

## CERTIFICATE

It is certified that the Dissertation Report entitled “Genes, genomics, genetic engineering and future agriculture: Production of Transgenic Plants suitable for cultivation in salt-affected areas of Rajasthan” which is being submitted by SATYAPRIYA SAXENA in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University, National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



Signature of Supervisor

Professor Anil Grover  
Head  
Department of Plant Molecular Biology  
University of Delhi South Campus  
New Delhi-110021

## **CERTIFICATE**

It is certified that the Dissertation Report entitled “GENES, GENOMICS, GENETIC ENGINEERING, AND FUTURE AGRICULTURE: PRODUCTION OF TRANSGENIC PLANTS SUITABLE FOR CULTIVATION IN HEAT-AFFECTED AREAS OF RAJASTHAN” which is being submitted by Saumya Pathak in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for the award of any other degree.



**Signature of Supervisor**

**Professor Anil Grover**  
Head  
Department of Plant Molecular Biology  
University of Delhi South Campus  
New Delhi -110021

## CERTIFICATE

It is certified that the Dissertation Report entitled “**Trending Infrastructure**” which is being submitted by **Shatorupa Ghosh** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



*P. S. Sridharan*

18 Dec 2020.

Signature of Supervisor

SRIKANT SRIDHARAN  
SR. MANAGER, BIOINFORMATICS

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# क्षेत्रीय आयुर्वेदीय औषधि विकास अनुसंधान संस्थान

(केन्द्रीय आयुर्वेदीय विज्ञान अनुसंधान परिषद,  
आयुषमंत्रालय, भारत सरकार)

आमखो, ग्वालियर-474009 (म.प्र.)

**Regional Ayurveda Research Institute for Drug Development**

(Central Council for Research in Ayurvedic Sciences  
Ministry of AYUSH, Govt. of India)

**Aamkho, Gwalior-474009 (M.P.)**

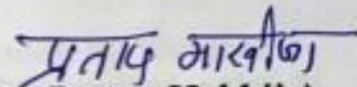
Date: 10/12/2020

## Certificate

It is certified that the Dissertation Report entitled, "**Evaluation of *in-vitro* anticrystallization and antioxidant activities of leaves of *Corbichonia decumbens* (Patharchatti)**" which is being submitted by Ms. Shefali Arya in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith, Rajasthan under supervision of Dr. Manish M. Wanjari, Research Officer (Scientist-3) at Pharmacology Division, Regional Ayurveda Research Institute for Drug Development, Gwalior.

The report is hereby forwarded for submission.

Date: 10/12/2020  
Gwalior

  
(Dr. Pratap Makhija)  
Asstt. Director I/c

## CERTIFICATE

It is certified that the Dissertation Report entitled “Identification of variation in genes that could contribute to inter-individual variability in the Conserved transcriptional response to adversity (CTRA)” which is being submitted by Ms Shourya Burnwal in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under me and my colleague Dr Arpita Konar’s supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

*Mitali Mukerji*

Signature of Supervisor

Mitali Mukerji, PhD

Chief Scientist

Genomics and Molecular Medicine

CSIR Institute of Genomics & Integrative Biology

Mathura Road, New Delhi- 110 025, INDIA

*Arpita Konar*

Signature of co-supervisor

Arpita Konar, PhD

DST-INSPIRE faculty

Institute of Genomics & Integrative Biology

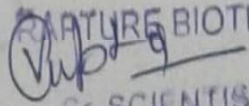
Mathura Road, New Delhi- 110 025, INDIA



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## CERTIFICATE


It is certified that the Dissertation Report entitled "**Isolation and Characterization of *Lactobacillus plantarum* and formulation of Probiotics Health Drink**" which is being submitted by **Shraddha Dubey** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapeeth (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
RAPTURE BIOTECH  
Sr. SCIENTIST  
Signature of the supervisor



