



# Bharath

## INSTITUTE OF HIGHER EDUCATION AND RESEARCH

(Declared as Deemed-to-be University under section 3 of UGC Act, 1956)  
(Vide Notification No. F.9-5/2000 - U.3, Ministry of Human Resource Development, Govt. of India, dated 4<sup>th</sup> July 2002)



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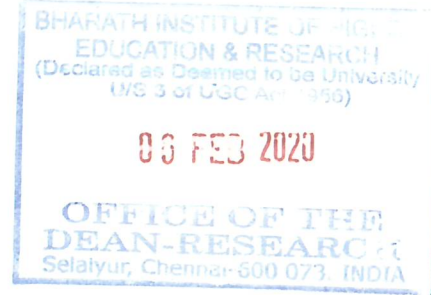
173, Agaram Road, Selaiyur, Tambaram,  
Chennai - 600 073. Tamil Nadu.

Ref. No.SMS-2018-O-09

Date: 06.02.2020

TO

Ms. T. Mohanalakshmi  
Assoc.Professor/Microbiology,  
BIHER.



Thro: Concern Head of the Department

Greetings!!!

We are happy to announce that the Research Advisory Committee has approved your proposal for Seed Money Scheme-2018 which was presented by you. You are requested to complete the proposal and send the progress report to the Dean Research in the prescribed time period.

**Title of the Project: Biochemical Investigations in Gastric Cancer Patients**

**Seed Money Amount: Rs.1, 00,000/- (Rupees One Lakh Only)**

**Approved on: 03.02.2020**

**Payment details:**

**Voucher No.64**

**Dated: 12.02.2020**

With Regards

Dean-Research

# Bharath University

SELAIYUR, CHENNAI - 600 073, TAMIL NADU, INDIA.

## CASH / PAYMENT VOUCHER

Date 12/02/2020  
V.No. 64

Debit \_\_\_\_\_ Amount \_\_\_\_\_

**Rs.**

PAID TO Dr. T. Mohanlalshani

RUPEES One Lakh Only

TOWARDS Seed Money Scheme - 2018



*[Signature]*

Authorised by

Finance Manager

Cashier/Accountant

Payee's Signature

*[Signature]*

## PROPOSAL SUBMISSION

### 1. Details of Principal Investigator

**Name** : Dr. T. Mohanalakshmi  
**Designation** : Associate Professor  
**Highest Qualifications** : Ph.D.  
**Department** : Microbiology  
**E-mail** : drpebyreddy@yahoo.com  
**Contact no** : 9849616163  
**Date of Joining** : 10.06.2014

### 2. Details of Co-Principal Investigator

**Name** : Dr. Asayas Bosco Chandra Kumar  
**Designation** : Professor  
**Highest Qualifications** : MS  
**Department** : General Surgery  
**E-mail** : asayas.journal@gmail.com  
**Contact no** : 9159819500  
**Date of Joining** : 20.08.2012

## Technical details

### 1. Introduction:

Stomach cancer is the second most common cause of cancer-related death in the world – it leads to around 800,000 deaths each year, yet it is only the fourth most commonly diagnosed cancer, with around one million people diagnosed each year [1]. Gastric cancer (GC) ranks fourth in incidence (after lung, breast and colorectal) and second in mortality (after lung cancer) among all cancers worldwide [2]. The early screening of gastric cancer is costly and opportunistic screening in outpatient service has been adopted all the way in our country, leading to early diagnosis rate lower than 10% [2]. Both genetic and environmental factors are involved in GC development [3]. Recent epidemiological and clinical investigations have evidenced the relationship between inflammation and development of gastrointestinal cancers [4, 5]. *Helicobacter pylori* infection is considered to be the leading cause of gastric mucosa inflammation [6]. Gastritis is followed by the activation of neutrophils, leukocytes, macrophages, and platelets. Long-standing inflammation promotes the stomach wall ulceration and may initiate the cancer pathway: inflammationmetaplasia- dysplasia cancer [7, 3]. Development of GC is usually asymptomatic; therefore, it is diagnosed at the advanced stage. Gastric cancer is a result of multiple factors and the detection of a single marker is often of the contradiction between specificity and sensitivity, so the combined detection of multiple markers is of great significance for the screening and diagnosis of gastric cancer [7]. Blood testing is a widely accepted method in this regard and that the combined detection of multiple tumor markers in serum has been widely used for cancer diagnosis [8]. Present study explored and analyzed the clinical value of combined detection in the blood biochemical investigations and tumor markers in screening of gastric cancer patients so as to provide strong support for accurate identification of gastric cancer prevalent population. So we designed the study aim is to detection of Tumor Markers and other Biochemical investigations in the serum.

### 2. Review of status of Research and Development in the subject

Subhash VV, Ho B. Inflammation and proliferation- a causal event of host response to *Helicobacter pylori* infection. *Microbiol*, 2015; 161; 1150-1160.

