishali*

(Dr. Vaishali Panjabi)  
Scientist 'E'

DR. VAISHALI PANJABI  
SCIENTIST 'E'  
DEPARTMENT OF BIOTECHNOLOGY & BIOINFORMATICS  
NORTH EASTERN HILL UNIVERSITY, SHILLONG  
793022, MEGHALAYA

*[Handwritten signature]*

## Annexure -I

Details of the Equipment sanctioned for the implementation of the project entitled "Development of Drug-seeds that target TFF3 in mammary gastric, and hepatocellular Carcinoma":

North-Eastern Hill University, Shillong			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	Isothermal Titration Calorimeter (ITC)	1	4700000.00
<b>Total</b>			<b>4700000.00</b>
University of Mysore			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	Medicinal Chemistry-Fuming cupboards	1	150000.00
2.	Bio-safety cabinet	1	400000.00
3.	inverted microscope	1	300000.00
4.	Western-blot unit	1	650000.00
<b>Total</b>			<b>1500000.00</b>

*Valshali*

(Dr. Valshali Panjabi)  
Scientist 'E'

Dr. Valshali Panjabi, Scientist 'E',  
Department of Biochemistry,  
University of Mysore, Mysore-570002  
Karnataka, India. Email: valshali@uomysore.ac.in

*Valshali*

**Annexure -II**

Details of the manpower sanctioned for the implementation of the project entitled "Development of Drug-seeds that target TFF3 in mammary, gastric, and hepatocellular Carcinoma";

Head	No. of Position	Year I	Year II	Year III	Total (Rs.)
<b>1. University of Mysore</b>					
Junior Research Fellow (JRF @ ₹ 31,000/- + 16% HRA for the 1st & 2nd yr SRF @ ₹ 35,000/- + 16% HRA for 3rd yr)	<b>1</b>	431520	431520	487200	<b>1350240</b>
Total(Rs.)		431520	431520	487200	<b>1350240</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-08/2018 dated 30.01.2019 for JRF/SRF/RA and OM No. SR/S9/Z-05/2019 dated 21.08.2019 for all other categories.

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

VAISHALI PANJABI  
 Scientist 'E'  
 Department of Biotechnology  
 Institute of Chemical Technology  
 Maroldi, Matunga, Mumbai - 400 088