



Advertisement for Junior Research Fellows (JRFs)

 सत्यमेव जयते Govt of Gujarat	Marine BioResource Centre (MBRC) (Under Gujarat State Biotechnology Mission, DST, GoG) Room No. 52, Dhanvantri Mandir, GAU, Bedi Bandar Road Jamnagar, Gujarat - 361008	 ॥ जीवो ज्ञेयं मायम् ॥ GSBTM TRANSCRIPTING BRIGHTER BIO FUTURE
Applications are invited for six Junior Research Fellows (JRFs) in Marine BioResource Centre, Jamnagar. Last Date of Application: 30-05-2016		
<ul style="list-style-type: none"> • Application form has to reach in 6 copies, with one recent passport size photograph, Single copy of all marksheets/ certificates or any other relevant paper attached. • Please submit this Application form up to 30-05-2016 by 06:00 pm as per the prescribed PROFORMA given below. • All the Applications should reach to Marine BioResource Centre, Room No. 52, Dhanvantri Mandir, GAU, Bedi Bandar Road, Jamnagar, Gujarat – 361008 by ordinary post or speed post • Date of interview will be intimated by emails or phone to the shortlisted candidates only. 		

Name and No. of Posts	Fellowship/month	Essential qualification	Desirable Qualification
*Junior Research Fellow (6)	Rs.12000/- + HRA in case of Minimum Post graduation in Biotechnology or in any branch of life sciences/biological sciences or graduate degree professional course in Biotech/Bioinformatics OR Rs.14000/- + HRA in case of Minimum post graduation in Biotechnology or in any branch of life sciences/biological sciences or graduate degree in professional course with Biotech/Bioinformatics having 2 years of experience. OR 25,000/- + HRA in case of Minimum Post Graduation in Biotechnology/ or in any branch of Life Sciences/biological sciences with NET/GATE qualified or Post graduate degree in professional courses with Biotech/Bioinformatics. (As per DST norms)	Minimum Post graduation in Biotechnology/Biochemistry or in any branch of life sciences/biological sciences, or graduate degree in professional course in Biotech/ Bioinformatics OR Minimum Post graduation in Biotechnology /Biochemistry or any branch of life sciences/biological sciences, or graduate degree in professional course with Biotech/ Bioinformatics having 2 years of experience. OR Minimum Post graduation in Biotechnology / Biochemistry or any branch of life sciences/biological sciences with NET qualification or Graduate degree in professional course with NET qualification or Post-Graduate degree in professional courses with Biotechnology/ Bioinformatics	Knowledge and Research Experience in Molecular techniques/ Microbial techniques/ Analytical techniques/ Protein purification/ Bioinformatics

The above posts are purely temporary and will be filled on contractual basis for an initial period of 11 months, which may be extended if required after assessing the performance in case the project extends. There is no provision of re-engagement after termination of the project. The selected candidate shall have no claim for regular appointment, as the fellowship is co-terminus of respective project. No TA/DA will be paid for attending the interview. ***Candidate who is appearing in final examination is eligible to apply under Result Awaited category (as per CSIR/UGC NET norms). But He/ She has to submit a declaration as mentioned in Annexure I in Application form and submit the marksheet/certificate finally at the time of interview failing which the candidature will stand cancelled.**

A. INTRODUCTION

MBRC was established in 2009, with 1200 sqft of lab and office space got completely developed in 2010. MBRC has been attempting to cover the entire Gujarat coast with a special emphasis on the two Gulfs. This is collaborative initiative of Gujarat State Biotechnology Mission with Forest Department and Gujarat Ayurved University for using Biotechnology Application in conservation of Marine flora, fauna and microbial biodiversity. Sampling sites have been chalked out along the coast and the projects are devised accordingly. Today, MBRC has a dedicated marine bacterial bank of marine microbes from coral and mangrove ecosystems, which are being studied for various biomolecules. Studies are also being conducted on Marine and Estuarine Phytoplanktons and Mangroves. The newly approved projects are in the field of Microbiology, Biotechnology, Biochemistry, Zoology and Phytochemistry to unveil unknown marine bioresources.