This review aims to classify developing topics for biomarkers in GC, while providing insights on potent candidates based on novel molecular classification that ultimately highlight molecular studies and clinical implementation. These findings should be useful for translating molecular classification and profiling of tumors into therapeutic targets and predictive biomarkers to achieve personalized treatment in the future. GC is a heterogeneous disease in which each cancer patient exhibits a distinct genetic and molecular profile. Unfortunately, although a numerous study has been conducted on molecular biomarkers, most of the identified biomarkers failed in the validation studies. Almost patients with advanced GC still cannot be treated with a targeted therapy and currently no diagnostic markers can be seen for secondary

prevention. For being able to use GC associated biomarkers in clinical care of patients, comprehensive review to determine the direction for identifying the precise biomarker pinpoint that can be explored for the personalized therapy.

### **2.1. International Status:**

Gastric cancer (GC) is one of the most prevalent malignant types in the world and an aggressive disease with a poor 5-year survival. This cancer is biologically and genetically heterogeneous with a poorly understood carcinogenesis at the molecular level. Although the incidence is declining, the outcome of patients with GC remains dismal. Thus, the detection at an early stage utilizing useful screening approaches, selection of an appropriate treatment plan, and effective monitoring is pivotal to reduce GC mortalities. Identification of biomarkers in a basis of clinical information and comprehensive genome analysis could improve diagnosis, prognosis, prediction of recurrence and treatment response. This review summarized the current status and approaches in GC biomarker, which could be potentially used for early diagnosis, accurate prediction of therapeutic approaches and discussed the future perspective based on the molecular classification and profiling. The measurement of conventional serum tumor biomarkers has been widely accepted in the diagnosis and prediction of recurrence in GC. However, due to their insufficient specificity and sensitivity, these molecular markers cannot be applied for early GC detection. Therefore, novel and dependable tumor biomarkers are urgently needed.

### **2.2. National Status:**

NIL

### **3. Progress/ achievement so far, if any**

- a). Reference papers was collected.
- b). Literature survey was studied.
- c). Materials and methods were designed.

### **4. Work plan**

#### **4.1 Methodology**

60 gastric cancer patients, 36 were male and 24 were female aged 43-65 years and 100 health control group, 50 males and 50 females aged 44-64 years were included in this study. The present study was conducted with the established and histopathologically confirmed gastric cancer. The blood samples (5 ml) each were collected from each patient aseptically in heparinized tubes. The samples were then centrifuged at 2000 rpm for 15 min. The plasma of the samples was then collected in sample vials and kept in the freezer till the samples are

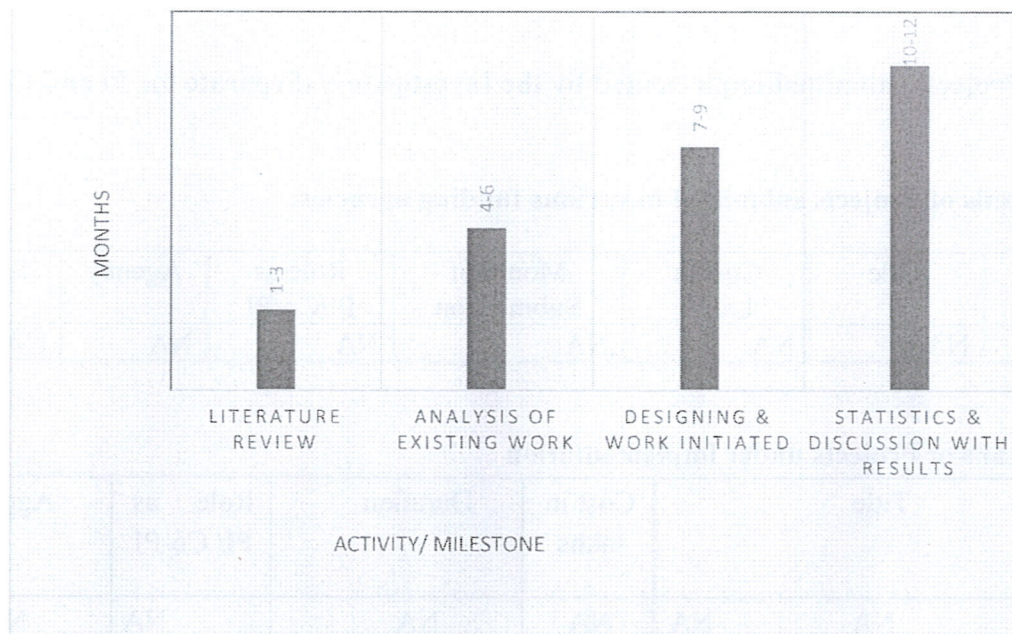
analyzed for the biochemical profile and Tumor Markers. The collected samples were analyzed for various biochemical parameters including blood sugar, total cholesterol, triglycerides, HDL-C, total protein, albumin, globulin, A:G ratio, billirubin (direct & total), creatinine, BUN, uric acid, calcium, phosphorus, cholinesterase, SGOT, SGPT, alkaline phosphatase, gamma glutamyl transferase, lactate dehydrogenase, amylase etc. All the biochemical parameters were analyzed on a fully siememns automated analyzer. Carcinoma Embryonic Antigen (CEA) and CA125 done by ELISA method.

