

PROF. SUNIL KR. SHARMA.
DEPTT. OF CHEMISTRY

BIRAC-DBT-413

7-90 दिल्ली विश्वविद्यालय
UNIVERSITY OF DELHI

फाईल संख्या Finance III(i)
File No. 18 months

Termine : ~~11/2/2020~~ to ~~31/06/2021~~ 18/08/2021

02/06/2020 to 01/12/2021

Extended upto 1.6.2022

delhi dt. 24/11/2021



F.A. DBT.

Title. - Partially. - - -

Approach

विभाग S.A. 37.52 Lakh

Department Sanction Order No. BT/GUAR-GOM 0016/01/19
dated 19/2/20

विषय _____

Subject _____

अनुभाग _____

Section _____

Biotechnology Industry Research Assistance Council

(A Government of India Enterprise)

Date: 19th Feb 2020

UGUAR-GUM0016/01/19

Sub: Funding of Project entitled "*Partially Hydrolysed Guar Gum Based Non-ionic Amphiphiles for Biomedical and Industrial Applications: A Cleaner and Greener Bio catalytic Approach*" for funding under Guar Gum approach for transition towards a Bio-based economy (Guar Gum).

GRANT-IN-AID LETTER AGREEMENT

This Grant-in-aid Letter Agreement (hereinafter called as "GLA") is between Biotechnology Industry Research Assistance Council, a Government of India enterprise, incorporated under the Companies Act, 2013 having its office at 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi 110003 (the "BIRAC") and the Recipients mentioned below for research proposal entitled "*Partially Hydrolysed Guar Gum Based Non-ionic Amphiphiles for Biomedical and Industrial Applications: A Cleaner and Greener Bio catalytic Approach*".

1. Recipient(s) and Designated Project Investigator(s):

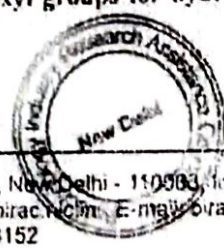
S. No.	Recipient(s)	Designated Project Investigator
1	University of Delhi, New Delhi, an Institute having its office at Department of Chemistry, University Road, North Campus Delhi-110007 hereinafter referred to as the "Institute" (which expression shall wherever the context so admits include its successors in interest, liquidators, administrators and permitted assignees).	Mr. Sunil Kumar Sharma, Professor Department of Chemistry, University of Delhi, University Road, Delhi-110007. Mob: 9818915790 Email: sk.sharma90@gmail.com

Aims & Objectives: The detailed aims and the objectives that are to be executed by the aforesaid are as per the detailed Project document, submitted including revisions / modifications incorporated therein (hereinafter called as "Project") and appended herein as **Schedule 3**. The main objectives proposed to be achieved from the project are enumerated hereunder:

- Carry out controlled depolymerisation of guar gum using biocatalyst to yield lower molecular weight polysaccharides.
- To obtain hydrophobic derivatives of guar gum by introducing short chain hydrocarbons selectively at primary hydroxyl groups by following an enzymatic transesterification approach. Characterization and study of aggregation behavior.
- To fine tune the physico-chemical properties by incorporating additional functionalities or groups at the secondary hydroxyl groups for hydrophobic guar gum derivatives and their characterization

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P. K. S. S. S.



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Phone: +91-11-24389600 Fax: +91-11-24389611 Website: www.birac.nic.in E-mail: birac.dbi@nic.in
Delhi - 110007 CIN No. : U73100DL2012NPL233152

Project Duration: The Recipients shall complete the Project within the stipulated period of 18 Months from the date of acceptance of the GLA by all the recipients. In the event the Parties affix their signatures to this GLA on separate dates, the GLA shall be effective from the date on which the last set of signature is affixed thereto ("Effective Date"). Project Duration is subject to the Change order(s) issued by the BIRAC from time to time.

Project Implementation Site: Department of Chemistry, University of Delhi, University Road, North Campus Delhi-110007.

