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राष्ट्रीय जालमा कुष्ठ एवं अन्य माइकोबैक्टीरियल रोग संस्थान  
NATIONAL JALMA INSTITUTE FOR LEPROSY & OTHER MYCOBACTERIAL DISEASES

(भारतीय आयुर्विज्ञान अनुसन्धान परिषद्)  
(INDIAN COUNCIL OF MEDICAL RESEARCH)

पोस्ट बॉक्स - 1101, ताजगंज, आगरा - 282001  
POST BOX - 1101, TAJGANJ, AGRA - 282001

Dr. Vimal Kumar  
B.V.Sc and AH, M.V.Sc, Ph.D  
Scientist B.  
Co- Investigator

Dr. T. Rajasekar,  
M.Sc., M.Phil., Ph.D., Scientist-C  
Principal Investigator

**Sub:** Budget allocation for the study entitled "Immune enhancement using sulfated polysaccharides isolated from marine algae (Seaweeds) against *Mycobacterium tuberculosis*"  
Reg.

Dear Sir,

Hereby, Rs 300000 has been allocated for NJIL and OMD, Agra to carry out the experiments here.

In very first release of fund for the animal experiments, I received Rs 200000/- in the form of DD to start the experiment.

 03.10.19

Dr. Vimal Kumar



# SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)

Accredited with Grade "A" By NAAC

Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119, Tamil Nadu, India.



**Cordially Invites you all for the**

**MHRD-SPARC**

**(Ministry of Human Resource Development- Scheme for  
Promotion of Academic & Research Collaborations)**



**MHRD**  
Govt. of India



**CENTRE FOR  
DRUG DISCOVERY AND DEVELOPMENT**



Scheme for Promotion of Academic and Research Collaboration



**NANYANG  
TECHNOLOGICAL  
UNIVERSITY**  
SINGAPORE

## **International Online Faculty & Student Development Programme on "Translational and Interdisciplinary research in human Diseases Management"**

**Date: 24<sup>th</sup> to 30<sup>th</sup> July 2020 , Time: 10 AM -12 PM (Indian Time)**

**For Registration : <https://forms.gle/YkcxXENKK9Bxwxho9>**

- ❖ Registered participants will receive the zoom login, Password and Detailed program
- ❖ E-certificates will be provided for the participants completing the full program

**As a Part of MHRD-SPARC Project  
"Identification of Biomarkers for the development of  
Rapid diagnostics of Pulmonary Tuberculosis by  
quantum dot bio-imaging"**

**Indian PI: Dr. Krupakar Parthasarathy  
Co-PIs: Dr. B. Sheela Rani  
Dr. K. Govindaraju & Mr. S. Anbarasu**

**Foreign PI: Prof Gerhard Grueber  
Co-PI: Dr. Shashi Bhushan**

## Eminent Speakers from Singapore



**Prof. Kini Manjunatha**

Dept. of Biological Sciences  
NUS, Singapore

Title: From toxins to Therapeutics: Nature inspired drug leads from snake venoms



**Dr. Sreekanth Rajan**

Scientist, NTU, Singapore

Title: Towards Parkinson's disease Therapeutics-A Structural Biology Perspective



**Dr. Anthony Chua**

Stratificare

Title: Bench to Beside Approaches for Dengue and CoVID-19



**Dr. M. Elavazaghan**

PrEls Biotech

Title: Redefining the Paradigms of Scientific Entrepreneurship



**Dr. M. Shaillender**

IQVIA Asia

Title: Interdisciplinary Research: Data Science, AI in Healthcare Technologies



**Dr. Goran Biukovic, NTU**

Title: High Throughput Assays for Mycobacterium tuberculosis Drug Development

## Eminent Speakers from India



**Dr. Anirban Bhunia**

Bose Institute, Kolkatta

Title: NMR and Biophysical Techniques in Drug Discovery of Type 2 Diabetes



**Dr. K. Anandhi,**

inStem, NCBS, Bangalore

Title: The Bangalore Life Science Cluster (BLiSc) Diagnostic Efforts in CoVID-19 Management