#### Statistical Analysis

Data analysis was conducted using SPSS, version 11.5. Descriptive statistics were presented as mean [standard deviation (SD)] for quantitative data. Analysis of variance (ANOVA) was used to test the significance of the mean differences

#### 4.2 Time Schedule of activities giving milestones through BAR diagram. (Maximum of 1/2 pages)

S. No	Activity/ mile stolen	1 <sup>st</sup> Year			
		1-3 month	4-6 month	7-9 month	10-12 month
1	Literature review				
2	Analysis of existing work	-			
3	Designing & work initiated	-	-		
4	Statistics & Discussion with results	-	-	-	



#### 4.3 Expected outcome within the time period of See Money Scheme

The serum triglycerides, total cholesterol, alkaline phosphatase and CEA, CA125 and CKMB levels were higher in gastric cancer patients while the HDLCholesterol level was lowered. The combined detection in the blood biochemical investigations and tumor markers is of important reference value for screening of patients with gastric cancer and can provide the basis for early treatment of the disease. With a larger trial, we would be able to make more definitive statements regarding the importance of these biochemical parameters and the proper timing for measurement. Future mechanistic studies are therefore necessary to establish whether serum LDH is a proxy of tumour growth and severity, which explains its association to cancer survival, or whether it is also involved in early carcinogenesis. Further research is needed to help planning the follow-up strategy using these biochemical indicators.

#### 5. Suggested Plan of action stating the name of funding agency where the project will be communicated for financial support within the time period of project.

Nil

#### 6. Bibliography: Nil

Nil

## 7. List of Projects submitted/implemented by the Investigators (Separate for Pi and Co-PI)

### 7.1 Details of Projects submitted to various funding agencies:

S.No	Title	Cost in Lakhs	Month of Submission	Role as PI/Co-PI	Agency	Status
1	NA	NA	NA	NA	NA	NA

### 7.2 Details of Projects under implementation

Sl. No.	Title	Cost in lakhs	Duration	Role as PI/ Co-PI	Agency
1	NA	NA	NA	NA	NA

### 7.3 Details of Projects completed during the last 5 years

Sl. No.	Title	Cost in lakhs	Duration	Role as PI/ Co-PI	Agency
1	NA	NA NA	NA	NA	NA

## 8. List of publications published by the Investigators, if any:

### a) Principal Investigator

S. No	Author names	Title of paper	Name of Journal	Vol (Issue)	Page No.	Year
	Mahadeo Mane <sup>1</sup> , E Prabhakar Reddy <sup>2</sup> , <b>T.Mohanalakshmi</b> <sup>3</sup>	A Study of Platelet Indices in Patients with Metabolic Syndrome and Type 2 Diabetes Mellitus	Indian Journal of Public Health Research & Development	11(11)	195-202	2020
1.	E Prabhakar Reddy <sup>1*</sup> , <b>T.Mohanalakshmi</b> <sup>2</sup>	Role of Immunity: Current Status of COVID-19-A Review	Br J Med Health Res	7(10)	24-36	2020
2.	E. Prabhakar Reddy, Mahadeo Mane, T.	Triglycerides fasting or non-fasting? Current	Asian Journal of Pharmacy and	5(2)	218-226	2019

	<b>Mohanalakshmi 1* 2 3</b>	knowledge in diagnostic values	Pharmacology			
3.	<b>T Mohana Lakshmi1*</b> , BS Ravi Kiran2, P Jayakumar3, R Srikumar4, E Prabhakar Reddy5.	High Sensitive C – Reactive Protein in Hypertension and Metabolic Syndrome.	Research Journal of Pharmaceutical, Biological and Chemical Sciences	7(6)	2017-2021	2016
4.	<b>T Mohana Lakshmi 1,</b> Chidambaram2 , A Vaithialingam3 , and E Prabhakar Reddy4 *	Advantages of Stem Cell Research: Role of Medical therapy in India.	Research Journal of Pharmaceutical, Biological and Chemical Sciences	5(3)	96-99	2014
5.	E Prabhakar Reddy , <b>T.Mohana Lakshmi</b> , Shankar Manohar Pawar	Antioxidants Status in Haemodialysis Patients	Int J Biol Med Res.	3(1)	1466-1468	2012

