

**No. BT/PR6664/NNT/28/628/2012**

GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY

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

**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: "**Glutathione Appended Polymeric Nanoconstructs of Asiatic Acid for Efficacious Neuroprotection against Alzheimer's disease**" for a period of 3 Year 0 Month at a total cost of Rs. **4556800** (Rupees Fourty Five Lakhs Fifty Six Thousand Eight Hundred Only) on the terms and conditions detailed here under:-

**2 The Project :**

**2.1 Title :** "**Glutathione Appended Polymeric Nanoconstructs of Asiatic Acid for Efficacious Neuroprotection against Alzheimer's disease**"

**2.2 Details of the Investigators:**

**Dr. Sanjeev Rameshchandra Acharya**

PI

Institute of Pharmacy, Nirma  
University  
Institute of Pharmacy- Nirma

**Dr. Sanjeev Rameshchandra Acharya**

PI

Institute of Pharmacy, Nirma  
University  
Institute of Pharmacy- Nirma

**CO-PI:**

**Dr. Niyati S Acharya**

Assistant Professor

Institute of Pharmacy Nirma University  
Institute of Pharmacy- Nirma University  
Sarkhej-Gandhinagar Highway, Ahmedabad,  
Ahmedabad - 382421, Gujarat

## 2.3 Objectives:

1. To Develop glutathione appended BSA/PLA nanoparticles loaded with Asiatic acid with the concept of quality by design
2. To characterize the conjugated and prepared nanoparticles using various methods mentioned in work plan.
3. To evaluate the permeability potential of development nano formulation using in-vitro co- culture model of MDCK-MDR1 and astrocytes developed as the BBB model.
4. Toxicological study of Asiatic acid and Asiatic acid entrapped nano-constructs in normal albino mice
5. To investigate effect of Asiatic acid and its nano-construct in the streptozotocin induced rat/mouse model of dementia and assess brain (hippocampal and fronto-cortical) acetylcholinesterase activity and compare the status with available standard drugs(donepezil and memantine).
6. In vivo evaluation studies on bioavailability of Asiatic acid and glutathione conjugated polymeric nano-carriers entrapped with Asiatic acid micro-dialysis.
7. To perform in vitro mechanistic study of Asiatic acid and its nano-constructs using primary rat cortical neurons

## 2.4 Time Schedule:

The duration of the project is 3 Year 0 Month from the date of this sanction order.

## 2.5 Project Cost:

The total cost of the project is Rs. **4556800/-**(Rupees Fourty Five Lakhs Fifty Six Thousand Eight Hundred Only) as per details given below :

Budget Head	Year I	Year II	Year III	Total(Rs.)
Equipment	3000000.00			<b>3000000.00</b>
Manpower	0.00	390000.00	436800.00	<b>826800.00</b>
Contingency	50000.00	25000.00	35000.00	<b>110000.00</b>
Travel	20000.00	25000.00	25000.00	<b>70000.00</b>
Consumables	200000.00	300000.00	50000.00	<b>550000.00</b>
<b>Total (Rs.)</b>	<b>3270000.00</b>	<b>740000.00</b>	<b>546800.00</b>	<b>4556800.00</b>

## 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

## 3. Head of Account:

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

Demand No. 85	Department of Biotechnology
<b>3425</b>	Other Scientific Research 2014-2015
<b>3425.60</b>	Others (Sub Major Head)
<b>3425.60.200</b>	Assistance to other Scientific Bodies (Minor Head)
<b>3425.60.200.29</b>	Research & Development
<b>3425.60.200.29.03</b>	Basic Research & Emerging Areas
<b>3425.60.200.29.03.35</b>	Grants for creation of capital Assets

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

**Annexure -I**

Demand No. 85		Department of Biotechnology		Project titled "Glutathione Appended Polymeric Nanoconstructs of Asiatic Acid for Efficacious Neuroprotection against Alzheimer's disease"	
3425		Other Scientific Research 2014-2015			
3425.60		Institute of Pharmacy- Nirma University			
3425.60.200		Assistance to other Scientific Bodies (Minor Head)			
SNo.	Name of Equipment	No.	Head	Cost(Rs.)	
1.	High speed Homogenizer	1	Research & Development	225000.00	
2.	Lyophilizer (Labconco)	1	Basic Research & Emerging Areas	400000.00	
3.	Stereo-taxic apparatus along with microdialysis (BASi, USA)	1	Grants-in-Aid General	1450000.00	
4.	Video tracking system	1		225000.00	
4.1	Microtiter Plate reader (FL 600)	1		250000.00	
4.2	Microscope with image analysis	1		45000.00	
				<b>Total</b>	<b>3000000.00</b>

- 4.3 The other terms and conditions governing this sanction are attached at Annexure- III.
- 4.4 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 by the grantee institutions and its acceptance by DBT. In case of NGO or Private Institution, MOA signed is mandatory first release. A format of the MoA is enclosed in Annexure-IV
- 4.5 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 so earned will be treated as created to the institute/Agency and shall be adjusted towards further installment of the grant and or at the time of Final Settlement of Accounts.
- 5.No International Travel will be undertaken from the sanctioned project grant unless specified otherwise.
- 6.The Director, Institute of Pharmacy- Nirma University, Ahmedabad, Gujarat 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.PI's of DBT sponsored projects can consider appointment of JRF from Category-II merit list of DBT-BET exam so that candidates can be paid fellowships at par with NET/GATE/BET qualified candidates as per DST OM No. A.SR/S9/Z-09/2012 dated on 21 Oct 2014. However, there is no compulsion on PI's to select candidates for JRF in their projects from Category-II of DBT-BET.
- 8.As per Rule 236 (1) of GFR 2017, the accounts of all Grantee Institutions or Organisations 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 Organisation is called upon to do so.
- 9.If the Research Project involves biological resource, 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](http://www.nbaindia.org)
- 10.This issues under the power delegated to this Department and with the concurrence of IFD vide their SAN No. **102/IFD/SAN/3991/2014-2015** dated **January, 01 2015**.
- 11.This sanction order has been noted at serial no. \_\_\_\_\_ in the Register of Grants.

**(Dr. D K Tewary)**  
**Scientist 'E'**

**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 The Director, Institute of Pharmacy- Nirma University, Nirma University , Ahmedabad - 382481, Gujarat
- 3 Dr. Niyati S Acharya, Assistant Professor, Institute of Pharmacy Nirma University, Institute of Pharmacy- Nirma University, Sarkhej-Gandhinagar Highway, Ahmedabad, Ahmedabad - 382421, Gujarat
- 4 Dr. Sanjeev Rameshchandra Acharya, PI, Institute of Pharmacy, Nirma University, Institute of Pharmacy- Nirma University, Institute of Pharmacy, Nirma university, Ahmedabad - 382421, Gujarat
- 5 Cash Section, DBT (2 copies).
- 6 Sanction Folder.
- 7 File Copy.

**(Dr. D K Tewary)**  
**Scientist 'E'**

**Annexure -II**

Details of the manpower sanctioned for the implementation of the project titled "**Glutathione Appended Polymeric Nanoconstructs of Asiatic Acid for Efficacious Neuroprotection against Alzheimer's disease**":

<b>Head</b>	<b>No. of Position</b>	<b>Year I</b>	<b>Year II</b>	<b>Year III</b>	<b>Total (Rs.)</b>
Junior Research Fellow Rs. 28,000/- P.M + 30% HRA for 3rd year	1		390000.00		<b>390000.00</b>
Junior Research Fellow Rs. 28,000/- P.M + 30% HRA for 3rd year	1			436800.00	<b>436800.00</b>
<b>Total(Rs.)</b>			<b>390000.00</b>	<b>436800.00</b>	<b>826800.00</b>

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-09/2012 dated 21.10.2014.

**(Dr. D K Tewary)**  
**Scientist 'E'**