

No. BT/PR40195/BTIS/137/58/2023
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

Block 2, 6-8th Floors
CGO Complex, Lodhi Road,
New Delhi- 110 003
Dated: 06.03.2023

ORDER

Sanction of the President is hereby accorded, under Rule 18 of the Delegation of Financial Powers Rules, 1978, for the implementation of the project entitled "**National Network Project of Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi**" for a period of 5 Year 0 Month at a total cost of Rs. **17442200** (Rupees One Crores Seventy Four Lakhs Forty Two Thousand Two Hundred Only) on the terms and conditions detailed here under:-

2 The Project :

2.1 Title : "National Network Project of Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi".

2.2 Details of the Investigators:

Project Coordinator/ Principal Investigators:

Dr. Madhu Chopra

PI

Dr B.R. Ambedkar Center for Biomedical Research (ACBR)
University of Delhi, (North Campus), Delhi -110007

Principal Investigators:

Dr. Tavpritesh Sethi

Assistant Professor

Department of Computational Biology

Indraprastha Institute of Information Technology,

Okhla Industrial Estate, Phase III (Near Govind Puri Metro Station)

New Delhi- 110020

CO-PI:

Dr. Pratibha Mehta Luthra

Associate Professor

Dr B.R. Ambedkar Center for Biomedical Research (ACBR)

University of Delhi (North Campus), Delhi 110007

Prof. Daman Saluja

Professor

Dr B.R. Ambedkar Center for Biomedical Research (ACBR)

University of Delhi (North Campus) New Delhi - 110007, Delhi

Prof. Vani Brahmachari

Professor

Dr B.R. Ambedkar Center for Biomedical Research (ACBR)

University of Delhi (North Campus), Delhi – 110007

2.3 Objectives:

Overall Objectives:

1. ACBR is working in addressing human health problem through genome-based system biology approach, data mining to understand mechanism of diseases and drug discovery. Computational drug design and bioinformatics has been effectively utilized for guiding the design of novel potential drug molecules, identifying drug targets and also for guiding bench experiments, in addition to the analysis of the large amount of data available in the public domain to derive novel pathways through network analysis. Under the infectious disease area the BIF facility has been utilized for in depth understanding of drug resistance in *Neisseria gonorrhoea* and *Chlamydia trachomatis*. The BIF facility has been utilized for genome mining for novel epigenetic regulatory tool- kit of the human genome. This has yielded both novel cis-elements and also novel functions for known epigenetic modifiers. The ongoing project on understanding the epigenetic mechanisms of the genomic imprinting involves genomic tools.
2. The present proposal will cater majorly two aspects (Two broad Objectives):
 - I. Drug Design and Development.
 - II. System Biology approach through Genome Mining.
 - a. To discover new targets especially for lifestyle/complex diseases targeting epigenetic regulators and other proteins/ RNA molecules.
 - b. Identification of new targets to combat antimicrobial resistance.

Institute wise Objectives:

Dr B.R. Ambedkar Center for Biomedical Research (ACBR) :

1. Identifying druggable targets (in addition to already identified) against various diseases [specifically focussing on cervical; pancreatic and gastric cancer but not restricted to if target is broad spectrum (PI- Dr. Madhu Chopra); infections involving *Neisseria gonorrhoea*, *Chlamydia*, *Mycobacterium tuberculosis* (PI- Prof. Daman Saluja); Neurological Disorders (PI- Dr. P. M. Luthra).
2. Generation of predictive 3D-Pharmacophore models based on ligand based (e.g. HDAC1/6, CDK-1/4/6, ER, COX-2, PAD2, PARP, Topoisomerase, Telomerase, ICK, AURK etc.) and/or protein binding site (if using Novel Targets such as ICK, CUL4 etc.; validation using statistical tools and test set prediction etc.
3. Generation of Machine learning based QSAR models followed by validation using test set.
4. Virtual Library screening using above models.
5. Development of webserver ACBR_AANKALAN.
6. Lead identification through in-vitro screening of chosen compounds.
7. i. Mining genomes for novel genes involved in epigenetic regulation and other specific functional molecules.
8. Using in silico tools, attempts will be made to understand the functional significance of alternate splicing of Sin3, a major co-repressor in cancer cells.
9. Using in house generated transcriptome data from colon cancer cell lines and available RNAseq and microarray data, we will analyse the altered expression of lncRNA and its role in cancer.
10. We have in-house data on long-range interaction generated for a novel cis-element that was characterized in laboratory of Prof. Vani Brahmachari. This data will be analysed with reference to inter-chromosomal interaction.
11. Analysis of-long range analysis of interaction data in cancers and also complex diseases available in the public domain, including data from ENCODE phase II project. We can raise specific queries that are of our interest and carry our more detailed analysis.
12. We will also explore these chromatin architectures in the context of the novel epigenetic drugs that have been proposed and in some cases tested under the Drug Discovery project in the earlier phase of BIF facility at ACBR.