## CERTIFICATE

It is certified that the Dissertation Report entitled “**IDENTIFICATION OF BACTERIA**” which is being submitted by **SHREASHI GHOSHAL (ROLL NO.- 1712239)** in partial fulfilment of the requirements for the award of the degree of **BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidhyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
Signature of Supervisor  
**Dr. Siddhartha Singha**  
Assistant Professor  
Centre for Rural Technology  
Indian Institute of Technology Guwahati  
Guwahati-781039, Assam, India

## BANARAS HINDU UNIVERSITY

**Dr. Richa Arya**  
*Assistant Professor*

Cytogenetics Laboratory  
Department of Zoology  
Varanasi 221 005

---

Tele: (0542) 2368145 (Lab); Fax : (0542) 2368457, 2368074; E-Mail: [aryaricha@bhu.ac.in](mailto:aryaricha@bhu.ac.in)

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### CERTIFICATE

It is certified that the Dissertation Report entitled “**Role of Meteorological Factors on Covid-19 pandemic in India**” which is being submitted by **Simran Sharma** in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

*Richa Arya*  
Signature of Supervisor  
**DR. RICHA ARYA**  
Assistant Professor  
Department of Zoology  
Institute of Science  
Banaras Hindu University  
Varanasi-221005





## CERIFICATE

This is to certify that research work entitled “**M98K-OPTN associated with Glaucoma and Retinal Cell Death**” submitted by Sonal Kashyap as a part of Partial fulfillment of requirements for the award of the Degree of Bachelor of Technology in Biotechnology at Center for Cellular and Molecular Biology from 23<sup>rd</sup> June 2020 to 18<sup>th</sup> December 2020 under my supervision.

This is also to certify that the above said work has not submitted previously for the award of any degree, diploma, fellowship in any Indian or foreign university.

*Sonal Kashyap*

Sonal Kashyap

Date: 18<sup>th</sup> December, 2020

*Ghanshyam Swarup*

Dr. Ghanshyam Swarup

Supervisor

Dr. GHANSHYAM SWARUP

CSIR-Centre for Cellular & Molecular Biology  
Uppal Road, Hyderabad - 500 007

# CERTIFICATE

It is certified that the Dissertation Report entitled “**In silico benchmarking of molecular diagnostic assays for CoVID-19 in the light of genetic evolution of SARS-CoV 2.**” Which is being submitted by **Sonal Kumari** in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

  
10/12/20  
Institute of Applied Bioinformatics  
Bhopal, Madhya Pradesh

## **CERTIFICATE**

It is certified that the Dissertation Report entitled “In Silico Benchmarking Of Molecular Diagnostic Assays For COVID-19 In The Light Of Genetic Evolution Of SARS-CoV2” which is being submitted by SUMAN KUMARI in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
10/12/20  
Institute of Applied Bioinformatics  
Bhopal, Madhya Pradesh

Signature of Supervisor



## HALDIRAM SNACKS PVT. LTD.

Date:- 22/12/2020

### TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. Shubhangi Tripathi** D/O **Mr. Prashant Tripathi** Student of **B.Tech (Biotechnology)** at **Banasthali Vidyapith, Jaipur** has successfully undergone industrial training from **15/07/2020** to **15/12/2020** in the **Quality Control** Department.

During training period, she was found Sincere, Hardworking and good in conduct.

We wish her success in future endeavour.

For Haldiram Snacks Pvt Ltd.

  
22/12/20

**Satish Kumar**

**Deputy Manager-HR & ADMIN**

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## CERTIFICATE

It is certified that the Dissertation Report entitled "Screening of industrial important amylase producing bacteria from the kitchen waste material and its industrial application" which is being submitted by Tripti Mittal is partial fulfillment of the requirement for the awards of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University)(National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

RAPTURE BIOTECH


Signature of Supervisor

Dr. Vinod Kumar Gupta

# Certificate

## To Whom it may concern

This is to certified that the research project entitled “Identification of Core Drug Targets For Leukemia and Their Functional Enrichmnet Using Network Biology Approches” is done by Ms. Varsha, for the award of Bachlor of Technology in Biotechnology, to the Banasthali University, is carried out under the supervision of Dr. Pramod Katara, Centre of Bioinformatics, University of Allahabad, Prayagraj-211002, India