Project Cost and Contribution: The total estimated cost of the Project is Rs. 37.52 Lakhs (Rupees Thirty Seven Lakhs and Fifty Two Thousand Only). The contribution of BIRAC is Rs. 37.52 Lakhs (Rupees Thirty Seven Lakhs and Fifty Two Thousand Only) as Grant-in-aid towards the Project. The contribution of BIRAC is Rs. 37.52 Lakhs (Rupees Thirty Seven Lakhs and Fifty Two Thousand Only) as Grant-in-aid to the University of Delhi, New Delhi (Mr. Sunil Kumar Sharma) Institute on the terms and conditions detailed in this GLA.

6. BIRAC Budget break-up:

S. No.	Details	BIRAC Support under Guar Guan to the Institute (Amount in Rs. Lakhs)
1.	Non-Recurring (A)	
	Equipment	3.10 ✓
	Accessories	0.30 ✓
	Total (A)	3.40 ✓
2.	Recurring (B)	
	Manpower	20.33
	Consumables	9.79
	Travel	1.00
	Contingency	1.50
	Outsourcing	1.50
	Total (B)	34.12
Total A + B	37.52	

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 University of Delhi
 Delhi-110007



PKS Sharma

List of Equipment Proposed To Be Acquired Through Contribution of BIRAC release under Guar Gum for University of Delhi:

S. No	Infrastructure/ Equipment	Capacity	Quantity	Specific Requirement In The Project	Estimated Value (Rs. In Lakhs)
1	Viscometer	N/A	1	To determine viscosity	0.30
2	Rotary Evaporator	N/A	1	For solvent evaporation	2.80
Total : 3.10					
Accessories To Be Acquired (Rs in Lakhs):					0.30

Milestones/Timelines

S. No.	Milestones	Month of start of activity	Month of end of activity	Required financial input (Rs. In Lakhs)
1	<ul style="list-style-type: none"> Acceptance of Undertaking under GLA And Fulfilment of fund release requirements 	00	00	17.256 (30% of BIRAC support under Guar Gum)
2	<ul style="list-style-type: none"> Product characterization in terms of molecular weight distribution, degree of polymerisation, G/M ratio, intrinsic viscosity, rheology, flow behavior and consistency index, IR spectroscopy And Submission of UC/SOE for the corresponding milestone certified by internal finance 	05	06	7.504 (20% of BIRAC support under Guar Gum)
3	<ul style="list-style-type: none"> Characterization and study of aggregation behavior of amphiphiles And Submission of UC/SOE for the corresponding milestone certified by internal finance 	11	12	7.504 (20% of BIRAC support under Guar Gum)

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Comparison with existing delivery mechanism for superiority And Submission of UC/SOE for the corresponding milestone certified by internal finance	13	17	7.504 (20% of BIRAC support under Guar Gum)
• Submission of final completion report and consolidated Utilization Certificate (UC) and Statement of Expenses (SOE) certified by internal finance.	18	18	3.752 (10% of BIRAC support under Guar Gum)

9. Periodic Payment/Release Arrangements of the project support based on milestones

Instalment	Contribution by BIRAC under Guar Gum to University of Delhi	Total (Rs. In Lakhs)
1 st	11.256	11.256
2 nd	7.504	7.504
3 rd	7.504	7.504
4 th	7.504	7.504
5 th	3.752	3.752
Total	37.52	37.52

10. ** The recipient of the fund should convey their acceptance to the terms and conditions of this GLA within four (4) weeks of the issue of GLA failing which the present offer of the funding support will be considered as in fructuous and the project will be treated as withdrawn.

11. Inclusion by Reference:

This GLA includes and incorporates by this reference:	<ul style="list-style-type: none"> - Terms and Conditions (Schedule 1) - Acceptance and Undertaking (Schedule 2) - Project document (Schedule 3) - Intellectual Property Governing Framework (Schedule 4)
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12. The Expenditure is debitable to A.05.01 (k) - Head of Accounts for the financial year 2019-20.

13. This issue with the approval of competent authority vides BFD No. BFD/AO/A.05.01(k)/0123 dated 19/02/2020 79-20

14. The GLA has been noted at Serial No. 24/P3-32 in the Register of Grant/Cost.

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