Indraprastha Institute of Information Technology :

1. Generation of Machine learning based QSAR models followed by validation using test set. work will be done simultaneously at ACBR and IIIT, Delhi.

2.4 Time Schedule:

The duration of the project will be 5 Year 0 Month from the issuance of first release order.

2.5 Project Cost:

The total cost of the project is Rs. **17442200/-** (Rupees One Crores Seventy Four Lakhs Fourty Two Thousand Two Hundred Only) as per details given below:

Institute	Year I	Year II	Year III	Year IV	Year V	Total Cost(Rs.)
1. Dr B.R. Ambedkar Center for Biomedical Research (ACBR)	2920160	1920160	1920160	1820160	1820160	10400800
2. Indraprastha Institute of Information Technology	4496280	661280	611280	661280	611280	7041400
Total (Rs.)	7416440	2581440	2531440	2481440	2431440	17442200

Institute wise details are:

Budget Head	Year I	Year II	Year III	Year IV	Year V	Total(Rs.)
1. Dr B.R. Ambedkar Center for Biomedical Research (ACBR), Delhi						
GIA – Capital (Non-Recurring) Equipment	1000000.00	0.00	0.00	0.00	0.00	1000000.00
GIA – General (Manpower)	1220160.00	1220160.00	1220160.00	1220160.00	1220160.00	6100800.00
*GIA – General (Recurring)	700000.00	700000.00	700000.00	600000.00	600000.00	3300000.00
Total (Rs.)	2920160.00	1920160.00	1920160.00	1820160.00	1820160.00	10400800.00
2. Indraprastha Institute of Information Technology (IIT), New Delhi						
GIA – Capital (Non-Recurring) Equipment	3885000.00	0.00	0.00	0.00	0.00	3885000.00
GIA – General (Manpower)	461280.00	461280.00	461280.00	461280.00	461280.00	2306400.00
GIA – General (Overhead)	100000.00	100000.00	100000.00	100000.00	100000.00	500000.00
*GIA – General (Recurring)	50000.00	100000.00	50000.00	100000.00	50000.00	350000.00
Total (Rs.)	4496280.00	661280.00	611280.00	661280.00	611280.00	7041400.00

*GIA – General (Recurring) includes Travel, Consumables and Contingency.

2.6 Equipment

The details of the equipment sanctioned for the implementation of the project at **Annexure-I**.

2.7 Manpower:

The details of the manpower sanctioned for the implementation of the project at **Annexure-II**.

2.8 Outcome of the Proposal.

The details of the Outcome of the Proposal at **Annexure-III**

3. Head of Account:

The **Non-Recurring** expenditure involved is debitable to:

Demand No. 90	Department of Biotechnology
3425	Other Scientific Research 2022-2023
3425.60	Others (Sub Major Head)
3425.60.200	Assistance to other Scientific Bodies
3425.60.200.29	Biotechnology Research and Development
3425.60.200.29.17	Assistance to Research and Development
3425.60.200.29.17.35	Grants for creation of capital assets

The **Recurring** expenditure involved is debitable to:

Demand No. 90	Department of Biotechnology
3425	Other Scientific Research 2022-2023
3425.60	Others (Sub Major Head)
3425.60.200	Assistance to other Scientific Bodies
3425.60.200.29	Biotechnology Research and Development
3425.60.200.29.17	Assistance to Research and Development
3425.60.200.29.17.31	Grants -in-Aid General

4. Terms & Conditions:

- 4.1A. The approval of the project is subject to condition that further release will be made only after appraisal and approval of the DBT umbrella scheme on 'Biotechnology Research & Development' by the Ministry of Finance for continuation during 15th Finance Commission.
- 4.1B. In case the whole or a part of the amount of the Grant for creation of capital assets is being refunded, an interest rate of ten percent thereon shall be recovered.
- 4.1C. The Expenditure is to be made as per the EAT module of the Government of India.
- 4.1D. Any further grant release in the project would also be subject to Utilization Certificate updates in PFMS.
- 4.1E. Quarterly deliverables in the project, in quantifiable terms have to be provided for each quarter of the project, based on which, inter-alia, monitoring/review of the project will be done and proposal for release of subsequent installment will be considered.
- 4.2 A Memorandum of Agreement (MoA) will be signed between the Department of Biotechnology and the grantee institution on Non-Judicial stamp paper Rs. 100/- in the enclosed format and the second release/installment will be made only after signing of MoA between the grantee institutions and DBT. In case of NGO's and Private Institution's, execution of MOA is mandatory before first release.
- 4.3 The Institute/Agency will keep the whole of the grant in a Bank Account earning interest, and the interest so earned should be reported to DBT in the Utilisation Certificate and Statement of Expenditure. The interest earned should be remitted to the Consolidated fund of India through Bharat Kosh portal (www.bharatkosh.gov.in) as per GFR-2017-230(8) after finalization of the account for a given Financial Year.
5. No International Travel will be undertaken from the sanctioned project.
6. The Director, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), Delhi and The Director, Indraprastha Institute of Information Technology (IIIT), New Delhi, Delhi would be responsible for submission of Statements of Expenditure (SoE), utilization certificates (UC), Assets Certificates, Manpower staffing & expenditure details in prescribed DBT formats to DBT in respect of grants released in this project from time to time.

7. As per Rule 236 (1) of GFR 2017, the accounts of all Grantee Institutions or Organizations shall be open to inspection by the sanctioning authority and audit, both by the Comptroller and Auditor General of India under the provision of CAG (DPC) Act 1971 and internal audit by the Principal Accounts Office of the Ministry or Department, whenever the Institution or Organizations is called upon to do so.
8. If the Research Project involves biological resources, the obligations under the Biological Diversity Act 2002 as applicable shall be complied with by the Project Investigator, the details of such obligations can be accessed at www.nbaindia.org.
9. (I) "The PIs/Implementing Agencies shall strictly adhere to the GoI instructions issued vide OM No.F.4.1.2021-PPD dated 30.6.2021 in the matter of issue of Global tender Enquiry with special reference to instructions contained under para 4 of the said OM for procurement of equipments, spares and consumables for research purposes and shall not issue Global Tenders Enquiries before seeking the approval of the competent authority".
- (II) "After incurring the expenditure on import of such items and at the time of submission of UCs to the department next year, the PIs will also furnish the copy of the approval sought from the competent authority for issue of the GTE for such items of import. The release of next installment of grant will be subject to the fulfillment of the above condition."
10. If any biological data as specified in the guideline are being generated in the project then PI should submit the date generated in the project to Indian Biological Data Centre in Nation repository being implemented at Regional centre for Biotechnology, Faridabad in compliance with the Biotech-PRIDE Guidelines 2021.
11. This issues, under the power delegated to this Department and with the concurrence of IFD vide their SAN No.102/IFD/SAN/1909/2022-2023 date 06.03.2023.
12. This sanction order has been noted at serial no. 63 in the Register of Grants.

(Dr. Richi V Mahajan)
Scientist 'C'

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To,

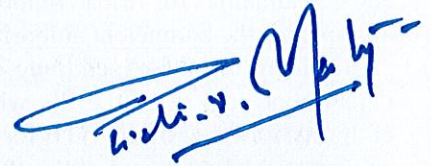
The Pay & Accounts Officer,
Department of Biotechnology,
New Delhi – 110 003.

Copy to:

- 1 The Principal Director of Audit (Scientific Departments), DACR Building, New Delhi- 110 002.
- 2 Dr. Madhu Chopra(Project Co-ordinator), Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi 110007.
- 3 The Director, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi (North Campus), Delhi-110007.
- 4 The Director, Indraprastha Institute of Information Technology (IIIT), Okhla Phase 3, New Delhi Delhi 110020, Delhi.
- 5 Dr. Madhu Chopra, PI, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi, Delhi -110007.
- 6 Dr. Pratibha Mehta Luthra, Associate Professor, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi (North Campus), Delhi 110007.
- 7 Dr. Tavpritesh Sethi, Assistant Professor, Department of Computational Biology, Indraprastha Institute

of Information Technology (IIT), Okhla Industrial Estate, Phase III, (Near Govind Puri Metro Station),
New Delhi - 110020, Delhi.

- 8 Prof. Daman Saluja, Professor, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi (North Campus), Delhi- 110007.
- 9 Prof. Vani Brahmachari, Professor, Dr B.R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi (North Campus), Delhi 110007.
- 10 CNA, NII, New Delhi
- 11 Cash Section, DBT (2 copies).
- 12 Sanction Folder.
- 13 File Copy.



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Annexure -I

Details of the Equipment sanctioned for the implementation of the project entitled "National Network Project of Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi":

Dr B.R. Ambedkar Center for Biomedical Research (ACBR), Delhi.			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	Workstations (medium)	1	1000000.00
Total			1000000.00
Indraprastha Institute of Information Technology (IIIT), New Delhi, Delhi.			
SNo.	Name of Equipment	No.	Cost(Rs.)
1.	DGX Deep Learning Server with 4 Volta GPU	1	3885000.00
Total			3885000.00

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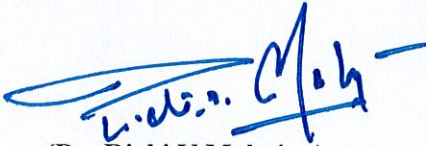
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Annexure -II

Details of the manpower sanctioned for the implementation of the project entitled "National Network Project of Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi":

Head	No. of Position	Year I	Year II	Year III	Year IV	Year V	Total (Rs.)
1. Dr B.R. Ambedkar Center for Biomedical Research (ACBR), Delhi.							
Junior Research Fellow @ 31,000 p.m.+ 24% HRA i.e. Rs. 38,440/- p.m for Ist, IInd, IIIrd, IVth & Vth Year.	2	922560	922560	922560	922560	922560	4612800
Project Assistant @ 20,000 p.m.+ 24% HRA i.e. Rs. 24,800/- p.m for Ist, IInd, IIIrd, IVth & Vth Year.	1	297600	297600	297600	297600	297600	1488000
Total(Rs.)		1220160	1220160	1220160	1220160	1220160	6100800
2. Indraprastha Institute of Information Technology (IIIT), New Delhi, Delhi.							
Junior Research Fellow @ Rs.31,000/- p.m. + 24% HRA i.e. Rs. 38,440 for Ist, IInd, IIIrd, IVth & Vth Year.	1	461280	461280	461280	461280	461280	2306400
Total(Rs.)		461280	461280	461280	461280	461280	2306400

Emoluments detail of research personal(s) mentioned in table(s) of Annexure-II shall be applicable only if candidate(s) met educational qualification and eligibility criteria as per DST OM No. SR/S9/Z-05/2019 dated 10.07.2020 and SR/S9/Z-08/2018 dated: 30.01.2019.



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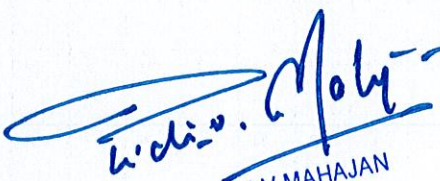
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The Outcome of Proposal are presented below:

Dr B.R. Ambedkar Center for Biomedical Research (ACBR), Delhi:

Quarter	1 st year				2 nd year				3 rd Year				4 th Year				5 th Year			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Target (T)/ Achievements (A)	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
No. of manpower supported/ trained	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
No. of female beneficiaries in the DBT funded project	0	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4	1- 4
No. of publications	0	0	1- 2	1- 2	0	0	1- 2	1- 2	0	1- 2	0	1- 2	0	2- 3	0	2- 3	1- 2	1- 2	1- 2	1- 2
Impact factor of the publication	0	0	>3	>3	0	0	>3	>3	0	>3	0	>3	0	>3	0	>3	>3	>3	>3	>3
No. of Patents filed/ granted/commercialized	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1
No. of products or technologies developed/ transferred/ commercialized (including software and databases)	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0

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Indraprastha Institute of Information Technology:

Quarter	1 st year				2 nd year				3 rd Year				4 th Year				5 th Year			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Target (T)/ Achievements (A)	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
No. of manpower supported/ trained	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
No. of female beneficiaries in the DBT funded project	0	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
No. of publications	0	0	1-2	1-2	0	0	1-2	1-2	0	1-2	0	1-2	0	2-3	0	2-3	1-2	1-2	1-2	1-2
Impact factor of the publication	0	0	>3	>3	0	0	>3	>3	0	>3	0	>3	0	>3	0	>3	>3	>3	>3	>3
No. of Patents filed/ granted/commercialized	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1
No. of products or technologies developed/ transferred/ commercialized (including software and databases)	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0

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