  
(Dr. Pramod Katara)

**Dr. Pramod Katara**  
Center of Bioinformatics, IIDS  
University of Allahabad  
Allahabad-211002 (INDIA)



अंशुमान अ. खर्डेनवीस  
एम.एस.सी., पी.एच.डी.  
प्रधान वैज्ञानिक  
पर्यावरणीय जैवप्रौद्योगिकी एवं  
जिनोमिक्स प्रभाग

राष्ट्रीय  
पर्यावरण  
अभियांत्रिकी  
अनुसंधान  
संस्थान



CSIR-National  
Environmental  
Engineering  
Research  
Institute

नेहरु मार्ग  
नागपुर 440020  
भारत

Nehru Marg  
Nagpur 440 020  
INDIA



Anshuman A. Khardenavis  
M.Sc., Ph.D.  
Principal Scientist  
Environmental Biotechnology and  
Genomics Division

## **CERTIFICATE**

It is certified that the Dissertation Report entitled “**Metagenomics Insight Into Biogas Production from Different Organic Substrates**” which is being submitted by **Vishakha Bhati** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for the award of any other degree.

**Dr. Anshuman A. Khardenavis**  
Signature of Supervisor



# FACULTY OF AGRICULTURE

कृषि संकाय

चौ० चरण सिंह विश्वविद्यालय, मेरठ (उ०प्र०) भारत  
CH. CHARAN SINGH UNIVERSITY, MEERUT (U.P.) India

Prof. Shailendra S. Gaurav  
DEAN

Ref. No.

Date: 17/12/2020

## CERTIFICATE

This is to certify that the thesis entitled "*Effect of Nano-priming and Invigoration on Seed Germination and Vigor of Some Crop Seeds*" submitted for the partial fulfilment of requirement for the degree of **Bachelor of Technology in Biotechnology** of Department of Bioscience & Biotechnology, **Banasthali Vidyapith, Rajasthan** is a bona-fide dissertation work carried out by **Miss Vishakha Tyagi** under my guidance and supervision and that no part of this thesis has been submitted for any other degree or diploma.

The assistance and help received during the course of this investigation have been fully acknowledged.

*S. S. Gaurav*  
17/12/2020

**Dr. (Shailendra S. Gaurav)**  
Dean, Faculty of Agriculture  
Prof. & Ex.-Head, Department of Genetics & Plant Breeding

Prof. S. S. GAURAV  
DEAN  
Faculty of Agriculture  
Ch. Charan Singh University  
Meerut-250004 (UP) India

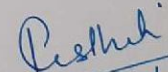


**Environmental Impact & Sustainability Division**

पर्यावरणीय प्रभाव एवं संधारणीय प्रभाग

**CERTIFICATE**

It is certified that the Dissertation Report entitled “**Estimation of GHG Footprints from Domestic Sewage in terms of Methane for Metropolitan Cities in India using IPCC Framework**” which is being submitted by Amoolya Singh in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
Supervisor 21/12/2020

Mr. M. Karthik

Principal Scientist

Environmental Impact and Sustainability Division

CSIR-NEERI, Nagpur

Scanned with CamScanner

Ph. No. 011-26412547

Email: [urmibajpai@andc.du.ac.in](mailto:urmibajpai@andc.du.ac.in)  
<https://www.andcollege.du.ac.in>



**ACHARYA NARENDRA DEV COLLEGE**  
**(UNIVERSITY OF DELHI)**  
Govindpuri, New Delhi – 110 019

Dr. Urmi Bajpai  
Associate Professor,  
Deptt. of Biomedical Science

10.12.2020

**CERTIFICATE**

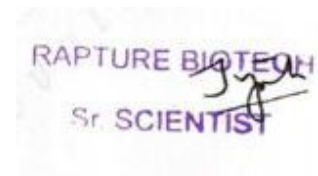
It is certified that the Dissertation Report entitled “Development of Bacteriophages and Derived Enzymes as Commercial Products” which is being submitted by Ms. Anchal Gupta in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

