

No. BT/PR25173/NER/95/1055/2017
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
(NER-BPMC)

MED/2017/83

Block 2, 6-8th Floors
CGO Complex, Lodhi Road,
New Delhi- 110 003
Dated: 20/07/2018

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: "**Design and Synthesis of Hybrid Molecules for Multi-Drug-Resistant Tuberculosis**" for a period of 3 Year 0 Month at a total cost of Rs. **5079996** (Rupees Fifty Lakhs Seventy Nine Thousand Nine Hundred and Ninety Six Only) on the terms and conditions detailed here under:-

2 The Project :

2.1 Title : "**Design and Synthesis of Hybrid Molecules for Multi-Drug-Resistant Tuberculosis**"

2.2 Details of the Investigators:

Project Coordinator

Dr. Sajal Kumar Das

Assistant Professor

Chemical Sciences

Tezpur University

Dept. of Chemical Sciences, Tezpur University, Tezpur, Assam, 784028

Principal Investigators:

Dr. Sajal Kumar Das

Assistant Professor

Chemical Sciences

Tezpur University

Dept. of Chemical Sciences, Tezpur

University, Tezpur, Assam, 784028

Dr. Arunava Dasgupta

Senior Scientist

Microbiology

Central Drug Research Institute

Division of Microbiology

CSIR-Central Drug Research

Institute

Sector 10, Jankipuram extension,

Sitapur Road, Lucknow-226031, UP,

Lucknow, Uttar Pradesh, 226031

Mohd. Adil

CO-PI:

Dr. Sidharth Chopra
Senior Scientist
Microbiology
Central Drug Research Institute
Division of Microbiology
CSIR-Central Drug Research Institute
Sector 10, Jankipuram extension,
Sitapur Road, Lucknow-226031, UP., Lucknow -
226031, Uttar Pradesh

2.3 Objectives:

Overall Objectives:

1. With a view to discover multi- and extensively-drug-resistant anti-TB drug leads, the overall objective of this project is to synthesize several series of compounds following molecular hybridization approach which will be executed by combining the structures of preclinical anti-TB drug candidates SQ109, BM212, and NITD-304. In-vitro evaluations, hit identifications and assessment of structure activity relationships (SAR), lead optimization through synthesis of refined molecules and biological screenings are other objectives of this proposal.

Institute wise Objectives:

Central Drug Research Institute

1. To perform in vitro, ex vivo and in vivo screening of the synthesized compounds against drug-susceptible as well as drug-resistant Mtb isolates that includes activity utilizing conventional and specific media conditions.
2. To assess the cytotoxicity of the hits against Vero cells (those hits which possess MIC <1 mg/L and Selectivity index of >10, will be tested in the Intracellular killing of Mtb within macrophage/macrophage cell lines).
3. Assessment of the hits for static or cidalty (those hits which have MIC <1 mg/L, Selectivity index of >10 and cidal will be assessed in in vivo mouse models of TB infection).

Tezpur University

1. To design and synthesize hybrids of SQ109 and BM212 as effective chemotherapeutic agent for the treatment of TB and MDR-TB.
2. To design and synthesize hybrids of SQ109 and NITD-304 as effective chemotherapeutic agent for the treatment of TB and MDR-TB.
3. To design and synthesize hybrids of NITD-304 and BM212 as effective chemotherapeutic agent for the treatment of TB and MDR-TB.

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. **5079996/-** (Rupees Fifty Lakhs Seventy Nine Thousand Nine Hundred and Ninety Six Only) as per details given below :

Md. Ado

| Institute | Year I | Year II | Year III | Total Cost(Rs.) |
|------------------------------------|----------------|----------------|----------------|-----------------|
| 1. Central Drug Research Institute | 650000 | 650000 | 650000 | 1950000 |
| 2. Tezpur University | 1230000 | 930000 | 969996 | 3129996 |
| Total (Rs.) | 1880000 | 1580000 | 1619996 | 5079996 |