**Dr. C.S. Sripriya, MD**

MMC, VDRL, Chennai

Title: CoVID-19 Diagnostics from a Clinician Perspectives



**Dr. V. Haribalaji**

VivagenDx & DUKE-NUS

Title: CoVID-19: Virus Specific Immune Responses



**Dr. S. Seshadri**

Coordinator SIST-TBI, Chennai

Title: Importance of Interdisciplinary Research in Innovation and Commercialization



**Dr. K. G. Sreejalekshmi**

Indian Institute of Space Technology, Trivandrum

Title: Space Biosciences: The Prospective and Opportunities for Research in the Indian Contest

## PATRONS

**Dr. Mariazeena Johnson**

**Chancellor**

**Dr. Marie Johnson**

**President**

**Coordinators**

**Dr. T. Sasipraba, Vice-Chancellor**

**Dr. Wilson Aruni, Pro Vice-Chancellor**

**Dr. B. Sheela Rani, Director (Research)**

**Convener :** Dr. Krupakar Parthasarathy, Scientist-D  
Centre for Drug Discovery & Development  
Email: pkrupakar.cddd@sathyabama.ac.in

**Co-conveners :**  
Dr. K. Govindaraju  
Mr.S.Anbarasu

**Organizing Committee:** Dr. Jerrine Joseph; Dr. M. Radhakrishnan; Dr. V. Gopi Krishnan; Dr. T. Rajasekar; Dr. S. Kumaran



**National Centre for Polar and Ocean Research**  
Earth System Science Organisation  
(Ministry Of Earth Sciences, Government of India)  
Headland Sada, Goa - 403804

**Date: 05/07/2019**

**SANCTION ORDER (NCPOR/2019/ PACER-POP/ BS-08)**

Director, NCPOR, is pleased to sanction a sub-project entitled " **Diversity and distribution of culturable and non-culturable forms of marine actinobacteria and its role in Southern Ocean biogeochemistry** " to Sathyabama Institute of Science & Technology, Chennai under the Project Monitoring Committee Meeting of The Pacer Outreach Programme (POP) under The Polar Science And Cryosphere (PACER) Programme Initiative at a total cost of **Rs. 38,30,200/- (Rupees Thirty Eight Lakh Thirty Thousand and Two Hundred Only)** for a period of three years (2019-2022) on the terms and conditions detailed here under:

**1. The Project**

***PACER (POP): Diversity and distribution of culturable and non-culturable forms of marine actinobacteria and its role in Southern Ocean biogeochemistry***

**2. Implementation:**

This project will be carried out at the Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai as detailed at Annexure I. The project will be executed by Dr.M.Radhakrishnan, Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai as Principal Investigator (PI) and Dr. V. Gopikrishnan, Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai (Co-PI). The concerned PI will report about the progress to Head of the respective institution and will be responsible for implementation of the project. The time period for implementation of the project is for three years (2019-2022). The project will be initially funded for a period of one year from date of sanction. The release of funds for the subsequent years will be based upon recommendation of the duly constituted Project Monitoring Committee based on the progress of the project.

Dr. P.V. Bhaskar, Scientist D is the collaborator (Co-PI) for the project from ESSO-NCPOR.

A handwritten signature in dark ink, appearing to be 'P.V. Bhaskar', is located in the lower right quadrant of the page.



### 3. Project Objectives

1. Collection of water samples from the Indian sector of Southern Ocean and their physico-chemical characterization
2. Determination of unculturable actinobacterial diversity through metagenomic approach
3. Determination of culturable actinobacteria diversity
4. Characterization and taxonomy of actinobacterial strains isolated from Indian sector of Southern Ocean and their *ex situ* conservation

### 4. Manpower

The following manpower is sanctioned under this project.

- Junior Research fellow (01 No)
- Research Assistant (01 No)

The host institutes may follow their own guidelines in respect of the manpower engaged by them for the said project. In the absence of host institute guidelines, guidelines of DST, Government of India, should be followed.