Dr. Urmi Bajpai  
Associate Professor  
Department of Biomedical Science  
Acharya Narendra Dev College  
Govindpuri, Kalkaji  
New Delhi-110 019

## CERTIFICATE

It is certified that the Dissertation Report entitled “*In Silico drug designing using phytochemicals for Anti-HIV therapeutics development*” which is being submitted by **Anjali Ojha** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of **Banasthali Vidyapith** (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

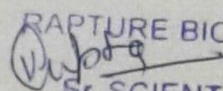


RAPTURE BIOTECH  
Sr. SCIENTIST

Signature of supervisor

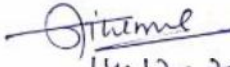
## CERTIFICATE

It is certified that the Dissertation Report entitled "Formulation and Validation of Poly Herbal Sanitizer Against Amoxicillin Resistance Bacteria" which is being submitted by **Annu Ayesha** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University of Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
RAPTURE BIOTECH  
Sr. SCIENTIST  
Signature of Supervisor

## CERTIFICATE

It is certified that the Dissertation Report entitled "Homoplasmic Mitochondrial Mutations in Uveal Melanoma" which is being submitted by Anu Dwivedi for the partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
14.12.2020

Signature of Supervisor

**Dr. TIKAM CHAND DAKAL**  
Assistant Professor  
Department of Biotechnology  
Mohania Swamiji University  
Udaipur-313001, (Raj.) India



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### CERTIFICATE

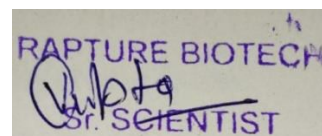
It is certified that the dissertation report entitled "Screening and characterization of probiotic Bacteria from Cabbage Pickle and Formulation of yogurt from Isolation probiotic Bacteria" which is being submitted by Anushka Johari in partial fulfilment of the required for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidhyapith (deemed university)(National university for women education) is a record of candidates own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

RAPTURE BIOTECH  
  
SCIENTIST

Signature of Supervision

## **CERTIFICATE**

It is certified that the Dissertation Report entitled “**Screening and isolation of protease producing bacteria from paneer and its application in detergent industry**” which is being submitted by **Anushka Singh** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University of Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



Signature of Supervisor

**(Dr. Vinod Kumar Gupta)**

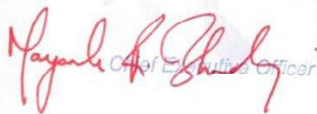
## CERTIFICATE

This is to certify that **Miss Apeksha Yadav, D/o Mr. Suresh Chandra Yadav** student of **B.Tech. in Biotechnology 7<sup>th</sup> sem, I.D. no.- 2017/1125**, from **Banasthali Vidhayapith, Rajasthan** has successfully completed her 6 months project training, from 6<sup>th</sup> July 2020 to 1<sup>st</sup> December 2020, under the guidance of Dr. Jyoti Bala in our Biotechnology Division at **NOIDA Campus** with **A+ Grade** on the topic:

**“Computer Aided and Herbal Informatics Based Drug Designing for Potential Liver Cancer Therapeutics Development”**

We wish for her bright future.

**Certificate Number:RPTN-2012/08**



For Rapture Biotech  
Chief Executive Officer

**Mr. Mayank Raj Bhardwaj**

Chief Executive Officer

**Rapture Biotech, India**





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#### CERTIFICATE

It is certified that the Dissertation Report entitled "**Computer Aided Drug Designing Approach for Anti - SARS CoV 2 Therapeutics**" which is being submitted by **Aru Singh** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University of for Women's Education ) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award or any other degree.

RAPTURE BIOTECH  
Sr. SCIENTIST

Signature of Supervisor  
Dr. Jyoti Bala  
Sr. Scientist  
Bioinformatics Division  
Rapture Biotech International Pvt. Ltd.



# FARELABS

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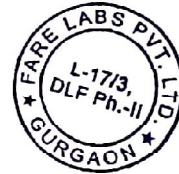
Fax : +91-124-4036038, Cell : +91-95992 21227

E-mail : farelabs@farelabs.com

Website : www.farelabs.com

### CERTIFICATE

It is certified that the Dissertation Report entitled "Real Time Detection of soya allergens in food products" which is being submitted by Avantika Kuntal in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



Signature of Supervisor

## DECLARATION

This is to certify that the work that forms the basis of this project “GENETIC DIVERSITY ANALYSIS IN MAJOR INDIAN TEA (*Camellia sinensis*) CULTIVARS USING SSR MARKERS” is an original work carried out by me and has not been submitted anywhere else for the award of any degree.

I certify that all sources of information and data are fully acknowledged in the project Dissertation.

*Ayushi*

AYUSHI CHAUDHARY

Date: 18/12/20

**CERTIFICATE**

It is certified that the Dissertation Report entitled “**PHYTOCHEMICAL AND ANTIOXIDANT SCREENING FROM ETHNO MEDICINAL PLANTS AND PREPARARION OF ANTIAGEING BIO-COSMATICS**” which is being submitted by **Ayushi Goel** in partial fulfilment of the requirements for the award of the degree of BACHLOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

RAPTURE BIOTEC.

*(Signature)*  
SCIENTIST

Signature of Supervisor

काशी हिन्दू  
विश्वविद्यालय



BANARAS HINDU  
UNIVERSITY

AN INSTITUTION OF NATIONAL IMPORTANCE ESTABLISHED BY AN ACT OF PARLIAMENT

Department of Biochemistry  
Institute of Science  
Varanasi -221005, UP, INDIA

Dr. Surya P. Singh  
Professor & Head

17 December 2020

## CERTIFICATE

It is certified that the Dissertation report entitled "Neuroprotective role of Withania Somnifera in Parkinsonian mouse model" which is being submitted by **Diksha Singh** in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed university) (National University for Women's Education) is a record of candidates own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Sign of Supervisor

आचार्य एवं विभागाध्यक्ष  
Professor & Head  
जैव रसायन विभाग  
Department of Biochemistry  
विज्ञान संस्थान  
Institute of Science  
काशी हिन्दू विश्वविद्यालय  
Banaras Hindu University  
वाराणसी-221005



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Department of Biochemistry  
Institute of Science  
Varanasi -221005, UP, INDIA

Dr. Surya P. Singh  
Professor & Head

17 December 2020

CERTIFICATE

It is certified that the Dissertation Report entitled "Effect of Chlorogenic acid on Oxidative stress and Neuroinflammation in Parkinson's disease" which is being submitted by Ms.DIVYANKA PANDEY in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

17/12/20  
आचार्य एवं विभागाध्यक्ष  
Professor & Head  
जैव रसायन विभाग  
Department of Biochemistry  
विज्ञान संस्थान  
Institute of Science  
का० हि० वि० वि०  
Banaras Hindu University  
वाराणसी-221005  
Varanasi-221005



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Cell : 9454734930; 8765054661, E-mails: ssingh35@bhu.ac.in; headbiochembhu@yahoo.com

काशी हिन्दू  
विश्वविद्यालय



BANARAS HINDU  
UNIVERSITY

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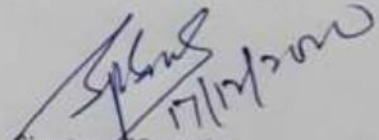
Department of Biochemistry  
Institute of Science  
Varanasi -221005, UP, INDIA

Dr. Surya P. Singh  
Professor & Head

16.12.2020

### CERTIFICATE

It is certified that the Dissertation Report entitled "**Effect of *Tinospora Cordifolia* in Neurodegenerative Disorder**" which is being submitted by **Gitanjali Singh** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidates own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
Signature of Supervisor  
अध्यक्ष एवं विभागाध्यक्ष  
Professor & Head  
जीव रसायन विभाग  
Department of Biochemistry  
विज्ञान संस्थान  
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**IGIB**  
INSTITUTE OF GENOMICS  
& INTEGRATIVE BIOLOGY  
Genomics Knowledge Partner

सीएसआईआर-जीनोमिकी और समवेत जीव विज्ञान संस्थान  
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्, भारत सरकार)  
**CSIR-Institute of Genomics & Integrative Biology**  
(COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH, GOVT. OF INDIA)

### CERTIFICATE

It is certified that the Dissertation Report entitled "IN-SILICO ANALYSIS OF PHYTOESTROGENS TARGETING TNF-alpha IN RHEUMATOID ARTHRITIS" which is being submitted by ISHITA SHARMA in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

**Sagarika Biswas, Ph.D.**  
**Sr. Principal Scientist & Professor**  
Academy of Scientific and Innovative Research  
Department of Integrative and Functional Biology  
**CSIR-Institute of Genomics & Integrative Biology**  
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Delhi-110 007 India  
Email: [sagarika.biswas@igib.res.in](mailto:sagarika.biswas@igib.res.in)  
[Sagarika.zollu@gmail.com](mailto:Sagarika.zollu@gmail.com)

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- मुख्य कार्यालय :- उत्तर परिसर, माल रोड, दिल्ली-110007  
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Telefax : 91-11-27662407-08, 27662099 • E-mail : [info@igib.res.in](mailto:info@igib.res.in) • Website : [www.igib.res.in](http://www.igib.res.in)
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SOUTH CAMPUS, MATHURA ROAD, NEW DELHI-110025 • Tel. : 26932421-23, 29879487-88



## CERTIFICATE

It is certified that the Dissertation Report entitled – “Mutation Analysis of Exon-6 in DNASE1L3 Gene Causing Systemic Lupus Erythematosus (SLE) among North Karnataka population: A Pilot Study” conducted during July 15 and December 17, 2020 which is being submitted by JANHAVI RAI in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

### Lab Supervisor



**Ms. Smita Hegde**

Senior Project Research Fellow

Karnataka Institute for DNA Research

Dharwad, Karnataka

### Guide



**Dr. Suyamindra S Kulkarni**

Scientist 'C'

Karnataka Institute for DNA Research

Dharwad, Karnataka





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(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, भारत सरकार)  
दिल्ली विश्वविद्यालय परिसर, माल रोड, दिल्ली-110007 भारत

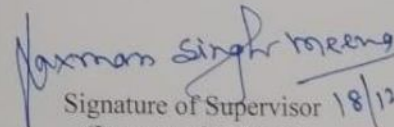
**CSIR-Institute of Genomics & Integrative Biology**  
(COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH, GOVT. OF INDIA)  
DELHI UNIVERSITY CAMPUS, MALL ROAD, DELHI-110007, INDIA

**Dr. Laxman Singh Meena, PhD**  
Senior Principal Scientist  
CSIR-Institute of Genomics and Integrative Biology  
Mall Road, Delhi-110007 (India)  
Telephone no: 011-27002200  
Fax no: 011-27667471  
Email ID: meena@igib.res.in

To whom it may concern

**CERTIFICATE**

It is certified that the Dissertation report entitled "**In silico analysis and characterization of PE\_PGRS family protein of *Mycobacterium tuberculosis* H<sub>37</sub>Rv**" which is being submitted by **Ms. Khyati Patni** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) in completion of her dissertation program during the period from July, 2020 to December, 2020 is a record candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree. She has shown keen interest in the field of Research & Development.

  
Signature of Supervisor 18/12/2020  
(**Laxman S. Meena**)  
(Senior Principal Scientist)

2020-21

**CERTIFICATE**

It is certified that the Dissertation Report entitled "Emerging Role of Mycobacteriophages in Tuberculosis" which is being submitted by Kriti Gupta in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



Supervisor

Dr. Urmi Bajpai

Associate Professor

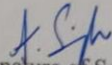
Department of Biomedical Science

Acharya Narendra Dev College

Dr. Urmi Bajpai  
Associate Professor  
Department of Biomedical Science  
Acharya Narendra Dev College  
Govindpuri, Kalkaji  
New Delhi-110 015

CERTIFICATE

It is certified that the Dissertation Report entitled "Filarial Immunology" which is being submitted by Manisha Mishra in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree

  
Signature of Supervisor

Dr. Anchal Singh/डॉ० अंचल सिंह  
Assistant Professor/असिस्टेंट प्रोफेसर  
Deptt. of Biochemistry/जैवरासायन विभाग  
Institute of Sciences/विज्ञान संस्थान  
Banaras Hindu University/बनारस हिन्दू विश्वविद्यालय

**CERTIFICATE**

It is certified that the Dissertation Report entitled "Microbiological analysis of pharmaceutical drugs" which is being submitted by Ms.Mannat Gehlawat in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

*P. Patel*  
18/12/2020  
Signature of Supervisor



Ph. No. 011-2641254

Email: [urmibajpai@andc.du.ac.in](mailto:urmibajpai@andc.du.ac.in)  
<https://www.andcollege.du.ac.in>



**ACHARYA NARENDRA DEV COLLEGE**  
(UNIVERSITY OF DELHI)  
Govindpuri, New Delhi – 110 019

Dr. Urmi Bajpai  
Associate Professor,  
Deptt. of Biomedical Science

10.12.2020

**CERTIFICATE**

It is certified that the Dissertation Report entitled “Investigating receptor binding proteins in mycobacteriophages” which is being submitted by Megha Baghel in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

Dr. Urmi Bajpai  
Associate Professor  
Department of Biomedical Science  
Acharya Narendra Dev College  
Govindpuri, Kalkaji  
New Delhi-110 019

[Type text]

## BANARAS HINDU UNIVERSITY

**Dr. Richa Arya**  
*Assistant Professor*

Cytogenetics Laboratory  
Department of Zoology  
Varanasi 221 005

-----  
Tele: (0542) 2368145 (Lab); Fax : (0542) 2368157, 2368074; E-Mail: [aryaricha@bhu.ac.in](mailto:aryaricha@bhu.ac.in)

### CERTIFICATE

It is certified that the Dissertation Report entitled “Ashwagandha and Giloy for the prevention and treatment of COVID-19” which is being submitted by Muskan Jain in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



Signature of Supervisor

**DR. RICHA ARYA**  
Assistant Professor  
Department of Zoology  
Institute of Science  
Banaras Hindu University  
Varanasi-221005

काशी हिन्दू  
विश्वविद्यालय



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Department of Biochemistry  
Institute of Science  
Varanasi -221005, UP, INDIA

Dr. Surya P. Singh  
Professor & Head

15 Dec. 2020

**CERTIFICATE**

It is certified that dissertation report entitled "Role Of Ursolic Acid In Neurodegenerative Disorder" which is being submitted by Nancy Keshri in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
Signature  
15/12/2020



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Cell : 9454734930; 8765054661, E-mails: ssingh35@bhu.ac.in; headbiochembhu@yahoo.com



## CERTIFICATE

It is certified that the Dissertation Report entitled “**Comparative Metagenomics for Exploration of Antibiotic Resistance Determinants in Gut Microbiome**” which is being submitted by **NITYA MAHESHWARI** in partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



श्री. निशांत अ. दाफले / Dr. Nishant A. Dafale  
सीनियर वैज्ञानिक / Senior Scientist  
पर्यावरणीय बैक्टीरियोलॉजी व जीनोमिक्स विभाग  
Environmental Bacteriology & Genomics Division  
सी.एस.ई.आर. - राष्ट्रीय पर्यावरण अभियंता संस्थान  
CSR-National Environmental Engineering Research Institute  
नेहरू मार्ग, नागपुर-440 020 / Nehru Marg, Nagpur-440 020, India

(Nishant A. Dafale)  
**Signature of Supervisor**

काशी हिन्दू  
विश्वविद्यालय



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Department of Biochemistry  
Institute of Science  
Varanasi -221005, UP, INDIA