Institute wise details are:

| Budget Head | Year I | Year II | Year III | Total(Rs.) |
|---|-------------------|------------------|------------------|-------------------|
| 1. Tezpur University | | | | |
| Equipment | 300000.00 | | | 300000.00 |
| Manpower | 330000.00 | 330000.00 | 369996.00 | 1029996.00 |
| Contingency | 50000.00 | 50000.00 | 50000.00 | 150000.00 |
| Travel | 50000.00 | 50000.00 | 50000.00 | 150000.00 |
| Consumables | 400000.00 | 400000.00 | 400000.00 | 1200000.00 |
| Overhead | 100000.00 | 100000.00 | 100000.00 | 300000.00 |
| Total (Rs.) | 1230000.00 | 930000.00 | 969996.00 | 3129996.00 |
| 2. Central Drug Research Institute | | | | |
| Consumables | 500000.00 | 500000.00 | 500000.00 | 1500000.00 |
| Overhead | 50000.00 | 50000.00 | 50000.00 | 150000.00 |
| Contingency | 50000.00 | 50000.00 | 50000.00 | 150000.00 |
| Travel | 50000.00 | 50000.00 | 50000.00 | 150000.00 |
| Total (Rs.) | 650000.00 | 650000.00 | 650000.00 | 1950000.00 |

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:

Mohd. Adnan

| | |
|----------------------|--|
| 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.
- The NER Scientists are to be trained at the collaborating institute appropriately to empower the NER Scientists.
- 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.
- 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.

Mohd. Adil

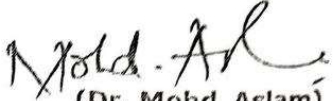
- 4.2A Memorandum of Agreement (MoA) will be signed between the Department of Biotechnology and the grantee institution on Non-Judicial stamp paper Rs. 100/- in the enclosed format and the second release/installment will be made only after signing of MoA by the grantee institutions and its acceptance 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, Central Drug Research Institute, Lucknow, Uttar Pradesh and The Registrar, Tezpur University, Tezpur, 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
10. This issues under the power delegated to this Department and with the concurrence of IFD vide their SAN No. **102/IFD/SAN/1064/2018-2019** dated **July, 11 2018**.
11. This sanction order has been noted at serial no. 118-119 in the Register of Grants.


(Dr. Mohd Aslam)
Adviser/Scientist 'G'

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 Sajal Kumar Das(Project Co-ordinator), Departmentt. of Chemical Sciences
Tezpur University
P.O.- Napaam, Tezpur
Dist-Sonitpur,
Assam-7
- 3 The Director, Central Drug Research Institute, , Lucknow - 226001, Uttar Pradesh
- 4 The Registrar, Tezpur University, Tezpur University
Napaam, Tezpur
Sonitpur, Tezpur - 784028, Assam
- 5 Dr. Arunava Dasgupta, Senior Scientist, Microbiology, Central Drug Research Institute,
Division of Microbiology
CSIR-Central Drug Research Institute
Sector 10, Jankipuram extension,
Sitapur Road, Lucknow-226031, UP, Lucknow - 226031, Uttar Pradesh
- 6 Dr. Sajal Kumar Das, Assistant Professor, Chemical Sciences, Tezpur University, Dept. of
Chemical Sciences, Tezpur University, Tezpur - 784028, Assam
- 7 Dr. Sidharth Chopra, Senior Scientist, Microbiology, Central Drug Research Institute,
Division of Microbiology
CSIR-Central Drug Research Institute
Sector 10, Jankipuram extension,
Sitapur Road, Lucknow-226031, UP., Lucknow - 226031, Uttar Pradesh
- 8 Cash Section, DBT (2 copies).
- 9 Sanction Folder.
- 10 File Copy


(Dr. Mohd Aslam)
Adviser/Scientist 'G'

Annexure -I

Details of the Equipment sanctioned for the implementation of the project titled "Design and Synthesis of Hybrid Molecules for Multi-Drug-Resistant Tuberculosis":

| Tezpur University | | | |
|-------------------|---|-----|-----------|
| SNo. | Name of Equipment | No. | Cost(Rs.) |
| 1. | Rotary Evaporator with vacuum pump, chiller and related accessories | 1 | 300000.00 |
| Total | | | 300000.00 |


(Dr. Mohd Aslam)
Adviser/Scientist 'G'