**b). Co-Principal Investigator**

S. No	Author names	Title of paper	Name of Journal	Vol (Issue)	Page No.	Year
1.	Venkateshwaralu K.1, <b>Asayas Bosco Chandra Kumar1</b> , Rajasekaran S.1 , Balasubramainan C.2, Maheswaran K.V.1 , Murugesan1 And Baskaran	Abdominal wall scar recurrence of carcinoma cervix –A rare entity	CIBTech Journal of Surgery	3(1)	1-4	2014
2.	<b>Dr. Asayas Bosco Chandra Kumar1</b> , Dr. Vijaya Ragavan2 , Dr. Dr. Thirugananasamban dhan3, Dr. Boblee James4 ,Dr. K.V. Maheswaran5	A comparative study of the correlation of student’s self assessment of the outcome of final year M.B.B.S examination to the final university results of the final year M.B.B.S PART II general surgery examination in a medical	SAS Journal of Surgery	1(3)	119-121	2015

	, Dr.Balagurunathan6	college.				
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## 9. Budget

SI. No	Head	Amount (Rs.)
1	BP Apparatus, Stethoscopes, Body weight weighing machine, SPSS version 16 Chicago, IL, USA, ECG machine	50,000/-
2	Consumables (gels bottles, cotton, sprit, testing charges, tools, etc.)	25,000/-
3	Travel support for the purpose of research work.	10,000/-
4	Contingency	10,000/-
5	Others consumables	5,000/-
	<b>Total</b>	<b>1,00,000/-</b>

\*In case of any joint proposal for purchasing a same equipment, each of the associated PLs is also required to give separate budget (without any clubbing) to avoid any ambiguity, if all the associated projects are not awarded by committee.

## 10. Name of at least two subject experts from the Institute and one from the outside Institute with their contact details:

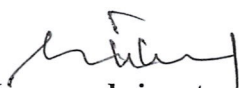
<p>1. <b>Dr. Praveen Kumar. V</b> Associate Professor in Microbiology, Chalmedha Anand Rao Institute of Medical Sciences, Karimnagar, Telanagana <b>Mobile No:</b> 8332063265 <b>E-mail id:</b> vpraveenkumar4@gmail.com</p>	<p>2. <b>Dr. Patta Appa Rao</b> Professor in Microbiology NRI Medical College, Vishakapattinam <b>Mobile No:</b> 9848766293 <b>E-mail id:</b> pattaapparao@yahoo.com</p>
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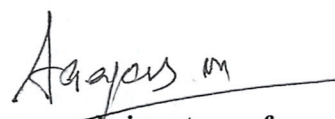
## CERTIFICATE FROM THE INVESTIGATOR

**Project Title: Biochemical Investigations in Gastric Cancer Patients**

It is certified that


1. I do hereby agree to submit a complete proposal for financial support to the external funding agency within the time period of SMS-2018.
2. I undertake that spare time on equipment procured in the project will be made available to other users.
3. I agree to submit a certificate from Institutional Biosafety Committee, if the project involves the utilization of genetically engineered organisms. I also declare that while conducting experiments, the Biosafety Guidelines of Department of Biotechnology, Department of Health Research, GOI would be followed in to.
4. I agree to submit ethical clearance certificate from the concerned ethical committee, if the project involved field trails/experiments/exchange of specimens, human & animal materials etc.
5. I agree to abide by the terms and conditions of SMS-2018, BIHER, and Chennai.

  
Name and signature of  
Principal Investigator


  
Name and signature of  
Co-Principal Investigator

**Date: 24.01.2020**

**Place: Pondicherry**

  
Forwarded by Head of the Department

Signature of the Head

  
**DEAN**  
**SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES**  
OSUDU, AGARAM VILLAGE,  
KODAPAKKAM POST,  
PUDUCHERRY - 605 502

## PROJECT EVALUATION FORMAT

### Recommendation sheet

Name of the Principal Investigator	Dr. T. Mohanalakshmi
Name of the Co-Principal Investigator	Dr. Asayas Bosco Chandra Kumar
Name of the Department	Microbiology
Title of project	Biochemical Investigations in Gastric Cancer Patients
Recommendation of the evaluation committee (Recommended/Revision/Not Recommended)	RECOMMENDED
Financial allocation recommended	Rs. 1,00,000/-

SI. No.	Head	Amount
1	BP Apparatus, Stethoscopes, Body weight weighing machine, SPSS version 16 Chicago, IL, USA, ECG machine	50,000/-
2	Consumables- Gel bottles, cotton, spirit, testing charges, tools, etc.	25,000/-
3	Travel support for the purpose of research work.	10,000/-
4	Contingency	10,000/-
5	Others consumables	5,000/-
	<b>Total</b>	<b>1,00,000/-</b>

Name and Signature of the Research Advisory Committee members with date.



(Dr. C. BALAGURUNATHAN)