Dr. Surya P. Singh  
Professor & Head

17 December 2020

CERTIFICATE

It is certified that the Dissertation Report entitled "**Role of Epigenetics of Immunomodulation of Parkinson's Disease by Mucuna Pruriens**" which is being submitted by **PRAKRITI PRASAD** in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

आचार्य एवं विभागाध्यक्ष  
Professor & Head  
जैव रसायन विभाग  
Department of Biochemistry  
विज्ञान संस्थान  
Institute of Science  
का० हि० वि० वि०  
Banaras Hindu University  
वाराणसी-221005



Cell : 9454734930; 8765054661, E-mails: [ssingh35@bhu.ac.in](mailto:ssingh35@bhu.ac.in); [headbiochembhu@yahoo.com](mailto:headbiochembhu@yahoo.com)

## CERTIFICATE

It is certified that the Dissertation Report entitled "Biological & Pharmacological Prediction of Some Phytochemicals against SARS-CoV-2" which is being submitted by Priyanka Kumari in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.



14-12-2020

Signature of Supervisor

**Dr. TIKAM CHAND DAKAL**  
Assistant Professor  
Department of Biotechnology  
Mohanlal Sukhadia University  
Udaipur-313001, (Raj.) India

## CERTIFICATE

This is to certify that **Miss Rashmi Kumari**, D/o **Mr. Ranjeet Singh** student of **Bachelor of Technology in Biotechnology, 7<sup>th</sup> Semester**, from **Banasthali Vidyapith, Newai, Rajasthan** has successfully completed her **Review Paper Publication work**, from **1<sup>st</sup> July 2020 to 1<sup>st</sup> December 2020**, under the guidance of **Dr. Vinod kumar Gupta** in our **Biotechnology Division at NOIDA Campus** with **A+ Grade** on the topic:

**“Stem Cell Therapy”**

We wish for her bright future.

**Certificate Number:RPTN-2011/20**

For **RAPTURE BIOTECH**  
  
*Chief Executive Officer*

**Mr. Mayank Raj Bhardwaj**

Chief Executive Officer

**Rapture Biotech, India**

## CERTIFICATE

It is certified that the Dissertation Report entitled "Gut Processing" which is being submitted by RIYA JOSHI in partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University, National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

Dr. Siddhartha Singha  
Assistant Professor  
Centre for Rural Technology  
Indian Institute of Technology Guwahati  
Guwahati-781039, Assam, India

### CERTIFICATE

This is to certify that **Miss. Riya Vashishtha**, D/o **Mr. Santosh Kumar** student of **B.Tech. in Biotechnology 7<sup>th</sup> sem**, from **Banasthali Vidhyapith, Jaipur** has successfully completed her 6 month project training, from 6<sup>th</sup> July 2020 to 1<sup>st</sup> December 2020, under the guidance of **Dr. Jyoti Bala** in our **Bioinformatics Division** at **NOIDA Campus** with **A+ Grade** on the topic:

**"Genomics and Proteomics Studies of SARS CoV2 for In Silico Drug Designing"**

We wish for her bright future.

Certificate Number:RPTN-2012/11



Mr. Mayank Raj Bhardwaj  
Chief Executive Officer

**Mr. Mayank Raj Bhardwaj**

Chief Executive Officer

**Rapture Biotech, India**



## CERTIFICATE

It is certified that the Dissertation Report entitled “**PREDICTIVE MICROBIOLOG**” which is being submitted by **SAKSHI GUPTA** in partial fulfillment of the requirements for the award of the degree of **BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (Deemed University) (National University for Women’s Education) is a record of candidate’s own work carried out by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of Supervisor

**Dr. Siddhartha Singha**  
Assistant Professor  
Centre for Rural Technology  
Indian Institute of Technology Guwahati  
Guwahati-781039, Assam, India

A PROJECT REPORT ON

**“Design and optimization of universal PCR primers using bioinformatics and molecular approaches for detection of human malaria causing pathogens”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Bachelor of  
Technology

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Saloni Sikka**

Under the Guidance of

**Abhinav Sinha**

**Scientist-E**

**ICMR-NIMR,**

New Delhi, 110077

Year of Submission

**2020**