### 5. Terms & Conditions:

- 5.1 The Principal Investigator (PI) shall be a permanent employee of the host Institution / University/ Research Laboratory/ Organization, and is expected to have sufficient exposure and prior experience in the proposed field. All basic facilities by way of accommodation, infrastructure etc. required for the project shall be provided by the host organization.
- 5.2 Project will be sanctioned for a specific period and the date of commencement of the project will be the issue of sanction order. The release of further funds will be only against the submission of (i) Audited Utilization Certificate, (ii) Audited Statement of Expenditure, (iii) List of assets acquired from the Project Grants, and (iv) Annual Progress Report.
- 5.3 Accounts should be maintained in a separate Register by controlling authority.  
This account shall be subjected to the audit and the report should be submitted periodically. If it is found expedient to keep a part or whole of the grant in bank account earning interest, the interest thus yielded should be reported to the NCPOR. This will be treated as credit to the host Institution / University / Organization and will be adjusted in the subsequent releases of



the grant by NCPOR. The final audited statement of accounts pertaining to the grant should be submitted within 3 months of the termination / completion of the project. The audited accounts shall be submitted and the unspent balance if any shall be remitted to NCPOR. The Comptroller and Auditor General of India at its discretion shall have the right to access the books and audits of the Institution / University / Organization for the grants received from NCPOR.

- 5.4 Allocation of funds for various budgetary items as sanctioned shall be adhered strictly. Any deviation either in spending the money from the sanctioned amount for each head or after the lapse of time should be spent only after obtaining the prior approval from NCPOR. No amount can be transferred from one head to other head without the prior approval of NCPOR.
- 5.5 The host Institution / University / Organization is not permitted to seek or utilize funds from any other organization (Government / Semi-Government / Autonomous or Private) for the same project.
- 5.6 Research Associates / Fellows and Technical Supporting Staff, can be appointed as per the guidelines of the concerned host institute. The project staff shall not to be treated as employees of the NCPOR. The deployment of such staff after the completion / termination of the project is not the concern / responsibility of the NCPOR.
- 5.7 The PI shall submit one hard copy and a soft copy of the annual progress report of the project by **last week of June every year** during the entire duration of the project. The review committee constituted by NCPOR will review the progress of the work and suggest measures to ensure an early realization of the results of the project. During the execution period of the project, the host Institution / University / Organization shall extend all facilities to the committee of experts who will be on inspection / review.
- 5.8 Internal Travel can be included for participation in scientific conferences / symposia / workshops etc connected with the project. **International Travel cost is not allowed out of project funds.**
- 5.9 Minor equipment not available in the nearby and expendable items to laboratory supplies and cost of computer time etc, may be proposed. However, equipment should be ordered within ninety days from the date of sanctioning of the project. Major equipments may be shared from NCPOR or collaborative institutions.
- 5.10. For permanent / semi permanent assets acquired solely or mainly out of the grant including books, furniture, etc., an audited record in the form of a register shall be maintained by the host Institution / University / Organization for the record purpose. The term Asset means (i) Immovable



property or (ii) Movable Property of a capital nature where the value exceeds Rs.10,000/-. However, the grant shall not be utilized for construction of any building. At the end of each financial year, a physical stock verification certificate together with asset details is to be provided for the assets acquired under the project grants for the audit purpose.

- 5.11. All the assets including equipment, prototype acquired or fabricated out of project funds etc, will be property of NCPOR. They will remain with the host Institution / University / Organization concerned unless or otherwise directed by NCPOR. These should not be disposed off or encumbered or utilized for any purpose other than those for which the grant is sanctioned during the project period.
- 5.12. At the conclusion of the Project, NCPOR will decide about the assets acquired under the project funding. NCPOR has the discretion to give the assets to the Institution if it considers it appropriate. The money generated out of sale proceeds of assets of NCPOR if any, shall be remitted to NCPOR account. However, the host Institution / University / Organization shall render necessary facilities for arranging the sale of assets or transfer them to other places as per the desires of NCPOR.
- 5.13. Reports / Dissertation / Thesis / Publications coming out of this research work shall be forwarded to NCPOR immediately after their release. Proper acknowledgement should be given to NCPOR and the PACER Outreach Programme (POP) Project in all publications (reports/scientific papers/review articles, etc.) emerging out of the research/activity undertaken under this project as follows:  
**"The author/authors acknowledge the financial support given by the ESSO-National Centre for Polar and Ocean Research, Ministry of Earth Sciences, under the PACER Outreach Programme (POP) Initiative, to undertake this research".**
- 5.14. The host Institution / University / Organization shall submit all drawings, source codes and technical documentations pertaining to the products of the project at any time as desired by NCPOR. The know-how generated either from the project or the receipts by way of sale of know-how, royalty, etc. will be property of NCPOR. The NCPOR may, at its discretion allow a portion of such receipts to be retained by the host organization. However, sale of know-how, collection and settling the rate of royalty etc. would be decided by the NCPOR.
- 5.15. In case of change of PI to whom the project is sanctioned, due to unforeseen circumstances, the PI shall submit an upto date status report of the project and accounts and shall hand over the same to the first Co-PI who will become PI after obtaining the necessary permission from the host organization as well as from NCPOR.



