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 4th July 2002)
Accredited by NAAC NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
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173, Agaram Road, Selaiyur, Tambaram,
Chennai - 600 073. Tamil Nadu.

Ref. No.SMS-2018-O-02

Date: 29.08.2019

TO

Mr. E. Prabhakar Reddy
Professor/Biochemistry,
BIHER.

BHARATH INSTITUTE OF HIGHER EDUCATION & RESEARCH
(Declared as Deemed to be University U/S 3 of UGC Act 1956)
29 AUG 2019
OFFICE OF THE DEAN-RESEARCH
Selaiyur, Chennai-600 073. INDIA

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: Oxidant and Antioxidant Status And Uric Acid In Hyper Tension, Diabetes Mellitus And Metabolic Syndrome

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

Approved on: 22.08.2019

Payment details:

Voucher No.57

Dated: 03.09.2019

With Regards

Dean-Research

Bharath University

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

CASH / PAYMENT VOUCHER

Date 03/09/2019

V.No. 57

Debit _____ Amount

Rs. 1,00,000/-

PAID TO Dr. E. Prabhakar Reddy

RUPEES One lakh only

TOWARDS Seed Money Scheme 2018

BHARATH UNIVERSITY CHENNAI 600 073. INDIA.

Authorised by **Finance Manager** **Cashier/Accountant** **Payee's Signature**

E. Prabhakar Reddy

PROPOSAL SUBMISSION

1. **Details of Principal Investigator**

Name	: Dr. E. Prabhakar Reddy
Designation	: Professor
Highest Qualifications	: Ph.D.
Department	: Biochemistry
E-mail	: drpebyreddy@gmail.com
Contact no	: 9159186879
Date of Joining	: 21.10.2009

2. **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

Technical details

1. Introduction:

Diabetes represents a major public health burden, both locally and globally. From 1985 to 2000, the number of people living with diabetes globally rose from 30 million to 171 million. Future projections have estimated the prevalence of diabetes to exceed 300 million cases by 2030, with the majority of growth occurring in developing countries. It is well known that diabetes is associated with significant morbidity and mortality. For these reasons considerable resources have been invested to improve diabetes management [1]. Diabetes is not one disease, but rather is a heterogeneous group of syndromes [2] characterized by hyperglycemia due to absolute (or) relative deficiency of insulin [3]. Diabetes mellitus (DM) is also characterized with disturbance of carbohydrate, fat, and protein metabolism, resulting from defects in insulin secretion, insulin action (or) both. When the effects of DM include long term damage, dysfunction and failure of various organs, especially the eyes, kidneys, heart and blood vessels. DM may present with characteristic symptoms such as thirst, polyuria, blurring of vision, weight loss, and polyphagia, in its most severe forms with ketoacidosis (or), nonketotic hyperosmolarity, which in the absence of effective treatment leads to stupor coma and death [4]. Free radicals are the chemical species (molecules (or) molecular fragments) that possess one (or) more unpaired electrons and have an independent existence.

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

Soltani, Zohreh et al. "Potential role of uric acid in metabolic syndrome, hypertension, kidney injury, and cardiovascular diseases: is it time for reappraisal." Current hypertension reports vol. 15,3 (2013): 175-81. doi:10.1007/s11906-013-0344-5

Since several million years ago, our early ancestors have lost the gene for uricase which converts uric acid into the soluble form, allantoin and uric acid remains as the final waste product of purine metabolism in humans.1,2 As a consequence, humans have higher uric acid levels than most other mammals having the enzyme uricase. Although definition of hyperuricemia is arbitrary, it is usually defined as a serum uric acid level greater than 7.0 mg/dl in men and greater than 6.0 mg/dl in women. This difference has been linked to the uricosuric effect of estrogens in women.3

Since uric acid has the ability to act as an antioxidant, elevated plasma uric acid concentration has been considered as a beneficial phenomenon,4 which has a compensatory role in response to increased oxidative stress in conditions such as cardiovascular disease.5 Although uric acid seems to have antioxidant activity in the extracellular environment, once it enters cells including vascular smooth muscle cells (VSMC) and adipocytes, it has detrimental effects.6,7 Injurious impacts of uric acid include an inhibitory effect on nitric oxide (NO) production8; induction of platelet aggregation9, and pro-inflammatory activity.10

Extending these observations, it has been proposed that hyperuricemia may predict the development of metabolic syndrome11, diabetes12, hypertension13, kidney disease14 and cardiovascular disorders15. These findings support the notion that elevated serum uric acid levels cannot just be viewed as a secondary phenomenon in these pathologies. However, it is still unclear whether uric acid plays a pathogenic role in the development and progression of these syndrome and diseases.

2.1. International Status:

Available data suggests that hyperuricemia may not be benign and appears to be a potential contributor to the worldwide obesity pandemic, diabetes, and kidney and cardiovascular disease states. Despite the evidence for a possible causal role of elevated serum uric acid concentration, consensus on treatment of asymptomatic hyperuricemia is lacking. We believe that it is a time for appropriate randomized controlled trials to be performed to critically determine whether treatment of asymptomatic hyperuricemia slows the development and progression of metabolic syndrome, diabetes, and kidney disease, particularly, diabetic nephropathy which is the most common cause of CKD in the United States.

2.2. National Status:

NIL

3. Progress/ achievement so far, if any

a). Reference papers was collected.
b). Materials and methods were designed
c). Proposal has been sent for ethical clearence.

4. Work plan

4.1 Methodology

The WHO criteria appear to identify a greater number of obese adults at risk for CVD. Nevertheless, the addition of an OGTT at least in nondiabetic patients with two ATPIII-defined metabolic risk factors may help to improve the association between the MS and CVD in obese adults.

Subjects

This cross-sectional study used the data from Health Survey for Prevention of HT and Type 2 Diabetes Mellitus in residents of Puducherry. We expect Four hundred participants excluding subjects with known end stage renal failure, cancer, infection and any life threatening diseases from the study.

Anthropometric and Blood Pressure Measurement

Anthropometric parameters i.e. height, weight, and BP were measured and body mass index (BMI) was calculated. Waist circumference was measured at the midpoint between the both of rib cage and the top of lateral border of iliac crest during minimal respiration. Blood pressure was measured as the mean value of at least two measurements of these participants on the same day with a Terumo digital blood pressure monitor (ES-P110). Hypertension was defined as an average BP ≥140/90 mmHg or if the participant was taking antihypertensive medications or had been diagnosed with HT.

Blood Sample Collection and Biochemical Determination

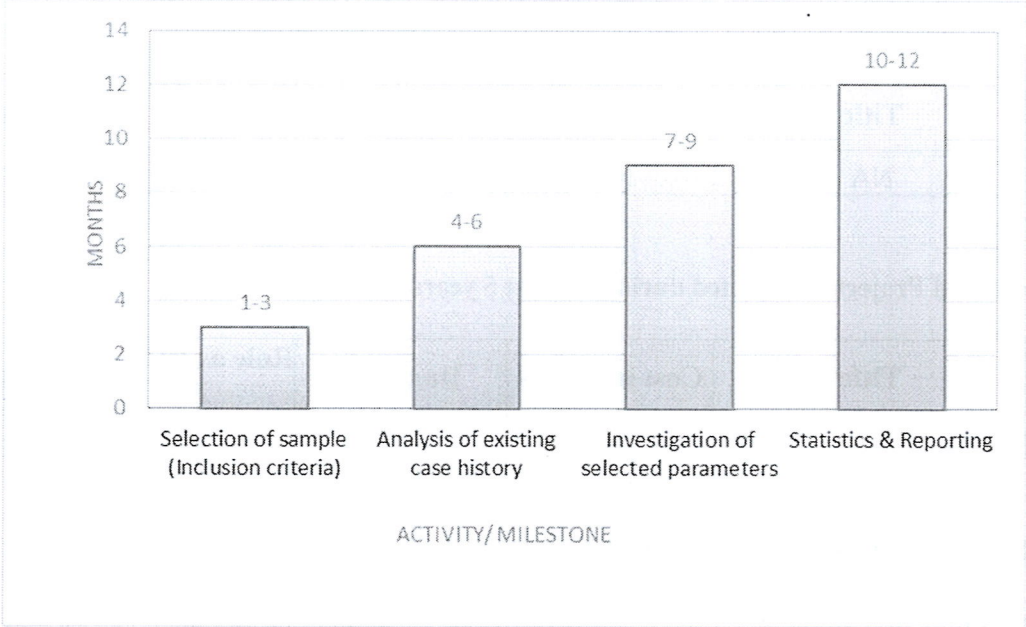
Venous blood samples were collected without stasis after a 12 h fast and a 30 min rest in a supine position. Blood specimens were processed and assayed on the central laboratory of Faculty of Allied Health Sciences on the same day. Fasting plasma glucose (Glu), Uric acid, total cholesterol (TC), triglycerides (TG), and high density lipoprotein cholesterol (HDL-C) were determined by the enzymatic methods on the Hitachi 912 autoanalyzer (Roche Diagnostic, Switzerland). Low density lipoprotein cholesterol (LDL-C) was calculated by Friedewald's equation, which is valid for TG values less than or equal to 400 mg/dl. We defined subjects as having hyperuricemia if their SUA concentration was >7.0 mg/dl (in men) or >6.0 mg/dl (in women).

Statistical analysis

Statistical analysis will be carried using Students't' test

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

S. No	Activity/ mile stolen	1st Year			
1	Selection of sample (Inclusion criteria)	**1-3 month**			
2	Analysis of existing case history	-	**4-6 month**		
3	Investigation of selected parameters	-	-	**7-9 month**	
4	Statistics & Reporting	-	-	-	**10-12 month**



4.3 Expected outcome within the time period of See Money Scheme

Our studies are applied factor analysis to investigate how the major components of the metabolic syndrome relate to each other and to the development of diabetes in a Chinese population. Our aim is to comparing the findings in women and men and in nondiabetic and diabetic participants separately.

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.	Title	Cost in	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.	Title	Cost in Lakhs	Duration	Role as PI/ Co-PI	Agency
1	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
1.	EP Reddy, TM Lakshmi, BSR Kiran, S Rani, R Srikumar	Lipid Profile Changes During Pregnancy in South Indian Population	EXECUTIVE EDITOR	9 (5)	208	2018
2.	EP Reddy, R Geetharani, KM Kumar, TM Lakshmi	Macronutrient Status in Children Aged 1-6 Years in and around Pondicherry	Indian Journal of Public Health Research & Development	9 (4)	-	2018
3.	EP Reddy, RS Kumar, S Arun, R Srikumar, R Chidambaram	A Study of Coffee Addiction in the Medical College, Engineering Students and in General Population of in and Around Pondicherry.	Indian Journal of Public Health Research & Development	9 (4)	-	2018
4.	M Maney, V Rao, **EP Reddy**, A Vaithilingam	Prolonged Storage-Induced Changes In Haematology Parameters And Stability At Room Temperature For Counting Red And White Blood Cells And Platelets	Paripex-Indian Journal Of Research	6 (3)	46-48	2017
5.	1B. Sai Ravi Kiran*, 2T. Mohana Lakshmi, 3R. Srikumar, **4E. Prabhakar Reddy**	Total Antioxidant Status and Oxidative Stress in Diabetes Mellitus and Metabolic Syndrome	International Journal of Pharmaceutical Sciences Review and Research	40(1)	271-277	2016

6.	V Kowsalya, R Vijayakumar, R Chidambaram, R Srikumar, **E Prabhakar Reddy,** S Latha, I Gayathri Fathima, C Kishor Kumar	A study on knowledge, attitude and practice regarding voluntary blood donation among medical students in Puducherry, India.	Pakistan Journal of Biological Sciences	16(9)	439-442	2013

9. Budget

SI. No	Head	Amount (Rs.)
1	Minor Equipments	50,000/-
2	Consumables (gels bottles, cotton, sprit, testing charges, tools, etc.)	30,000/-
3	Travel support for the purpose of research work	10,000/-
4	Contingency	10,000/-
	Total	**1,00,000/-**

*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:

1. **Dr. Seshadri Reddy** Assistant Professor, Dept of Biochemistry AIIMS Deoghar **Mobile No**: 8106145001 **E-mail id:** lifeschemistry@live.com	2. **Dr. Manne Munikumar** Data Manager (Bioinformatics) Clinical Division, ICMR-National Institute of Nutrition Jamai-Osmania (Post) Hyderabad-500007, Telangana **Mobile No**: 9492373997 **E-mail id:** mannemk@gmail.com

CERTIFICATE FROM THE INVESTIGATOR

Project Title: Oxidant and Antioxidant Status and Uric Acid in Hyper Tension, Diabetes Mellitus and Metabolic Syndrome.

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: 10.07.2019
Place: Pondicherry

Forwarded by Head of the Department

Signature of the Head

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

PROJECT EVALUATION FORMAT

Recommendation sheet

Name of the Principal Investigator	Dr. E. Prabhakar Reddy
Name of the Co-Principal Investigator	Dr. T. Mohanalakshmi
Name of the Department	Biochemistry
Title of project	Oxidant and Antioxidant Status and Uric Acid in Hyper Tension, Diabetes Mellitus and Metabolic Syndrome.
Recommendation of the evaluation committee (Recommended/Revision/Not Recommended)	Recommended
Financial allocation recommended	Rs. 1,00,000/-

SI. No	Head	Amount (Rs.)
1	Minor Equipments	50,000/-
2	Consumables (gels bottles, cotton, sprit, testing charges, tools, etc.)	30,000/-
3	Travel support for the purpose of research work	10,000/-
4	Contingency	10,000/-
	Total	**1,00,000/-**

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

Internal Quality Assurance Cell * SLIMS * IQAC Pondicherry-07

(Dr. G. Jayalakshmi)