B. PROJECTS

Project I: Bio Prospecting of Bio-Active Compounds produced by Mangroves of Gulf of Kachchh

i. Project Summary

Project focuses on screening and isolation of bioactive compounds from the Mangroves of Gulf of Kachchh viz. *Avicennia marina*, *Creipostagal* and *Rhizophoramucronata*. The samples will be collected from various marine environments of Gujarat coast. The screening for the bioactive compounds will be done from Leaf, Bark and Roots of the plants. The screening of the compounds will be done by extraction of the compounds in various organic solvents and their mixtures, which will be followed by chromatographic analysis of the crude extract for the identification of the compound and their anti microbial, anti diabetic and, anti malarial activities will be checked. Basic toxicity assays of the potion having bioactivity will be done. Molecule identification and structural elucidation work will be carried out.

ii. No of posts: Junior research Fellow (One)

iii. Project Duties and responsibilities of Junior Research Fellow in Bio Prospecting of Bio-Active Compounds produced by Mangroves of Gulf of Kachchh

- Extraction of bioactive molecules in different organic solvents
- Screening of these extracts for bioactive compounds
- Bioactivity against microbes and malaria parasite, along with their anti-diabetic properties.
- Conducting research on basic toxicity assays.
- Molecule Identification using various chromatographic techniques
- Further Molecule identification/ Structural Elucidation work
- Field collection
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC.

iv. Tenure of the project: Three Years (may extend for two more years)

Project II: Isolation, screening and cloning of lignolytic enzyme; laccase from marine actinomycetes isolated from mangrove rhizosphere

i. Project Summary

Project focuses on isolation of lignolytic enzymes from various actinomycetes which would be isolated mainly from the mangrove rhizospheres. The samples will be collected from various marine environments of Gujarat coast. The isolated actinomycetes will be screened for the production of Lignolytic enzymes. The screening of the lignolytic enzymes will be done by plate method using various substrates. The enzyme would be purified and would be checked for the activity using colorimetric methods. Selected isolates would be subjected to 16s rDNA gene sequencing for their identification. Once the isolates are identified, bioprocess development will be done for the highest enzyme producing strains. Whole genome studies for the best Laccase producer will be carried out. The enzyme will then be characterized using HPLC, and GC/LC-MS. In the final stage of the project stability studies of the purified enzyme shall be carried out.

ii. No. of Posts: Junior Research fellow(One)

iii. Project Duties and responsibilities of Junior Research Fellow in isolation, screening and cloning of lignolytic enzyme; laccase from marine actinomycetes isolated from mangrove rhizosphere

- Isolation of actinomycetes from Mangrove Rhizospheric soil samples from various sites of Gujarat coast (Gulf of Kachchh).
- Screening for Laccase producers using plate assay and various substrates
- Secondary screening using submerged and solid state fermentation
- Selection of the isolates showing maximum Laccase activity and their molecular identification using 16s rDNA gene amplification
- Enzyme characterization using chromatographic techniques
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC

iv. Tenure of the project: 3 Years (may extend for two more years)

Project III: Isolation of L-asparaginase (with low or no glutaminase activity) producing microorganisms from various sites of Gulf of Kachchh: Characterization of L-asparaginase from a potential isolate

i. Project Summary

Project focuses on isolation of microorganisms from various soil and water samples. The samples will be collected from various marine environments of Gujarat coast. The isolates thus obtained will be screened for L-asparaginase producing microorganisms. The screening is based on L-asparaginase plate assay. The screened isolates will then be subjected to submerged fermentation to select L-asparaginase hyper producers. Genomic DNA will be isolated from the selected isolates and will be identified using molecular tools with the aid of amplification and sequencing of 16s rDNA gene. After identifying the selected isolates next step will be to isolate l-asparaginase gene using primers designed from the gene sequences available in NCBI database. The primers will be designed using l-asparaginase gene sequences of corresponding identified microorganism/s. Once the gene is isolated then it will be cloned in a suitable vector and expressed in a suitable host. The recombinant l-asparaginase thus produced will be purified with the help of affinity chromatography. The purified recombinant l-asparaginase will then be checked for various parameters like its optimum pH, temperature, half life and its kinetic parameters such as K_m , V_{max} , K_{cat} , etc.

ii. No. of Posts: Junior Research Fellow (One)

iii. Project Duties and responsibilities of Junior Research Fellow in Isolation of L-asparaginase (with low or no glutaminase activity) producing microorganisms from various sites of Gulf of Kachchh: Characterization of L-asparaginase from a potential isolate

- To isolate microorganisms from soil samples of various sites of Gujarat coast (Gulf of Kachchh).
- To screen L-asparaginase producing isolates by L-asparaginase plate assay method.
- Identification of potent microbial candidates producing L-asparaginase using molecular techniques, 16s rDNA gene amplification.
- Characterization of L-asparaginase from selected isolate/s
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC

iv. Tenure of the project: 3 Years (may extend for two more years)

Project IV: Isolation of phytase producing microorganisms and characterization of phytase from a potential isolate

i. Project Summary

Project focuses on isolation of microorganisms from various soil and water samples. The samples will be collected from various marine environments of Gujarat coast. The isolates thus obtained will be screened for phytase producing microorganisms. The screening is based on phytase plate assay. The screened isolates will then be subjected to submerged fermentation to select phytase hyper producers. Genomic DNA will be isolated from the selected isolates and will be identified using molecular tools with the aid of amplification and sequencing of 16s rDNA gene. After identifying the selected isolates next step will be to isolate phytase gene using primers designed from the gene sequences available in NCBI database. The primers will be designed using phytase gene sequences of corresponding identified microorganism/s. Once the gene is isolated then it will be cloned in a suitable vector and expressed in a suitable host. The recombinant phytase thus produced will be purified with the help of affinity chromatography. The purified recombinant phytase will then be checked for various parameters like its optimum pH, temperature, half life and its kinetic parameters such as K_m , V_{max} , K_{cat} , etc.

ii. No. of Posts: Junior Research Fellow (One)

iii. Project Duties and responsibilities of Junior Research Fellow in Isolation of phytase producing microorganisms and characterization of phytase from a potential isolate

- To isolate microorganisms from soil samples of various sites of Gujarat coast (Gulf of Kachchh).
- To screen for Phytase producing isolates by phytase plate assay method.
- Identification of potent microbial candidates producing Phytase using molecular techniques, 16s rDNA gene amplification.
- Characterization of Phytase from selected isolate/s
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC

iv. Tenure of the project: 3 years

Project V: Studies on whole genome sequencing of *Goniopora* sp. in Gulf of Kachchh

i. Project Summary

Tropical marine ecosystem based on stony corals is one of the most productive and biodiverse system on the earth providing food and shelter for many unique and irreplaceable species. The great success of corals as ecosystem engineer might lie in their own extraordinary ecology and physiology that is based on a complex mutualistic symbiosis between dinoflagellates algae and the anthozoan animal host. A full understanding of this coral host and its symbiodinium remains elusive, particularly at the molecular level. Unfortunately, there is a pressing need to comprehend the coral system because of the global trend towards failing coral health due to mass coral bleaching. Our ability to deal directly with coral bleaching and to predict reef change is dependent on how well we understand corals across molecular, physiological and ecological scales. To address this challenge and to further corals as a model system in marine ecophysiological genomics, we have undertaken the construction and characterization of the stony coral genomes, EST and cDNA libraries, with the ultimate goal of collecting experimental field data on genome function.

ii. No. of Posts: Junior research Fellow (One)

iii. Project Duties and responsibilities of Junior Research Fellow in Studies on whole genome sequencing of *Goniopora* sp. in Gulf of Kachchh

- To assess the complete genomic DNA sequence of selected corals.
- Construct complete genetic map of the coral genome.
- Identify unknown genes by comparing with other databases of cnidarians species.
- To determine the function of individual genes.
- Field collection
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC

iv. Tenure of the Project: 3 Years (may extend for two more years)

Project VI: Studies on coral symbionts (*Symbiodinium* spp.) to understand the reef resilience in Gulf of Kachchh

i. Project Summary

Coral reefs are in rapid decline on a global scale due to human activities and a changing climate. Shallow water reefs depend on the obligatory symbiosis between the habitat forming coral host and its algal symbionts from the genus *Symbiodinium* (zooxanthellae). This association is highly sensitive to thermal perturbations and temperatures as little as 26°C above the average summer maxima can cause the breakdown of this symbiosis, termed coral bleaching. Coral assemblage may have the capacity to maintain their presence at their generic level against long term disturbance such as elevated sea surface temperatures by acclimatization through successful association with a stress tolerant *Symbiodinium* over time. Predicting the capacity of corals to survive the expected increase in seawater temperatures depends strongly on our understanding of the thermal tolerance of the symbiotic algae. The possible outcomes therefore could be that in a coral reef ecosystem thermo resilient corals host only resistance type of *Symbiodinium* sp. or only those corals that are able to host resistant *Symbiodinium* can survive. This project can hypothesize that if the *Symbiodinium* helps in resistance towards the long term warming of sea surface temperature will enable corals at the community level to survive the effects of climate change.

ii. No. of Posts: Junior Research Fellow (One)

iii. Project duties and responsibilities Junior research Fellow in Studies on coral symbionts (*Symbiodinium* sp.) to understand the reef resilience in Gulf of Kachchh

- Isolation of *Symbiodinium* algae from host corals.
- Identification of *Symbiodinium* sp. upto their clade level.
- Monitoring the response of *Symbiodinium* sp. to the environmental factors of GoK.
- Field collection
- General laboratory assigned Wet lab work
- Other relevant duties assigned and directed according to Project Coordinator and Director, MBRC.

iv. Tenure of the Project: 3 Years (may extend for two more years)

APPLICATION FORM FOR JRF

To,
The Director,
Marine BioResource Centre,
Jamnagar

Paste your
recent
passport size
photograph here
and sign across

1. Name:
2. Father/Husband/Guardian's name:
3. Date of birth (DD-MM-YYYY):
4. Age on the date of application (dd-mm-yyyy):
5. Gender: Male /Female
6. Marital Status: Married/Unmarried
7. Nationality:
8. Languages Known:

Sl. No.	Languages Known	Speak	Read	Write
1				
2				
3				

9. Permanent address with post code:

10. Current address with post code:

11. Phone number/mobile no and Email ID:

12. Qualification:

Sr. No.	Name of Examination	Subject (s)	Institute/ College	Board/ University	Percentage /Grades	Passing Year
1						
2						
3						
4						

13. Details of experience:

Sr. No.	Name of Organization	Designation	From	To	Total Period	Pay Scale (Rs.)	Nature of Duties
1							
2							
3							
4							
5							

14. Any other details

15. Please mention name of two references who are not your relative and who can certify Your work and conduct.

(1) _____ (2) _____

(Ph.): _____

(M.): _____

(Ph) _____

(M) _____

16. Tick the projects in which you have experience/interest with regard to duties and responsibilities described under the projects:

Name of the Projects	
Project I: Bio Prospecting of Bio-Active Compounds produced by Mangroves of Gulf of Kachchh	
Project II: Isolation, screening and cloning of lignolytic enzyme; laccase from marine actinomycetes isolated from mangrove rhizosphere	
Project III: Isolation of L-asparaginase (with low or no glutaminase activity) producing microorganisms from various sites of Gulf of Kachchh: Characterization of L-asparaginase from a potential isolate	
Project IV: Isolation of phytase producing microorganisms and characterization of phytase from a potential isolate	
Project V: Studies on whole genome sequencing of <i>Goniopora</i> sp. in Gulf of Kachchh	
Project VI: Studies on coral symbionts (<i>Symbiodinium</i> sp.) to understand the reef resilience in Gulf of Kachchh	

17. List of self attested (True Copy) certificates/documents attached:

I _____ solemnly declare that the particulars furnished in this application are true and correct. I clearly understand that any misstatement of fact contained herein or willful concealment of any material fact will render me liable to appropriate action as may be decided by University.

Signature of candidate

Date:

Place:

Instructions to the Applicants

1. There are six (6) positions of Junior Research Fellow. GSBTM has right to increase or decrease the number of positions without prior notice.
 2. Form received after due date will be treated as rejected and no communication will be made about the same to the candidate.
 3. If an applicant makes multiple number of applications, for a single position, then only the first application will be considered as final.
 4. **Forms incomplete in any aspect, like basic details, photograph, signature, name of the project applied for or other information, will be rejected.**
 5. **A copy of detailed Curriculum Vitae/Resume should be attached with the application, for reference of the office.**
 6. At any stage of recruitment or after recruitment if he/she is found ineligible for the position then he/she will be discontinued from the job with immediate effect.
 7. The decision of Director, MBRC shall be final and binding on the candidates, in case of any representation if is submitted.
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ANNEXURE I

Attestation (FOR “RESULT AWAITED” CATEGORY ONLY)

I certify that the information given by the candidate Shri/Smt/Kum _____
_____ has been verified by me with reference to records.

Also , this is certified that the candidate is having completed for Post Graduation in Life Science Subject or B.Tech / M.Tech or equivalent degree and is eligible to appear under ‘Result Awaited’ category as laid down in the eligibility criteria for the post of JRF.

Signature of the Head of the Dept/Institute
(With Stamp/seal)

Name:

Designation:

[Note: Attestation should be signed by the Head of the Dept. or Institution where the candidate has appeared]