- 5.16. In case where the host organization is unable to execute or complete the work, the entire amount received in the form of a grant shall be returned to NCPOR along with penal interest. In such case the host organization shall not entrust this work, in full / partial, to any other Institution / University / Organizations for implementation.
- 5.17. NCPOR shall terminate the grant at any stage if convinced either grant of the project is not being properly utilized or work is not progressing according to the milestones.
- 5.18. The PI should submit bi-monthly progress reports (through email) having detail outcome of the project to NCPOR during the sanctioned period.
- 5.19. The PI should submit data generated through the sub-project to NCPOR at regular interval (offline or delayed time) and transmit the data in real-time/near-real time to NCPOR once the automated transmission is operational.
- 5.20. NCPOR data policy is applicable for sharing of data with users.
- 5.21. In case, where there is violation of any of these conditions for the grant, closure or dissolution of the host organization, NCPOR shall take possession of all the assets acquired under the project grants, and use them in any manner deemed appropriate or to recover from the host organization, to an extent the total value of the Project including penal interest.

## 6. Project Releases:

An amount of **Rs. 14,27,800/-** (Rupees Fourteen Lakh Twenty Seven Thousand Eight Hundred Only) will be transferred electronically in favor of The Registrar, Sathyabama Institute of Science and Technology, Chennai towards the grant-in-aid for the first year. The details of electronic transfer of funds are as follows:-

### Sathyabama Institute of Science and Technology-Chennai

- Name and Style of the Account: Sathyabama Institute of Science and Technology -Research
- Type of Account : Savings
- Account Number: 6089858032
- Bank Name: Indian Bank
- Bank Address: Jeppiaar Nagar, Rajiv Gandhi Road, Chennai -600 119, Tamil Nadu
- Bank Branch Code : 000S201
- IFSC Code: IDIB000S201



## 7. Institutional Break up of funds

***Diversity and distribution of culturable and non-culturable forms of marine actinobacteria and its role in Southern Ocean biogeochemistry (M.Radhakrishnan; Sathyabama Institute of Science & Technology)***

| Item/Details                                             | Year wise breakup for 3 years<br>(Amount in Lakhs) |                                    |                                    | Cost in INR<br>(in Lakhs) | Total in INR<br>(amount in Lakhs) |
|----------------------------------------------------------|----------------------------------------------------|------------------------------------|------------------------------------|---------------------------|-----------------------------------|
|                                                          | <b><i>Recurring Expenditure</i></b>                |                                    |                                    |                           |                                   |
| Manpower cost (rates in per months per head)             | 1 <sup>st</sup> Year<br>(In Lakhs)                 | 2 <sup>nd</sup> Year<br>(In Lakhs) | 3 <sup>rd</sup> Year<br>(In Lakhs) | Total<br>(In Lakhs)       | <b>34.82</b>                      |
| Junior Research Fellow -1 No<br>Research Assistant-1 No. | 7.23                                               | 7.23                               | 7.86                               | 22.32                     |                                   |
| Consumables                                              | 2.00                                               | 1.00                               | 0.50                               | 3.5                       |                                   |
| Travel                                                   | 0.75                                               | 0.75                               | 0.50                               | 2.00                      |                                   |
| Contingency (Metagenomic<br>sequence analysis)           | 3.00                                               | 3.00                               | 1.00                               | 7.00                      |                                   |
| <b>Total Recurring</b>                                   | <b>12.98</b>                                       | <b>11.98</b>                       | <b>9.86</b>                        | <b>34.82</b>              | <b>34.82</b>                      |
| <b>Overhead Charges (10%)</b>                            | <b>1.298</b>                                       | <b>1.198</b>                       | <b>0.986</b>                       | <b>3.482</b>              | <b>3.482</b>                      |
| <b>Total</b>                                             | <b>14.278</b>                                      | <b>13.178</b>                      | <b>10.846</b>                      | <b>38.302</b>             | <b>38.302</b>                     |
| <b>Grand Total</b>                                       | <b>14.278</b>                                      | <b>13.178</b>                      | <b>10.846</b>                      | <b>38.302</b>             | <b>38.302</b>                     |

## 8. Project Review

The progress of the project will be periodically monitored and also necessary suggestions will be provided by the Project Monitoring Committee (PMC) constituted by Director, NCPOR. The extension of the project will be based upon the satisfactory progress and recommendation of the PMC.

*CFM*



## 9. Acknowledgements by PIs

All the Principal Investigators (PI) who have obtained the financial support from the NCPOR or any of ESSO constituent units should provide the "Undertaking from the Investigators" Letter provided at Annexure-II for giving proper acknowledgements.

(S. Anoop)

Administrative Officer

To:

एस.नूप / S. Anoop  
प्रशासनिक अधिकारी / Administrative Officer  
ईएसएसओ-राष्ट्रीय एवं समुद्री अनुसंधान केंद्र  
ESSO - National Centre for Polar and Ocean Research  
(पृथ्वी विज्ञान विभाग / Ministry of Earth Sciences)  
हैदराबाद रोड, वास्को-दे-गामा / Hyderabad Road, Vasco-da-Gama  
गोवा / Goa - 403804

- 1) The Registrar, Sathyabama Institute of Science and Technology, Chennai - 600 119, Tamil Nadu
- 2) The Director, National Center for Polar and Ocean Research, Goa 403804
- 3) Dr. Rahul Mohan, POP Project Coordinator, National Center for Polar and Ocean Research, Goa
- 4) Dr. V. Gopikrishnan, Centre for Drug Discovery and Development, Sathyabama Institute of Science and Technology, Chennai - 600 119, Tamil Nadu.
- 5) Dr. P.V. Bhaskar, National Center for Polar and Ocean Research, Goa 403804
- 6) Finance Section, National Center for Polar and Ocean Research, Goa - for information



## **Annexure - I**

### **1. Participating Institutes:**

- a) Sathyabama Institute of Science and Technology, Chennai- 600119, Tamil Nadu (M.Radhakrishnan)
- b) Sathyabama Institute of Science and Technology, Chennai- 600119, Tamil Nadu (V. Gopikrishnan)
- c) ESSO-National Centre for Polar and Ocean Research (P.V. Bhaskar)

### **2. Focal Person/s and Contact Details:**

Dr. M. Radhakrishnan  
Centre for Drug Discovery and Development  
Sathyabama Institute of Science and Technology,  
Chennai – 600 119. Tamil Nadu.  
Email address: mrkactinos@gmail.com  
Mobile No: 9047513606

### **3. Annual Activity Plan (Project Proposal)**

| Objectives                                                        | Time duration [months] |      |       |       |       |       |
|-------------------------------------------------------------------|------------------------|------|-------|-------|-------|-------|
|                                                                   | 1-6                    | 7-12 | 13-18 | 19-24 | 25-30 | 31-36 |
| Sample collection & physico chemical characterization             |                        |      |       |       |       |       |
| Determination of diversity of uncultured actinobacteria           |                        |      |       |       |       |       |
| Isolation of actinobacteria & determination of cultural diversity |                        |      |       |       |       |       |
| Characterization of actinobacterial strains                       |                        |      |       |       |       |       |
| Ex situ conservation of actinobacteria                            |                        |      |       |       |       |       |

### **4. Deliverable/Output**

- Existence of cultural and uncultural Actinobacterial forms in Southern Ocean will be determined
- Taxonomic position of Actinobacteria genera will be described
- Novel Actinobacterial species (if any) will be proposed
- In house consortium of Actinobacterial forms from Southern Ocean will be developed



## **Annexure – II**

### **UNDERTAKING FROM INVESTIGATORS**

I/We agree to acknowledge the financial support given by Ministry of Earth Sciences in all publications (reports/scientific papers/review articles etc) emerging out of the research/activity undertaken under this project as per the following format

“The author/authors acknowledge the financial support by the ESSO–National Centre for Polar and Ocean Research, Ministry of Earth Sciences, under the PACER Outreach Programme (POP) initiative, to undertake this research”.

Date:

Signature of Principal Investigator  
with Official Seal

Place: