



## Final Award Letter

04/01/2019

The British High Commission, New Delhi, India

Chevening Reference: INV-2018-5502

Dr. Suphiya Khan

104 Ramkrishan Nivas Banasthali Vidyapith  
Tonk Rajasthan 304022  
India

Dear Dr. Khan

### Chevening Fellowship

I have pleasure in confirming your Chevening Research, Science and Innovation Programme Fellowship at the University of Oxford. Your Chevening Fellowship will start on 23/04/2019 and will continue until the completion of your fellowship or 28/06/2019, whichever is earlier.

Your Chevening Fellowship will be administered by the Chevening Secretariat (the Secretariat) on behalf of the Foreign and Commonwealth Office (FCO) and is offered on the terms and conditions which can be accessed here: <http://www.chevening.org/fellows/terms-conditions>

The FCO reserves the right to change the terms and conditions at any time. Failure to comply with the terms and conditions may result in repayment of the award in full. Your fellowship may be withdrawn if we find that there are significant errors or omissions in the information you have supplied either to the FCO or the Secretariat in the course of your application.

Your acceptance constitutes a contract between you and the FCO. In accepting this award, you have agreed to the Chevening terms and conditions.

The Secretariat will pay directly to you or on your behalf, during the period of the fellowship:

- An allowance of £2,000
- Accommodation as provided by the University of Oxford

All payments will be made to you via your cash card.

**Return economy airfare** will be paid for by the Secretariat on your behalf. The fellowships team will provide more information on how to make these arrangements.

The Secretariat will pay, on behalf of the Foreign and Commonwealth Office to University of Oxford, all related programme costs associated with the fellowship.

Congratulations on your Chevening Fellowship and I hope that you enjoy your time in the UK.

Yours sincerely,

*Rajul Dube*

Chevening Scholarships  
Political Dept.  
British High Commission,  
Chanakyapuri,  
New Delhi-110021

Rajul Dube, Deputy Head of Chevening Scholarships, India.

8 January, 2019



Frau  
Singh Hamsavahini  
4 Arvind Niwas Banasthali University, P O Banasthali  
304022 Rajasthan  
Indien

[hamsachinju@gmail.com](mailto:hamsachinju@gmail.com)

Wien, 01.03.2018

## Anmeldebestätigung/Einladung

Sehr geehrte Frau Singh,

wir haben Ihre Bewerbung um ein Stipendium für unsere Fortbildungsseminare erhalten und freuen uns, Ihnen mitteilen zu können, dass wir Ihnen einen Platz in folgendem Seminar zur Verfügung stellen können:

**"Bewegung und Veränderung – Vorarlberg mehrdimensional erfahren"**

**Seminardatum:** von 02.07 - 13.07.2018

Unterlagen erhalten Sie von dem/der zuständigen SeminarorganisatorIn:

Gerhard Grabner  
Mail: [gerhard.grabner@kulturundsprache.at](mailto:gerhard.grabner@kulturundsprache.at)

Für alle weiteren Informationen Ihr Seminar betreffend können Sie sich jederzeit an den Organisator/die Organisatorin wenden.



**Sie erhalten seitens des österreichischen Bundesministeriums für Bildung, Wissenschaft und Forschung (BMBWF), Programm „Kultur und Sprache“ ein Stipendium, das alle während des Seminars anfallenden Kosten abdeckt und folgende Leistungen inkludiert:**

50% der Flugkosten (Flug Economy, gegen Vorlage der Originalbelege und der Bordkarten - Rückerstattung am Seminar), Programmkosten, Seminarmaterialien, Unterkunft und Verpflegung (Vollpension) für die Dauer des Seminars, Fahrten im Rahmen des Seminarprogramms. **Nicht enthalten:** Reisekosten vom Flughafen zum Seminarort und retour; Kosten für Reiseversicherung und - falls notwendig - Visum.

Die Unterbringung erfolgt in folgendem Seminarhaus/in folgenden Seminarhäusern  
Schloss Hofen, Lochau  
Seminar - und Gästehaus "Im Kloster Bezaun", Bezaun

Das Seminar beginnt am ersten Tag mit dem Abendessen (Anreisetag) und endet am letzten Tag mit dem Frühstück (Abreisetag).

**Wichtig:** Bitte kümmern Sie sich zeitgerecht um die Organisation der Anreise und (falls notwendig) um die Beantragung eines Visums.

mit freundlichen Grüßen



Brigitte Stockinger-Resch  
Projektkoordination Kultur und Sprache

Email: [office@kulturundsprache.at](mailto:office@kulturundsprache.at)  
[www.kulturundsprache.at](http://www.kulturundsprache.at)



**A PROJECT REPORT  
ON**

**Regulation of miR775 in response to light is mediated by Elongated  
Hypocotyl (HY5) in *Arabidopsis thaliana***

Submitted in Partial Fulfillment of the Requirements for the Award of the  
Degree of Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Adya Mishra**

Under the Guidance of

**Dr. Prabodh K. Trivedi**

(Senior Principal Scientist)

CSIR – National Botanical Research Institute, lucknow

Year of Submission- 2019





CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE  
(COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH)

P.O. BOX 436, RANA PRATAP MARG

LUCKNOW 226001

INDIA



Letter no. Adya/2019/1

Date: 30.05.2019

**Dr. Prabodh K. Trivedi, FNASc, FNAAS**

**Senior Principal Scientist**

Tel: 91-522- 2297958 (work)

91-522-3052049 (home)

FAX: 91-522- 2205836, 2205839

E. mail: [prabodht@hotmail.com](mailto:prabodht@hotmail.com); [prabodht@nbri.res.in](mailto:prabodht@nbri.res.in)

### CERTIFICATE

It is certified that the Dissertation Report entitled “**Regulation of miR775 in response to light is mediated by Elongated Hypocotyl (HY5) in *Arabidopsis thaliana***” which is being submitted by “**Adya Mishra**” in partial fulfilment of the requirements for the award of the degree of **APPLIED MICROBIOLOGY AND 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.

(Prabodh Kumar Trivedi)

Dr. Prabodh Kumar Trivedi  
FNASc, FNAAS  
Senior Principal Scientist  
CSIR-National Botanical Research Institute  
Lucknow-226001



17632

## A PROJECT REPORT ON

# STUDIES ON YOGHURT MANUFACTURING :- EFFECT OF MILK TYPE AND STARTER BACTERIA

Submitted in partial fulfillment of the requirement for the award of the

Degree of Master of Science

In

Applied microbiology and biotechnology

Of

Banasthali Vidyapith



SUBMITTED BY

AISHWARYA SINGH

Under the guidance of

DR.A.K.SINGH

PRINCIPAL SCIENTISTS, DAIRY TECHNOLOGY

NATIONAL DAIRY RESEARCH INSTITUTE KARNAL

JEEV MANDIR

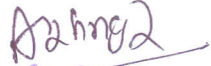
JR1631



## CERTIFICATE

It is certified that Dissertation report entitled "Studies on Yoghusts Manufacturing :- Effect of milk Type and Starter Bacteria."

"Which is being submitted by AISHWARYA SINGH in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND BIOTECHNOLOGY of Banasthali Vidyapith ( deemed university )( National university for women's Education ) is a record of candidate's own work carried by her under my supervision and guidance .The matter embodied in this report has not been submitted for award of any other degree.

  
Dr. Ashish Kr. Singh  
Principal Scientist  
Dairy Technology Division  
N.D.R.I., KARNAL-13200

17/33  
A Project Report

On

**Isolation and Characterization of Rhizospheric and Non-rhizospheric Bacteria of Different Cultivars of *Chrysopogon zizanioides***

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



JR1632

Submitted By

**AKANKSHA PALIWAL**



Under the Guidance of

**Dr. RAJESH KUMAR VERMA**

Division of Agronomy and Soil Science

CSIR- Central Institute of Medicinal and Aromatic Plants, Lucknow

2019

JEEV MANDIR

JR1632







**CSIR-CIMAP**

**CERTIFICATE**

*It is certified that the Dissertation Report entitled "Isolation and Characterization of Rhizospheric and Non- Rhizospheric Bacteria of Different Cultivars of *Chrysopogon zizanioides*" which is being submitted by Akanksha Paliwal in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.*

(Dr. R.K. Verma)

Senior Principal Scientist

Division of agronomy and Soil Science

**A PROJECT REPORT  
ON  
DESIGN, SYNTHESIS, *IN SILICO* STUDIES AND DEVELOPMENT OF  
METALLORADIOPHARMACEUTICAL AS DIAGNOSTIC AGENTS**

**SUBMITTED TO**



**Department of Bioscience and Biotechnology  
BANASTHALI UNIVERSITY, RAJASTHAN**

In the partial fulfillment of the requirements for the award of degree

Of

**MASTER OF SCIENCE  
IN  
APPLIED MICROBIOLOGY AND BIOTECHNOLOGY**

By

**AKSHITA UPRETI**

Under the supervision of

**Dr. Shubhra Chaturvedi Scientist 'E'**

**Institute of Nuclear Medicine and Allied Sciences (INMAS)**

**DRDO, Delhi, India**



JEEV MANDIR

JR1633



## CERTIFICATE

It is certified that the Dissertation Report entitled “**DESIGN, SYNTHESIS, *IN SILICO* STUDIES AND DEVELOPMENT OF METALLORADIOPHARMACEUTICAL AS DIAGNOSTIC AGENTS**” which is being submitted by **AKSHITA UPRETI** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

डॉ० शुभ्रा चतुर्वेदी / Dr. Shubhra Chaturvedi  
वैज्ञानिक 'ई' / Scientist 'E'  
साईकलोट्रॉन एवं रेडियोमैथज प्रभाग  
Division of Cyclotron and Radiopharmaceutical Sciences  
नाभिकीय औषधि तथा सम्बन्ध विज्ञान संस्था  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस० के० मजूमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054

# **A PROJECT REPORT**

**ON**

**“Replacement of non-biodegradable plastics by the generation of edible biofilms prepared from Ginger extract and use it as rectifying agent against microbes on fruit samples”**

**-Submitted to-**



**Department of Bioscience and Biotechnology**

**Banasthali Vidyapith, Rajasthan**

In the partial fulfillment of the requirements for the award of degree

Of

**M.Sc. (Applied Microbiology and Biotechnology)**

By

**Anupama Chauhan**

2 year, 4<sup>th</sup> semester

**-Under Supervision of-**

**Dr. Madhulika Singh**

Head (Division of Biotechnology)



**CytoGene Research and Development**

**Lucknow**

**JEEV MANDIR**

**JR1634**





Dr. Madhulika Singh  
Head (Division of Biotechnology) ,  
CytoGene Research &  
Development,  
Lucknow – 226016.

**Subject:**

## CERTIFICATE

*Certificate*

**Date:**

*15<sup>th</sup> June, 2019*

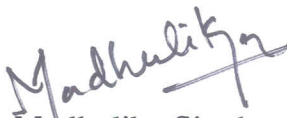
**Reference No:**

*CG/1906/1501*

This is to certify that **Ms. Anupama Chauhan** student of M.Sc. (Applied Microbiology and Biotechnology) Banasthali Vidyapith, Vanasthali (Rajasthan) worked as a Project trainee on “Replacement of non-biodegradable plastics by the generation of edible biofilms prepared from Ginger extract and use it as rectifying agent against microbes on fruit samples”. under my supervision from 01<sup>st</sup> January, 2019 to 15<sup>th</sup> June, 2019.

During the training period, she has shown her full devotion and dedication towards her training.

I wish her all the very best for a bright future.



Dr. Madhulika Singh

**Address:**

2<sup>nd</sup> Floor, B-1655  
Indira Nagar  
Lucknow – 226016

**Contact:**

+91 - 7703093333  
+91 - 7703092222

**Email:**

cytogenernd@gmail.com

A PROJECT REPORT ON  
“MICROBIOLOGICAL TESTS IN PHARMACEUTICAL INDUSTRY “

Submitted in Partial fulfillment of the Requirement for the award of the Degree of

Master of Science

*In*

**Applied Microbiology and Biotechnology**

Of

**Banasthali Vidyapith**



Submitted by

**Aruna Parihar**

Under the Guidance of

**Mr. Lokeshwar Kumar**

**Sr. Executive Microbiology**

Naari Pharma Pvt Ltd

Sector-5, IIE, Pantnagar,

Rudrapur – 263153,

Dist. U.S. Nagar, (Uttarakhand)

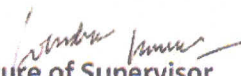
Year of Submission - 2018



**Dated: May 27, 2019**

**CERTIFICATE**

It is certified that the Dissertation Report entitled "Microbiological test in Pharmaceuticals industry" which is being submitted by Ms. Aruna Parihar in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

**A PROJECT REPORT  
ON  
A COMPREHENSIVE APPROACH FOR DESIGNING  
RADIOPHARMACEUTICALS/PHARMACEUTICALS**

**SUBMITTED TO**



**Department of Bioscience and Biotechnology  
BANASTHALI UNIVERSITY, RAJASTHAN**

**In the partial fulfillment of the requirements for the award of degree**

**Of**

**MASTER OF APPLIED MICROBIOLOGY AND  
BIOTECHNOLOGY**

**By**

**Ms. Ayushi Verma**

**Under the supervision of**

**Dr. Shubhra Chaturvedi Scientist 'E'**

**Institute of Nuclear Medicine and Allied Sciences (INMAS)**

**DRDO, Delhi, India**




**JEEV MANDIR  
JR1636**





# **CERTIFICATE**

It is certified that the Project Report entitled "**A COMPREHENSIVE APPROACH FOR DESIGNING RADIOPHARMACEUTICALS/PHARMACEUTICALS**" which is being submitted by Ayushi Verma in the partial fulfillment of the requirements for the award of the degree of **MASTERS OF APPLIED MICROBIOLOGY AND BIOTECHNOLOGY** of Banasthali Vidyapith (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 the Supervisor**

डॉ० शुभ्रा चतुर्वेदी / Dr. Shubhra Chaturvedi  
वैज्ञानिक 'ई' / Scientist 'E'  
साइक्लोट्रॉन एवं रेडियोमेषज प्रभाग  
Division of Cyclotron and Radiopharmaceutical Sciences  
नाभिकीय औषधि तथा सम्बद्ध विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस० के० मजूमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054

17629

A PROJECT REPORT ON

**Association of *NOS3* intron-4 VNTR polymorphism in adaptation  
and maladaptation at high-altitude**

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

Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**BIDUSHI CHAHAL**

Under the Guidance of

**Dr. M. A. QADAR PASHA**

Emeritus Medical Scientist-ICMR

CSIR-Institute of Genomics and Integrative Biology, Mall Road

Delhi-110007

JEEV MANDIR

JR1637



(2017-2019)

Email: s.balachandran@igib.res.in

No.HR/IGIB/EC/19

June 14, 2019

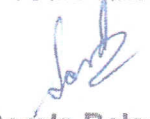
To Whom It May Concern

This is to certify that **Ms. Bidushi Chahal** has successfully completed her training at CSIR-IGIB, Delhi from **30-Dec-2018 to 14-June-2019** under the supervision of **Dr. M.A.Qadar Pasha**. The topic of the training was ***"Association of NOS3 intron-4 VNTR polymorphism in adaptation and maladaptation at High-altitude"***.

This certificate is issued on her written request.

We wish her success in all facets of life.

Yours sincerely,



(Sarala Balachandran)  
Chief Scientist & Head HRD

17640  
A PROJECT REPORT ON

**Identification and characterization of novel small molecules against ESKAPE pathogens**  
**And**  
**Elucidating mechanism of action of the hit compound**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science

In  
**Applied Microbiology and Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Ms. Deepanshi Saxena**  
Roll No. 17640

Under the Guidance of  
**Dr. Sidharth Chopra**  
Senior Scientist  
Microbiology Division

CSIR-Central Drug Research Institute,  
Sector 10, Jankipuram extension, Sitapur Road,  
Lucknow 226031, India

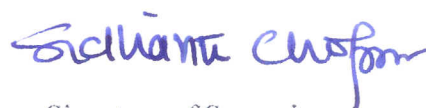
JEEV MANDIR  
JR1638  


2019



## CERTIFICATE

It is certified that the Dissertation Report entitled “**Identification and characterization of novel small molecules against ESKAPE pathogens and elucidating the mechanism of action of the hit compound**” which is being submitted by Deepanshi Saxena in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.



Signature of Supervisor

Scientist  
Division of Microbiology  
CSIR - Central Drug Research Institute  
Sector 10, Jankipuram Extension, Sitapur Road,  
Lucknow - 206031, Uttar Pradesh, INDIA

17691

A PROJECT REPORT ON

**Biological Evaluation of Amino Acid Based Radiotracer for Tumor Imaging**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Geetika Pandey**

Under the Guidance of

Dr. Puja Panwar Hazari  
(INMAS, DRDO)  
Scientist "E"



Institute of Nuclear Medicine And Allied Sciences

Defence Research and Development Organisation



JEEV MANDIR  
JR1639



Lucknow Road, Timarpur, Delhi -11005

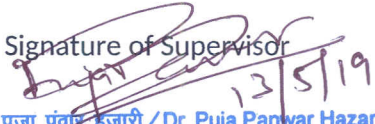
Year of Submission

2018-2019

## CERTIFICATE

It is certified that the Dissertation Report entitled “Biological Evaluation of Amino Acid Based Radiotracer For Tumor Imaging .” which is being submitted by **Geetika Pandey** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

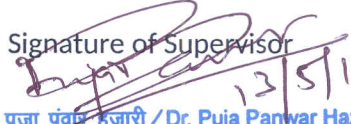
Signature of Supervisor

  
डॉ० पूजा पंवार हजारी / Dr. Puja Panwar Hazari  
वैज्ञानिक 'ई' / Scientist 'E'  
साईक्लोट्रॉन एवं रेडियोमेषज प्रभाग  
Division of Cyclotron and Radiopharmaceutical Sciences  
नामकीय औषधि तथा सम्बद्ध विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस० के० मजुमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054

## CERTIFICATE

It is certified that the Dissertation Report entitled "**Biological Evaluation of Amino Acid Based Radiotracer For Tumor Imaging .**" which is being submitted by **Geetika Pandey** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

  
डॉ० पूजा पंवार हजारी / Dr. Puja Panwar Hazari  
वैज्ञानिक 'ई' / Scientist 'E'  
साईक्लोट्रॉन एवं रेडियोभेषज प्रभाग  
Division of Cyclotron and Radiopharmaceutical Sciences  
नामकीय औषधि तथा सम्बद्ध विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस० के० मजुमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054

A PROJECT REPORT ON

**Isolation and characterization of novel mycobacteriophages  
and in vitro analysis of phage-derived recombinant lysinB**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Kanika Nadar**

Under the Guidance of

**Dr. Urmi Bajpai**

Associate professor,

Department of Biomedical Science,

Acharya Narendra Dev College,

University of Delhi

Govindpuri, Kalkaji, New Delhi-110019

2019

JEEV MANDIR  
JR1640







**ACHARYA NARENDRA DEV COLLEGE**

(UNIVERSITY OF DELHI)

Govindpuri, Kalkaji, New Delhi – 110 019

New Delhi

Dated: 21/06/2019

**CERTIFICATE**

It is certified that Dissertation Report entitled **“Isolation and characterization of novel mycobacteriophages and in vitro analysis of phage-derived recombinant lysinB”** which is being submitted by **Kanika Nadar** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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 Bajpal  
Associate Professor  
Department of Biomedical Science  
Acharya Narendra Dev College  
Govindpuri, Kalkaji  
New Delhi-110 019

**A PROJECT REPORT  
ON  
CYTOGENETIC ASSAY: DICENTRIC CHROMOSOMAL ASSAY,  
CBMN ASSAY AND COMET ASSAY**

**SUBMITTED TO**



**Department of Bioscience and Biotechnology  
BANASTHALI UNIVERSITY, RAJASTHAN**

In the partial fulfilment of the requirements for the award of degree

Of

**MASTER OF SCIENCE  
IN  
APPLIED MICROBIOLOGY AND BIOTECHNOLOGY**

By

**MANISHA SUPRIYA**

Under the supervision of


**Dr. N.K. CHAUDHURY**

**Scientist 'G' and HOD**

**Institute of Nuclear Medicine and Allied Sciences (INMAS)**

**DRDO, Delhi, India**

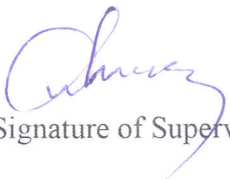


JEEV MANDIR  
JR1641  




## **CERTIFICATE**

It is certified that the Dissertation Report entitled “**CYTOGENETIC ASSAY: DICENTRIC CHROMOSOMAL ASSAY, CBMN ASSAY AND COMET ASSAY**” which is being submitted by **MANISHA SUPRIYA** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

 10/6/19  
Signature of Supervisor

A PROJECT REPORT ON

To understand different molecular biology techniques in cloning and expression of protein, helping in survival and pathogenesis of *Mycobacterium tuberculosis* H<sub>37</sub>Rv

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of  
Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Under the Supervision of

**Dr. LAXMAN SINGH MEENA**

(Sr. PRINCIPAL SCIENTIST)



**IGB**  
INSTITUTE OF GENOMICS  
& INTEGRATIVE BIOLOGY  
*Genomics Knowledge Partner*

**CSIR-INSTITUTE OF GENOMICS & INTEGRATIVE BIOLOGY**

**Mall Road, Delhi-110007**

Submitted By

**MANU MISHRA**

ID NO. - LSMSM17161

2019

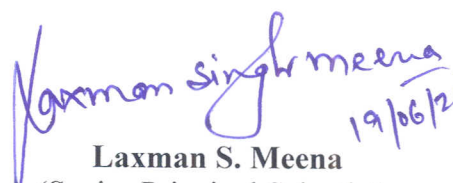


**Dr. Laxman S. Meena, PhD**  
Senior Principal Scientist  
CSIR-Institute of Genomics and Integrative Biology  
Mall Road, Delhi-110007 (India)  
Telephone no: 011-27002200 Ext # 234  
Fax No: 011-27667471  
E-mail ID: meena@igib.res.in

June, 2019

## CERTIFICATE

This is certified that **Ms. Manu Mishra** in final year of **Masters of Science in Applied Microbiology and Biotechnology** from Banasthali Vidhyapith University (National University for Women's Education) has carried out her dissertation work entitled "**To Understand different Molecular Biology techniques in cloning and expression of protein, helping in survival and pathogenesis of *Mycobacterium tuberculosis* H<sub>37</sub>Rv**" during the period from January, 2019 to June, 2019 has been completed successfully under my supervision. In her dissertation work, she has shown keen interest in Research and Development Activities.

  
**Laxman S. Meena**  
(Senior Principal Scientist)



A PROJECT REPORT ON

*“Effect of Etoricoxib on variables of diabetes to trinitrobenzene sulphonic acid  
(TNBS) induced Colitis in Rats.”*

Submitted in the Partial Fulfilment of the requirements for the award of the

Degree of Master of Science

In

Applied Microbiology and Biotechnology

Of

Banasthali Vidyapith



Submitted By

NIDHI GUPTA

Under the Guidance of

Dr. Hamendra Singh Parmar

Assistant Professor, School of Biotechnology,

Devi Ahilya University, Indore

2019

JEEV MANDIR

JR1643



Phone: 0731-2470372, 2470373  
Tele Fax: 0731-2470372  
E-mail : hamendrasingh999@yahoo.co.in

**DEVI AHILYA UNIVERSITY, INDORE**  
**SCHOOL OF BIOTECHNOLOGY**  
**BIOTECHNOLGY BUILDING, KHANDWA ROAD, INDORE 452001**


---

**Certificate**

---

It is certified that the Dissertation Report entitled "*Effects of etoricoxib on variables of diabetes to trinitrobenzene sulphonic acid (TNBS) induced colitis in rats*" which is being submitted by **NIDHI GUPTA** in partial fulfilment of the requirements for the award of the MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

**Dr. Hamendra Singh Parmar**  
Assistant Professor  
School of Biotechnology  
Devi Ahilya University  
INDORE-452001(M.P.) INDIA



Signature of Supervisor

Date: 18/06/19

**Dr. Hamendra Singh Parmar**

Assistant Professor  
School of Biotechnology  
Devi Ahilya University  
Indore, INDIA-452001

A PROJECT REPORT ON

***“Agrobacterium tumefaciens mediated genetic Transformation of  
Vigna radiata (Mung bean) with mCry1Ac gene and Screening of putative  
transgenic plants through Tissue PCR” And Cloning of Reporter Genes.***



Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**NIKITA GAUTAM [LSMSM17041 ]**

Under the Guidance of

**Dr.Sadhu Leelavathi**

**International Centre for Genetic engineering and Biotechnology (ICGEB)**

**Aruna Asaf Ali Marg, JNU campus, New Delhi**

JEEV MANDIR  
JR1644



June 2019



## INTERNATIONAL CENTRE FOR GENETIC ENGINEERING AND BIOTECHNOLOGY

ICGEB Campus, P.O. Box: 10504, Aruna Asaf Ali Marg, New Delhi – 110 067, India  
<http://www.icgeb.org>

+91-11-26742357/60  
Fax: +91-11-26742316

### CERTIFICATE

This is to certify that the Dissertation report entitle “ *Agrobacterium tumefaciens* mediated genetic transformation of *Vigna radiata* (Mung bean) with mCry1Ac gene and screening of putative transgenic plants by Tissue PCR ” and Cloning of Reporter Gene submitted by NIKITA GAUTAM student of M.Sc [AMBT], Fourth Semester of Banasthali Vidyapith , Jaipur in the partial fulfilment of the requirements for the award of degree of Masters of Science in AMBT was complete under the guidance of Dr. Sadhu Leelavathi at International Centre for Genetic Engineering and Biotechnology(ICGEB), Aruna Asaf Ali Marg, New Delhi.

Dr. Sadhu Leelavathi  
Group Leader  
Plant Transformation Group  
ICGEB, New Delhi

Dr. Deepjyoti Chakraborty  
Head of Department  
Department of Bioscience and Biotechnology  
Banasthali Vidyapith, Rajasthan

# COMPARATIVE ANALYSIS OF PROBIOTIC POTENTIAL AMONG DIFFERENT LACTIC ACID BACTERIA



PROJECT REPORT SUBMITTED TO THE  
DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY,  
**BANASTHALI VIDYAPITH**  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
AWARD OF  
**DEGREE OF MASTERS IN SCIENCE**

IN

**APPLIED MICROBIOLOGY AND  
BIOTECHNOLOGY**

BY

**PEHCHAN (M.Sc. AMBT)**

Under the supervision of

**Dr. Diwas Pradhan (Scientist)**

**Dairy Microbiology Division**

**NATIONAL DAIRY RESEARCH INSTITUTE, KARNAL**



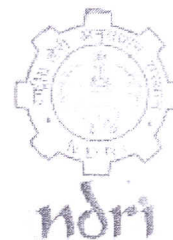
JEEV MANDIR  
JR1645







DAIRY MICROBIOLOGY DIVISION  
ICAR-NATIONAL DAIRY RESEARCH INSTITUTE  
(An ISO Certified Institute)  
KARNAL-132001, HARYANA, INDIA



Diwas Pradhan  
Scientist

Date: 22<sup>nd</sup> June, 2019

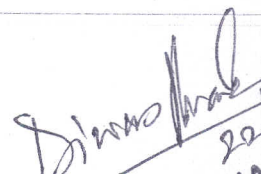
To Whom It May Concern

This is to certify that **Ms. Pehchan**, M.Sc., Microbiology and Biotechnology student of Department of Biosciences and Biotechnology, Banasthali University, Rajasthan-304022 has successfully undergone training program at ICAR-National Dairy Research Institute for 4 months and 13 days on the project entitled "**Comparative Analysis of Probiotic Potential among different Lactic Acid Bacterial Genera**" from **Feb. 10, 2019 to June 22, 2019** under my supervision.

She worked with sincerity, dedication and delivered excellent outputs as per the proposed assignment given during the training program.

Wishing her good luck in future scientific endeavors!

Dated: 22/06/2019

  
22/06/2019  
(Diwas Pradhan)  
**DIWAS PRADHAN**  
Scientist, Dairy Microbiology Division  
National Dairy Research Institute  
Karnal-132001, Haryana, India

A PROJECT REPORT ON

**MOST COMMON CAUSATIVE MICROORGANISM IN URINE  
CLINICAL SAMPLES**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science

In  
**Applied Microbiology and Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**PRIYANKA**  
**Class - MSc AMBT**

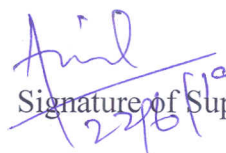
Under the Guidance of  
**Major (Dr.) Anil Sharma**  
Head of Laboratory Medicine Department  
Narayana Multispecialty Hospital, Jaipur

JEEV MANDIR  
JR1646  


Year of Submission - 2017-2019

## CERTIFICATE

It is certified that the Dissertation Report entitled “Most common causative micro-organism in urine clinical samples” which is being submitted by Priyanka in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

MAJOR (Dr.) ANIL SHARMA  
MBBS, MD (Microbiology)  
Regn. No. 10320  
Narayana Hrudayalaya Jaipur

17649

A PROJECT REPORT ON

**EVALUATION OF DNA DAMAGE AMONG  
LEPTOSPIROSIS CASES IN HUMAN**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In  
**Applied Microbiology and Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Puja Kumari**

Under the Guidance of  
**Dr. Rajendra Palkhade**  
Scientist 'C' Division of Animal House  
ICMR – National Institute of Occupational Health, Ahmedabad



**icmr**  
INDIAN COUNCIL OF  
MEDICAL RESEARCH

**NIOH**  
NATIONAL INSTITUTE OF  
OCCUPATIONAL HEALTH

आई सी एम आर-राष्ट्रीय व्यावसायिक स्वास्थ्य संस्थान

स्वास्थ्य अनुसंधान विभाग,

स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार

ICMR - National Institute of Occupational Health

Department of Health Research

Ministry of Health and Family Welfare, Government of India

### CERTIFICATE

It is certified that the Dissertation Report entitled “To evaluate the DNA damage among **Leptospirosis cases in human**” which is being submitted by **Puja Kumari** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

*Rajendra Palkhade*

**Dr. Rajendra Palkhade,**

Scientist ‘C’

Lab. Animal Facility



# **A PROJECT REPORT ON**

## **Rapid green synthesis of silver nanoparticles by using Aloe Vera plant extract : synthesis and characterization**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Reshu Yadav**

Under the Guidance of

**Md. Owais**

Designation

Interdisciplinary biotechnology unit AMU – Aligarh 202002

Year of Submission

2019

Date.....

# CERTIFICATE

It is certified that the Dissertation project entitled “ **Rapid green synthesis of silver nanoparticles by using AloeVera plant leaf extract : synthesis and characterization**” which is being submitted by RESHU YADAV in partial fulfillments of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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 H.O.D

  
June 11, 2019  
Signature of Supervisor

(Countersigned)

17652

A PROJECT REPORT ON

**Effect of *Moringa Oleifera* extract on SaOS-2 cells under hypoxia**

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

Master of Science

In

**Applied Microbiology and Biotechnology**

**Banasthali Vidyapith**



Submitted By

**RICHA SHARMA**

Under the Guidance of

**DR. MRINALINI**

SCIENTIST 'E'

EXPERIMENTAL BIOLOGY DIVISON

DRDO, DIPAS



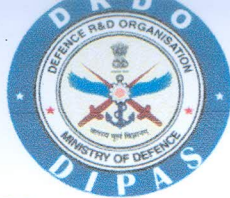
2019

JEEV MANDIR  
JR1649



DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCE, (DIPAS)

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION, (DRDO)



17651

## Defence Institute of Physiology and Allied Sciences

रक्षा शरीरक्रिया एवं संबंधित विज्ञान संस्थान

(An ISO 9001 : 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization  
भारत सरकार रक्षा मंत्रालय रक्षा अनुसंधान एवं विकास संगठन  
Lucknow Road, Timarpur, Delhi - 110 054  
लखनऊ रोड, तिमारपुर दिल्ली - 110 054

### CERTIFICATE

This is to certify that

Ms. Richa Sharma Student of M. Sc. (Applied microbiology and biotechnology) Banasthali University, Rajasthan, has undertaken Project Work titled "Effect of *Moringa Oleifera* on SAOS-2 cells under hypoxia" from 03<sup>rd</sup> Jan 2019 to 14<sup>th</sup> June 2019 in this establishment.

The work carried out by the candidate is property of DIPAS and should not be published without prior approval of Director, DIPAS.

*Mrinalini*  
14.6.19

(Dr. Mrinalini)

Scientist 'E'

Experimental Biology Division

*Shweta*

(Dr. Shweta Rawat)

Scientist 'E'

HRD Coordinator

Office : 91-11-23883111

FAX No : 91-11-23914790 E-mail : [hrd@dipas.drdo.in](mailto:hrd@dipas.drdo.in)

DIPAS..... In pursuit of excellence in military Physiology



17652

A PROJECT REPORT ON

**“Prevalence of Acid Fast Bacilli by ZN staining in clinical samples”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Ridhi**

Under the Guidance of

**Major (Dr.) Anil Sharma**

Head of Department of laboratory medicine

Narayana Multispecialty Hospital

JEEV MANDIR

JR1650

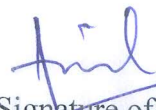


Year of Submission – 2017- 2019



## CERTIFICATE

It is certified that the Dissertation Report entitled "Prevalence of Acid Fast Bacilli by ZN staining in clinical samples" which is being submitted by Ridhi in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

**MAJOR (Dr.) ANIL SHARMA**  
MBBS, MD (Microbiology)  
Regn. No. 10320  
Narayana Hrudayalaya Jaipur

A PROJECT REPORT ON

## Generation of Atg23 knock-in and knock-out parasites

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

RUBY SHARMA

Under the Guidance of

**Dr. Puran Singh Sijwali**

**Principal scientist**

CSIR- Center for Cellular and Molecular Biology

Hyderabad TS, India

(2019-2020)



JEEV MANDIR

JR1651





**Bonafide**

It is certified that the dissertation report entitled “**Generation of Atg23 knock-in and knock-out parasites**”, which is being submitted by Miss RUBY SHARMA in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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 in CSIR-Centre for Cellular and Molecular Biology, Hyderabad-500007 from January 2019-June 2019. The matter embodied in this report has not been submitted for award of any other degree.

Signature of the supervisor

Dr. Puran Singh Sijwali

Principal scientist, CCMB

Uppal Road, Habsiguda, Hyderabad

फैक्स

अंतर्राष्ट्रीय  
भारत

+91-40-27160591, 27160311  
040-27160591, 27160311

दूरभाष  
Telephone

+91-40-27160222-41

Fax

International  
India

+91-40-27160591, 27160311  
040-27160591, 27160311

वेब साइट  
Website

<http://www.ccmb.res.in>



17654

**A PROJECT REPORT ON  
EVALUATION OF EFFICACY OF ANTIBIOTICS BY RESAZURIN DYE  
BASED METHOD**

**Submitted in partial fulfilment of the requirements for the award of the degree  
of**

**Master of Science  
in**

**Applied Microbiology and Biotechnology**

**Banasthali Vidyapith**



**Submitted By  
Ruchi Verma**



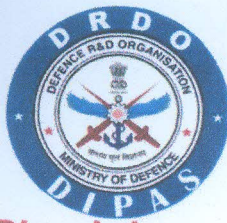
**Under the Guidance of  
Dr. Divya Singh, Scientist-'E'**



**DEPARTMENT OF IMMUNOMODULATION  
DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCES  
DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION,  
LUCKNOW ROAD TIMARPUR, DELHI - 110054  
(2017-2019)**

JEEV MANDIR  
JR1617





## Defence Institute of Physiology and Allied Sciences

रक्षा शरीरक्रिया एवं संबंधित विज्ञान संस्थान

(An ISO 9001 : 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization

भारत सरकार रक्षा मंत्रालय रक्षा अनुसंधान एवं विकास संगठन

Lucknow Road, Timarpur, Delhi - 110 054

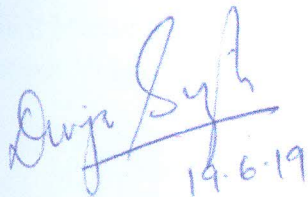
लखनऊ रोड, तिमारपुर दिल्ली - 110 054

### CERTIFICATE

This is to certify that

Ms. Ruchi Verma Student of M. Sc. (Applied Microbiology and Biotechnology) Banasthali Vidyapith, Rajasthan, has undertaken Project Work titled "Evaluation of efficacy of antibiotics by resazurin dye based method" from 05<sup>th</sup> Jan 2019 to 18<sup>th</sup> June 2019 in this establishment.

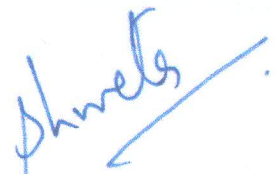
The work carried out by the candidate is property of DIPAS and should not be published without prior approval of Director, DIPAS.

  
19.6.19

(Dr. Divya Singh)

Scientist 'E'

Immunomodulation Division



(Dr. Shweta Rawat)

Scientist 'E'

HRD Coordinator

Office : 91-11-23883111

FAX No : 91-11-23914790 E-mail : [hrd@dipas.drdo.in](mailto:hrd@dipas.drdo.in)

DIPAS..... In pursuit of excellence in military Physiology



17655

A PROJECT REPORT

ON

**“Comparative Analysis of Genotypic and Phenotypic Drug Susceptibility Tests for Aminoglycosides & Cyclic Peptides in MDR-TB/RR-TB Patients”**

Submitted in Partial fulfilment of the Requirements for the Award of the Degree of Master of Science

In

**Applied Microbiology and Biotechnology**

Of

**Banasthali Vidyapith**



Submitted By

**Sadhna Singh**

Under the Guidance of

**Dr.ParthaSarathiMohanty, Scientist-D**

**Department of Epidemiology,**

**NATIONAL JALMA INSTITUTE FOR LEPROSY & OTHER MYCOBACTERIUM DISEASES  
TAJGANJ, AGRA**

JEEV MANDIR

JR1618



Year of Submission

2019



राष्ट्रीय जालमा कुष्ठ एवं अन्य माइकोबैक्टीरियल रोग संस्थान, ताजगंज, आगरा

**NATIONAL JALMA INSTITUTE FOR LEPROSY & OTHER MYCOBACTERIAL DISEASES**

(भारतीय आयुर्विज्ञान अनुसंधान परिषद)  
(Indian Council of Medical Research)

पोस्ट बॉक्स- 1101, ताजगंज, आगरा- 282 001

POST BOX-1101, TAJGANJ, AGRA-282 001

Ref: NJIL&OMD/PT/EPI/2019

Date: 14-06-2019

## CERTIFICATE

It is certified that the Dissertation Report entitled “**Comparative Analysis of Genotypic and Phenotypic Drug Susceptibility Test for Aminoglycosides & Cyclic peptides in MDR-TB/RR-TB Patients**” which is being submitted by **Ms. Sadhna Singh** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

**Dr. Partha Sarathi Mohanty**  
Scientist D  
Department of Epidemiology

17656

**A PROJECT REPORT ON**

**Evaluation of combined efficacy of antibiotics with different flavonoids**

**Submitted in partial fulfilment of the requirements for the award of the degree of**

**Master of Science  
in**

**Applied Microbiology and Biotechnology**

**Banasthali Vidyapith**



Submitted By  
**Sangeeta Sati**

Under the Guidance of  
**Dr. Divya Singh, Scientist-'E'**



**DEPARTMENT OF IMMUNOMODULATION  
DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCES  
DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION,  
LUCKNOW ROAD TIMARPUR, DELHI - 110054  
(2017-2019)**

JEEV MANDIR  
JR1619







## Defence Institute of Physiology and Allied Sciences

रक्षा शारीरक्रिया एवं संबंध विज्ञान संस्थान

(An ISO 9001 : 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization

भारत सरकार रक्षा मंत्रालय रक्षा अनुसंधान एवं विकास संगठन

Lucknow Road, Timarpur, Delhi - 110 054

लखनऊ रोड, तिमारपुर दिल्ली - 110 054

### CERTIFICATE

This is to certify that

Ms. Sangeeta Sati Student of M. Sc. (Applied Microbiology and Biotechnology) Banasthali Vidyapith Rajasthan, has undertaken Project Work titled "Evaluation of combined efficacy of antibiotics with different flavonoids" from 05<sup>th</sup> Jan 2019 to 17<sup>th</sup> June 2019 in this establishment.

The work carried out by the candidate is property of DIPAS and should not be published without prior approval of Director, DIPAS.

*Dr. Divya Singh*  
18.6.19

(Dr. Divya Singh)

Scientist 'E'

Immunomodulation Division

*Shweta*

(Dr. Shweta Rawat)

Scientist 'E'

HRD Coordinator

Office : 91-11-23883111

FAX No : 91-11-23914790 E-mail : [hrd@dipas.drdo.in](mailto:hrd@dipas.drdo.in)

DIPAS..... In pursuit of excellence in military Physiology

17657

A Thesis presented to  
The Faculty of Department of Bioscience and Biotechnology  
Banasthali vidyapeeth



ON THE TOPIC  
QUALITY CONTROL AND QUALITY ASSURANCE  
OF  
FROZEN AND FRESH FRUITS & VEGETABLES  
AT  
MOTHER DAIRY FRUIT & VEGETABLE PRIVATE LTD.

FRUIT & VEGETABLE UNIT  
MANGOLPURI (NEW DELHI)

**Safal**



In Partial Fulfillment of the Requirements for the Degree of

Master of Science

M.Sc.-AMBT

by

Shaifali Chauhan

JEEV MANDIR  
JR1620







F&V: HRA: ST:456

20<sup>th</sup> June 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Ms. Shaifali Chauhan**, M.Sc. AMBT student of Banasthali Vidyapeeth, Rajasthan, has undergone in-plant internship in our Unit during the period of 15<sup>th</sup> January 2019 to 20<sup>th</sup> June 2019.

During the training period, she has worked in our Quality Department on a Project "To study about quality analysis of Processed frozen foods & Fresh F&V." and has submitted Project Report. Her performance and conduct during the training period were satisfactory.

We wish her success for a bright career.

**For Mother Dairy Fruit & Vegetable Private Limited**

**Dy. Manager – HR**

**मदर डेयरी फ्रूट एण्ड वैजिटेबल प्राइवेट लिमिटेड**

यूनिट : फ्रूट एण्ड वैजिटेबल यूनिट, मंगोलपुरी औद्योगिक क्षेत्र, फेज-१, दिल्ली-११० ०८३ फोन : ०११ - २७९०२२२२ फैक्स : ०११ - २७९९८९६

पंजीकृत कार्यालय : 'मदर डेयरी' पटपड़गंज, दिल्ली-११० ०९२ भारत फोन : ०११ - २२४७९९९९ फैक्स : ०११-२२४७९९९९

**Mother Dairy Fruit & Vegetable Private Ltd.**

Unit : Fruit & Vegetable Unit, Mangolpuri Industrial Area, Phase-I, Delhi-110 083, Tel.: 011-27902222 Fax : 011-27915816

Regd. Office : "Mother Dairy" Patparganj, Delhi-110 092 INDIA Tel.: 011-22471991 Fax : 011-22475991

E-mail : [contact@motherdairy.com](mailto:contact@motherdairy.com)

CIN No.: U15209DL2000PTC104671

17658

**A PROJECT REPORT ON**

**Evaluation of *Trichoderma* isolates as potential bio-control agent against leaf  
blight disease in Poplar caused by *Sclerotium rolfsii***

**Submitted in partial fulfilment of the requirements for the award of the degree  
of**

**Master of Science  
in**

**Applied Microbiology and Biotechnology**

**Banasthali Vidyapith**



Submitted By

**Shakshi Yadav**



Under the Guidance of

**Mrs. Ranajana Juwantha, Scientist 'C'**



**Forest Pathology Discipline, Forest Protection Division,**

**Forest Research Institute Deemed University, Dehradun.**

**(2017-2019)**

JEEV MANDIR  
JR1621





## FOREST RESEARCH INSTITUTE

INDIAN COUNCIL OF FORESTRY RESEARCH AND  
EDUCATION

Dr. Amit Pandey  
Officer-In-Charge

Forest Pathology Discipline

Forest Protection Division,

Forest Research Institute.

Dehradun.

Forest Pathology Division

P.O New Forest, Dehradun- 248006 IND

[Email-l-panday@icfre.org](mailto:Email-l-panday@icfre.org)

Ph: 091-135-2768437 (R)

Fax – 091-135-2756865

### CERTIFICATE

This is to certify that project report entitled “**Evaluation of *Trichoderma* isolates as potential bio-control agent against leaf blight disease in Poplar caused by *Sclerotium rolfsii***” submitted in partial fulfillment for the award of the degree of M.sc. applied microbiology & Biotechnology at Banasthali Vidhyapeeth is a faithful record of bonafide work carried out by Ms. Sakshi Yadav under the supervision of Mrs. Ranjana Juwantha, Scientist ‘C’ at Forest Pathology Discipline, Forest Research Institute, Dehradun during the period from Jan to June 2019. No part of this thesis has been submitted for any other degree or diploma.

The assistance and help received during course of investigation have been duly acknowledged.

Place: Dehradun

Date: 21.06.19

Dr.Amit Pandey ‘Scientist G’

Officer-In-Charge

Forest Pathology Discipline,

Forest Protection Division,

Forest Research Institute.



*A Dissertation on*

**PHOTOSENSITIZER LOADED COMPOSITE FILM  
FOR  
WOUND HEALING APPLICATIONS**

*to be submitted by*

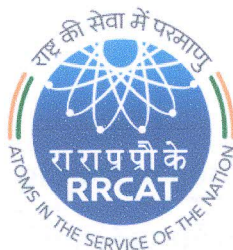
**Shivangi**

*Under the supervision of*

**Dr. Khageswar Sahu**

**Laser Biomedical Applications Section**

**Raja Ramanna Centre for Advanced Technology, Indore**



*For the award of the degree*

*of*

**Master of Science**

**Applied Microbiology and Biotechnology**

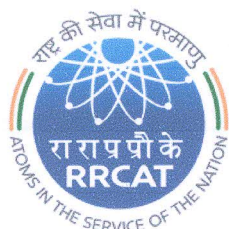


**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY  
BANASTHALI VIDYAPITH  
BANASTHALI – 304022**

**JUNE-2019**

JEEV MANDIR  
JR1622





RAJA RAMANNA CENTRE FOR ADVANCED TECHNOLOGY

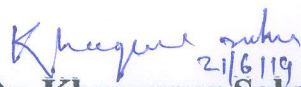
DEPARTMENT OF ATOMIC ENERGY

INDORE (M.P.) – 452013

**CERTIFICATE**

This is to certify that the draft project report titled, “**Photosensitizer Loaded Composite Film For Wound Healing Applications**” submitted by **Ms. Shivangi**, in partial fulfillment of the requirements for the degree of **Master of Science in Applied Microbiology and Biotechnology** under the **Department of Bioscience and Biotechnology, Banasthali Vidyapith** is a record of bonafide work carried out by her under my supervision during Jan 2019 to June 2019 at **Laser Biomedical Applications Section, Raja Ramanna Center for Advanced Technology, Indore (M.P.)**

**Project Guide:**

  
**Dr. Khageswar Sahu**

Scientific Officer/F  
LBAS, RRCAT, Indore



17660

# Synthesis and Characterization of Graphene Oxide Stabilized Copper Nanoparticles

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Science

in

Applied Microbiology and Biotechnology

**Banasthali Vidyapith**

2019



Submitted by

**Shivani Kaushik**

Under the guidance of

**Dr. Hemant Ritturaj Kushwaha**

Assistant Professor  
School of Biotechnology,  
Jawaharlal Nehru University, New Delhi-67

JEEV MANDIR  
JR1623

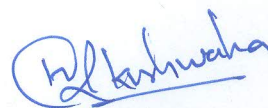




**SCHOOL OF BIOTECHNOLOGY**  
**JAWAHARLAL NEHRU UNIVERSITY**  
**NEW DELHI - 110 067, INDIA**

**Certificate**

This is to certify that the Dissertation Report entitled “Synthesis and Characterization of Graphene Oxide Stabilised Copper Nanoparticles” which is being submitted by Ms. Shivani Kaushik in partial fulfilment of the requirements for the award of the degree of Master of Science in Biotechnology or Master of Science in Applied Microbiology and Biotechnology, Banasthali Vidyapith (Deemed University) (National University for Women’s Education), Rajasthan, 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**

**हेमन्त र. कुशवाहा**  
**HEMANT R. KUSHWAHA**  
सहायक प्राध्यापक / Asstt. Professor  
School of Biotechnology  
जवाहरलाल नेहरू विश्वविद्यालय  
Jawaharlal Nehru University  
नई दिल्ली / New Delhi - 110067



17661

A PROJECT REPORT  
ON  
**"STUDIES ON BETA-GLUCAN IN FOOD GRADE YEAST"**

Submitted in Partial Fulfillment of the Requirements for the Award of the  
**DEGREE OF MASTER OF SCIENCE**

In  
**APPLIED MICROBIOLOGY AND BIOTECHNOLOGY**  
of  
**BANASTHALI VIDYAPITH**



Submitted By  
**SHREYA CHAKRABORTY**

Under the Guidance of  
**Dr. AVINASH P. SATTUR**

Senior principal scientist

Department of microbiology and fermentation technology

**CSIR-CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE**

(An ISO 9001:2008, ISO 14001:2004 & ISO 17025:2005 organization)

A Constituent Laboratory of Council of Scientific and Industrial Research (CSIR)

**MINISTRY OF SCIENCE AND TECHNOLOGY, GOVT. OF INDIA**

Mysore-570020

JEEV MANDIR  
JR1624



DECEMBER 2018- JULY 2019



केन्द्रीय खाद्य प्रौद्योगिक अनुसंधान संस्थान, मैसूर - 570 020, भारत  
Central Food Technological Research Institute  
Mysore - 570 020, India

cftri

## CERTIFICATE

This is to certify that the dissertation report entitled “ **STUDIES ON BETA-GLUCAN IN FOOD GRADE YEAST**” submitted to BANASTHALI VIDYAPITH in partial fulfilment for the Degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND BIOTECHNOLOGY is a research work carried out by **SHREYA.CHAKRABORTY** in the department of MICROBIOLOGY AND FERMENTATION TECHNOLOGY at CSIR-CFTRI , Mysuru, under the guidance of **Dr. AVINASH P. SATTUR** during the period of December 2018- July 2019.

### HEAD OF THE DEPARTMENT

Dr. Avinash P. Sattur,  
Senior principal scientist,  
Dept. of Microbiology and  
Fermentation technology  
CSIR-CFTRI , Mysore

### SUPERVISOR

Dr. Avinash P. Sattur,  
Senior principal scientist,  
Dept. of Microbiology and  
Fermentation technology  
CSIR-CFTRI, Mysore

### HRD CO-ORDINATOR

Dr. R.P SINGH / डॉ. आर.पी. सिंह / Dr. R.P. Singh  
HEAD, HUMAN RESOURCE DEVELOPMENT विभाग विकास विभाग  
CSIR-CFTRI , MYSORE-570020 Resource Development  
CSIR-CFTRI / सी एस आई आर सी एफ टी आर आई  
मैसूरु / Mysuru-570 020



17662

**A PROJECT REPORT ON**  
**TRAINING IN PATHOLOGY DEPARTMENT OF BOKARO GENERAL**  
**HOSPITAL**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Sumankumari**

Under the Guidance of

**Dr. Prakash Pandey**

**Joint director (medicine and health services)**

**Bokaro general hospital**

**Bokaro steel city, Jharkhand, 827004**

**Year of Submission -2019**

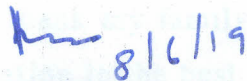
JEEV MANDIR  
JR1625





## CERTIFICATE

It is certified that the dissertation report entitle" TRAINING IN PATHOLOGY DEPARTMENT OF BOKARO GENERAL HOSPITAL" which is submitted by SUMAN KUMARI in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

डॉ० प्रकाश पाण्डेय  
संयुक्त निदेशक चि० एवं स्वा० सेवारें)  
बोकारो जेनरल अस्पताल  
कोड : PP

**PROJECT REPORT  
ON  
BIOLOGICAL EVALUATION OF SMALL ORGANIC MOLECULES IN  
EXPERIMENT MODEL OF NEURO-ONCO DISORDERS.**

SUBMITTED TO



**Department of Bioscience and Biotechnology  
BANASTHALI UNIVERSITY, RAJASTHAN**

In the partial fulfillment of the requirements for the award of degree

Of

**MASTER OF SCIENCE  
IN  
APPLIED MICROBIOLOGY AND BIOTECHNOLOGY**

By

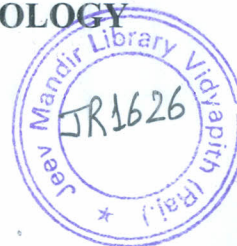
**SURBHI SHARMA**

Under the supervision of

**Dr. Puja Panwar Hazari Scientist 'E'**

**Institute of Nuclear Medicine and Allied Sciences (INMAS)**

**DRDO, Delhi, India**



JEEV MANDIR  
JR1626





## CERTIFICATE

It is certified that the Dissertation Report entitled "BIOLOGICAL EVALUATION OF SMALL ORGANIC MOLECULES IN EXPERIMENT MODEL OF NEURO-ONCO DISORDERS" which is being submitted by SURBHI SHARMA in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

डॉ० पूजा पंवार हजारी / Dr. Puja Panwar Hazari  
वैज्ञानिक 'ई' / Scientist 'E'  
साइक्लोट्रॉन एवं रेडियोफार्मास्युटिकल विभाग  
Division of Cyclotron and Radiopharmaceutical Sciences  
नामकीय औषधि तथा सम्बन्धित विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस० के० मजुमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054

A PROJECT REPORT ON

**“Impact of Gestational Arsenic Exposure on Inflammatory gene expression”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**TANYA GUPTA**

Under the Guidance of

**DR. VIKAS SRIVASTAVA**

SCIENTIST

CSIR-INDIAN INSTITUTE OF TOXICOLOGY RESEARCH

Year of Submission

2019



JEEV MANDIR  
JR1627







सीएसआईआर-भारतीय विषविज्ञान अनुसंधान संस्थान  
CSIR-INDIAN INSTITUTE OF TOXICOLOGY RESEARCH



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

## CERTIFICATE

It is certified that the Dissertation Report entitled "Impact of Gestational Arsenic Exposure on Inflammatory gene expression" which is being submitted by TANYA GUPTA in partial fulfilment of the requirements for the awards of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND BIOTECHNOLOGY of Banasthali Vidyapith (Deemed University) (National University for Women's Education) 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. No content of this work may be reproduced in any form without the written consent of the undersigned.

Vibha  
19/6/19

Signature of Supervisor

Scientist  
CSIR- Indian Institute of Toxicology Research  
Lucknow

विषविज्ञान भवन, 31, महात्मा गाँधी मार्ग  
पोस्ट बाक्स नं० 80, लखनऊ, उ.प्र., भारत

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director@iitrindia.org www.iitrindia.org



एनएबीएल द्वारा रासायनिक एवं  
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and biological testing



विषाक्तता परीक्षण: जीएसपी अनुमति सुविधा  
Toxicity Testing: GLP Test Facility



A PROJECT REPORT ON

**Effect of *Prunus armeniaca* extract on SaOS-2 cells under hypoxia**

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

Master of Science

In

**Applied Microbiology and Biotechnology**

**Banasthali Vidyapith**



Submitted By

**TWINKLE GUPTA**

Under the Guidance of

**DR. MRINALINI**

SCIENTIST 'E'

EXPERIMENTAL BIOLOGY DIVISION

DIPAS, DRDO



2017-2019

JEEV MANDIR  
JR1628



DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCE, (DIPAS)

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION, (DRDO)



17665

## Defence Institute of Physiology and Allied Sciences

रक्षा शरीरक्रिया एवं संबंधित विज्ञान संस्थान

(An ISO 9001 : 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization  
भारत सरकार रक्षा मंत्रालय रक्षा अनुसंधान एवं विकास संगठन  
Lucknow Road, Timarpur, Delhi - 110 054  
लखनऊ रोड, तिमारपुर दिल्ली - 110 054

### CERTIFICATE

This is to certify that

Ms. Twinkle Gupta Student of M. Sc. (Applied microbiology  
biotechnology) Banasthali University, Rajasthan,  
undertaken Project Work titled "Effect of *P. armeniaca* on S  
2 cells under hypoxia" from 03<sup>rd</sup> Jan 2019 to 14<sup>th</sup> June 20  
this establishment.

The work carried out by the candidate is property of DIPAS  
should not be published without prior approval of Director, DIP.

*Mrinalini*  
14.6.19  
(Dr. Mrinalini)

Scientist 'E'  
Experimental Biology Division

*Shweta*  
(Dr. Shweta Raw)  
Scientist 'E'  
HRD Coordinator

Office : 91-11-23883111

FAX No : 91-11-23914790 E-mail : [hrd@dipas.drdo.in](mailto:hrd@dipas.drdo.in)

DIPAS..... In pursuit of excellence in military Physiology



17666

A PROJECT REPORT ON

**AGROBACTERIUM MEDIATED TRANSFORMATION OF  
*Nicotianatabacum L.* WITH HEAT STRESS RESPONSIVE GENE  
*TaSTI***

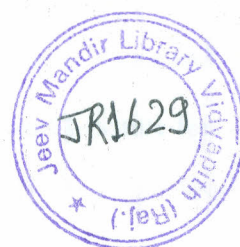
Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Science

In

**Applied Microbiology and Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**YOGITA SHARMA**

Under the Guidance of

**Dr.(Mrs.) J.C. Padaria**

SCIENTIST

NATIONAL INSTITUTE FOR PLANT BIOTECHNOLOGY, IARI, New Delhi-12

JEEV MANDIR  
JR1629



Year of Submission-2019



राष्ट्रीय पादप जैव प्रौद्योगिकी अनुसंधान केन्द्र  
लाल बहादुर शास्त्री भवन, पुसा परिसर, नई दिल्ली - 110012  
National Research Centre on Plant Biotechnology  
Lal Bahadur Shastri Building, Pusa Campus, New Delhi -110012



Dr. Jasdeep Chatrath Padaria  
Principal Scientist

19 June, 2019

### CERTIFICATE

This is to certify that Ms. Yogita Sharma (College ID LSMSM17039), a bonafide student of M.Sc. (Applied Microbiology and Biotechnology), BANASTHALI VIDYAPITH, Rajasthan, has undergone Project Work Training on “*Agrobacterium* mediated transformation of *Nicotiana tabacum* L. with heat stress responsive gene *Ta-STI*” under my guidance and supervision from 2 January, 2019 to 19 June, 2019 at National Institute for Plant Biotechnology, New Delhi.

During her tenure at NIPB, she has been found to be sincere, intelligent, disciplined and hard working student with keen interest for research work and eagerness to carry out the assigned experiment with honesty.

I wish her the very best in all her future endeavours.

*Jasdeep Chatrath*

Dr. Jasdeep Chatrath Padaria



17541

A PROJECT REPORT ON  
**ROLE OF BACTERIOPHAGE HK022 IN THE CARCINOGENESIS  
OF BRAIN**

Submitted in Partial Fulfillment of the Requirements  
for the Award of the Degree of  
Master of Science  
In  
**Biotechnology**  
(Department of Biosciences)  
of  
**Banasthali Vidyapith**



Submitted By

**AARTI KOTNALA**  
**(LSMST17006)**

Under the Guidance of  
**Dr. Manish Kr. Sharma**  
Director

**Pioneer Centre of Bio-Sciences**



JEEV MANDIR

JR1567



2018 - 2019



**PIONEER CENTRE OF BIOSCIENCES  
FOR ADVANCED TRAINING AND RESEARCH**

Mohan Nagar, Ghaziabad, UP.

Contact no: +91-9015076699; +91-996-802-3660

[www.pioneerbioscience.com](http://www.pioneerbioscience.com)

**Dr. Manish Sharma**  
**MSc, PhD**  
**Director**  
**Reg. No. AAD-2611**

**Phone: +91-9015076699**  
**+91-9968023660**

**Email: [manishatrey@hotmail.com](mailto:manishatrey@hotmail.com)**  
**[manishatrey@gmail.com](mailto:manishatrey@gmail.com)**

**Date of Issue: 10<sup>th</sup> June, 2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that *Aarti Kotnala*, a 4<sup>th</sup> semester student of M.Sc. (Biotechnology) from Banasthali Vidyapith, Rajasthan, completed her 6 months project at Pioneer Centre of Biosciences. During this period, she worked on "*Role of Bacteriophage HK022 in the Carcinogenesis of Brain*". During this project, she performed isolation of DNA from meningioma tumor and blood, qualitative and quantitative analysis of extracted DNA and amplification of genotype using PCR. She has also learned the use of bioinformatics tools to design primers.

She sincerely learned theory and carried out all the experiments necessary to understand her work. I am quite happy about her work performance in the lab and wish her all the best in her future endeavor.

*Manish Sharma*

**Dr Manish Sharma**



A PROJECT REPORT ON

**Green synthesis, Characterization and Antimicrobial activity of  
Copper Nanoparticles**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Aditi Bajpai**

Under the Guidance of

**Dr. MONIKA SHARMA**

(Assistant professor)

Department of Bioscience and Biotechnology

Banasthali Vidyapith

Rajasthan – 304022

(June-2019)

JEEV MANDIR  
JR1568





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



: +91 1438 228302

+91 1438 228341-46 Ext. 380

Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “**green synthesis, characterization and antimicrobial activity of CuNPs**” which is being submitted by **Miss Aditi Bajpai** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

**Prof. Dipjyoti Chakraborty**  
Deptt. of Biosc. and Biotechnology  
Banasthali Vidyapeeth  
Rajasthan-304022

**Dr. Monika Sharma**  
Deptt. of Biosc. and Biotechnology  
Banasthali Vidyapeeth  
Rajasthan-304022

A PROJECT REPORT ON

***In-Silico* Analysis and Modeling 3D Structure of Frizzled Receptor**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Akanksha Kotiya**

Under the Guidance of

**Dr. Surya Pratap Singh**

Assistant Professor

Department Of Bioscience and Biotechnology

JEEV MANDIR  
JR1569



Year of Submission- 2019

# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



☎ : +91 1438 228302  
+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the dissertation report entitled “*In-silico* analysis and modeling 3D structure of Frizzled receptor” which is being submitted by Ms. Akanksha Kotiya in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY of Bansthal 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 H.O.D.

Signature of Supervisor

(Dr. Dipjyoti Chakraborty)  
Prof. & Head  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

Dr. Surya Pratap Singh  
Assistant Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith



**DNA Barcoding of Selected Plants for Authentication of Their Identity**

By

AKANKSHA SINGH

Roll no-LSMST17010

A thesis submitted to the



DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY

BANASTHALI VIDYAPITH

BANASTHALI

In partial fulfilment of the requirement for the degree of

**MASTER OF SCIENCE**

IN

**BIOTECHNOLOGY**

Based on the work done at



CSIR – CENTRE FOR CELLULAR AND MOLECULAR BIOLOGY, HYDERABAD

During

20 December 2018 – 21 June 2019

JEEV MANDIR  
JR1570



~~JR 1569~~

# सी सी एम बी CCMB

सीएसआईआर - कोशिकीय एवं आणविक जीवविज्ञान केन्द्र  
CSIR-CENTRE FOR CELLULAR AND MOLECULAR BIOLOGY

उप्पल रोड, हैदराबाद तेलंगाना - 500 007. भारत.  
Uppal Road, Hyderabad, Telangana - 500 007. India.



**Dr. Sunil Kumar Verma**

*Principal Scientist*

## Certificate

It is to certify that **Ms AKANKSHA SINGH** has worked as a 'Dissertation Student' at CSIR - Centre for Cellular and Molecular Biology, Hyderabad, India from 20 December 2018 to 21 June 2019. During this time, she has worked on a project entitled, "*DNA Barcoding of Selected Plants for Authentication of Their Identity.*" under my supervision.

Hyderabad

June 21, 2019

[Sunil Kumar Verma]

**Dr. Sunil Kumar Verma, Ph.D**

Principal Scientist

CSIR-Centre for Cellular and Molecular Biology

Ministry of Science & Technology, Govt. of India

Uppal Road, Hyderabad-500 007 INDIA

फैक्स

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वेब साइट  
Website

<http://www.ccmb.res.in>

17345

A PROJECT REPORT ON

**“Effect of bioactive constituents of petiole of  
*Eichhornia crassipes* (Mart.) Solms against Sodium Fluoride  
induced toxicity in *Clarias batrachus*.”**

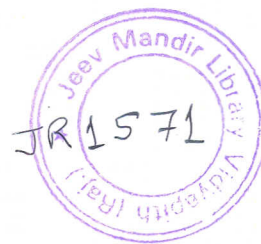
Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Akruti Gupta**

Under the Guidance of

**Dr. Rashmi Tripathi**

Assistant Professor

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY**

**BANASTHALI VIDYAPITH,**

**BANASTHALI-304022**

**RAJASTHAN**

**(2019)**

JEEV MANDIR  
JR1571





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

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Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “EFFECT OF BIOACTIVE CONSTITUENTS OF PETIOLE OF *EICHHORNIA CRASSIPES* (MART.) SOLMS AGAINST SODIUM FLUORIDE INDUCED TOXICITY IN *CLARIAS BATRACHUS*” which is being submitted by AKRUTI GUPTA in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

Prof. Dipjyoti Chakraborty  
Head of the Department  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

Rashmi  
24/6/19

Dr. Rashmi Tripathi  
Assistant Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

**A PROJECT REPORT**

**ON**

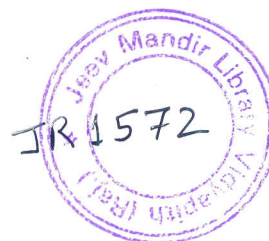
***Biological conversion of Cellulosic waste to value added products(ethanol and xylitol)***

*Submitted in partial fulfillment of the requirements for the award of  
degree of*

**MASTER OF SCIENCE IN  
BIOTECHNOLOGY**

**Of**

**Banasthali Vidyapith**



**SUBMITTED BY  
ALKA SINGH**

**Under the supervision of  
Dr. Ajay Kumar Sharma  
(Dy. Manager Research)**

**BERC –Bioenergy and research centre, IOCL**

**Faridabad**

**(2017-2019)**

**JEEV MANDIR  
JR1572**



## CERTIFICATE

It is certified that the Project Report entitled "*Biological conversion of Cellulosic waste to value added products(ethanol and xylitol)* " which is being submitted by Alka Singh, Id-LSMST17120 in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY of Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under (Dr. Ajay Kumar Sharma) my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

Signature of the Supervisor

(Dr. Ajay Kumar Sharma)



A Comprehensive Literature Dissertation Report On  
HAEMATOPOIETIC DISORDER



Submitted to

**Department of Bioscience and Biotechnology**

**Banasthali Vidyapith**

(NAAC 'A' Grade Accredited Institution)

For partial fulfillment of the requirements for the award of the degree of

**Master of Science**

In

**BIOTECHNOLOGY**

By

**Anjalee Anand**

Under the Supervision


Of

**Vishnu. P**

Regional Manager  
Stemcyte India Therapeutics Pvt. Ltd.  
(Bangalore)

## CERTIFICATE

It is certified that the Dissertation Report entitled **“Stem cell help in the Curing of Hematopoietic discover with great emphasis on Leukemia Disease”** which is being submitted by **Anjalee Anand** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.



**Firdaus Khan**

**Sr. Manager – HR & Admin**

1720

**A PROJECT REPORT ON**  
**EFFECT OF CYTOKININ AND AUXIN ON MICROPROPAGATION OF**  
**BANANA**

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE**  
**AWARD OF THE DEGREE OF**

**MASTER OF SCIENCE**

**IN**

**BIOTECHNOLOGY**

**OF**

**BANASTHALI VIDYAPITH**



**SUBMITTED BY**

**ANJALI SAXENA**

**ROLL NO- 17548**

**UNDER THE GUIDANCE OF**

**Dr. R.P. VYAS**

**Assistant Professor/ Tissue Culture Lab**

**Chandra Shekhar Azad University of Agriculture and Technology**

**JEEV MANDIR**

**JR1574**



**Year of Submission- 2019**



### CERTIFICATE

It is to certify that the Dissertation Report entitled "The effect of concentration of cytokinin and auxin on micropropagation of banana" which is being submitted by Anjali Saxena in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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

A PROJECT REPORT ON

**“Production and Optimization of Xanthan Gum by *Xanthomonas campestris*”**

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Science

In

**BIOTECHNOLOGY**

of

**BANASTHALI VIDYAPITH**



Submitted By

**ANJALI SINGH**

Under the Guidance of

**Dr. SUMANT CHAUBEY**

(Head of 3B Biotech)

**3B BIOTECH BIOLOGICS DEVELOPMENT CENTRE AND BIOPROCESS**

**LABORATORY AND TESTING HOUSE**

**VADODARA, GUJARAT**

**VADODARA-390021 (GUJARAT) INDIA**

**MAY 2019**

JEEV MANDIR  
JR1575



# CERTIFICATE

It is certified that the Dissertation Report entitled "**Production and Optimization of Xanthan Gum by *Xanthomonas campestris***" which is being submitted by **ANJALI SINGH** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

3B BIOTECH ENTERPRISES

*Harzani Chaubey*  
AUTHORISED SIGNATORY  
Signature of Supervisor



17550

A PROJECT REPORT ON

**Phytochemical analysis and evaluation of anticancer activity of  
*Achyranthes aspera* aqueous root extract in Dalton's Lymphoma  
Cells**

Submitted in the partial fulfillment of the requirement for award of the degree of

**M.Sc. in Biotechnology**

(2017 - 2019)



**BANASTHALI VIDYAPITH RAJASTHAN**

Submitted by

**Anjali Tripathi**

M.Sc. Biotechnology

IV<sup>th</sup> Semester

Roll No. ~~15240~~ **1576**

Under the supervision of

**Prof. Arbind Acharya**

Department Of Zoology,

Institute Of Science,

Banaras Hindu University,

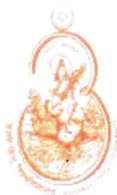
Varanasi-221005

JEEV MANDIR

JR1576



काशी हिन्दू  
विश्वविद्यालय



BANARAS HINDU  
UNIVERSITY

ESTABLISHED BY PARLIAMENT BY NOTIFICATION NO.225 OF 1916

Professor Arbind Acharya  
Tumor Immunology Lab  
Department of Zoology  
Institute of Science

### Certificate

This is to certify that report of dissertation work entitled **"Phytochemical analysis and evaluation of anticancer activity of *Achyranthes aspera* aqueous root extract in Dalton's Lymphoma Cells"** submitted in partial fulfillment of the requirement for the award of the degree of **MASTER OF SCIENCE IN BIOTECHNOLOGY** from **Banasthali Vidyapith (Deemed University) (National University Women's Education), Rajasthan** is carried out by **Ms. Anjali Tripathi** in the **Department of Zoology, Institute of Science, Banaras Hindu University, Varanasi**. The entire work of dissertation (**From 15 December 2018 to 14 May 2019**) was carried out by the candidate under my supervision and guidance. The matter embodied in this report has not been submitted anywhere in my knowledge.

(Supervisor)

Prof. Arbind Acharya  
**PROF. ARBIND ACHARYA**  
**DEPARTMENT OF ZOOLOGY**  
**INSTITUTE OF SCIENCE**  
**BANARAS HINDU UNIVERSITY**  
**VARANASI-221005**  
**U.P., INDIA**



Varanasi, UP, INDIA  
Mobile: 09453221651  
Email: [acharya@bhu.ac.in](mailto:acharya@bhu.ac.in)

**A PROJECT REPORT ON**

**TO INVESTIGATE THE ANTI-PROLIFERATIVE EFFECT OF**

**MOLECULAR IODINE ON BREAST CANCER CELL LINES**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**ANKITA SINGH**  
**M.Sc. Biotechnology (IV<sup>th</sup> Semester)**  
**Roll No. 17551**

Under the Guidance of  
**DR. SWASTI TIWARI**  
Professor and Head of the department  
Sanjay Gandhi Post-Graduate Institute of Medical Sciences  
Raibareli Rd, Haibat Mau Mawaiya, Lucknow, Uttar Pradesh 226014

2017-2019





Phones: 0522-2495641 (O), 2495642, 5643, 5699, 4368  
Fax: 0522-2668017, 2668129

**Department of Molecular Medicine & Biotechnology**  
**Sanjay Gandhi Postgraduate Institute of Medical Sciences**

4<sup>th</sup> Floor, PMSSY Bulding  
SGPGIMS, Raebareli Road  
Lucknow-226014 (India)

PGI/MOL-MED/CERT-07/2019

Dated: 18.06.2019


Email: dralokkumar03@gmail.com

Cell: +91-9532060613

**CERTIFICATE**

This is to certify that Ms. Ankita Singh, student of M.Sc. Biotechnology, Department of Biosciences & Biotechnology, Banasthli Vidyapith, Rajasthan has Completed her training project titled "To Investigate The Anti-proliferative Effect Of Molecular Iodine In Breast Cancer Cell Lines" in the Department of Molecular Medicine & Biotechnology, at SGPGIMS, Lucknow for 6 months w.e.f. 1st January, 2019

I wish her success in all her future endeavors.

  
Dr. Alok Kumar

**Dr. Alok Kumar**  
Associate Professor  
Department of Molecular  
Medicine & Biotechnology  
SGPGIMS

17552

A PROJECT REPORT ON

**Effect of culture condition on growth and pigment for**

***Dunaliella parva* (Lerche)**

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

Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Anmol Bhargava**

Under the Guidance of

**Dr. Arvind Pareek**

Professor of Botany

Maharshi Dayanand Saraswati University, Ajmer

JEEV MANDIR

JR1578



2017-2019



महर्षि दयानन्द सरस्वती विश्वविद्यालय, अजमेर

MAHARSHI DAYANAND SARASWATI UNIVERSITY, AJMER

पुस्तकालय, अजमेर - 305 005

पुस्तकालय, अजमेर - 305 005, Rajasthan, India

प्रो.(डॉ.) अरविन्द पारीक MSc, PhD, FBS

विभागाध्यक्ष, अणुजीव विज्ञान

Prof. (Dr.) Arvind Pareek MSc, PhD, FBS

Head, Department of Microbiology

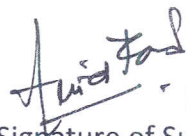
विभागाध्यक्ष, अणुजीव विज्ञान

पुस्तकालय, अजमेर - 305 005

ईमेल: [arvindmdsu@gmail.com](mailto:arvindmdsu@gmail.com)

## CERTIFICATE

It is certified that the Dissertation Report entitled "Effect of culture condition on growth and pigments *Dunaliella parva* (Lerche) " which is being submitted by ANMOL BHARGAVA in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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.

  
13.6.19.  
Signature of Supervisor



17553

**A PROJECT ON**  
**ISOLATION, IDENTIFICATION AND CHARACTERISATION OF**  
**PROBIOTICS FROM *Vigna radiata***

Submitted in Department of Biosciences and Biotechnology, for the Partial Fulfillment of  
the Requirements for the Award of the Degree of

Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Anukriti Srivastava**

Under the Guidance of

**Dr. K.A. Paari**

Assistant Professor



JEEV MANDIR  
JR1579



**CHRIST (Deemed to be University), Hosur Main road,  
Bengaluru, Karnataka-560029**

**Year of Submission :- 2018-19**

## CERTIFICATE

It is certified that the Dissertation Report entitled "Isolation, Identification and Characterisation of Probiotics from *Vigna radiata*(MK999905)", which is being submitted by **Anukriti Srivastava** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY of **Banasthali Vidyapith(Deemed to be 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.

Place:-Bengaluru

K.A. 9/07/06/19  
Signature of Supervisor



A Dissertation Report

on

***“EVALUATION OF NUTRACEUTICAL POTENTIAL OF  
FRUITS AND VEGETABLES WASTE”***

Submitted in partial fulfilment of the requirement for the award of the  
degree of

**MASTERS OF SCIENCE IN BIOTECHNOLOGY**



Submitted by: **Anusha Agarwal**

M.Sc. Biotechnology IV semester



Under the guidance of

**Dr. Sharad Vats**

Associate Professor

Department of Biosciences and Biotechnology

Banasthali Vidyapeeth

Rajasthan- 304022

JEEV MANDIR  
JR1580





# BANASTHALI VIDYAPITH

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E-mail : bv.bioinfo@gmail.com

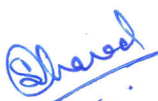
## CERTIFICATE

This is to certify that the Dissertation Report entitled AS “EVALUATION OF NUTRACEUTICAL POTENTIAL OF FRUITS AND VEGETABLES WASTE” which is being submitted by ANUSHA AGARWAL in partial fulfillment of the requirements for the award of degree of MASTER OF SCIENCE 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. This matter embodied in this report has not been submitted for award of any other degree.

Signature of H.O.D.

Signature of Supervisor

**Prof. Dipjyoti Chakraborty**  
Professor and Head  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

  
**Dr. Sharad Vats**  
Associate Professor  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
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E-mail : bv.bioinfo@gmail.com

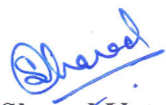
## CERTIFICATE

This is to certify that the Dissertation Report entitled AS “EVALUATION OF NUTRACEUTICAL POTENTIAL OF FRUITS AND VEGETABLES WASTE” which is being submitted by ANUSHA AGARWAL in partial fulfillment of the requirements for the award of degree of MASTER OF SCIENCE 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. This matter embodied in this report has not been submitted for award of any other degree.

Signature of H.O.D.

Signature of Supervisor

**Prof. Dipjyoti Chakraborty**  
Professor and Head  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

  
**Dr. Sharad Vats**  
Associate Professor  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

17555

Project report on  
**Molecular characterisation of heat tolerance in  
wheat**

Submitted in partial fulfilment of the Requirements for the Award  
of the Degree of Master of Science

In  
**Biotechnology**  
Of  
**BANASTHALI VIDYAPITH**  
**RAJASTHAN ,304022**  
**(2017-2019)**



Submitted by:

**ANUSHKA DINESH SHARMA**

Under the supervision of

**Dr.Girish chandra pandey**  
**(Assitant professor ,dept of Biotech.**  
**and Bioscience Banasthali vidyapith)**

JEEV MANDIR  
JR1581





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



☎ : +91 1438 228302  
+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## Certificate

It is certified that the dissertation report entitled “ **Molecular characterization of heat tolerance in wheat** ” which is being submitted by **Anushka Dinesh Sharma** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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 the supervision and guidance . The matter embodied in this report has not been submitted for the award of any other degree

Signature of the HOD

Dr. Dipjyoti Chakraborty  
Head of the department  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

Signature of supervisor

*Girish Ch Pandey*

Dr. Girish Chandra Pandey  
Assistant professor  
Dept. of Biosc. and Biotechnology  
Banasthali vidyapith

17556

A PROJECT DISSERTATION REPORT ON  
**EVALUATION OF ANTIOXIDANT ACTIVITIES OF EXTRACTS OF *Aegle  
marmelos* AND COMPARISON WITH ANTI-DIABETIC DRUGS**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By

**ARUSHI**

Under the Guidance of

**Dr. SURABHI BAJPAI**

Assistant professor

Department of Bioscience and Biotechnology

Banasthali Vidyapith

(National University For Women Education)

JEEV MANDIR

JR1582



Year of Submission

2019

# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



: +91 1438 228302

+91 1438 228341-46 Ext. 380

Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “**Evaluation of antioxidant activities of extracts of *Aegle marmelos* and their comparison with antidiabetic drugs**” which is being submitted by Miss Arushi in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

**Prof. Dipjyoti Chakraborty**

Professor & Head

Department of Biosc. and Biotechnology

Banasthali Vidyapith

*Surabhi*  
Signature of Supervisor

**Dr. Surabhi Bajpai**

Assistant Professor

Department of Biosc. and Biotechnology

Banasthali Vidyapith



**A PROJECT REPORT ON**  
**“In Vitro Micro propagation of Brahmi**  
**(*Bacopa monnieri*(L.)Pennell”)**

Submitted in Partial Fulfillment of the Requirements for the Award of the  
Degree of Master of Science

In  
**Biotechnology**  
of  
**Banasthali Vidhyapith**



Submitted By  
**Avantika Mishra**  
**Roll No.-17557**



Under the Guidance of  
**Dr R P Vyas**  
M.Sc. (Ag), Ph.D.

Assistant Professor / In Charge, Plant Tissue Culture Laboratory,  
Department of Genetics and Plant Breeding  
C.S. Azad University of Agriculture and Technology, Kanpur-208002  
(U.P.)

Year of Submission  
2019

JEEV MANDIR  
JR1583



### Certificate

It is certified that the Dissertation Report entitled "*In Vitro* Micro propagation of Brahmi (*Bacopa monnieri* (L.) Pennell.)" Which is being submitted by **Avantika Mishra** in particular fulfillment of the requirements for the award of degree of **MASTER OF SCIENCE 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

17558

A PROJECT REPORT ON

**“Value Added Products Generation from Micro-algae”**

Submitted in Partial fulfilment of the Requirement for the Award of the Degree of

Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Avni Jain**

Under the Guidance of

**Dr. K. Krishnamurthi**

Scientist and Head

Health and Toxicity Division

CSIR-NEERI, NAGPUR



JEEV MANDIR  
JR1584



2018-2019



## Certificate

This is to certify that **Ms. Avni Jain**, student of M. Sc. (Biotechnology), Department of Bioscience and Biotechnology, Banasthali Vidyapith (Deemed University), Niwai, Rajasthan has successfully completed her dissertation work under my supervision and guidance on the topic **“Value added products generation from Micro-algae”** from January 2019 to June 2019.

This Dissertation Work Report is submitted to **Banasthali Vidyapith (Deemed University), Niwai, Rajasthan** in partial fulfillment of the requirement for award of degree of M. Sc. (Biotechnology) during the academic year 2018-2019. This research work is comprehensive, partially complete and ready for submission to the university.



(K. Krishnamurthi)

डॉ. क. कृष्णमुर्ती / Dr. K. Krishnamurthi  
मुख्य वैज्ञानिक तथा प्रमुख / Chief Scientist & Head  
आरोग्य तथा विषाक्तता प्रकोष्ठ / Health and Toxicity Ce-  
सी.एस.आई.आर.-नीरी, नम्रपुर-20/CSIR-NEERI, Nagpur

A PROJECT REPORT ON

**SPECIFIC MICRO RNA EXPRESSION PROFILING IN  
VTE PATIENTS AT SEA LEVEL AND AT HIGH ALTITUDE**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



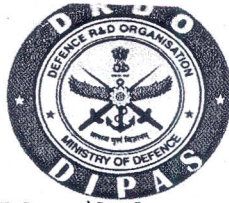
Submitted By  
**AYUSHI AGRAWAL**  
MSc. Biotechnology  
Under the Guidance of  
**DR. SWATI SRIVASTAVA**  
"Scientist- D"  
DIPAS, DRDO



JEEV MANDIR  
JR1585



**DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCES (DIPAS)**  
**DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)**



## Defence Institute of Physiology and Allied Sciences

रक्षा शारीरक्रिया एवं संबन्ध विज्ञान संस्थान

(An ISO 9001 : 2000 Certified Institute)

Govt. of India, Ministry of Defence, Defence Research & Development Organization  
भारत सरकार रक्षा मंत्रालय रक्षा अनुसंधान एवं विकास संगठन  
Lucknow Road, Timarpur, Delhi - 110 054  
लखनऊ रोड, तिमारपुर दिल्ली - 110 054

### CERTIFICATE

This is to certify that

Ms. Ayushi Agrawal Student of M.Sc. Biotechnology, Banasthali  
Vidhyapith, Tonk, Rajasthan, has undertaken Project Work titled  
"MICRO RNA EXPRESSION PROFILING IN VTE PATIENTS AT  
SEA LEVEL AND AT HIGH ALTITUDE" from 02<sup>nd</sup> Jan 2019 to  
14<sup>th</sup> June 2019 in this establishment.

The work carried out by the candidate is property of DIPAS and  
should not be published without prior approval of Director, DIPAS.

(Dr. Swati Srivastava)  
Scientist 'D'  
Genomics Division

(Dr. Shweta Rawat)  
Scientist 'E'  
HRD Coordinator

Office : 91-11-23883111

FAX No : 91-11-23914790 E-mail : [hrd@dipas.drdo.in](mailto:hrd@dipas.drdo.in)

DIPAS..... In pursuit of excellence in military Physiology



17 158

# “DETERMINATION OF PURITY AND POTENCY OF RECOMBINANT HUMAN ERYTHROPOIETIN”

DISSERTATION CARRIED OUT AT



RECOMBINANT PRODUCT LABORATORY,  
NATIONAL INSTITUTE OF BIOLOGICALS, NOIDA (U.P)

(17<sup>th</sup> December 2018 – 14<sup>th</sup> June 2019)

Submitted to Banasthali Vidyapith



In

Department of Biotechnology

By

AYUSHI GUPTA

(LSMST17024)

JEEV MANDIR  
JR1586



Under the Supervision of

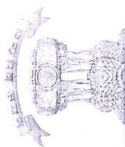
*Charu*  
13.6.2019

Dr. Charu M Kamal  
Scientist Grade- II, Head  
Recombinant Product Laboratory

Under the Co-Supervision of

*Manoj K Rajput*  
13/06/19

Dr. Manoj K Rajput  
Scientist Grade- III  
Recombinant Product Laboratory



# NATIONAL INSTITUTE OF BIOLOGICALS

(WHO Collaborating Centre for Quality Control of HIV, HCV, HBsAg, Syphilis *in-vitro* diagnostic assays)  
Ministry of Health and Family Welfare, Government of India

A-32, Sector-62, Noida-201309, Uttar Pradesh, INDIA

Ph.: +910120-2400022, 2400072, FAX: +910120-2403014, e-mail: [info@nib.gov.in](mailto:info@nib.gov.in)



This is to certify that Dr./Mr./Ms. Ayushi Gupta has successfully completed training programme/ dissertation /project work on “Determination of Purity and Potency of Recombinant Human Erythropoietin” at Recombinant Product Laboratory from 17.12.2018 to 14.06.2019.

Head Training Unit

Director

Certificate No. NIB/TRG/2019-20/1726 dt. 14.06.2019



17561

**REPORT ON THE TOPIC**

**Evaluation of *in vitro* DNA and protein protection activity of a Bacterial  
secondary metabolite RK-IP-006 and net against gamma radiation.**

**UNDER THE ELITE GUIDANCE OF**

**Dr. RAJ KUMAR (SCIENTIST 'E')**

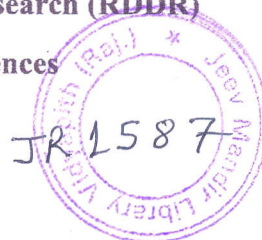
**AT**



**Division of Radioprotective Drug Development and Research (RDDR)**

**Institute of Nuclear Medicine and Allied Sciences**

**DRDO, Timarpur, Delhi-110054**



**SUBMITTED BY**

**BHAWANA JOSHI**

**[M.Sc. BIOTECHNOLOGY]**



**BANASTHALI VIDYAPEETH, RAJASTHAN**

**JEEV MANDIR  
JR1587**







**INSTITUTE OF NUCLEAR MEDICINE AND ALLIED SCIENCES  
DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION  
Brig.S.K. Mazumdar Marg, Delhi-110054, INDIA**

**Date: 21-06-2019**

**Dr. Raj Kumar**

**Scientist-'E'**


**Div. of Radioprotective Drug Development and Research**

**Email: [rajkumar790@yahoo.com](mailto:rajkumar790@yahoo.com); [rajkumar@inmas.drdo.in](mailto:rajkumar@inmas.drdo.in)**

**Ph: 09911401239; 01123905152**

**CERTIFICATE**

This is to certify that the training work embodied in this report entitled “**Evaluation of *in vitro* DNA and protein protection activity of a Bacterial secondary metabolite RK-IP-006 against gamma radiation**” which is being submitted by **Ms. Bhawana Joshi** in partial fulfilment of the requirements for the award of the **M.Sc. Biotechnology**, from **Banasthali Vidyapith, Jaipur, Rajasthan** as a record of work carried out by her under my supervision and guidance from **January, 1<sup>st</sup>, 2019 to June 21<sup>st</sup>, 2019**. I wish her all success in her future career.

  
21/6/2019  
**(Dr. Raj Kumar)**

**डा० राज कुमार/DR. RAJ KUMAR**

वैज्ञानिक 'ई'/SCIENTIST 'E'  
नाभिकीय औषधि तथा सम्बद्ध विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा अनुसंधान तथा विकास संगठन, रक्षा मंत्रालय  
Defence R&D Organisation Ministry of Defence  
ब्रिग एस.के. मजुमदार मार्ग, दिल्ली-110054  
Brig S.K. Mazumdar Road, Delhi-110054

A PROJECT REPORT ON

# QUALITY CONTROL ANALYSIS OF MILK AND ITS PRODUCT IN FOOD INDUSTRY

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Bhoomika Singh Raghav**

Under the Guidance of

**Mr. Rajneesh Kumar**

Manager QA

Heinz India Pvt. Ltd. Manzoorgarhi Aligarh

JEEV MANDIR  
JR1588



2019

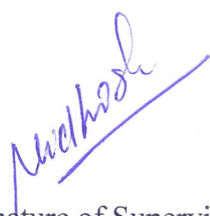
Banasthali Vidyapith, Banasthali

### CANDIDATE'S DECLARATION CERTIFICATE

I hereby certify that the work which is being presented in the report entitled "**In-Plant Training**" by "Bhoomika Singh" in partial fulfilment of requirements for the award of degree of **M.sc Biotech.** submitted to the **Department of Biotechnology, Banasthali Vidyapith, Banasthali** is an authentic record of my own work carried out during the period from 15<sup>th</sup> Dec.2018 to 15<sup>th</sup> June 2019 under the supervision of **Mr. Rajneesh Kumar**.

Signature of the Student

This is to certify that the above statement made by the candidate is correct to the best of my/our knowledge.

*for* 

Signature of Supervisor



Signature of HOD



17563

**A DISSERTATION REPORT**  
**ON**  
**NUTRACEUTICAL POTENTIAL OF DIFFERENT RICEBEAN**  
**CULTIVARS**

Submitted in partial fulfillment of the requirement  
for the award of the degree of  
**MASTERS OF SCIENCE IN BIOTECHNOLOGY**



Submitted by- **DEEKSHA SHARMA**

M.Sc- Biotechnology IV-SEM

under guidance and supervision of

**DR.SHARAD VATS**

**Associate Professor**

Department of Bioscience & Biotechnology

Banasthali Vidyapith

Rajasthan

JEEV MANDIR

JR1589



# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



☎ : +91 1438 228302  
+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

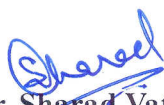
## CERTIFICATE

This is to certify that the Dissertation Report entitled as “NUTRACEUTICAL POTENTIAL OF DIFFERENT RICE BEAN CULTIVARS” which is being submitted by **Deeksha Sharma** in the partial fulfillment of the requirements for the award of the degree of **MASTERS of SCIENCE 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 H.O.D.

Signature of Supervisor

**Prof. Dipjyoti Chakraborty**  
Professor and Head  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

  
**Dr. Sharad Vats**  
Associate Professor  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

A PROJECT REPORT ON

**“Qualitative & Quantitative analysis of Secondary Metabolites  
and *In – Vitro* study of antibacterial activity of ten Indian  
medicinal plant on different Pathogen Microbial Strains”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By

**Deepika Gupta**

**M.Sc. in Biotechnology (2018-2019)**

**IV<sup>th</sup> semester**

**Roll no. 17564**

Under the guidance of

**Dr. VINOD KUMAR GUPTA**

**Scientist ‘C’**

**MS.SHERYA JAIN**

**Director**



**RAPTURE BIOTECH PHASE 8 INDUSTRIAL AREA SAS NAGAR MOHALI,**

**PUNJAB**

**Year of submission**

**2018-2019**

JEEV MANDIR  
JR1590







*Let's rejuvenate life*

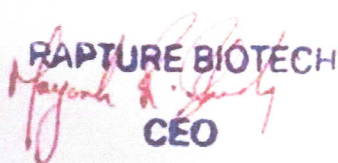
## CERTIFICATE

This is to certify that **Ms. Deepika, D/o Mr. Raj Bhushan Gupta**, student of **M.Sc. Biotechnology (Final year)**, Roll no-17564 from **"Banasthali Vidyapith, Jaipur"** has successfully completed her Project Internship Program of 6 Months, from 1<sup>st</sup> January 2019 to 30<sup>th</sup> June 2019, in our Biotechnology Division at **Mohali Campus** with **A Grade "A"** on the topic:

**"Qualitative & Quantitative analysis of Secondary Metabolites and In-vitro study of antibacterial activity of ten Indian medicinal plant on different Pathogen Microbial Strains"**

We wish for her bright future.

**Certificate Number: RPTM-1906/34**

**RAPTURE BIOTECH**  
  
**CEO**

**Mr. Mayank Raj Bhardwaj**

(Chief Executive Officer)

**Rapture Biotech, India.**

17555

A PROJECT REPORT ON

**PURITY OF FILGRASTIM (GCSF) USING  
SDS -PAGE, RP-HPLC & SE-HPLC**

Submitted in Partial Fulfilment of the requirements for the Award of the  
Degree of Master of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
Divyani Sharma  
M.Sc. Biotechnology



Under the Guidance of  
Dr. Meena Kumari  
(Scientist Grade –II)

Designation  
**National Institute of Biologicals**  
**Recombinant Products Laboratory**

JEEV MANDIR

JR1591



YEAR OF SUBMISSION : JUNE 2019





# NATIONAL INSTITUTE OF BIOLOGICALS

(WHO Collaborating Centre for Quality Control of HIV, HCV, HBsAg, Syphilis *in-vitro* diagnostic assays)  
Ministry of Health and Family Welfare, Government of India

A-32, Sector-62, Noida-201309, Uttar Pradesh, INDIA

Ph.: +910120-2400022, 2400072, FAX: +910120-2403014, e-mail: info@nib.gov.in

## CERTIFICATE

This is to certify that Dr./Mr./Ms. Divyani Sharma has successfully completed training programme/ dissertation /project work on "Purity of filgrastim (GCSF) using SDS- PAGE, RP- HPLC & SE-HPLC" at Recombinant Product Laboratory from 17.12.2018 to 17.06.2019.

Head Training Unit

Director

Certificate No. NIB/TRG/2019-20/1732 dt. 19.06.2019



17566

A PROJECT REPORT ON  
**Preparation of performance panel for HIV diagnostics using various Immunoassay**

**Methodologies and PCR**

Submitted in partial fulfilment of the requirements for the award of the

Degree of Master of Science

In

Biotechnology



Submitted by

**DOLLY KUMARI**

M.Sc. Biotechnology



Under the Guidance of

**Dr. RICHA BARANWAL**

Scientist Grade - III

National Institute of Biologicals

(Ministry of Health and Family Welfare, Govt. of India)

( 17 dec 2019 – 17 june 2019)

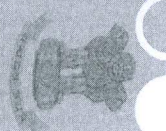
JEEV MANDIR  
JR1551







1V IM NO 10HS



## NATIONAL INSTITUTE OF BIOLOGICALS

(WHO Collaborating Centre for Quality Control of HIV, HCV, HBsAg, Syphilis *in-vitro* diagnostic assays)  
Ministry of Health and Family Welfare, Government of India

A-32, Sector-62, Noida-201309, Uttar Pradesh, INDIA

Ph.: +910120-2400022, 2400072, FAX: +910120-2403014, e-mail: [info@nib.gov.in](mailto:info@nib.gov.in)



This is to certify that Dr./Mr./Ms. Doly Kumari has successfully completed training programme/ dissertation /project work on "Preparation of performance panel for HIV diagnostics using various Immunoassay Methodologies and PCR" at Immunodiagnostic Kits & Molecular Diagnostic Laboratory from 17.12.2018 to 17.06.2019.

Head Training Unit

Certificate No. NIB/TRG/2019-20/1731 dt. 19.06.2019

Director



A PROJECT REPORT ON  
**CASE STUDY ON RETRIEVAL OF STEM CELL FROM THE UMBILICAL CORD  
BLOOD AND ITS APPLICATION IN TREATING THALASSEMIA**

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of  
Science

In

Biotechnology

Of

**BANASTHALI VIDYAPITH**

**RAJASTHAN, 304022**

**(2017-2019)**



Submitted By:

**EKTA DAGAR**

Under the Supervision of

**Mr. Ashish Singh**

**Senior RM**

JEEV MANDIR  
JR1552



 **StemCyte**  
A GLOBAL REGENERATIVE THERAPEUTICS COMPANY



## CERTIFICATE

It Is Certified That The Dissertation Report Entitled "Case Study On Retrieval Of Stem Cell From The Umbilical Cord Blood And Its Application In Treating Thalassemia." Which is being submitted by Ekta Dagar in partial fulfillment of the requirements for the award of the degree of Master Of Science 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.

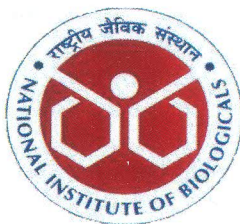


**Firdaus Khan**  
Sr. Manager – HR & Admin

17568

**“Potency, Identity and Purity determination for Quality Control  
Testing of Insulin Glargine”**

DISSERTATION CARRIED OUT AT



**RECOMBINANT PRODUCT LABORATORY,  
NATIONAL INSTITUTE OF BIOLOGICALS , NOIDA**

**(U.P)**

(17<sup>th</sup> December 2018 – 14<sup>th</sup> June 2019)

Submitted to Banasthali Vidyapith



In

Department of Biotechnology

By

**Ekta Pandey**

**(LSMST17096)**

JEEV MANDIR  
JR1553



Under the Supervision of

*Charu*  
*14.6.2019*  
**Dr. Charu M Kamal**  
Scientist Grade-II, Head  
Recombinant Product Laboratory

Under the Co-Supervision of

*Sanjay Mendiratta*  
*14/06/2019*  
**Dr. Sanjay Mendiratta,**  
Junior Scientist  
Recombinant Product Laboratory





## NATIONAL INSTITUTE OF BIOLOGICALS

(WHO Collaborating Centre for Quality Control of HIV, HCV, HBSAg, Syphilis *in-vitro* diagnostic assays)  
Ministry of Health and Family Welfare, Government of India

A-32, Sector-62, Noida-201309, Uttar Pradesh, INDIA

Ph.: +910120-2400022, 2400072, FAX: +910120-2403014, e-mail: [info@nib.gov.in](mailto:info@nib.gov.in)



This is to certify that Dr./Mr./Ms. Ektá Panday has successfully completed training programme/ dissertation /project work on "Potency, Identity and Purity Determination for Quality Control Testing of Insulin Glargine" at Recombinant Product Laboratory from 17.12.2018 to 14.06.2019.

  
Head Training Unit

Certificate No. NIB/TRG/2019-20/1730 dt. 14.06.2019

  
Director



17569

**“Physiological and biochemical changes in different cultivars of  
*Cyamopsis tetragonoloba* (L.) Taub under copper stress”**



**A Dissertation Report**

Submitted to

**Banasthali Vidyapith**

In partial fulfilment of the requirements for the award of degree of

**Master of Science**

In

**BIOTECHNOLOGY**

by

**Garima**



Under the supervision of

**Prof. Nilima Kumari**

**Department of Bioscience and Biotechnology**

**Banasthali Vidyapith**

**Rajasthan-304022**

**June 2019**

# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



☎ : +91 1438 228302  
+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “**Physiological and biochemical changes in different cultivars of *Cyamopsis tetragonoloba* (L.) Taub. under copper stress**” which is being submitted by **Garima** in partial fulfilment of the requirements for the award of degree of MASTER OF SCIENCE IN BIOTECHNOLOGY of Banasthali Vidyapith (National University for Women’s Education), is a piece of original research 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 H.O.D

*D. P. Chakraborty*

Prof. Dipjyoti Chakraborty  
Prof. & HOD  
Dept. of Bioscience and Biotechnology  
Banasthali Vidyapith, Rajasthan

Signature of Supervisor

*Nilima Kumari*

Prof. Nilima Kumari  
Professor  
Dept. of Bioscience and Biotechnology  
Banasthali Vidyapith, Rajasthan

17570

**Study on different long non-coding transcripts of *hsr $\omega$*  in  
in *Drosophila melanogaster***



**DISSERTATION REPORT**

Submitted in partial fulfillment of the requirements for the degree of

**MASTER OF SCIENCE  
IN  
BIOTECHNOLOGY**



**Session: 2017-2019**

JEEV MANDIR  
JR1555



**Supervisor:**

**Prof. S. C. Lakhotia**  
Distinguished Professor  
Cytogenetics Laboratory  
Department of Zoology  
Banaras Hindu University  
Varanasi- 221005

**Submitted by:**

**Geetanjali Kushwah**  
M.Sc. Biotechnology  
Department of Biotechnology  
Banasthali University  
Roll No: 17570



काशी हिन्दू  
विश्वविद्यालय



BANARAS HINDU  
UNIVERSITY

AN INSTITUTION OF NATIONAL IMPORTANCE ESTABLISHED BY AN ACT OF PARLIAMENT

**Cytogenetics Laboratory, Department of Zoology, Institute of Science  
Varanasi 221 005**

Tele: (+91-542) 236-8145 & 670-1827 (lab); Fax: 236-8457, 2312012 (Resi )  
e-Mail: lakhotia@bhu.ac.in; sclakhotia@yahoo.co.in

**Prof. S.C. Lakhotia, FNA, FASc, FNASc**  
BHU Distinguished Professor (Lifetime) & SERB Distinguished Fellow

June 8, 2019

### CERTIFICATE

It is certified that the Project Report entitled “Study on different long non-coding transcripts of *hsr $\omega$*  in *Drosophila melanogaster*” which is being submitted by Ms. Geetanjali Kushwah (Roll No: 17570) in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE IN BIOTECHNOLOGY** of Banasthali Vidyapith (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.

**S C Lakhotia**

**PROF. S.C. LAKHOTIA**  
Distinguished Professor  
Department of Zoology  
Institute of Science  
Banaras Hindu University  
Varanasi-221005



17571

## Dissertation Report

### Anti-acetylcholinesterase activity of novel Indian herbal formulations/plant extracts: screening and kinetic study

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science  
In  
Biotechnology  
of  
Banasthali Vidyapith



Submitted By

**Hiteshi Tomar**

Under the Guidance of

**Dr. Subarna Pokhrel**

Senior Scientist and Team Leader

Biochemistry Unit

Drug Discovery and Development Division

Patanjali Research Institute

Patanjali Research Foundation and Trust

Haridwar-249405, India

2019

JEEV MANDIR  
JR1556





## CERTIFICATE

It is certified that the Dissertation Report entitled “**Anti-acetylcholinesterase activity of novel Indian herbal formulation/Plant extracts: screening and Kinetic Study**” which is being submitted by **HITESHI TOMAR** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

*[Handwritten Signature]*  
10/06/19

Signature of Supervisor



*[Handwritten Signature]*  
10/06/19

Prof. & Head



17572

**A PROJECT REPORT ON**  
**Development of profuse rooting protocol**  
**in sugarcane variety CoS 08272**

**Submitted in the partial fulfillment of the requirement**  
**for award of the degree of Master**

**In**

**BIOTECHNOLOGY**

**(2017-2019)**



**BANASTHALI VIDYAPEETH RAJASTHAN-**  
**304022(INDIA)**

**Submitted By**

**ILA TANDON**

**M.Sc. Biotechnology**

**IV<sup>th</sup> semester**

**Roll. No.-17572**

**Under the supervision of**

**DR.R.K SINGH**

**Head, Centre for Sugarcane Biotechnology**

**U.P. COUNCIL OF SUGARCANE RESEARCH**

**SHAHJAHANPUR - 242001, Uttar Pradesh, INDIA**

JEEV MANDIR  
JR1557





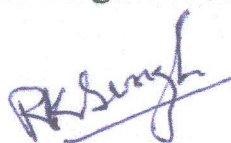
Mob. 6389025301 (Director)  
05842-222509 (Ph./Fax)  
E-mail : dirupcsr@gmail.com


## U.P. Council of Sugarcane Research SHAHJAHANPUR - 242 001

Date May 28, 2019

### CERTIFICATE

This is to certify that the research work embodied in this thesis entitled "**Development of Profuse rooting protocol in Sugarcane**" carried out by **Miss. Ila Tandon**, student of M.Sc. Biotechnology, for partial fulfillment of the degree of Master of Science in Biotechnology, **Banasthali Vidyapeeth, Rajasthan** has worked in Center for Sugarcane Biotechnology at **U.P. Council of Sugarcane Research, Shahjahanpur**. This research work is up to the required standards in terms of its contents and presentation. Miss. Ila Tandon has worked from Dec17, 2018 to May 28, 2019 in this Institute. She is a sincere and hardworking student. She bears a good moral character.

  
(R.K. SINGH)  
Supervisor

  
(J. SINGH)  
Director



A PROJECT REPORT ON

# Development of DNA Barcodes of Sacred Plants of Bhopal Using *rbcL* gene

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**JAHANVI AGRAWAL**

Under the Guidance of

**DR. ANITA TILWARI**

Senior Scientist

JEEV MANDIR  
JR1558



**Centre of Excellence in Biotechnology**

(An ISO: 9001- 2008 Certified Laboratory)

**Madhya Pradesh Council of Science & Technology**

(Department of Science and Technology, Govt. of M. P.)

Vigyan Bhawan, Bhopal-462003 (M.P.), India

**2019**





**Dr Anita Tilwari,**  
"Senior Scientist"  
M Sc, PhD, PDF (Malaysia)

## **CENTRE OF EXCELLENCE IN BIOTECHNOLOGY**

**M.P. Council of Science & Technology**  
(Dept. of Science and Technology, Govt of Madhya Pradesh)  
**Vigyan Bhavan, Nehru Nagar, Bhopal-462003**  
Tel.: 0755-2670447, EPBX: 2433126, 2671612  
Fax: 0755-2671600

E-mail: [anita\\_tilwari@yahoo.com](mailto:anita_tilwari@yahoo.com), [anitatilwari@mpcost.nic.in](mailto:anitatilwari@mpcost.nic.in)

No. 244/CST/CEBT/Trg./2019

Dated: 22.06.2019

### **CERTIFICATE**

It is certified that the Dissertation Report entitled "**Development of DNA Barcodes of Sacred Plants of Bhopal Using *rbcl* gene**" which is being submitted by **Ms. JAHANVI AGRAWAL** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

It is a record of the bonafide work carried out by her from Jan, 2019 to June, 2019 under my guidance and supervision. She has acknowledged all the assistance and help received during the course of the investigation.

We wish for her successful carrier.

**Dr Anita Tilwari**  
(Supervisor)

A PROJECT REPORT ON

**Enhancing drought tolerance in *Vigna mungo* using bacterial consortia: Physiological and Molecular study**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Janvi singh**

Under the Guidance of

**Prof. Dipjyoti Chakraborty**

Head of the Department of bioscience and Biotechnology

Banasthali Vidyapith

Rajasthan-304022 (INDIA)

2019

JEEV MANDIR  
JR1559





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



: +91 1438 228302

+91 1438 228341-46 Ext. 380

Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “**Enhancing drought tolerance in *Vigna mungo* using bacterial consortia: Physiological and Molecular study**” which is being submitted by **Ms. Janvi Singh** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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

Prof. Dipjyoti Chakraborty  
Head of the Department  
Department of Biosc. and Biotechnology  
Banasthali Vidyapith



A PROJECT REPORT ON

**“Assessment of anti-cancer efficacy of evolved DNazymes in an  
*in-vitro* model”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Jaya Srivastav**

Under the Guidance of

**Dr. Vikas Srivastava**

(Scientist)

CSIR-IITR

Department of developmental toxicology division

Vishvigyan Bhawan 31, mahatma Gandhi marg, Lucknow

Uttar Pradesh, 226001

JEEV MANDIR  
JR1560



2019



सीएसआईआर-भारतीय विषविज्ञान अनुसंधान संस्थान  
CSIR-INDIAN INSTITUTE OF TOXICOLOGY RESEARCH



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

डॉ देवेन्द्र परमार  
मुख्य वैज्ञानिक एवं प्रमुख  
मानव संसाधन प्रोफेसर

जून 19, 2019

### *To whomsoever it may concern*

यह प्रमाणित किया जाता है कि सुश्री जया श्रीवास्तव, एम०एससी० (बायोटेक्नोलॉजी), डिपार्टमेंट ऑफ बायोसाइन्स एंड बायोटेक्नोलॉजी, वनस्थली विद्यापीठ (राजस्थान) में अध्ययन कर रही हैं उन्होंने "Assessment of Anti-cancer Efficacy of Evolved DNA Zymes in an In-vitro Model" विषय पर दिनांक 20-12-2018 से 19-06-2019 तक शोध निबंध का प्रशिक्षण डॉ. विकास श्रीवास्तव, वैज्ञानिक, डिवेलपमेंटल टोक्सिकोलॉजी विभाग के पर्यवेक्षण में लिया है।

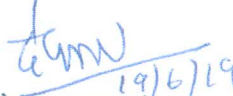
इस कार्य या इसके किसी अंश को, अधोहस्ताक्षरी के बिना लिखित अनुमति के प्रकाशित नहीं किया जायेगा।

मैं उनके उज्ज्वल भविष्य की कामना करता हूँ।

This is to certify that Km. Jaya Srivastava student of M.Sc. (Biotechnology), Department of Bioscience and Biotechnology, Banasthali Vidyapith (Rajasthan) has undergone dissertation training on "Assessment of Anti-cancer Efficacy of Evolved DNA-Zymes in an In-vitro Model" from 20-12-2018 to 19-06-2019 under the supervision of Dr. Vikas Srivastava, Scientist, Developmental Toxicology Division of the Institute.

The work should not be published, even in part without the prior written permission of the undersigned.

I wish all success in her career.

  
(देवेन्द्र परमार)

विषविज्ञान भवन, 31, महात्मा गाँधी मार्ग  
पोस्ट बाक्स नं० 80, लखनऊ, उ.प्र., भारत  
VISHVIGYAN BHAWAN, 31, MAHATMA GANDHI MARG  
POST BOX NO 80, LUCKNOW-226001, U.P. INDIA

Phone: +91-522-2627586, 2614118, 2628228 Fax: +91-522-2628227, 2611547  
director@iitrindia.org www.iitrindia.org



एनएबीएल द्वारा रासायनिक एवं  
जैविक परीक्षण हेतु प्रत्याथित  
Accredited by NABL for chemical  
and biological testing



विषाक्तता परीक्षण, जीएलपी अनुसंधान सुविधा  
Toxicity Testing: GLP Test Facility



17576

A PROJECT REPORT  
ON  
**STUDY ON DIABETES PROGRESSION IN TMT  
INDUCED NEURODEGENERATION: PROTECTIVE  
ROLE OF ASPIRIN**

SUBMITTED TO



**Department of Bioscience and Biotechnology  
BANASTHALI VIDHYAPITH, RAJASTHAN**

*In Partial Fulfillment of the Requirements for the Award of the Degree*

Of

**MASTER OF BIOTECHNOLOGY**

**BY**

**Ms. Jyoti Bala Gurjar**

Under the supervision of

**Dr. Hamendra Singh Parmar**  
**DEVI AHILYA UNIVERSITY, INDORE**  
**SCHOOL OF BIOTECHNOLOGY**

**BIOTECHNOLGY BUILDING, KHANDWA ROAD, INDORE, INDIA**



JEEV MANDIR  
JR1561



2017-19



## CERTIFICATE

It is certified that the Dissertation Report entitled “**Study on diabetes progression in TMT induced neurodegeneration: Protective role of Aspirin**” which is being submitted by **Jyoti Bala Gurjar** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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.

**Dr. Hamendra Singh Parmar**  
Assistant Professor  
School of Biotechnology  
Devi Ahilya University  
INDORE-452001(M.P.) INDIA

*Hamendra*

Date **19/06/19**

**Dr. Hamendra Singh Parmar**  
Assistant Professor  
School of Biotechnology  
Devi Ahilya University  
Indore, INDIA-452001



17577

A PROJECT REPORT ON

**Biocompatibility and efficacy study of pristine and polymeric mercury bhasma particles in ameliorating drug induced kidney and liver injuries**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Karishma Bhardwaj**  
M.Sc. (Biotechnology)  
Roll No. – 17577

Under the Guidance of  
**Dr. Kunal Bhattacharya**

Senior Research Scientist  
*In Vitro* Biology Department,  
Drug Discovery and Development Division,  
Patanjali Research Institute,  
Near NH-58,  
Haridwar – 249 407  
Uttarakhand

Year of Submission  
(2019)



JR1562

JEEV MANDIR.  
JR1562





DEPARTMENT OF BIOSCIENCE & BIOTECHNOLOGY

BANASTHALI VIDYAPITH

CERTIFICATE

It is certified that the Dissertation Report entitled "In vitro toxicity study of polymeric mercury based bhasmas in kidney and hipatocyte cells." which is being submitted by Karishma Bhardwaj in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

*Kunal Bhattacharya*  
(Kunal Bhattacharya)  
Signature of Supervisor

- C. The front cover page of the Dissertation Report showing the title, name of the degree and name of the candidate should be on white or sky blue glossy paper (format attached).
- D. Three copies of Dissertation Report shall be prepared in spiral binding. Two copies of the Report shall be submitted in the dept. office and one copy shall be retained by the candidate for her own record.
- E. All text should be in Times New Roman 12 Font size and 1.5 line spacing



( *Abhishek* )

Dr. Abhishek Gupta  
HoD,  
In Vitro Biology Division



17578

A PROJECT REPORT ON  
**QUALITY ANALYSIS OF PROCESSED FROZEN PEAS**

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

Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**KIRAN BISHT**



Under the Guidance of

**Mr. HIMANSHU MAHARA & Mr. ANAND BATE**



**Mother Dairy Fruit and Vegetable unit, Delhi**

**2019**

JEEV MANDIR

JR1563





F&V: HRA: ST: 362

4<sup>th</sup> June 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Ms. Kiran Bisht**, M.Sc. Biotechnology student of Banasthali Vidyapeeth, Rajasthan has undergone in-plant internship in our Unit during the period of 14<sup>th</sup> January 2019 to 31<sup>st</sup> May 2019.

During the training period she has worked in our Quality Department on a Project "To study about quality analysis of Processed frozen foods & Fresh F&V." and has submitted Project Report. Her performance and conduct during the training period were satisfactory.

We wish her success for a bright career.

For Mother Dairy Fruit & Vegetable Private Limited

  
Dy. Manager - HR

**मदर डेयरी फ्रूट एण्ड वैजिटेबल प्राइवेट लिमिटेड**

यूनिट : फ्रूट एण्ड वैजिटेबल यूनिट, मंगोलपुरी औद्योगिक क्षेत्र, फेज़-9, दिल्ली-110 083 फोन : 099 - 26902222 फैक्स : 099 - 26994994  
पंजीकृत कार्यालय : 'मदर डेयरी' पटपड़गंज, दिल्ली-110 092 भारत फोन : 099 - 22471991 फैक्स : 099 - 22475991

**Mother Dairy Fruit & Vegetable Private Ltd.**

Unit : Fruit & Vegetable Unit, Mangolpuri Industrial Area, Phase-I, Delhi-110 083, Tel.: 011-27902222 Fax : 011-27915816

Regd. Office : "Mother Dairy" Patparganj, Delhi-110 092 INDIA Tel.: 011-22471991 Fax : 011-22475991

E-mail : [contact@motherdairy.com](mailto:contact@motherdairy.com)

CIN No.: U15209DL2000PTC104671



17579

**A PROJECT REPORT  
ON  
“GENOTYPING OF TRANSGENIC AND INBRED MICE”  
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE AWARD OF THE DEGREE OF  
MASTERS OF SCIENCE IN BIOTECHNOLOGY  
OF**

**BANASTHALI VIDYAPITH  
DEPARTMENT OF BIOTECHNOLOGY**



SUBMITTED  
BY  
**KOMAL PUNDIR**

UNDER THE GUIDANCE  
OF  
**DR. NEERAJ KHATRI**  
PRINCIPAL SCIENTIST & HEAD  
IMTECH CENTRE FOR ANIMAL RESOURCES AND  
EXPERIMENTATION (iCARE)  
CSIR-INSTITUTE OF MICROBIAL TECHNOLOGY, CHANDIGARH

**2019**





सीएसआईआर – इमटैक  
CSIR-IMTECH

सीएसआईआर – सूक्ष्मजीव प्रौद्योगिकी संस्थान

सेक्टर 39-ए, चण्डीगढ़ - 160 036 (भारत)

CSIR-INSTITUTE OF MICROBIAL TECHNOLOGY

(A CONSTITUENT ESTABLISHMENT OF CSIR)

Sector 39-A, Chandigarh-160 036 (INDIA)

**CERTIFICATE**

It is certified that the Dissertation Report entitled " **GENOTYPING OF TRANSGENIC AND INBRED MICE**" which is being submitted by **MISS KOMAL PUNDIR** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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. Neeraj Khatri*  
14/6/19

**DR. NEERAJ KHATRI**

Principal Scientist & Head

iCARE, CSIR-IMTECH

7758

A PROJECT REPORT ON

**Comparative study to check the viability of cryopreserved red blood cells when thawed and resuspended in Alsever's solution for a period of four weeks.**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

Of

**Banasthali Vidyapith**



Submitted by

**Mansi Sharma**



Under the Guidance of

**Mrs. Kanchan Ahuja**

Scientist Grade-III, Head

Blood Reagent Laboratory

National Institute of Biologicals, NOIDA

Year of Submission-2019

JEEV MANDIR

JR1565

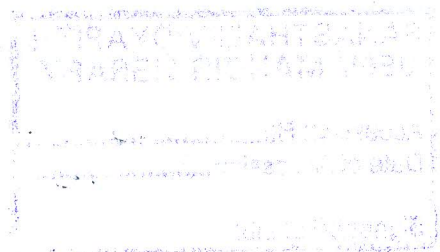




## CERTIFICATE

It is certified that the Dissertation Report entitled “ Comparative Study To Check The Viability Of Cryopreserved Red Blood Cells When Thawed And Resuspended In Alsever's Solution For A Period Of Four Weeks” which is being submitted by Mansi Sharma in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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.



*Kanchan*  
14/6/19  
Signature of Supervisor





## DISSERTATION REPORT

INDUSTRIAL TRAINING

Under the guidance of

Mr. RAKESH KUMAR SINGH

(SENIOR MANAGER)

QUALITY ASSURANCE & CONTROL DEPARTMENT

MOTHER DAIRY DELHI

**Project topic- Frozen vegetables & Quality Assurance**

JEEV MANDIR  
JR1566



Submitted To  
Banasthali Vidyapith

Submitted by  
Monisha Mishra  
(LSMST17044) M.SC BT



F&amp;V: HRA: ST: 164

30<sup>th</sup> April 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Ms. Monisha Mishra**, M.Sc. Biotechnology student of Banasthali Vidyapeeth, Rajasthan has undergone in-plant internship in our Unit during the period of 14<sup>th</sup> January 2019 to 30<sup>th</sup> April 2019.

During the training period she has worked in our Quality Department on a Project "To study about quality analysis of Processed frozen foods & Fresh F&V." and has submitted Project Report. Her performance and conduct during the training period were satisfactory.

We wish her success for a bright career.

For Mother Dairy Fruit & Vegetable Private Limited

Dy. Manager – HR

**मदर डेयरी फ्रूट एण्ड वैजिटेबल प्राइवेट लिमिटेड**

यूनिट : फ्रूट एण्ड वैजिटेबल यूनिट, मंगोलपुरी औद्योगिक क्षेत्र, फेज़-१, दिल्ली-११० ०८३ फोन : ०११ - २७९०२२२२ फैक्स : ०११ - २७९१५८९६  
पंजीकृत कार्यालय : 'मदर डेयरी' पटपड़गंज, दिल्ली-११० ०९२ भारत फोन : ०११ - २२४७९९९९ फैक्स : ०११-२२४७९९९९

**Mother Dairy Fruit & Vegetable Private Ltd.**

Unit : Fruit & Vegetable Unit, Mangolpuri Industrial Area, Phase-I, Delhi-110 083, Tel.: 011-27902222 Fax : 011-27915816

Regd. Office : "Mother Dairy" Patparganj, Delhi-110 092 INDIA Tel.: 011-22471991 Fax : 011-22475991

E-mail : [contact@motherdairy.com](mailto:contact@motherdairy.com)

CIN No.: U15209DL2000PTC104671



17582

***In vitro* callus induction of *Quercus semecarpifolia* Sm. from leaf explant**

**Dissertation carried out at**



**Uttarakhand Council For Biotechnology**

Biotech Bhawan, Haldi, Pantnagar, U. S. Nagar  
Uttarakhand, India

**Submitted to Banasthali Vidyapith**



In

Department Of Biotechnology



**Submitted By**

**Mridula bisht**

(LSMST17059)

**Under the Guidance of**

**Dr.Sumit Purohit**

**Scientific Officer**

Uttarakhand Council for Biotechnology  
(Deptt. Of Biotechnology, Govt. of Uttarakhand)  
Biotech Bhawan, Haldi, Pantnagar, U. S. Nagar  
Uttarakhand, India

JEEV MANDIR  
JR1592



2018-2019





उत्तराखण्ड जैवप्रौद्योगिकी परिषद्  
UTTARAKHAND COUNCIL FOR BIOTECHNOLOGY  
Department of Biotechnology, Govt. of Uttarakhand



Dr. Sumit Purohit  
Scientific Officer

UCB/HLD/2019/ 15

Date - 20/6/19

**CERTIFICATE**

This is to certify that Ms. Mridula Bisht the D/O Shri Ram Singh Bisht, a student of M.Sc. Biotechnology final year of Banasthali Vidyapith (Deemed University; National University for Women's Education) Niwai, Jaipur, Rajasthan has undergone her dissertation work of last semester under the my supervision at Uttarakhand Council For Biotechnology, Haldi, Pantnagar, Uttarakhand. During this period, she was assigned a thesis work entitle "*In vitro* callus induction of *Quercus semecarpifolia* from leaf explants Sm" During the tenure, she has been regular in attendance and has completed her dissertation work successfully.

  
20/6/19  
(Dr. Sumit Purohit)

Scientific officer

डा० सुमित पुरोहित

वैज्ञानिक अधिकारी

उत्तराखण्ड जैव प्रौद्योगिक परिषद्  
बायोटेक भवन, हल्दी, ऊधम सिंह नगर  
उत्तराखण्ड

17583

A PROJECT REPORT

On

**Isolation and identification of flavonoids from selected weed plants**

Submitted in partial fulfilment of the

Requirement for the degree of

**Master of Science in Biotechnology**



Submitted by

**NANDINI SINHA**



Under the supervision of

**MR. ANAND PRAKASH**

Assistant Professor

Department of Bioscience and Biotechnology

Banasthali University, Rajasthan

Pin: 304022

2019

JEEV MANDIR

JR1593





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
P. O. Banasthali Vidyapith – 304 022  
(Rajasthan)



: +91 1438 228302

+91 1438 228341-46 Ext. 380

Fax

: +91 1438 228365

E-mail : bv.bioinfo@gmail.com


## CERTIFICATE

It is certified that the Dissertation Report entitled “Isolation and identification of flavonoids from selected weed plant” which is being submitted by Nandini Sinha in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

(Dr. Dipjyoti Chakraborty)  
Prof. & Head  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

Signature of Supervisor

  
(Mr. Anand Prakash)  
Assistant Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith



17584

A PROJECT REPORT ON  
**GENE EXPRESSION ANALYSIS IN GLIOMA**

Submitted in Partial Fulfillment of the Requirements  
for the Award of the Degree of  
Master of Science

In  
**Biotechnology**  
(Department of Biosciences)  
of  
**Banasthali Vidyapith**



Submitted By

**NEETU NEGI**  
(LSMST17038)

Under the Guidance of  
**Dr. Manish Kr. Sharma**

Director

**Pioneer Centre of Bio-Sciences**



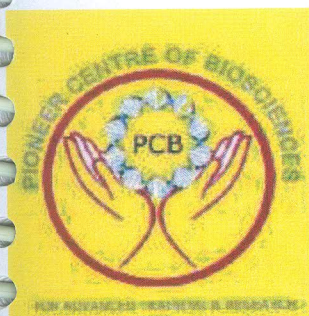
2018 - 2019

JEEV MANDIR

JR1594







**PIONEER CENTRE OF BIOSCIENCES  
FOR ADVANCED TRAINING AND RESEARCH**

Mohan Nagar, Ghaziabad, U.P.

Contact no: +91-9015076699; +91-996-802-3660

[www.pioneerbioscience.com](http://www.pioneerbioscience.com)

**Dr. Manish Sharma**

**MSc, PhD**

**Director**

**Reg. No.AAD-2611**

**Phone: +91-9015076699**

**+91-9968023660**

**Email: [manishatrey@hotmail.com](mailto:manishatrey@hotmail.com)**

**[manishatrey@gmail.com](mailto:manishatrey@gmail.com)**

**Date of Issue: 10<sup>th</sup> June, 2019**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that *Neetu Negi*, a 4<sup>th</sup> semester student of M.Sc. (Biotechnology) from Banasthali Vidyapith, Rajasthan, completed her 6 months project at Pioneer Centre of Biosciences. During this period, she worked on "*Gene Expression Analysis in Glioma*". During this project, she performed isolation of RNA from cultured glioma cells lines, qualitative and quantitative analysis of extracted RNA, preparation of cDNA and amplification of genes using PCR. She has also learned the use of bioinformatics tools to design primers.

She sincerely learned theory and carried out all the experiments necessary to understand her work. I am quite happy about her work performance in the lab and wish her all the best in her future endeavor.

*Manish Sharma*

**Dr Manish Sharma**



17585

**“DEVELOPMENT AND VALIDATION OF ELISA METHOD FOR  
DETERMINATION OF POTENCY IN TETANUS IMMUNOGLOBULIN”**

Carried out at  
**BLOOD PRODUCTS LABORATORY**



**NATIONAL INSTITUTE OF BIOLOGICALS (NIB), NOIDA (UP)**

**(17<sup>th</sup> Dec 2018 - 14<sup>th</sup> June 2019)**

**Submitted to Banasthali University**



In  
**Department of Biotechnology**

By  
**Neha Yadav**  
**(LSMST17017)**



  
21.06.19  
**Supervisor**

**Dr. J.P Prasad**  
**Head of Department, Blood Products Lab**

**JEEV MANDIR**  
**JR1595**



**Co – Supervisor I**

**Mrs. Sudha V. Gopinath**  
**(Scientist Grade – III)**

**Co – Supervisor II**

**Dr. Varun Singh**  
**(Jr. Scientist)**





**National Institute of Biologicals**

**Ministry of Health and Family Welfare, Government of India**

**Plot No.A-32, Sector-62 Institutional Area, Noida 201309 (U.P), India**

Date.....

### **CERTIFICATE**

This is to certify that project report entitled - **“DEVELOPMENT AND VALIDATION OF ELISA FOR DETERMINATION OF POTENCY IN TETANUS IMMUNOGLOBULIN”** is submitted to BANASTHALI VIDYAPITH, NIWAI (TONK) in partial fulfillment of the requirement for the award of MSc 2<sup>nd</sup> Year. This is a bonafied record of the work carried out by Neha Yadav in Blood Products Laboratory of National Institute of Biologicals Noida (U.P). under the supervision of Dr. J.P. Prasad, during the period from 16/12/2018 to 14/6/2019. No part of this report has been reproduced elsewhere for any degree or diploma to the best of my knowledge and belief. The project work done by Neha Yadav shall not be published in any form by the individual or other concerned without explicit permission of the National Institute of Biologicals, Noida.

Supervisor

**Dr. J.P. Prasad**

Head, Blood Products Lab

Co - Supervisor I

**Mrs. Sudha V. Gopinath**

(Scientist - III, Blood Products Lab)

Co - Supervisor II

**Dr. Varun Singh**

(Jr. Scientist, Blood Products Lab)



17586

A PROJECT REPORT ON

**CLONING AND EXPRESSION OF ALKALINE PHOSPHATASE  
GENE IN PROKARYOTES AND CONFIRMATION BY  
BLOTTING**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Nidhi Agrawal**

Under the Guidance of  
**Dr. Mahesh M**

CEO

AZYME BIOSCIENCES PVT. LTD. #1188/20,3<sup>rd</sup> Floor,26<sup>th</sup> Main, Opp. Ragigudda  
Temple Arch, 9<sup>th</sup> Block, Jayanagar, Bengaluru, Karnataka 560069

JEEV MANDIR

JR1596



2019

## CERTIFICATION

It is certified that the Dissertation Report entitled "Cloning and expression of ALP gene in prokaryotes and confirmation by blotting" which is being submitted by Nidhi Agrawal in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

*Mahesh M*

Mahesh. M  
CEO



**Signature of supervisor**



A PROJECT REPORT ON

**“Production and optimization of Rapamycin antibiotic by  
*Streptomyces hygroscopicus*”**

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of  
Science

In

**BIOTECHNOLOGY**

of

**BANASTHALI VIDYAPITH**



Submitted By

**NIDHI MAHESHWARI**



Under the Guidance of

**Dr. SUMANT CHAUBEY**

(Head of 3B Biotech)

**3B BIOTECH BIOLOGICS DEVELOPMENT CENTRE AND BIOPROCESS**

**LABORATORY AND TESTING HOUSE**

**VADODARA, GUJARAT**

**VADODARA-390021 (GUJARAT) INDIA**

**MAY 2019**

JEEV MANDIR

JR1597



17587

# CERTIFICATE

It is certified that the Dissertation Report entitled "**PRODUCTION AND OPTIMIZATION OF RAPAMYCIN ANTIBIOTIC BY *Streptomyces hygroscopicus***" which is being submitted by **NIDHI MAHESHWARI** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

3B BIOTECH ENTERPRISES  
*Bhaisali Chaudhary*  
AUTHORISED SIGNATORY  
Signature of Supervisor



17588

# **EXPRESSION OF RECOMBINANT PROTEINS USING INDUCIBLE SYSTEMS IN *Escherichia coli***

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

of

**BANASTHALI VIDYAPITH**



Submitted By

**NIKITA BINDAL**



Under the Guidance of

**DR. AMITA GUPTA**

Department of Biochemistry

University of Delhi South Campus

New Delhi-110021

JEEV MANDIR  
JR1598



(2019)





**Department of Biochemistry**  
University of Delhi South Campus (UDSC)  
Benito Juarez Road,  
New Delhi – 110021, INDIA

Date: \_\_\_\_\_

## **CERTIFICATE**

It is certified that the Dissertation Report entitled “**EXPRESSION OF RECOMBINANT PROTEINS USING INDUCIBLE SYSTEM IN *E.coli***” which is being submitted by NIKITA BINDAL, M.Sc. student (2019) in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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.

*Amita Gupta*  
19/6/19

**Dr. Amita Gupta**

(Supervisor)

17589

**Development of Graphene based composite for Textile Dye  
Removal, Defluoridation and Nanoparticle ( $\text{Al}_2\text{O}_3$ ) Effect on  
Plant**



**A Dissertation Report**

Submitted to

Banasthali University

(NAAC 'A' Grade Accredited Institution)

For partial fulfillment of the requirements for the award of the degree of

Master of Science

in

**BIOTECHNOLOGY**

Submitted By

**Nishi Goyal**

Under the Guidance of

**Dr. Suphiya Khan**

**Associate Professor**

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY**

**BANASTHALI VIDYAPITH**

JEEV MANDIR

JR1599



**2019**





# BANASTHALI VIDYAPITH

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Deptt. of Bioscience & Biotechnology

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(Rajasthan)



: +91 1438 228302

+91 1438 228341-46 Ext. 380

Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled "Development of Graphene Based composite for Textile Dye Removal, Defluoridation and Nanoparticle ( $Al_2O_3$ ) Effect on Plant" which is being submitted by Ms. Nishi Goyal in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Prof. Dipjyoti Chakraborty  
Professor & Head  
Dept. of Bioscience & Biotechnology  
Dean (Research & Development)  
Banasthali Vidyapith  
Banasthali - 304022

Signature of Supervisor

Dr. Suphiya Khan  
Associate Professor  
Dept. of Biosc. & Biotechnology  
Banasthali Vidyapith



17590

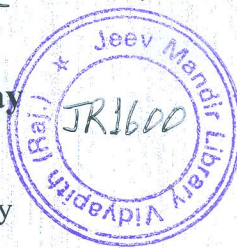
A PROJECT REPORT ON

**TO ESTABLISH AN OXALATE INDUCED CHRONIC  
KIDNEY DISEASE MODEL IN RODENTS**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science  
In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Pallavi Gupta (17590)**  
Under the Guidance of  
**Dr. Shrikant R. Mulay**  
Scientist  
Division of Pharmacology



CSIR-CENTRAL DRUG RESEARCH INSTITUTE, LUCKNOW

JEEV MANDIR  
JR1600



2018-19





# CSIR-CDRI



**CSIR - Central Drug Research Institute, Lucknow**  
(Council of Scientific & Industrial Research)



## Human Resource Development Programme

(Sponsored Project Training/Dissertation Work in Drug R&D and use of Sophisticated Laboratory Techniques)

Ref: No.:CDRI/HRD-Trng/1305-A/2019


Date: 14-06-2019

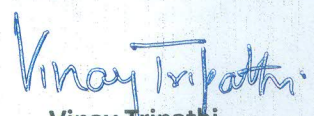
# CERTIFICATE

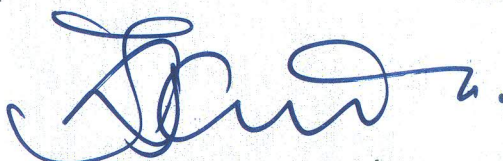
**This certificate is issued to the candidate on successful completion of the below mentioned course, at Central Drug Research Institute:**

Name of the Candidate & Qualification	: Ms. Pallavi Gupta M.Sc. (Biotechnology) Pursuing
Sponsoring Department & Institution	: Department of Bioscience & Biotechnology, Banasthali Vidyapith, Tonk niwai, Rajasthan
Category of Training	: General Training
Detail of Training	: Worked on the Project "To establish an oxalate-induced chronic kidney disease model in rodents"
Duration of Course	: 24 <sup>th</sup> December 2018 to 23 <sup>rd</sup> June 2019

**The candidate has fulfilled all prescribed requirements of the laboratory work, library consultation and completed the assigned task with sincerity and diligence.**

  
Shrikant R. Mulay  
Training Supervisor & Scientist  
Pharmacology Division

  
Vinay Tripathi  
Training Co-ordinator & Head  
HRD Division

  
Professor Tapas Kumar Kundu  
Director





17591

A PROJECT REPORT ON

**“Investigating the pharmacological role of nanoparticles  
synthesized from *Chenopodium murale* Linn.”**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Science

In

**Biotechnology**

Of

**Banasthali Vidyapith**



Submitted By

**Pallavi Mudgal**



Under the Guidance of

**Dr. Pracheta**

Assistant professor

Department of Bioscience and Biotechnology

Banasthali Vidyapith

JEEV MANDIR  
JR1601



June 2019



# BANASTHALI VIDYAPITH

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+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “Investigating the pharmacological role of nanoparticles synthesized from *Chenopodium murale*” which is being submitted by **Pallavi Mudgal** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

**Dr. Dipjyoti Chakraborty**  
Professor and Head  
Department of Bioscience and  
Biotechnology  
Banasthali Vidyapith

**Dr. Pracheta**  
Assistant Professor  
Department of Bioscience and  
Biotechnology  
Banasthali Vidyapith

*Pracheta*  
24/06/19



17592

A PROJECT REPORT ON  
**Computer-Aided Drug Designing For The Identification Of  
m-TOR Inhibitors For The Clinical Treatment Of Renal  
Cell Carcinoma**

Submitted in the partial fulfilment of the requirement  
for award of the degree of Master in Biotechnology  
(2017-2019)



**BANASTHALI VIDYAPEETH RAJASTHAN**  
304022(INDIA)

Submitted By  
**Miss. Payal Gupta**  
M.Sc Biotechnology  
IVth Semester  
Roll no:



UNDER THE SUPERVISION OF

**DR. ANURAJ NAYARISSEERI**  
PRINCIPAL SCIENTIST & DIRECTOR  
**EMINENT BIOSCIENCES,**  
91, SECTOR-A, MAHALAKSHMI NAGAR, INDORE, MP.

JEEV MANDIR  
JR1602





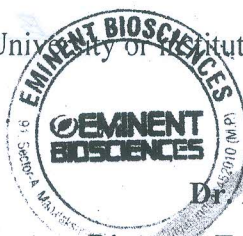
- Next Generation Sequencing
- Clinical Bioinformatics
- Microarray Data Analysis
- Healthcare and Clinical Research
- Statistical Computing
- Bio-Software Development
- R&D and Contract Research
- Training & Internship

Reg: 01783715  
Ref: EMBS092/19

## Certificate

This is to certify that Project titled *In silico* identification of high affinity small molecules targeting m-TOR inhibitors for the treatment of Renal Cell Carcinoma" was carried out by Miss. Payal Gupta for the partial fulfillment of M.Sc. Biotechnology, Banasthali University, Indore duration from 6th January 2019 to 5th May 2019 at *In silico* Research Laboratory, Eminent Biosciences, Indore.

This work is original and part of Eminent Biosciences research/consultation activity, which has not been submitted in part or full to any other University or Institution so far.



  
Dr. Anuraj Nayariseri

Director, Eminent Biosciences, Indore.



**A PROJECT REPORT**  
**ON**  
**“Phytochemical analysis and Antioxidant activity of**  
***Ficus religiosa* (leaves)”**

**SUBMITTED TO**  
**Banasthali Vidyapith, Jaipur**



**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF**  
**Master of Science in Biotechnology**

**SUBMITTED BY**  
**Ms. Priya Chaudhary, IV<sup>th</sup> Semester (LSMST 17082)**



**UNDER THE GUIDANCE OF**  
**Dr. Veena Sharma (Prof.)**

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY**

**BANASTHALI VIDYAPITH**

**RAJASTHAN - 304022**

**YEAR OF SUBMISSION - 2019**

JEEV MANDIR  
JR1603





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**E-mail** : bv.bioinfo@gmail.com

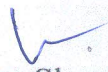
### CERTIFICATE

It is certified that the Dissertation Report entitled “**Phytochemical screening and Antioxidant activity of *Ficus religiosa* leaves**” which is being submitted by **Ms. Priya Chaudhary** in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D.**

**Signature of Supervisor**

(Dr. Dipjyoti Chakraborty)  
Prof. & Head  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

  
(Dr. Veena Sharma)  
Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith



17594

A PROJECT REPORT ON

**Screening, Production, Strain improvement, Optimization, Purification  
and Characterization of fungal lipase isolated from soil sample.**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**Priya chaudhary**

Under the Guidance of  
**Dr. Arun kumar sharma**

Assistant professor  
Department of Bioscience and Biotechnology  
Banasthali vidyapith

JEEV MANDIR

JR1604



2019



# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
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(Rajasthan)



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+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “Screening, production, strain improvement, optimization, purification and characterization of fungal lipase isolated from soil sample” which is being submitted by **Priya Chaudhary** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Dr. Dipjyoti Chakraborty  
Prof. & Head  
Dept. of Bioscience & Biotechnology  
Banasthali Vidyapith

Signature of Supervisor

Dr. Arun Kumar Sharma  
Assistant Professor  
Dept. of Bioscience & Biotechnology  
Banasthali Vidyapith

1-295

A PROJECT REPORT ON

**To identify miR-21 target genes and to study their expression at protein level in patients**

**With Coronary Artery Disease**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Science

In

**Biotechnology**

Of

**Bansathali Vidyapith**



Submitted By

**PRIYA RANI**

Under the guidance of

**DR. KAMNA SRIVASTVA**

Molecular Cardiology Lab

DR. B.R Ambedkar Centre for Biomedical Research University of Delhi (110007)

JEEV MANDIR

JR1605



Year of Submission (2018-2019)





डा. बी. आर. अम्बेडकर जैव चिकित्सा अनुसंधान केन्द्र (एसीबीआर)  
Dr. B.R. Ambedkar Center for Biomedical Research (ACBR)  
दिल्ली विश्वविद्यालय (उत्तरी परिसर) दिल्ली-११०००७, भारत  
University of Delhi (North Campus), Delhi-110 007, INDIA

18<sup>th</sup> April 2019

### CERTIFICATE

This is to certify that the dissertation report entitled "To identify miR-21 target genes and to study their expression at protein level in patient with Coronary Artery Disease" Submitted by Priya Rani, M.Sc. Final year student of Banasthali Vidyapith in partial fulfilment of the requirement for the award of the degree of M.Sc. Biotechnology, Banasthali Vidyapith, Rajasthan, under the guidance of Dr. Kamna Srivastava, Assistant professor, Dr. B. R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi- 110007. She has carried out her dissertation work from the period 04<sup>th</sup> January 2019 to 18<sup>th</sup> April 2019. I wish her all the best.

Kamna Srivastava

Dr. Kamna Srivastava

(Supervisor)

Prof. Daman Saluja

(Director, ACBR)

Director  
Dr. B.R. Ambedkar Center  
for Biomedical Research  
University of Delhi  
Delhi-110 007



17596

A PROJECT REPORT ON  
**Quantitation of Unknown Concentration of Taurine Using LC-MS**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**

Of  
**Banasthali Vidyapith**



Submitted By

**Priyanshi Singh**

Under the Guidance of

**Dr. Poonam Rana**

**Scientist 'E', INMAS DRDO**



**Institute of Nuclear Medicine and Allied Sciences  
DEFENSE RESEARCH AND DEVELOPMENT ORGANIZATION**

**Ministry of Defence, Government of India**

**New Delhi**

**Year of Submission**

**2018-19**

JEEV MANDIR

JR1606





Telephone: 011-23905312/319

Telegram : INMAS

Fax No. : 011-23919509



No. NMR/19-20/01

Govt. of India, Ministry of Defence  
Defence Research & Dev. Organisation  
Inst. of Nuclear Medicine & Allied Sciences  
Brig. S. K. Mazumdar Road  
Delhi- 110054

6<sup>th</sup> June 2019

### CERTIFICATE

It is certified that the Dissertation Report entitled "Quantitation of Unknown Concentration of Taurine Using LC-MS" which is being submitted by Priyanshi Singh in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

डॉ. पूनम राणा / Dr. POONAM RANA  
वैज्ञानिक 'E' / Scientist 'E'  
नाभिकीय औषधि एवं सम्बन्ध विज्ञान संस्थान  
Institute of Nuclear Medicine & Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगेड एस. के. मजुमदार रोड, तिमारपुर, दिल्ली-110054  
Brig. S. K. Mazumdar Road, Timarpur, Delhi-110054

17597

A PROJECT REPORT ON

## Review on Food Product Regulations

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Priyanshu**



Under the Guidance of

**Amit Sharma**

Director (Standards)

Food Safety and Standards Authority of India

JEEV MANDIR  
JR1607



2018 – 2019



## CERTIFICATE

It is certified that the Dissertation Report entitled "Review on Food Product Regulations" which is being submitted by Priyanshu in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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.

  
21/06/19  
Signature of Supervisor

डॉ. अमित शर्मा / Dr. AMIT SHARMA  
निदेशक / Director  
भारतीय खाद्य संरक्षा एवं मानक प्राधिकरण  
Food Safety and Standards Authority of India  
(स्वास्थ्य एवं परिवार कल्याण मंत्रालय)  
(Ministry of Health & Family Welfare)  
भारत सरकार / Government of India  
एफ.डी.ए. भवन, कोटला रोड, नई दिल्ली-110002  
FDA Bhavan, Kotle Road, New Delhi-110002

17598

A PROJECT REPORT ON

**Green synthesis of cobalt nanoparticles, optimization, characterization and kinetic modeling of secondary metabolites from *Trianthema portulacastrum* L.**

Submitted in Partial Fulfillment of the Requirements

for the Award of the Degree of Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**PURNIMA PATHAK**



Under the Guidance of

**Mr. Anand Prakash**

Assistant professor

Department of Bioscience and Biotechnology

Banasthali Vidyapith, Rajasthan, India

JEEV MANDIR  
JR1608



2019



# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
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(Rajasthan)



☎ : +91 1438 228302  
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Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com


## CERTIFICATE

It is certified that the dissertation report "Green synthesis of Cobalt nanoparticles, optimization, characterization and kinetic modeling of secondary metabolites from *Trianthema portulacastrum* " which is being submitted by PURNIMA PATHAK in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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 the supervision and guidance. The matter embodied in this report has been submitted for the award of any other degree.

Signature of the HOD

Signature of Supervisor

Prof. Dipjyoti Chakraborty  
Head of the Department  
Dept of Biosciences and Biotechnology,  
Banasthali Vidyapith,  
Rajasthan, India

  
Mr. Anand Prakash  
Assistant Professor  
Dept of Biosciences and Biotechnology,  
Banasthali Vidyapith,  
Rajasthan, India

127599

**Screening, production, strain improvement of amylase and  
cellulase in comparative manner and optimization,  
purification, characterization of amylase produced from  
*Aspergillus fumigatus* ATCC 1022**



**A Dissertation Report**

**Submitted to  
Department of Bioscience and Biotechnology**

**Banasthali Vidyapith**

**(NAAC 'A' Grade Accredited Institution)**

**For partial fulfilment of the requirements for the award of the degree of**

**Master of Science**

**in**

**Biotechnology**

**by**

**Radhika Jaithaliya**

**Under the Supervision of**

**Dr. Arun Kumar Sharma**

**Assistant Professor**



**Department of Bioscience and Biotechnology**

**Banasthali Vidyapith**

**Rajasthan-304022 (India)**

**June 2019**

JEEV MANDIR  
JR1609





17599  
BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
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(Rajasthan)



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Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

### CERTIFICATE

It is certified that the Dissertation Report entitled “Screening, production, strain improvement of amylase and cellulase in comparative manner and optimization, purification, characterization of fungal amylase isolated from soil sample” which is being submitted by **Radhika Jaithaliya** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D.

Dr. Dipjyoti Chakraborty  
Prof. & Head  
Dept. of Bioscience & Biotechnology  
Banasthali Vidyapith

  
Signature of Supervisor

Dr. Arun Kumar Sharma  
Assistant Professor  
Dept. of Bioscience & Biotechnology  
Banasthali Vidyapith

A PROJECT REPORT ON

**Evaluation of antioxidant properties and isolation of flavonoid from  
*Cyperus rotundus* Linn.**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Rashmi Upadhyay**



Under the Guidance of

**Dr. Pracheta**

Assistant Professor

Department of Bioscience and Biotechnology

Banasthali Vidyapith

Pin: 304022

JEEV MANDIR

JR1610



2019



# BANASTHALI VIDYAPITH

## वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology

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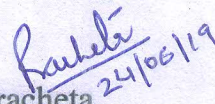
### CERTIFICATE

It is certified that the Dissertation Report entitled “**Evaluation of antioxidant potential and isolation of flavonoid from *Cyperus rotundus* Linn.**” which is being submitted by **Rashmi Upadhyay** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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.

(Countersigned HOD)

Dr. Dipjyoti Chakraborty  
Prof. & Head  
Department of Bioscience  
and Biotechnology,  
Banasthali Vidyapith

(Supervisor)

  
Dr. Pracheta 24/06/19  
Assistant Professor  
Department of Bioscience  
and Biotechnology  
Banasthali Vidyapith



A PROJECT REPORT ON

**“Isolation and characterization of *Fusarium oxysporum* that cause wilt disease in tomato plant”**

**Submitted in partial fulfilment for Requirement for the degree of**

**Master of Science**

**In**

**Biotechnology**



**SUBMITTED BY**

**Richa Singh**

**Under the Guidance of**

**Prof. R.S. Upadhyay**

**Department of Botany**

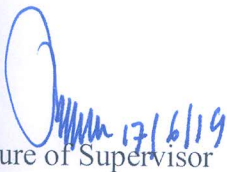
**BHU, Varanasi – 221005**

**Year of submission 2019 – 2020**



## CERTIFICATE

It is certified that the Dissertation Report entitled "**Isolation and characterization of Fusarium oxysporum that cause wilt disease in tomato plant**" which is submitted by Ms. Richa Singh in partial fulfillment of requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHONOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND BIOTECHONOLOGY of Banasthali Vidyapith (Deemed University) (National University for Woman 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

**Prof. R.S. Upadhyay**

**Department of Botany**

**Institute of Science,**

**B.H.U., Varanasi.**

17602

A PROJECT REPORT ON

**Studies towards Development of Animal Wound Model:**

**Evaluation of Efficacy of Drug**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree  
of Master of Science In

**BIOTECHNOLOGY**

OF

**BANASTHALI VIDYAPITH**

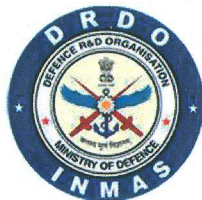
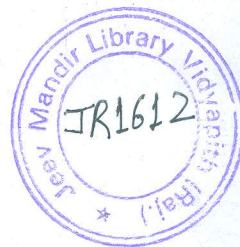


Submitted By

**Rimjhim Trivedi**  
ID- LSMST17139

Under the Guidance of

**Dr. Vanita Gupta**  
Scientist 'D', INMAS, DRDO



**INSTITUTE OF NUCLEAR MEDICINE AND ALLIED SCIENCES**

**Defence Research and Development Organization**  
**Ministry of Defence, Government of India, New Delhi**

**2018-19**

JEEV MANDIR

JR1612





Phone (office) : 011-23905150

फैक्स@FAX : 011-23919509

E-Mail :  
anuradhatyagi07@gmail.com



भारत सरकार, रक्षा मंत्रालय

GOVERNMENT OF INDIA, MINISTRY OF DEFENCE  
रक्षा अनुसन्धान तथा विकास संगठन

DEFENCE RESEARCH & DEVELOPMENT  
ORGANISATION

नाभकीय औषधि तथा सम्बद्ध विज्ञान संस्थान

INSTITUTE OF NUCLEAR MEDICINE & ALLIED SCIENCES

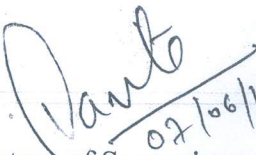
ब्रिगेडियर एस. के. मजूमदार मार्ग, दिल्ली- 110054

BRIG. S.K. MAZUMDAR MARG, DELHI-110054

दिनांक DATED : 07-06-2019

### CERTIFICATE

It is certified that the Dissertation Report entitled “**Studies towards development of Animal Wound Model: Evaluation of Efficacy of Drug**” which is being submitted by Rimjhim Trivedi in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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.

  
07/06/19

Signature of Supervisor

Dr. Vanita Gupta

Scientist D

Department of CEPIN

7603

**A PROJECT REPORT ON**  
**BIOPROSPECTING OF SOIL MICROBES FOR THE PRODUCTION OF**  
**1,3-PROPANEDIOL**

**Submitted in Partial Fulfillment of the Requirements for the Award of the**  
**Degree of Master of Science**

**In**  
**Biotechnology**  
**of**  
**Banasthali Vidyapith**



**Submitted By**  
**RITIKA GARG**

JR1613

**Under the Guidance of**  
**Dr. DEEPTI AGRAWAL**

**Sr. Scientist**  
**CSIR-INDIAN INSTITUTE OF PETROLEUM**  
**DEHRADUN**

**June-2019**





सीएसआईआर-भारतीय पेट्रोलियम संस्थान  
वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
हरिद्वार रोड, मोहकम्पुर  
देहरादून-248005, उत्तराखण्ड, भारत

**CSIR-INDIAN INSTITUTE OF PETROLEUM**

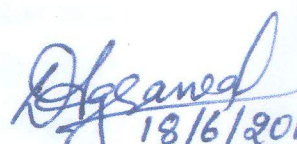
(Council of Scientific & Industrial Research)

Haridwar Road, Mohkampur  
Dehradun-248 005, Uttarakhand, India



### CERTIFICATE

It is certified that the dissertation report entitled “**Bioprospecting of soil microbes for the production of 1,3 Propanediol**” which is being submitted by **Ms. Ritika Garg** in partial fulfilment of requirement for the award of degree of **MASTER OF SCIENCE IN BIOTECHNOLOGY** of Bansthali 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 has not been submitted for award of any other degree. As per the terms and conditions provided earlier, Bansthali Vidyapith will not claim for any publication and IPR out of the results submitted. CSIR-IIP will retain the sole rights/IPR for publications of the work done.

  
18/6/2019.  
Signature of the Supervisor  
(Dr Deepti Agrawal)

17604

A PROJECT REPORT ON

# Study of inulinase from fungal sources

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

Master of Science

In

Biotechnology

Of

Banasthali Vidyapith



Submitted By

Ritu

Under the Guidance of

**Dr.V.C. Sonawane**

Senior Principal Scientist

Biochemical Engineering Research and Process Development Center (BERPDC)

CSIR-Institute of microbial technology (Chandigarh)

Year of Submission: 2019

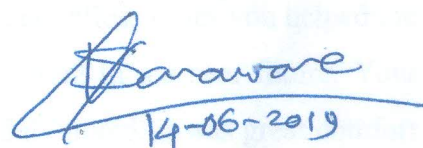
JEEV MANDIR  
JR1614





## CERTIFICATE

It is certified that the dissertation report entitled "Study of inulinase from a fungal source" which is being submitted by Ritu in the partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY of Banasthali university (deemed university) (national university for women 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.



14-06-2019

Signature of supervisor

17615

A PROJECT REPORT ON  
**Evaluation of Cancer Testis Antigen (CTA) "CABYR" in the Urine Samples of Cervical  
Cancer Patients**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
**Master of Science in Biotechnology**

**BANASTHALI VIDYAPITH**



Submitted By

**ROLI SHARMA**

Department of Biotechnology

**BANASTHALI VIDYAPITH**

(Session 2017-2019)

ID No. LSMST17174

ROLL NO. 17605

Under the supervision of



**Dr. Monika Sachdev**

Division of Endocrinology,

JEEV MANDIR  
JR1615



CSIR-Central Drug Research Institute, Lucknow (UP) - 226031



## CERTIFICATE

It is certified that the Dissertation Report entitled "**Evaluation of Cancer Testis Antigen (CTA) "CABYR" in the Urine Samples of Cervical Cancer Patients**" which is being submitted by **Roli Sharma** partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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.

Signature of Supervisor

ROLI SHARMA

17606

**Development of CNT based Composite for Textile Dye  
removal, Defluoridation and Nanoparticle ( $\text{Fe}_3\text{O}_4$ ) effect on  
Plant**



**A Dissertation Report**

Submitted to

**Banasthali vidyapith**

(NAAC 'A' Grade Accredited Institution)

For partial fulfillment of the requirements for the award of the degree of

Master of Science

in

**BIOTECHNOLOGY**

by

**Roshita Sharma**

Under the Supervision

of

**Dr. Suphiya Khan**

Associate Professor

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY**

**BANASTHALI VIDYAPITH**

**2019**

JEEV MANDIR  
JR1616





# BANASTHALI VIDYAPITH

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E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “Development of CNT Based composite for Textile Dye Removal, Defluoridation and Nanoparticle (Fe<sub>3</sub>O<sub>4</sub>) Effect on Plant” which is being submitted by Ms. Roshita Sharma in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

Prof. Dipjyoti Chakraborty  
Professor & Head  
Dept. of Bioscience & Biotechnology  
Dean (Research & Development)  
Banasthali Vidyapith  
Rajasthan 304022

Dr. Suphiya Khan  
Associate Professor  
Dept. of Bioscience & Biotechnology  
Banasthali Vidyapith

17607

A PROJECT REPORT ON

**COMPARATIVE BIOCHEMICAL ANALYSIS OF PROTEASES  
FROM *Bacillus pumilus* (MTCC1640), *Bacillus  
tequilensis* (MTCC619) AND *Kocuria rosea* (MTCC3700)**

Submitted in Partial Fulfilment  
of the Requirements for the Award of the  
Degree of Master of Science

In  
**BIOTECHNOLOGY**  
of  
**BANASTHALI VIDYAPITH**



Submitted By

**RUTH ZOMUANSANGI**

Under the Guidance of

**Dr. KAKOLI DUTT**

**(Associate Professor)**

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY  
BANASTHALI VIDYAPITH**

**BANASTHALI-304022 (RAJASTHAN) INDIA**

**MAY 2019**

JEEV MANDIR  
JR1535





# BANASTHALI VIDYAPITH

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E-mail : bv.bioinfo@gmail.com


## CERTIFICATE

It is certified that the Dissertation Report entitled “**COMPARATIVE BIOCHEMICAL ANALYSIS OF PROTEASES FROM *Bacillus pumilus* (MTCC1640), *Bacillus tequilensis* (MTCC619) AND *Kocuria rosea* (MTCC3700)**” which is being submitted by **RUTH ZOMUANSANGI** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D

**Dr. Dipjyoti Chakraborty**  
Professor and Head  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith  
Banasthali-304022

Signature of Supervisor

  
**Dr. Kakoli Dutt**  
Associate Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith  
Banasthali-304022

17608

A PROJECT REPORT ON

**STUDY OF THERAPEAUTIC POTENTIAL OF *NELUMBO NUCIFERA* SEED  
EXTRACT AGAINST FLUORIDE INDUCED TOXICITY IN  
*CLARIUS BATRACHUS***

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of  
Master of Science

In  
**Biotechnology**  
Of  
**Banasthali Vidyapith**



Submitted By  
**SAYA TYAGI**

Under the Guidance of  
**DR. RASHMI TRIPATHI**  
DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY  
BANASTHALI VIDYAPITH,  
BANASTHALI-304022  
RAJASTHAN  
(2019)

JEEV MANDIR  
JR1536





# BANASTHALI VIDYAPITH

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Fax : +91 1438 228365

E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “ **STUDY OF THERAPEUTIC POTENTIAL OF *NELUMBO NUCIFERA* SEED EXTRACT AGAINST SODIUM FLUORIDE INDUCED TOXICITY IN *CLARIAS BATRACHUS* ”** which is being submitted by **SAYA TYAGI** in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

Prof. Dipjyoti Chakraborty  
Head of the Department  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

*Rashmi*  
24/6/19

Dr. Rashmi Tripathi  
Assistant Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

17609

**Extraction of DNA from Different Human Samples for its  
PCR-RFLP analysis**

**Project report**

*Submitted in partial fulfilment of the requirement of the degree of*

**MASTER OF SCIENCE  
IN  
BIOTECHNOLOGY**



*by*

**Shambhavi Jha**

**LSMST17101**

**Department of Biotechnology**

**Banasthali Vidyapith**

*Under the guidance*

*of*

**Mr. Sahil Kaushik**

**Assistant Manager Training and Research**

**INBIT (Indian Biosciences), Delhi**



JEEV MANDIR  
JR1537





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Email: [inbt.director@gmail.com](mailto:inbt.director@gmail.com)

Website: [www.inbit.in](http://www.inbit.in)



CERTIFICATE FOR PROJECT

This certificate is awarded to Miss. Shambhavi Jha

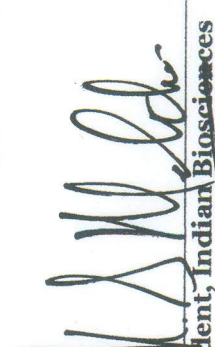
Student of Banasthali Vidhyapith, Jaipur on \_\_\_\_\_

successful completion of Training Programme from 2<sup>nd</sup> Jan.'19 to 15<sup>th</sup> June'19. The project work carried out during the training period was titled "Extraction of DNA from different human samples for its PCR – RFLP analysis"

under the supervision of Mr. Sahil Kaushik. The work

embodied in the Training is up to the mark and satisfactory for partial fulfillment of

M.Sc. Biotechnology.

  
President, Indian Biosciences

Professor, Dr. K.S. Mehta



  
Training Manager

Mr. Sahil Kaushik

A PROJECT WORK ON  
**Phytochemical Analysis and Determination of Antioxidant Potential  
of *Dalbergia sissoo* leaves.**

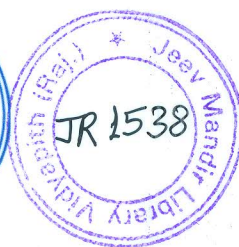
Submitted in partial fulfillment of the requirements for the Award of the Degree of  
Master of Science

In

**Biotechnology**

Of

**Banasthali Vidyapith**



Submitted By

**Sharmishtha Gangopadhyay**

Under the Guidance of

**Dr. Veena Sharma**

(Professor)

**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY, BANASTHALI  
VIDYAPITH, RAJASTHAN, 304022**

Year of Submission

**2019**

JEEV MANDIR  
JR1538





# BANASTHALI VIDYAPITH

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## CERTIFICATE

It is certified that the Dissertation Report entitled “**Phytochemical Analysis and Determination of Antioxidant Potential of *Dalbergia sissoo* leaves.**” which is being submitted by **Sharmishtha Gangopadhyay** in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

Signature of Supervisor

(Dr. Dipjyoti Chakraborty)  
Prof. & Head  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

(Dr. Veena Sharma)  
Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

17611

A Project Report On

**EXPLOITING THE POTENTIAL OF TBP DEGRADING  
BACTERIA FOR ITS MITIGATION FROM INDUSTRIAL REFUSE.**

Submitted in the partial fulfillment of the requirement for award of the degree of  
**MASTER IN BIOTECHNOLOGY**  
(2017-2019)



**BANASTHALI VIDYAPITH**

**RAJASTHAN**

**304022(INDIA)**

Submitted By

**SHEETAL PANDEY**

**M.Sc. Biotechnology**

**IV<sup>th</sup> semester**

**Roll no. 17611**

Under the Supervision of

**DR. SARIKA GUPTA**

**Senior Assistant Professor**

**Department of Bioscience and Biotechnology**

**Banasthali Vidyapith, Banasthali, 304022.**



JEEV MANDIR

JR1539





# BANASTHALI VIDYAPITH

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Deptt. of Bioscience & Biotechnology  
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(Rajasthan)



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+91 1438 228341-46 Ext. 380  
Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “ **EXPLORING THE POTENTIAL OF TRI-BUTYL PHOSPHATE DEGRADING BACTERIA FOR ITS MITIGATION FROM INDUSTRIAL REFUSE**” which is being submitted by **SHEETAL PANDEY** in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 H.O.D.

Prof. Dipjyoti Chakraborty  
Head of the Department  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

  
24/6/18  
Signature of Supervisor

Dr. Sarika Gupta  
Assistant Professor  
Dept. of Biosc. and Biotechnology  
Banasthali Vidyapith

17612

**Standardization of Quality Control Test Parameters Of  
Idursulfase**

**DESSERTATION CARRIED OUT AT**



**ENZYMES AND HORMONES LABORATORY,  
NATIONAL INSTITUTE OF BIOLOGICALS, NOIDA (U.P.)**  
(19<sup>th</sup> December 2018 – 19<sup>th</sup> June 2019)

Submitted to **Banasthali Vidyapith**

*in*

**Department of Biotechnology**

*by*

**Sheetul Sharma  
ID No. LSMST17031**

Under the Supervision of

**Dr. Akanksha Bisht**

Scientist grade II, Head, Enzymes and Hormones Laboratory  
National Institute of Biologicals, Noida



Under the Co-Supervision of

**Dr. Paras Jain**

Junior Scientist, Enzymes and Hormones Laboratory  
National Institute of Biologicals, Noida



**Banasthali Vidyapith  
Jaipur, Rajasthan- 304022**

JEEV MANDIR

JR1540





राष्ट्रीय जैविक संस्थान  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय

NATIONAL INSTITUTE OF BIOLOGICALS  
Ministry of Health & Family Welfare, Government of India



CERTIFICATE

A-32, Sector - 62 (Institutional Area)  
NOIDA - 201309 (U.P.) - INDIA  
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Fax : 0120 - 2403014, 2400074  
e-mail : info@nib.gov.in Website : www.nib.gov.in

It is certified that the Dissertation Report entitled "Standardization of Quality Control parameters of Idursulfase" which is being submitted by SHEETUL SHARMA in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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

17613

A PROJECT DISSERTATION REPORT

ON

**OPTIMIZATION OF ALGAL GROWTH AND BIODIESEL PRODUCTION**

Submitted in partial fulfillment of the requirement

For the award of the degree of

Master of Science in biotechnology



Submitted by

**SHRADHA**

Under the supervision of

**Dr. ARINDAM KUILA**

Assistant professor

Department of Bioscience and Biotechnology

Banasthali Vidyapith, Rajasthan

JEEV MANDIR  
JR1541





# BANASTHALI VIDYAPITH

वनस्थली विद्यापीठ

Deptt. of Bioscience & Biotechnology  
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Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com


## CERTIFICATE

This is to certify that the Dissertation Report entitled as “Optimization of Algal Growth And Biodiesel Production” which is being submitted by **Shradha** in the partial fulfillment of the requirements for the award of the degree of MASTERS of SCIENCE 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 H.O.D.

Signature of Supervisor

**Prof. Dipjyoti Chakraborty**  
Professor and Head  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

  
**Dr Arindam Kuila**  
Assistant Professor  
Department of Biosc. & Biotechnology  
Banasthali Vidyapith

17614

A PROJECT DISSERTATION REPORT  
ON  
**PRODUCTION AND OPTIMIZATION OF POLY-3-HYDROXYBUTYRATE**

Submitted in partial fulfillment of the requirement

For the award of the degree of  
Master of Science in biotechnology



Submitted by

**SHUBHANGEE SONI**

Under the supervision of

**Dr. ARINDAM KUILA**

Assistant professor

Department of Bioscience and Biotechnology

Banasthali Vidyapeeth, Rajasthan

2018-19

JEEV MANDIR  
JR1542





# BANASTHALI VIDYAPITH

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## CERTIFICATE

It is certified that the dissertation report “**Production And Optimization Of Poly-3-Hydroxybutyrate**” which is being submitted by **Ms. Shubhangee Soni** in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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 the supervision and guidance. The matter embodied in this report has been submitted for the award of any other degree.

Prof. Dipjyoti Chakraborty  
Head of the Department  
Dept of Biosciences and Biotechnology,  
Banasthali Vidyapith

  
Dr. Arindam Kuila  
Assistant Professor  
Dept of Biosciences and Biotechnology,  
Banasthali Vidyapith

17615

A PROJECT REPORT ON

**ESTIMATION OF COAGULATION PARAMETERS IN RATS  
EXPOSED TO HYPOXIA USING IVC LIGATION**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In  
**Biotechnology**  
of  
**Banasthali Vidyapith**



Submitted By  
**SHWETA ANTIL**  
MSc. Biotechnology  
Under the Guidance of  
**DR. SWATI SRIVASTAVA**  
"Scientist- D"  
DIPAS, DRDO



JEEV MANDIR  
JR1543



**DEFENCE INSTITUTE OF PHYSIOLOGY AND ALLIED SCIENCES (DIPAS)  
DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)**



## CERTIFICATE

It is certified that the Dissertation Report entitled "**ESTIMATION OF COAGULATION PARAMETERS IN RATS EXPOSED TO HYPOXIA USING IVC LIGATION**" which is being submitted by **SHWETA ANTIL** in partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE 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

**A PROJECT REPORT ON**  
**"Mycological analysis of *Sorghum bicolor* and efficacy of thymol**  
**against *Aspergillus flavus* Sb-04"**

**Submitted in partial fulfilment for Requirement for the degree of**  
**Master of Science**  
**In**  
**Biotechnology**  
**Of**  
**Banasthali Vidyapith**



**SUBMITTED BY**

**Sonal Singh**

**M.sc Biotechnology**

**4<sup>th</sup> Semester**

**Under the Guidance of**

**Dr. Bhanu Prakash**

**Department of Botany**  
**B H U, Varanasi- 221005**

**Year of submission 2019-20**

**JEEV MANDIR**  
**JR1544**







Date: June 2<sup>th</sup>, 2019

## CERTIFICATE

It is certified that the dersertation report entitled “*Mycological analysis of Sorghum bicolor and efficacy of thymol against Aspergillus flavus Sb-04*” which is submitted by Ms. Sonal Singh, is partial fulfilment of the requirements for the award of the degree of **MASTER OF SCIENCE IN BIOTECHNOLGY** of Banasthali Vidyapith (Deemed University) (National University for women’s Education) is record of candidate’s own works carry by her under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree. Banasthali, Rajasthan has completed her dissertation on the topic under my guidance and supervision.

(Dr. Bhanu Prakash)

**Dr. Bhanu Prakash**  
Assistant Professor  
Department of Botany  
Banaras Hindu University  
Varanasi-221005

134617

A PROJECT REPORT ON

**Studies of Relative Expression of Genes involved in  
Experimental Cerebral Malaria**

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

**Master of Science in Biotechnology**

**BANASTHALI VIDYAPITH**



Submitted By

**SUKHMANPREET KAUR**

Department of Biotechnology

**BANASTHALI VIDYAPITH**

(Session 2017-2019)



Under the supervision of

**Dr. RENU TRIPATHI**

*Head & Senior Principal Scientist*

**CSIR-Central Drug Research Institute Lucknow**



JEEV MANDIR  
JR1545







Dr. RENU TRIPATHI

Date: 20.06.2019

Senior Principal Scientist & Head

Division of Parasitology

### CERTIFICATE

It is certified that the Dissertation Report entitled “**Studies of Relative Expression of Genes involved in Experimental Cerebral Malaria**” which is being submitted by **Sukhmanpreet Kaur** in partial fulfillment of the requirements for the award of the degree of **Master of Science 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.

*R. Tripathi*

PLACE: LUCKNOW

Dr. Renu Tripathi

DATE: 20.06.2019

(Supervisor)

सेक्टर 10, जानकीपुरम विस्तार, सीतापुर रोड, लखनऊ-226 031 (भारत)  
Sector 10, Jankipuram Extension, Sitapur Road, Lucknow-226 031 (India)



A PROJECT REPORT ON

**Enhancing salt tolerance in *Vigna radiata* using bacterial consortia:  
Physiological and Molecular study**

Submitted in Partial Fulfillment of the Requirements  
for the Award of the Degree of  
Master of Science  
In  
**Biotechnology**  
Of  
**Banasthali Vidyapith**



Submitted By  
**Sukriti**

Under the Guidance of  
**Prof. Dipjyoti Chakraborty**  
Head of the Department of Bioscience and Biotechnology  
Banasthali Vidyapith  
Rajasthan-304022 (INDIA)

2019

JEEV MANDIR  
JR1546





# BANASTHALI VIDYAPITH

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E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “Enhancing salt tolerance in *Vigna radiata* using bacterial consortia: Physiological and Molecular study” which is being submitted by **Ms. Sukriti** in partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE 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

Prof. Dipjyoti Chakraborty  
Head of the Department  
Department of Biosc. and Biotechnology  
Banasthali Vidyapith

124819

A PROJECT REPORT ON

**PURIFICATION OF RECOMBINANT NANOBODIES HAVING  
THERAPEUTIC POTENTIAL IN CANCER TREATMENT**

Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of

**Master of Science in Biotechnology**

Of

**Banasthali Vidyapith**



Submitted By

**SWAPNIL SRIVASTAVA**

Under the Guidance of

**Dr. KRISHAN GOPAL THAKUR**

SENIOR SCIENTIST

CSIR- INSTITUTE OF MICROBIAL TECHNOLOGY

SECTOR 39A, CHANDIGARH, INDIA

Year of submission – 2019

JEEV MANDIR  
JR1547







सीएसआईआर – इमटेक  
CSIR-IMTECH

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सेक्टर 39-ए, चण्डीगढ़-160 036 (भारत)

CSIR-INSTITUTE OF MICROBIAL TECHNOLOGY

(A CONSTITUENT ESTABLISHMENT OF CSIR)

Sector 39-A, Chandigarh-160 036 (INDIA)

### CERTIFICATE

It is certified that the Dissertation Report entitled “PURIFICATION OF RECOMBINANT NANOBOODIES HAVING POTENTIAL IN CANCER TREATMENT” which is being submitted by SWAPNIL SRIVASTAVA in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY or MASTER OF SCIENCE IN APPLIED MICROBIOLOGY AND 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

डॉ. कृष्ण गोपाल/Dr. Krishan Gopal  
वरिष्ठ वैज्ञानिक/Senior Scientist  
सीएसआईआर-सूक्ष्मजीव प्रौद्योगिकी संस्थान  
CSIR-Institute of Microbial Technology  
सेक्टर/Sector 39-A, चण्डीगढ़/Chandigarh-160036

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तार : Gram : IMTECH  
E.mail : system@imtech.res.in  
Web : http://imtech.res.in

17620

A PROJECT REPORT ON

**Screening of Herboantimicrobials as Possible Drug Candidates for  
fungi of Dermatophytic Infection**

Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master  
of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**Tanya Bhayana**

Under the Guidance of

**Dr. Sarika Gupta**

(Assistant Professor)

Department of Bioscience & Biotechnology

**BANASTHALI VIDYAPITH, RAJASTHAN**

JEEV MANDIR  
JR1548



2019



# BANASTHALI VIDYAPITH

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Fax : +91 1438 228365  
E-mail : bv.bioinfo@gmail.com

## CERTIFICATE

It is certified that the Dissertation Report entitled “Screening of Herboantimicrobial as Possible Drug Candidates for Fungi of Dermatophytic Infection” which is being submitted by Tanya Bhayana in partial fulfilment of the requirements for the award of the degree of MASTER OF SCIENCE 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 H.O.D.

  
24/6/19  
Signature of Supervisor

**Dr. Dipjyoti Chakraborty**  
Prof. and Head,  
Department of Bioscience and  
Biotechnology  
Banasthali Vidyapith

**Dr. Sarika Gupta**  
Assistant Professor,  
Department of Bioscience and  
Biotechnology  
Banasthali Vidyapith



17621

A PROJECT REPORT ON

**Bacterial Production of Quercetin and Synthesis of  
Silver nano-particles**

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

**Master of Science**

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**VASUNDHARA PANDEY**

LSMST17226

Fourth semester

Under the Guidance of

**DR. PRIYANKA SINGH**

**Assistant professor**

**Banasthali Vidyapith**

JEEV MANDIR  
JR1549

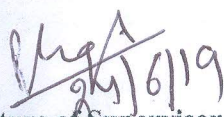


Year of Submission –June 2019



### Certificate

It is certified that the Dissertation Report entitled “ **Bacterial Production of Quercetin and Synthesis of Silver nanoparticles**” which is being submitted by **VASUNDHARA PANDEY** in the partial fulfillment of the requirements for the award of the degree of **MASTERS OF SCIENCE IN BIOTECHNOLOGY** of **Banasthali Vidyapith** (Deemed 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 degree.

  
Signature of Supervisor

17622

A PROJECT REPORT ON

# **SUPPLEMENTING METHIONINE IMPROVEMENT IN MAIZE THROUGH MOLECULAR STUDIES**

Submitted in Partial Fulfillment of the Requirements for the Award of the  
Degree of Master of Science

In

**Biotechnology**

of

**Banasthali Vidyapith**



Submitted By

**VIBHA GOUTAM**

Under the Guidance of

**Dr. ALLA SINGH**

Scientist

Agriculture biotechnology

ICAR – IIMR, Ludhiana

Punjab

JEEV MANDIR  
JR1550



Year of Submission  
2019





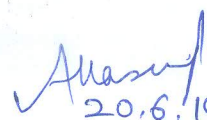
भाकृअनुप-भारतीय मक्का अनुसंधान संस्थान  
ICAR-INDIAN INSTITUTE OF MAIZE RESEARCH

पी.ए.यू. परिसर, लुधियाना - 141004, पंजाब (भारत)  
PAU Campus, Ludhiana - 141004, Punjab (India)



**CERTIFICATE**

It is certified that the Dissertation Report entitled '**Supplementing Methionine Improvement in Maize Through Molecular Studies**' which is being submitted by **Vibha Goutam** in partial fulfillment of the requirements for the award of the degree of **MASTER OF SCIENCE 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.

  
20.6.19,  
Signature of Supervisor

डॉ. आला सिंह/Dr. Alla Singh  
वैज्ञानिक (कृषि जैवप्रौद्योगिकी)  
Scientist (Agricultural Biotechnology)  
भारतीय मक्का अनुसंधान संस्थान  
Indian Institute of Maize Research  
लुधियाना, पंजाब/Ludhiana, Punjab.



भामअनुसं  
IIMR

Abbott Healthcare Pvt. Ltd.  
Village Bhatauli Khurd,  
Sai Road, Baddi,  
District Solan,  
Himachal Pradesh 173205  
Tel. : (91-1795) 304450  
Fax : (91-1795) 247034

**Registered Office :**  
3 Corporate Park,  
Sion-Trombay Road,  
Chembur, Mumbai 400076.  
CIN - U24200MH1997PTC104834

25<sup>th</sup> April, 2019

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Ms. Aakanksha Rajput** D/o Sh. Surendra Kumar Rajput was on Apprenticeship Training with our organization in Quality Control Department from 20<sup>th</sup> September, 2018 to 25<sup>th</sup> April, 2019.

She has resigned from the apprenticeship training of the company and accordingly she is being relieved from the apprenticeship training w.e.f 25<sup>th</sup> April, 2019 of the company.

During her apprenticeship, we found her sincere, hardworking and potential learner.

We wish her success for her future endeavor.

For **Abbott Healthcare Pvt. Ltd.**

  
Bharat Taneja  
Manager - HR



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A Promise for Life



Lt. (Dr.) Shiv Om Singh  
Assistant Professor & NCC Officer  
Department of Environmental Science  
Email: shivomsingh@itmuniversity.ac.in  
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UNIVERSITY

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"CELEBRATING DREAMS"

Ref.: \_\_\_\_\_

Date: 28.04.19

## CERTIFICATE

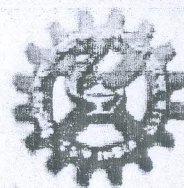
It is certified that the Project Report entitled "**Antimicrobial Activity of Bryophytes (Moss and Liverwort) Against Economically Important Plant Pathogens**" which is being submitted by **Ms. Manu Singh Rathor** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (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 the Supervisor



सीसीएमबी  
CCMB

सीएसआईआर-कोशिकीय एवं आणविक जीवविज्ञान केन्द्र  
CSIR-CENTRE FOR CELLULAR AND MOLECULAR BIOLOGY  
(विज्ञानिक तथा औद्योगिक अनुसंधान परिषद)  
(Council of Scientific & Industrial Research)



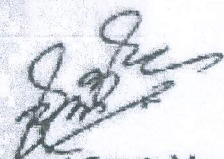
(विज्ञान एवं प्रौद्योगिकी) मंत्रालय, भारत सरकार / Ministry of Science & Technology, Govt. of India)  
उपपल रोड, हब्सिगुडा, हैदराबाद - 500 007, तेलंगाना, भारत  
Uppal Road, Habsiguda, Hyderabad - 500 007, Telangana, India

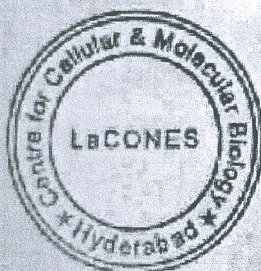
Dr. Sadanand D. Sontakke  
Principal Scientist

### CERTIFICATE

I certify that the research work presented in this thesis titled "**Synthesis and Assessment of LH-conjugated Nanoparticles *in vitro***" has been carried out by **Ms. Neha Dimri** under my supervision at Laboratory for the Conservation of Endangered Species (LaCONES), an Annexe of CSIR-Centre for Cellular and Molecular Biology, Hyderabad. The research work is original and has not been submitted for any other degree of this or any other University. Further, she was a regular student during her dissertation period between June 2018 and April 2019 and has worked under my guidance as a full time student at until the submission of the thesis to Banasthali Vidyapith, Rajasthan.

April 15, 2019

  
Sadanand Sontakke



फैक्स

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**A DISSERTATION REPORT**

**ON**

**"ISOLATION OF DIVERSE BACTERIA FOR BIODEGRADATION OF  
MICROPLASTICS/PLASTICS: CHARACTERIZATION OF METABOLITES AND  
BIOCHEMICAL INVESTIGATION"**



**SUBMITTED**

**TO**

**DEPARTMENT OF BIOSCIENCE**

**AND BIOTECHNOLOGY, BANASTHALI VIDYAPITH, BANASTHALI, 304022**

*In partial fulfilment for the requirements of*

**MASTER OF TECHNOLOGY**

**IN**

**BIOTECHNOLOGY**

**BY**

**Neha Gupta**

**Under the supervision of**

**Dr. Natesan Manickam  
Senior Principal Scientist**

**Environmental Biotechnology Division**

**CSIR-Indian Institute of Toxicology Research**

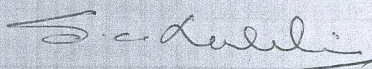
**Vishvigyan Bhawan, 31, Mahatma Gandhi Marg, Lucknow, Uttar Pradesh, 226001**



April 23, 2019

## CERTIFICATE

It is certified that the Project Report entitled “Effects of Ayurvedic formulations on life span in neurodegenerative and some mutant genotypes of *Drosophila melanogaster*” which is being submitted by **PRACHI MISHRA (LSMTT17026)** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (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.



S C Lakhotia

PROF. S.C. LAKHOTIA  
Distinguished Professor  
Department of Zoology  
Institute of Science  
Banaras Hindu University  
Varanasi-221005



# सीएसआईआर - राष्ट्रीय रासायनिक प्रयोगशाला

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

डॉ. होमी भाभा मार्ग, पुणे - 411 008, भारत





**CSIR - NATIONAL CHEMICAL LABORATORY**

(Council of Scientific & Industrial Research)

Dr. Homi Bhabha Road, Pune - 411 008, India

## CERTIFICATE

It is certified that the Project Report entitled "To study the bioactive potentials of rare actinomycetes" which is being submitted by MISS. SANSKRITI SHARMA in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (National University for Women's Education) is a report of the candidate's own work carried out by herself under my supervision and guidance. The matter embodied in this report has not been submitted for award of any other degree.

  
16.4.19  
Signature of the Supervisor  


डॉ. सैयद जी. दस्तगीर  
**Dr. Syed G. Dastager**  
Scientist, NCIM Resource Centre  
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### WEBSITE

[www.ncl-india.org](http://www.ncl-india.org)





भा.क.अनु.प. - भारतीय कृषि जैवप्रौद्योगिकी संस्थान

(डीम्ड विश्वविद्यालय)

गढ़खटंगा, राँची - ८३४०१०, झारखण्ड

ICAR-INDIAN INSTITUTE OF AGRICULTURAL BIOTECHNOLOGY

(Deemed to be University)

GARH KHATANGA, RANCHI - 834010, JHARKHAND




**Dr. Anil Kumar Singh**

**Senior Scientist**

## CERTIFICATE

It is certified that the Project Report entitled “**Full length cloning and characterization of lentils HSF genes under heat stress**” which is being submitted by **Subham Kumari Burman** in partial fulfilment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (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.

  
20/04/2019  
(Anil Kumar Singh)

**Camp office:** PDU Campus, IINRG, Namkum, Ranchi-834010

E-mail : anils13@gmail.com, anil.singh12@icar.gov.in

Website : <http://iiab.icar.gov.in>

E.P.A.B.X : +91-651-2261125

Fax : +91-651-2261123



## CERTIFICATE

It is certified that the Project report entitled "PROTEIN CHANGES TAKES PLACE AFTER REPEATED TRAUMATIC BRAIN INJURY" which is being submitted by TANYA AGARWAL in partial fulfilment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali Vidyapith (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 the Supervisor

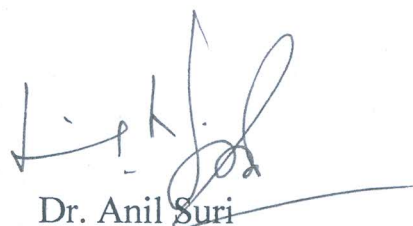




राष्ट्रीय प्रतिरक्षाविज्ञान संस्थान  
NATIONAL INSTITUTE OF IMMUNOLOGY

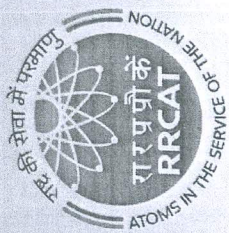
## CERTIFICATE

This is to certify that the project report entitled **"ROLE OF cAMP RESPONSIVE ELEMENT BINDING PROTEIN (CREB) IN TRIPLE NEGATIVE BREAST CANCER (TNBC) CELL"** which is being submitted by **ABHILASHA NAYAL** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance during the period from 1<sup>st</sup> June 2017 to 31<sup>st</sup> March 2018. The matter embodied in this report has not been submitted for award of any other degree.

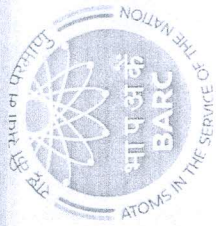


Dr. Anil Suri





**Raja Ramanna Centre for Advanced Technology (RRCAT)  
Protein Crystallography Beamline, PX-BL21, Indus-2, BARC,  
Indore- 452013, India.**



25<sup>th</sup> April 2018

This is to certify that **Ms. Aditi Chaturvedi**, a second year student of M.Tech (Biotechnology) from Banasthali University, Rajasthan has completed the Project entitled "**Molecular Studies of Insecticidal Proteins**" during 11<sup>th</sup> July 2017 to 25<sup>th</sup> April 2018. Her performance in the project is found to be excellent.

Dr. Ravindra D. Makde  
Head, Macromolecular crystallography Section, BARC  
Scientific Officer (G),  
BBS, CC. no. 5216  
RRCAT

नरेन्द्र मोहन

निदेशक

**NARENDRA MOHAN**

Director

Phone : 2570730

Fax : 0512-2570247

Email: director.nsi@gov.in

राष्ट्रीय शर्करा संस्थान

**NATIONAL SUGAR INSTITUTE**

भारत सरकार

GOVERNMENT OF INDIA

उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय

Ministry of Consumer Affairs, Food & Public Distribution

(खाद्य एवं सार्वजनिक वितरण विभाग)

(Deptt. of Food & Public Distribution)

कानपुर, दिनांक / KANPUR, DATED 27.3.2018

## CERTIFICATE

This is to certify that dissertation entitled **"MUSHROOM CULTIVATION FROM DIFFERENT LIGNOCELLULOSIC SUBSTRATES"** comprises the work done by **Ms. Anika Srivastava** at **National Sugar Institute**, Ministry of Consumer Affairs, Food & Public Distribution, Department of Food & Public Distribution, Government of India, Kanpur, U.P during the period July 2017-March 2018.

  
(Narendra Mohan)  
Director



## CERTIFICATE

It is certified that the Project Report entitled "**Purification and characterization of Fungal extracellular enzyme**" which is being submitted by **Anushka Pundir** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

Date: 27/04/2018



**Dr. Sunil Kumar Suman**  
(Scientist)  
CSIR-Indian Institute of Petroleum  
Dehradun, Uttarakhand



सी एस आई आर - राष्ट्रीय समुद्र विज्ञान संस्थान  
( वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद )  
दोना पावला, गोवा 403 004 भारत

CSIR - National Institute of Oceanography  
( Council of Scientific & Industrial Research )  
DONA PAULA, GOA - 403 004, India



## CERTIFICATE

It is certified that the project report entitled “Assessment of seawater quality in the recreational beaches, estuarine habitats and coastal regions of Goa” which is being submitted by Ms. Anushruti Mehta in partial fulfilment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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 the Supervisor

*Cathrine S. Manohar*  
(Cathrine S. Manohar)

Dr. Cathrine S. Manohar,  
Senior Scientist,  
Biological Oceanography Division,  
CSIR-National Institute of Oceanography,  
Dona Paula, Goa. 403 004. INDIA.



☎ : 91-(0)832-2450 450  
fax : 91-(0)832-2450 602/03

e-mail : [ocean@nio.org](mailto:ocean@nio.org)  
URL : <http://www.nio.org>

Regional Centres  
Mumbai, Kochi, Visakhapatnam



डॉ देवेन्द्र परमार  
मुख्य वैज्ञानिक एवं प्रमुख  
मानव संसाधन प्रोफेसर

अप्रैल 02, 2018

*To whomsoever it may concern*

यह प्रमाणित किया जाता है कि कु. अन्वेषिका मनोज, एम.टेक. (बायोटेक्नोलॉजी), डिपार्टमेंट ऑफ बायोसाइन्स एंड बायोटेक्नोलॉजी, बनस्थली विद्यापीठ, बनस्थली (राजस्थान) में अध्ययन कर रही हैं उन्होंने *"In vitro assessment of mycotoxin induced phenotypic and molecular alteration on rat proximal tubule epithelial cells"* विषय पर दिनांक 01-06-2017 से 02-04-2018 तक शोध निबंध का प्रशिक्षण डॉ. कौसर महमूद अंसारी, वैज्ञानिक, खाद्य, औषधि एवं रसायन विषविज्ञान प्रभाग के पर्यवेक्षण में लिया है।

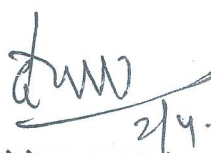
इस कार्य या इसके किसी अंश को अधोहस्ताक्षरी की बिना लिखित अनुमति के प्रकाशित नहीं किया जायेगा।

मैं उनके उज्ज्वल भविष्य की कामना करता हूँ।

This is to certify that Km. Anveshika Manoj student of M.Tech. (Biotechnology), Department of Bioscience & Biotechnology, Banasthali University, Banasthali Vidyapith (Rajasthan) has undergone dissertation training on *"In vitro assessment of mycotoxin induced phenotypic and molecular alteration on rat proximal tubule epithelial cells"* from 01-06-2017 to 02-04-2018 under the supervision of Dr. Kausar Mahmood Ansari, Food, Drug and Chemical Toxicology Division of the Institute.

The work should not be published, even in part without the prior written permission of the undersigned.

I wish all success in her career.

  
(देवेन्द्र परमार)





Tel: (+91 22) 2576 7762 (Office)  
(+91 22) 2572 3480 (Fax)  
Email: [ashutoshk@iitb.ac.in](mailto:ashutoshk@iitb.ac.in)

Ashutosh Kumar, PhD  
Associate Professor  
Department of Biosciences and Bioengineering  
Indian Institute of Technology-Bombay  
Powai, Mumbai-400076, India

IIT Bombay

## CERTIFICATE

This is to certify that the Project Report entitled “Structural characterization of glycine rich RNA binding protein in sorghum” which is being submitted by Avantika, (LSMTT16044) in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance from 19<sup>th</sup> May, 2017 to 28<sup>th</sup> April, 2018. The matter embodied in this report has not been submitted for award of any other degree.

(Signature of the Supervisor)  
Dr. Ashutosh Kumar  
Associate Professor  
Department of Bioscience and Bioengineering  
IIT, Bombay

प्रा. आशुतोष कुमार/Prof. Ashutosh Kumar  
सह प्राध्यापक/Associate Professor  
जैव विज्ञान एवं जैव अभियांत्रिकी विभाग  
Department of Biosciences & Bioengineering  
भा.प्रौ.सं.मुंबई/IIT Bombay, पवई/Powai  
मुंबई/Mumbai - 400 076 भारत INDIA



**A DISSERTATION REPORT**

**ON**

**“Differential response of antioxidant enzymes in *Arabidopsis thaliana*  
natural variation towards Arsenic stress”**



**SUBMITTED  
TO**

**DEPARTMENT OF BIOSCIENCE  
AND BIOTECHNOLOGY BANASTHALI UNIVERSITY,  
BANASTHALI, 304022**

*in partial fulfilment of the requirements for the award of degree  
of*

**MASTER OF TECHNOLOGY**

**IN  
BIOTECHNOLOGY  
BY**

**DEEKSHA AGRAWAL**

**Under the supervision of**

**Dr. Prabodh Kumar Trivedi  
(Senior Principal Scientist)**

**CSIR-National Botanical Research Institute, Lucknow**



CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE  
(COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH)  
P.O. BOX 436, RANA PRATAP MARG  
LUCKNOW 226001  
INDIA



Letter no.BV/Deeksha/1

Date: 12.04.2018

**Dr. Prabodh K. Trivedi, FNASc, FNAAS**

**Senior Principal Scientist,**

Tel: 91-522- 2297958 (work)

91-522-3052049 (home)

FAX: 91-522- 2205836, 2205839

E. mail: prabodht@hotmail.com;prabodht@nbri.res.in

### CERTIFICATE

It is certified that the Project Report entitled "**Differential response of antioxidant enzymes in *Arabidopsis thaliana* natural variation towards Arsenic stress**" which is being submitted by "**Deeksha Agrawal**" in partial fulfilment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

( Prabodh Kumar Trivedi )

Dr. Prabodh Kumar Trivedi

FNASc, FNAAS

Senior Principal Scientist

CSIR-National Botanical Research Institute

Lucknow-226001





**Division of Genetics & Tree Propagation**  
**Forest Research Institute**  
(Indian Council of Forestry Research and Education)  
**P.O.- IPE Dehradun-248195**  
**Uttarakhand, INDIA**

**AJENDRA KUMAR MEENA**  
**SCIENTIST 'C'**

Phone :- 0135-2224380  
Fax : 0135-2756865  
E-mail : [rajendra@icfre.org](mailto:rajendra@icfre.org)

Dated: April 23, 2018

### **CERTIFICATE**

This is to certify that **Miss Garima Dutt**, student of M.Tech. (Biotechnology) from Banasthali University, Rajasthan has undergone ten months dissertation work on "**Assessment of Genetic Diversity of Selected Rattan Species by using ISSR Molecular Markers**" under my supervision, her tenure was July, 2017 to April, 2018. She has carried out her training with full sincerity, dedication and hard work and has actively participated in the work assigned to her.

During the course of training her performance and conduct was good. I wish her a very bright future and success in future endeavors.

**(R.K. Meena)**

**Rajendra Kumar Meena**  
Scientist-C

Genetics & Tree Propagation Division  
Forest Research Institute  
Dehradun-248195 (Uttarakhand)

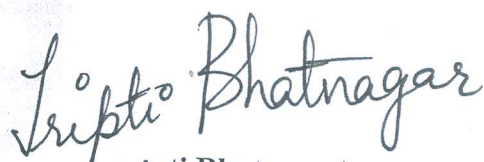
## CERTIFICATE

It is certify that the project entitled "STUDIES ON PRODUCTION AND OPTIMIZATION OF 1,3-PROPANEDIOL USING WASTE OF BIODIESEL INDUSTRY-GLYCEROL" which is being submitted by JYOTI CHAUDHARY in partial fulfillment of the requirements for the award of the degree of MASTER OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali 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.

Dated: 27/04/18

Place: Noida

No : CBPL2017-18/056



(Dr. Tripti Bhatnagar)

Managing Director

Codon Biotech Pvt. Ltd.

Noida



सी.एस.आई.आर..जीनोमिकी और समवेत जीवविज्ञान संस्थान  
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्, 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 .

Prof. Ashok Kumar, Ph.D.

*Biotechnology Overseas Associateship (Canada)*

Professor (AcSIR) / Chief Scientist

Molecular Biosensor Lab

e-mail: ashokigib@rediffmail.com

April 2018

### CERTIFICATE

This is to certify that **Ms. Karishma Sharma**, student of Department of Bioscience and Biotechnology, Banasthali University, Rajasthan has successfully completed her M.Tech dissertation work on "**Biosensor for detection of pathogenic bacteria causing rheumatic heart diseases in human**" under my supervision at the Institute of Genomics and Integrative Biology, Delhi from June 2017 to April 2018. I found her sincere and hard working student during her dissertation period. She has been trained to perform various biosensor techniques in my lab.

I wish all success in her career.

*A. Kumar*  
*18.4.2018*

Dr. ASHOK KUMAR

Professor (AcSIR)

CSIR-Institute of Genomics & Integrative Biology

Mall Road, Delhi-110007

.org

## The Energy and Resources Institute

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I H C Complex  
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New Delhi - 110 003

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UAE

(+971 50) 865 0912  
meenassj@teri.res.in

**Neeraj Dwivedi**  
Associate Fellow

neeraj.dwivedi@teri.res.in

19<sup>th</sup> April 2018

Sir,

I have pleasure in forwarding the thesis entitled "**Genetic and molecular characterization for Plcv resistance in chilli (*Capsicum annuum* L.)**" submitted by **Ms. Krutika Shrivastava** for the award of the degree MASTER OF TECHNOLOGY IN BIOTECHNOLOGY from Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision.

I certify that the entire scheme of investigation reported herein was carried out by the candidate under my guidance and supervision. No part of the thesis has been submitted for the award of any other degree or diploma.

Thanking You.

Your's faithfully

*Neeraj Dwivedi*  
20/4/18

(Neeraj Dwivedi)



**A DISSERTATION REPORT**

**ON**

**Assessment of ACF-HCl as an antimalarial drug and  
characterization of MSP1 as a merozoite specific marker**



**SUBMITTED**

**TO**

**DEPARTMENT OF BIOSCIENCE**

**AND BIOTECHNOLOGY BANASTHALI UNIVERSITY,**

**BANASTHALI, 304022**

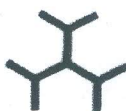
*In partial fulfillment of the requirements for the award of degree of*

**MASTERS OF TECHNOLOGY IN**

**BIOTECHNOLOGY**

**BY**

**MALANI NEGI**



**UNDER THE SUPERVISION OF**

**DR. AGAM PRASAD SINGH,**

**STAFF SCIENTIST-V, NATIONAL INSTITUTE OF IMMUNOLOGY, NEW  
DELHI, 110067**



## राष्ट्रीय प्रतिरक्षाविज्ञान संस्थान

जैव प्रौद्योगिकी विभाग, विज्ञान और प्रौद्योगिकी मंत्रालय, भारत सरकार का स्वायत्त अनुसंधान संस्थान

## NATIONAL INSTITUTE OF IMMUNOLOGY

An Autonomous Research Institute of the Department of Biotechnology, Ministry of Science and Technology,  
Government of India

### CERTIFICATE

This is to certify that the thesis entitled “Assessment of Acriflavine Hydrochloride(ACF-HCl) as an Anti Malarial Drug and Characterization of MSP-1 as a Merozoite Surface Protein 1 ” submitted by Malani Negi for the partial fulfillment of the MASTER OF TECHNOLOGY IN BIOTECHNOLOGY degree, from Banasthali University (National University for Women's Education), is the bonafide record of original research work done by her (July 2017 to April 2018) in the Infectious Disease Laboratory, NII, New Delhi, under my guidance and supervision.

Date: 16-04-2018

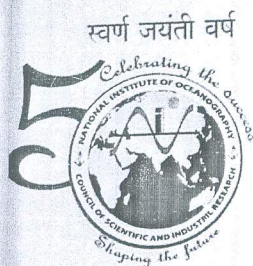
Dr. Agam P. Singh

Infectious Disease Laboratory  
National Institute of Immunology  
New Delhi- 110067

अगम प्रसाद सिंह पीएच. डी. / Agam P. Singh, Ph. D.  
स्टाफ वैज्ञानिक-IV / Staff Scientist-IV  
संक्रामक रोग प्रयोगशाला  
Infectious Diseases Laboratory (IDL)  
राष्ट्रीय प्रतिरक्षाविज्ञान संस्थान  
National Institute of Immunology  
अरुणा आसफ अली मार्ग, नई दिल्ली-110067  
Aruna Asaf Ali Marg, New Delhi - 110067

अरुणा आसफ अली मार्ग, नई दिल्ली - 110067; दूरभाष (ईपीएबीएक्स): 011-26162121-45 और 26717010-19  
फैक्स : 91-011-26742125, 26742626; तार : IMMUNOLOGY; वेबसाइट: www.nii.res.in  
Aruna Asaf Ali Marg, New Delhi - 110067; Telephones (EPABX) : 011-26717121-45 & 26717010-19  
Fax : 91-011-26742125, 26742626; Grams : IMMUNOLOGY; Website : www.nii.res.in





सी एस आई आर - राष्ट्रीय समुद्र विज्ञान संस्थान  
( वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद )  
दोना पावला, गोवा 403 004 भारत

CSIR - National Institute of Oceanography  
( Council of Scientific & Industrial Research )

DONA PAULA, GOA - 403 004, India



Date- 06/04/18

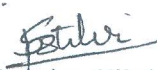
### CERTIFICATE

This is to certify that the dissertation entitled "Impact of pollutants on marine organisms" submitted by Manisha to the Banasthali University, for the award of the degree of M.Tech in Biotechnology, is a record of the bonafide work carried out by her under my supervision, as per the SRTMU code of academics and research ethics.

The contents of this report have not been submitted and will not be submitted either in part or in full, for the award of any degree or diploma in this institute or any other institute or university. The thesis fulfills the requirements and regulations of the University and in my opinion meets the necessary standards for submission.

Place: DONAPAVLA -GOA

Date: 27/04/2018

  
Dr. Supriya Tilvi  
Senior Scientist

CSIR- National Institute of Oceanography,  
Dona Paula, Goa



आईसीएमआर-राष्ट्रीय मलेरिया अनुसंधान संस्थान  
(रातीय आयुर्विज्ञान अनुसंधान परिषद)  
स्वस्थ अनुसंधान विभाग  
स्वस्थ एवं परिवार कल्याण मंत्रालय, भारत सरकार  
सेक्टर-8, द्वारका, नई दिल्ली-110 077



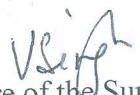
ICMR - NATIONAL INSTITUTE OF MALARIA RESEARCH  
(Indian Council of Medical Research)  
Department of Health Research  
Ministry of Health & FW, Govt. of India  
Sector 8, Dwarka, New Delhi-110 077



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WHO Collaborating Centre for Laboratory Testing and Evaluation of Public Health Pesticides

## CERTIFICATE

It is certified that the Project Report entitled "Studying the Mixed *Plasmodium falciparum* Field Isolates" is being submitted by Ms. Manorama, student of department of bioscience and biotechnology, Banasthali University (National University for Women's Education) in partial fulfilment of her **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** degree. It is also certified that the research work carried out by her under my supervision and guidance is original and innovating and has not been previously published or written by another person. The matter embodied in this report has not been submitted for award of any other degree.

 12/4/18  
Signature of the Supervisor

डॉ. विनीता सिंह, वैज्ञानिक 'डी'  
Dr. Vineeta Singh, Scientist "D"  
आईसीएमआर-राष्ट्रीय मलेरिया अनुसंधान संस्थान  
ICMR-National Institute of Malaria Research  
सेक्टर-8, द्वारका, नई दिल्ली-110077  
Sector-8, Dwarka, New Delhi-110077

हमारे संस्थान में आपके हिन्दी पत्रों का स्वागत है।

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**A DISSERTATION REPORT**  
**ON**  
**“DISCRIMINATION OF COMPLEX OLFACTORY STIMULI IN MICE”**



**SUBMITTED**  
**TO**  
**DEPARTMENT OF BIOSCIENCE AND BIOTECHNOLOGY**  
**BANASTHALI UNIVERSITY, BANASTHALI, 304022**

*in partial fulfillment of the requirements for the award of degree*  
*of*

**MASTER OF TECHNOLOGY**  
**IN**  
**BIOTECHNOLOGY**  
**BY**

**NEHA VERMA**

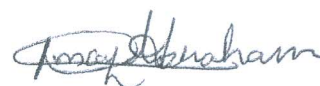
**Under the supervision of**

**Dr. Nixon M. Abraham**  
**Assistant Professor**  
**IISER Pune**

## CERTIFICATE

It is certified that the Project Report entitled “**Discrimination of Complex Olfactory Stimuli in Mice**” which is being submitted by **Neha Verma** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

Date: 29<sup>th</sup> April 2018



Signature of the Supervisor





# राष्ट्रीय पादप जीनोम अनुसंधान संस्थान

(जैव प्रौद्योगिकी विभाग, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार का स्वायत्त अनुसंधान संस्थान)

## NATIONAL INSTITUTE OF PLANT GENOME RESEARCH

(An Autonomous Institution of the Department of Biotechnology, Ministry of Science and Technology, Government of India)

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संथिल कुमार मुथप्पा


वैज्ञानिक

Senthil-Kumar Muthappa

Scientist

### CERTIFICATE

It is certified that the Project Report entitled "Assessing the effect of Arabidopsis apoplast nutrients on pathogen multiplication" which is being submitted by MISS. NISHTHA RAWAT in partial fulfillment of the requirements for the award of the degree of MASTER OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali 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. The contents of the document shall not be published or reproduced in any form without written consent of the undersigned.

  
Signature of the supervisor

26/4/2018



डॉ० संथिल कुमार मुथप्पा  
Dr. SENTHIL-KUMAR MUTHAPPA  
स्टाफ वैज्ञानिक / Staff Scientist  
राष्ट्रीय पादप जीनोम अनुसंधान संस्थान  
National Institute of Plant Genome Research  
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**Neeraj Dwivedi**  
Associate Fellow

19<sup>th</sup> April 2018


Sir,

I have pleasure in forwarding the thesis entitled "**Screening of genotypes, development of mapping population and parental polymorphic survey against anthracnose disease in *Capsicum* species.**" submitted by **Ms. Priyanka** for the award of the degree MASTER OF TECHNOLOGY IN BIOTECHNOLOGY from Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision.

I certify that the entire scheme of investigation reported herein was carried out by the candidate under my guidance and supervision. No part of the thesis has been submitted for the award of any other degree or diploma.

Thanking You.

Your's faithfully

  
(Neeraj Dwivedi) 20/4/18



## Declaration

I hereby declare that the present dissertation report on "**Genetic Diversity Analysis in *Grevillea robusta* using ISSR Molecular Markers**" which is being submitted by **Priyanka Parmar** in partial fulfilment of the requirements for the award of the degree of Master of Technology in Biotechnology at the Department of Bioscience and Biotechnology, Banasthali University under the supervision of Dr. Maneesh Singh Bhandari, Scientist-C, Genetics and Tree Propagation Division, Forest Research Institute, Dehradun (U.K.). The matter embodied in this report has not been submitted for award of any other degree.

Place: Dehradun

Date: 30/8/2018

*Priyanka Parmar*

**Priyanka Parmar**

M. Tech. Biotechnology  
Banasthali University



Centre for Rural Development and Technology  
Indian Institute of Technology Delhi  
Hauz Khas New Delhi- 110016

## Certificate

To whomsoever it may concern

This is to certify that the dissertation entitled “Study of *Phragmites karka* as a new bioresource for biorefinery production” submitted by Miss Reena Arora I.D no. LSMTT16047 to Banasthali University, Niwai 304022, for the degree of master of technology in Biotechnology is her original work, based on the results of the experiments and investigations carried out independently by her during the period of study under my guidance.

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

Signature of the Supervisor  
Prof. S.N Naik  
CRDT IIT Delhi

Centre for Rural Development and Technology  
Indian Institute of Technology Delhi  
Hauz Khas New Delhi-110016

Signature of the Supervisor  
Dr. Ranjita Biswas  
CRDT IIT Delhi

Date: 21<sup>st</sup> April 2018

Place: IIT Delhi





# राष्ट्रीय पादप जीनोम अनुसंधान संस्थान

(जैव प्रौद्योगिकी विभाग, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार का स्वायत्त अनुसंधान संस्थान)

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र आशीष दत्ता

Asis Datta

वैज्ञानिक

Distinguished Emeritus Scientist

संस्थापक निदेशक एवं श्रेष्ठता के प्रोफेसर,

पादप जीनोम अनुसंधान संस्थान एवं

पति, जवाहरलाल नेहरू विश्वविद्यालय)

Chiefly: Founder Director & Professor of Eminence

National Institute of Plant Genome Research and

Chancellor of Jawaharlal Nehru University)

Friday, April 27, 2018

### CERTIFICATE

It is certified that the Project Report entitled “**Studies on a fruit ripening related gene (*SlSECP*) of *Solanum lycopersicum***” which is being submitted by **RITIKA BHARDWAJ** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance. She worked in my laboratory from 12.06.2017 to 27.04.2018. The matter embodied in this report has not been submitted for award of any other degree.

Prof Asis Datta

Distinguished Scientist

Prof. ASIS DATTA  
Distinguished Emeritus Scientist  
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(Department of Biotechnology,  
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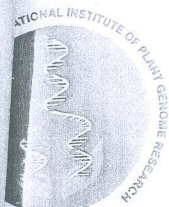
It is certified that the Project Report entitled "INVESTIGATION ON BIOMETHANE PRODUCTION FROM ORGANIC WASTE: OPTIMIZATION OF PROCESS PARAMETERS FOR PROCESS PERFORMANCE IMPROVEMENT" which is being submitted by ROSHANI KUMARI in partial fulfillment of the requirements for the award of the degree of MASTER OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali 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.

*Sanjukta Subudhi*

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(Sanjukta Subudhi)

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Manoj Prasad  
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f Scientist VI

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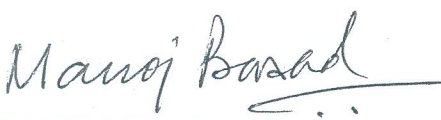
Aruna Asaf Ali Marg, JNU Campus, New Delhi - 110 067, India

April 27, 2018

### CERTIFICATE

It is certified that the Project Report entitled “Cloning and characterization of abiotic stress responsive gene(s) from foxtail millet” which is being submitted by Ms. Varsha Gupta (Enrolment 'no. 2012/1235) in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali University (National University for Women's Education) is a record of candidate's own work carried out by her under my supervision and guidance at National Institute of Plant Genome Research, New Delhi from July 15, 2017 to April 30, 2018.

It is also stated that no part of this thesis may be reproduced in any form, whatsoever, without taking written permission from me, and the work embodied in this thesis should not be presented elsewhere other than the above purpose.

  
(MANOJ PRASAD)



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**A DISSERTATION REPORT  
ON  
“MRI FEATURE PROFILING AS A BASELINE FOR AGEING AND  
DISEASED BRAIN ANALYSIS”**



**SUBMITTED  
TO  
DEPARTMENT OF BIOSCIENCE  
AND BIOTECHNOLOGY BANASTHALI UNIVERSITY,  
BANASTHALI, 304022  
in partial fulfilment of the requirements for the award of degree  
of  
MASTER OF TECHNOLOGY  
IN  
BIOTECHNOLOGY  
BY  
VIDHU AGARWAL  
Under the supervision of  
DR. PRAVAT K MANDAL  
PROFESSOR  
NATIONAL BRAIN REASEARCH CENTER**



## CERTIFICATE

I certify that work conducted by me is based on scientific merit and ethical standards.

I am thankful to ADNI (Alzheimer's Disease Neuroimaging Initiative) as I have used the various information's from the database.

*Vidhu*

Signature of the Candidate

# East-West Bonding

Banasthali University has been constantly advancing its international endeavours. The academic session 2016-17 witnessed diverse International engagements of the Vidyapith.

Banasthali participated in the 12th QS-APPLE Conference & Exhibition in Malaysia from 22- 24 November 2016. The Vidyapith had put up its booth at the exhibition in the same. Banasthali's booth was designed to give a wholesome idea about the University, its ideology, infrastructure, exemplary alumni and student activities to the global audience. Being the only women university in the exhibition galleria, Banasthali caught the attention of most of the delegates. Our booth was visited by academicians from Universiti Teknologi Malaysia, Universiti Kebangsaan Malaysia, Ahlia University, Bahrain, President University, Indonesia, Novosibirsk State University, Russia, University Sains Malayisa, Institut Teknologi Bandung, Indonesia Universiti Teknologi Mara, Malaysia and many more.

During the 12th QS- Apple Conference, Prof. Aditya Shastri, Vice- Chancellor, Banasthali University deliberated upon 'Defining and designing women's education: women's universities or universities for women?' In his presentation, Prof. Shastri emphasized upon the need to evolve a separate mechanism for the ranking of gender- specific universities.



preparing them for leadership roles in society. They have been established with an ideology keeping in mind the inherent strength, capabilities and psychological make-up of women and are not the universities which admit women just by chance. Such universities therefore, need to be globally recognized and ranked separately.

Prof. Shastri's words gave food for thought to the global audience. Delegates from Korea expressed concern over the status of Korean women universities. Japanese delegates quoted the social roles of Japanese women universities.

Having inspired with Prof. Shastri's words and recognizing the exemplary work done by Banasthali in the field of women's education, QS chose Banasthali University to be its organizing partner of the QS in Conversation Seminar on 'Women higher education for leadership and social innovation'.

Banasthali University gave biggest ever Indian platform to QS for discussing the issue of global importance. The seminar focused on the role of higher education in inculcating leadership skills in women and bringing about social innovation, a topic which is the essence of the existence and spirit of Banasthali Vidyapith. The QS in Conversation Seminar was organized from 13-15 February, 2017 with delegates registering from all across the globe.

The Seminar took off on a grand note on February 13th with the delegates' visit to Banasthali campus. As the Vice- Chancellor

narrated the legend of Banasthali's inception, the group was over whelmed.

The delegation was enthralled to witness a



rich blend of students' creative innovations and technical expertise at Banasthali.

The Seminar was inaugurated with a grand ceremony at the Chokhi Dhani Ethnic Resort, Jaipur in the evening of 13th February, with Ms. Mandy Mok, CEO, QS Asia and Prof. Chitra Purohit, President, Banasthali University delivering welcome addresses followed by the keynote address delivered by H.E. Aicha Bah Diallo, Former Chairperson, Forum for African Woman Educationalists (FAWE) and Former Minister of Education of Guinea Conakry.



He said that women universities like Banasthali have a legacy of over eight decades in nurturing women leaders. These universities are serving an enormous social mission in educating women more so





Ms. Diallo's speech was very relevant for Banasthali as she emphasized the role of youth particularly in leadership and social innovation quoting 'Africa needs Universities like Banasthali'.



seminar. She stated that "Banasthali Vidyapith has been doing a great work as it has been building the nation and its efforts are amazing and matchless. More and more people should take inspiration from Banasthali Vidyapith. More such universities for women are needed".



Mr. Ashwin Fernandes, Regional Director QS Asia, applauded Banasthali's role in women's education and quoted "Banasthali Vidyapith has been imparting education to women since a long time. Institutions like Banasthali are simply beyond rankings".

others who emphasized upon the need of separate women education.

Mr. Tom Rudin, Director, Committee on Women in Science, Engineering, and Medicine, USA talked about gender bias, society and stereotypes which have controlled women.

A very important point of differential ratio of man and woman in different courses was discussed by Dr. Syerina Syahrin, Deputy Director, International Office Universiti Kuala Lumpur (UniKL), Malaysia.



The second day of seminar on 14th February began with the introductory remarks of Ms. Mandy Mok, CEO, QS Asia by quoting "Banasthali University is a trail blazer of women's higher education in the world".



In the third session, nine distinguished panelists debated at length on the motion "Gender Specific Education is essential for the Advancement of Women in Society". Prof. Aditya Shastri informed the audience of the global statistics that graduates of women's-only institutions are over-represented in women's leadership positions, higher education, etc. The "first woman"-anything is very often the graduate of a women's university. Ms. Michelle Ozumba, President, Women's College Coalition, USA added that the women institutions are small but mighty.

Prof. Aditya Shastri, Vice Chancellor, Banasthali University, remarked that women education should be looked at from women's perspective only. He also applauded the commendable job done by QS in bringing along the stake holders in women education on a common platform.

Her Highness Princess Diya Kumari, Member of Legislative Assembly, Rajasthan graced the inaugural ceremony of the

Further, Prof. Pam Rajput, Prof. Emeritus, Punjab University, Dr. Vanita Shastri, Dean UG Program, Ashoka University and many



Dr. Wan Fatima, Malaysia, Prof. Irfan Prijambada, Indonesia, Dr. Clarita DL Carillo, Philippines and Prof. Kevin Hall, Australia discussed "Higher Education for Women as a Catalyst for Social Innovation" unanimously spoke for a great need of higher education for women.



The final day of seminar on 15th February opened with the talk of Dr. Haifa Jamal Allail, President, Effat University, Saudi Arabia. It was followed by talk of Dr. Lailani L. Alcantara, Associate Dean, Collage of International Management, Japan.



Ms. Michele Ozumba, President, Women's College Coalition, US, underlined the fact that the higher education must aim at inculcating team work, entrepreneurship and critical thinking as education is not just to teach work but to teach life. Dr. Anita BZ Abdul Aziz, Vice Chancellor and President, Brunei Darussalam who added that higher education must aim at developing critical thinking, reasoning & communication skill.



Prof. Kamila Ghazali, Associate Vice-Chancellor, University of Malaya, Malaysia and by Ms. Karen Imam, Director Binus University, Indonesia highlighted the developments made in their respective



countries to boost women participation and leadership roles in education.

Prof. Nigel Healey, Vice Chancellor, Fiji National University, Fiji said that any attempt of creating educational policy must include the agenda and interest of women.

Mr. Peter Stek, the coordinator of the program told that QS produces a great number of "specific" rankings of a particular region or subject, and this can create a renewed focus on a particular field or region. A similar approach could be taken to gender-specific higher education.

Finally, the three day international seminar came to its closure on 15th February with the closing remarks of Ms. Mondy Mok, CEO, QS Asia, Singapore and Professor Aditya Shastri, Vice-chancellor, Banasthali Vidyapith, India.



Banasthali University has categorically made its impression on the global audience by organizing seminar on such thought-provoking theme. The delegates appreciated the hospitality of Banasthali whole- heartedly.

Datuk Dr. Mary Yap, Deputy Minister, Higher Education, Malaysia visited Banasthali campus on 15th February and was amazed to see the state of the art infrastructure and an assortment of traditional and modern amenities at Banasthali.

Dr. Makoto Nagasawa of Saitama University,



Japan visited Banasthali University on 16th February and discussed the joint agreement to be signed between Saitama University and Banasthali University.

In other series of events, Banasthali University also participated in the 3rd QS Summer School Summit in Chennai from 5-8 December, 2016. The summit focused on the possibilities of cooperation between universities world over mainly with respect to summer schools.

Representatives of Banasthali discussed the ideas of collaboration with many universities



namely, La Salle University, Columbia, Novosibirsk State University, Russia, President University, Indonesia etc.

As a follow- up of the summit, talks for collaboration are in progress with these universities.







भारतीय प्रौद्योगिकी संस्थान दिल्ली  
Indian Institute of Technology Delhi

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### CERTIFICATE

It is certified that the Project Report entitled “ 3D bioprinting of cartilage ” which is being submitted by **AARUSHI SHARMA** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

*Sourabh Ghosh*

Sourabh Ghosh

26/4/17

Associate Professor  
Department of Textile Technology  
Indian Institute of Technology, Delhi, India

Dr. Sourabh Ghosh  
Associate Professor  
Department of Textile Technology  
Indian Institute of Technology Delhi  
Hauz Khas, New Delhi-110 016



## CERTIFICATE

ified that the Project Report entitled "Study of cold stress induced metabolic  
ns in rat model using NMR Spectroscopy" which is being submitted by Anukrati  
in partial fulfillment of the requirements for the award of the degree of **MASTER  
TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali University (National  
sity for Women's Education) is a record of candidate's own work carried out by  
der my supervision and guidance. The matter embodied in this report has not  
submitted for award of any other degree.

Sonia Gandhi  
26/04/17

Sonia Gandhi  
ect Supervisor (Scientist 'D')  
R Department, INMAS, DRDO  
hi

डॉ. सोनिया गाँधी / Dr. SONIA GANDHI  
वैज्ञानिक 'डी' / Scientist 'D'  
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Date: 28/4/17

## CERTIFICATE

It is certified that the Project Report entitled "**Evaluation of new formulations for burn wound healing and tissue debridement**" which is being submitted by **Ms. Ashima Gaur** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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

*(Signature)*  
28/4/17

Dr. Anshoo Gautam, Ph.D  
Scientist 'D' and ICMR-IF  
Division of CBRN Defence  
INMAS, Delhi

डा. अंशू गौतम/Dr. Anshoo Gautam  
वैज्ञानिक/Scientist  
नाभिकीय औषधि तथा सम्बन्ध विज्ञान संस्थान  
Institute of Nuclear Medicine and Allied Sciences  
रक्षा अनुसंधान तथा विकास संगठन, रक्षा मंत्रालय  
Defence R&D Organisation, Ministry of Defence  
ब्रिगे. एस.के. मजूमदार मार्ग, दिल्ली-110 054  
Brig. S.K. Mazumdar Road, Delhi-110 054



## ACKNOWLEDGEMENT

I count myself fortunate to have got the chance to work in one of the esteemed institutes of India. A major project work like this would never have been possible alone. The dissertation is an outcome of one year of work during which I was supported by different people in different possible ways.

First and foremost my hearty gratitude to my research guide Dr. Naseem A. Gaur for giving me this opportunity to do this project in his lab. He has been really helpful & inspirational throughout this project.

I would also like to thank Assistant professor and coordinator M.tech (Biotechnology), Banasthali University, Dr. Chandrakant Sharma for constant support, guidance and for taking care of all the academic requirements throughout the dissertation period.

Now, my deepest gratitude to my mentors Miss. Juhi Sharma and Mr. Jakeer Hussain without whom I can't even imagine my project to be completed. They had always been there, guiding and motivating me. Their constructive criticisms of the experimental approaches and foresight in planning experiments have helped me in understanding the essentials of a good scientific temperament. They would answer my innumerable answer and explain me the minutest detail of any experiment. Their discipline and sincerity at work makes them stand out.

Also, I would like to acknowledge Farnaz mam, Mohit Sir, Sonam mam, Ishita for all the support and care. The intellectual discussions with them made me aware about quite a few facts of research.

I would also like to extend a warm thanks to Dr. Brajesh Barse for helping collect the necessary documents. I am indeed thankful to Pan Singh and Amar Singh for providing good support in the lab.

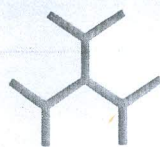
Last but not least, my endless thanks to my parents for their unconditional support, both financially and emotionally throughout my degree, my friends Abantika, Mansi, Uroosa and Karishma for their help and wishes for the successful completion of this project.

*This project has been an enriching experience and has helped me recognize the effort that is out behind any scientific endeavor.*

Kirti Nain

Kirti Nain





# राष्ट्रीय प्रतिरक्षाविज्ञान संस्थान NATIONAL INSTITUTE OF IMMUNOLOGY

## Certificate

It is certified that the Project Report entitled “**MODULATORY EFFECT OF NICOTINE ON ASTROCYTE AND NEURONAL COMMUNICATION**” which is being submitted by **KSHAMA** in partial fulfilment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

**Dr. Sarika Gupta**

Staff Scientist & In-charge

Molecular Science Laboratory

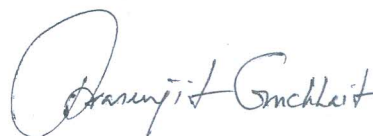
National Institute of Immunology



## CERTIFICATE

It is certified that the Project Report entitled "**PHENOTYPING OF IMMUNE CELLS**" which is being submitted by **Ms. L. S. SRAVANTHI** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

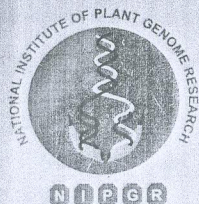
Dated 12.4.17



Dr. Prasenjit Guchhait

Professor





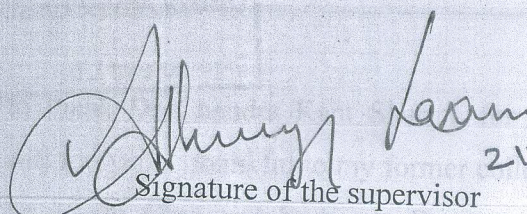
# NATIONAL INSTITUTE OF PLANT GENOME RESEARCH

(Formerly known as National Centre for Plant Genome Research)  
(An Autonomous Institution of the Department of Biotechnology, Ministry of Science and Technology, Government of India)

Aruna Asaf Ali Marg, Post Box Number 10531, New Delhi-110067

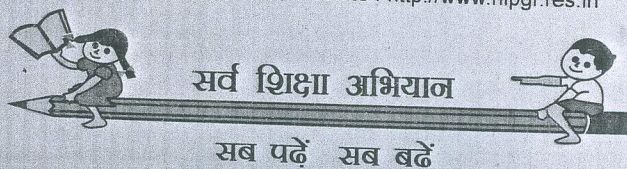
## CERTIFICATE

It is certified that the Project Report entitled “**Protein-protein interaction analysis of DUF proteins with SnRK1 subunits in *Arabidopsis thaliana***” which is being submitted by Manisha Rani in partial fulfillment of the requirements for the award of the degree of MASTER OF TECHNOLOGY IN BIOTECHNOLOGY of Banasthali 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.

  
21.04.17  
Signature of the supervisor

**Dr. Ashverya Laxmi**  
Staff Scientist  
National Institute of Plant Genome Research  
Aruna Asaf Ali Marg, New Delhi - 110 067

Ph. : 26741612, 26741614, 26741617, Fax : 91-11-26741658  
E-mail : nipgr@nipgr.res.in; Website : <http://www.nipgr.res.in>







DABUR  
RESEARCH  
FOUNDATION

## CERTIFICATE

It is certified that the Project Report entitled **“Safety evaluation of a polyherbal formulation (DRF/28D/13): A sub acute oral toxicity study in wistar rats”**, which is being submitted by **Ms. Ritika Parashar** in partial fulfillment of the requirements for the award of the degree of **“Master Of Technology in Biotechnology”** of Banasthali 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 the Supervisor  
(Dr. Virendra Kumar Tiwari)

CONFIDENTIAL



## DECLARATION

I hereby declare that this project report entitled "The study of the innate immunity along with age in humans; Natural Killer Cells and Phagocytosis" is carried out by me in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of **Banasthali University** (National University for Women's Education). This is a record of my own work carried out by me under the supervision of **Dr. Eleftheria Rosmaraki**, Lecturer, Department of Biology, University of Patras, Greece and under the guidance of **Dr. Chandrakant Sharma**, Assistant Professor at Banasthali University.

Place: Patras, Greece (Europe)

Date: 6- April-2017



**Ritika Parashar**

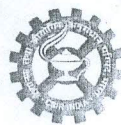
M.Tech (Biotechnology)

II Year

LSMTT15013

Roll no. 15928





Dr. N. Manickam  
Sr. Principal Scientist  
Human Resource Cell

April 25, 2017

*To whomsoever it may concern*

यह प्रमाणित किया जाता है कि कु० ऋतु वर्मा, एम.टेक (बायोटेक्नोलोजी), बनस्थली विश्वविद्यालय, बनस्थली में अध्ययन कर रही हैं। उन्होंने "Development of mouse model of Allergic Rhinitis via nasal route" विषय पर दिनांक 11-07-2016 से 25-04-2017 तक शोध निबंध का प्रशिक्षण लिया है, जो संस्थान के डॉ. पी०डी० दिवेदी, वरिष्ठ प्रधान वैज्ञानिक, खाद्य विषविज्ञान विभाग के पर्यवेक्षण में थी। इस कार्य या इसके किसी अंश को अधोहस्ताक्षरी की बिना लिखित अनुमति के प्रकाशित नहीं किया जाना चाहिए।

मैं उनकी सफलता की कामना करता हूँ।

This is to certify that *Ms. Ritu Verma*, student of M.Tech (Biotechnology), Banasthali University, Banasthali, has undergone dissertation training on "*Development of mouse model of Allergic Rhinitis via nasal route*" from 11-07-2016 to 25-04-2017 under the supervision of Dr. P.D.Dwivedi, Senior Principle Scientist, Food Toxicology Division of the Institute.

The work should not be published, even in part without the prior written permission of the undersigned.

I wish her all success in her career.

*(Signature)* 25/4/2017  
(डॉ०.एन. मणिकम)





CANCER SANSTHAN

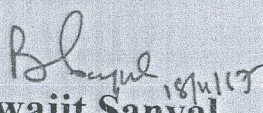
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Patna - 801 505 (INDIA)  
Phones : (0612) 2250127, 2253956  
Fax : (0612) 2253957  
email : mcspatna98@gmail.com  
website : www.mahavircancersansthan.com

## CERTIFICATE

*This is to certify that Shrinu Singh, student of M.Tech in Biotechnology (Session-2015-2017) of Banasthali University, Tonk, Rajasthan has done Training on "Genotoxic effect of Arsenic on chromosome of mice and its remedial approach through Lactobacillus sporogenes" at Mahavir Cancer Sansthan and Research Centre, Patna under supervision of Dr. Ranjit Kumar, Scientist I from 15<sup>th</sup> June 2016 to 18<sup>th</sup> April 2017. She has meticulously completed his work with 97% attendance.*

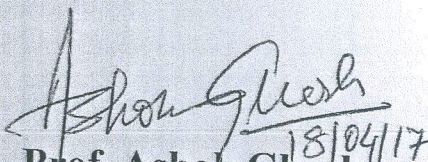
*She has been found sincere and dedicated with good character during the training period.*

*The institute wishes her success in her future endeavors.*

  
Dr. Biswajit Sanyal


Director

Mahavir Cancer Sansthan  
Patna

  
Prof. Ashok Ghosh

HoD, Research

Mahavir Cancer Sansthan  
Patna

  
Dr. Ranjit Kumar

Scientist - I

Mahavir Cancer Sansthan  
Patna





Dr. N. Manickam  
Sr. Principal Scientist  
Human Resource Cell

April 25, 2017

*To whomsoever it may concern*

यह प्रमाणित किया जाता है कि कु० श्वेता मिश्रा, एम.टेक (बायोटेक्नोलॉजी), बनस्थली विश्वविद्यालय, बनस्थली में अध्ययन कर रही हैं। उन्होंने *"Thermal processing: a therapeutic tool in amelioration of food allergy"* विषय पर दिनांक 11-07-2016 से 25-04-2017 तक शोध निबंध का प्रशिक्षण लिया है, जो संस्थान के डॉ. पी०डी० दिवेदी, वरिष्ठ प्रधान वैज्ञानिक, खाद्य विषविज्ञान विभाग के पर्यवेक्षण में थी।  
इस कार्य या इसके किसी अंश को अधोहस्ताक्षरी की बिना लिखित अनुमति के प्रकाशित नहीं किया जाना चाहिए।

मैं उनकी सफलता की कामना करता हूँ।

This is to certify that *Ms. Shweta Mishra* student of M.Tech (Biotechnology), Banasthali University, Banasthali, has undergone dissertation training on *"Thermal processing: a therapeutic tool in amelioration of food allergy"* from 11-07-2016 to 25-04-2017 under the supervision of Dr. P.D.Dwivedi, Senior Principle Scientist, Food Toxicology Division of the Institute.

The work should not be published, even in part without the prior written permission of the undersigned.

I wish her all success in her career.

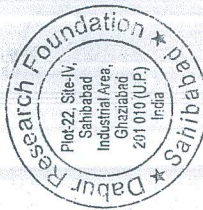
*M. Manickam*  
25/4/17  
(डॉ०.एन. मणिकम)





## CERTIFICATE

It is certified that the Project Report entitled "CYTOTOXIC EFFECT OF THE DIFFERENT HERBAL EXTRACTS ON THE CANCER CELLS" which is being submitted by Vandana Kumari in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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]*  
22/MAR/2017  
Signature of the Supervisor



CS

राष्ट्रीय कोशिका विज्ञान केन्द्र  
National Centre For Cell Science

जैवप्रौद्योगिकी विभाग, भारत सरकार का स्वायत्त संस्थान  
(An Autonomous Institution of the Department of Biotechnology, Government of India)

CERTIFICATE

It is certified that the Project Report entitled "UNDERSTANDING THE ROLE OF PPP1R3C IN " which is  
being submitted by VIDUSHA BHADAVIA in partial fulfillment of the requirements for the  
award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of  
Banasthali 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.

*Manas Kr. Santh*

Signature of the Supervisor  
NATIONAL CENTRE FOR CELL SCIENCE  
N.C.C.S. COMPLEX, GANESHKHIND,  
PUNE - 411 007.

एन सी सी एस कॉम्प्लेक्स, पो. बं. नं. ४०, गणेशखिंड पी. ओ., पुणे ४११ ००७, महाराष्ट्र, भारत  
NCCS Complex, P.B. No. 40, Ganeshkhind P. O., Pune - 411 007, Maharashtra, India  
दूरध्वनि / Tel.: (020) 25708000 फैक्स / Fax : 91 (020) 25692259  
ई मेल / E-mail : [infonccs@giaspn01.vsnl.net.in](mailto:infonccs@giaspn01.vsnl.net.in)  
वेबसाइट / Website : <http://www.nccs.res.in>



## CERTIFICATE

It is certified that the Project Report entitled "**Study of metabolic alterations in rats exposed to acute heat stress by using NMR Spectroscopy**" which is being submitted by **Yashu Gupta** in partial fulfillment of the requirements for the award of the degree of **MASTER OF TECHNOLOGY IN BIOTECHNOLOGY** of Banasthali 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.

*Sonia Gandhi*  
25/04/17  
Dr. Sonia Gandhi  
Project Supervisor (Scientist 'D')  
NMR Department, INMAS, DRDO  
Delhi

डॉ. सोनिया गाँधी / Dr. SONIA GANDHI  
वैज्ञानिक 'डी' / Scientist 'D'  
नाभिकीय औषधि एवम् सम्बंध विज्ञान संस्थान  
Institute of Nuclear Medicine & Allied Sciences  
रक्षा मंत्रालय / Ministry of Defence  
ब्रिगडियर एस के. मजुमदार मार्ग, दिल्ली-110054  
Brig. S. K. Mazumdar Marg, Delhi-110054

# East-West Bonding

Banasthali University's International exchange programmes are attaining International recognition. Its presence on the global platform is evident from the fact that Banasthali is receiving increasing number of queries regarding admission in various courses from different parts of the world like Africa, Afganistan, Fiji, Malaysia, Kazakhstan, Nepal and United States to name a few. Ms. Aparna Vashishtha Rota from USA visited our campus on 2nd August. She visited various Faculties of Banasthali and appreciated the modern facilities available at the University. She was deeply influenced by the concept of 'Five- Fold Education' and expressed that International students could be immensely benefitted from Banasthali's approach of Holistic education. She also met our Hon'ble Vice Chancellor, Prof. Aditya Shastri and aspired to establish long term academic relation with Banasthali under various exchange programmes.



A significant milestone covered in the direction of Banasthali's contribution towards global education was the presence of Hon'ble Vice- Chancellor Prof. Aditya Shastri in the QS Worldwide Conference at Nizhny Novgorod, Russia from 28th- 30th September 2015.

Prof. Aditya Shastri was invited over by Quacquarelli Symonds (QS), a British

organization that pioneers in the World University Rankings. Prof. Shastri spoke on 'Innovative Comprehensive Gender- Specific Education at Banasthali University' in front of the world audience. The event was attended by over 500 international delegates including academics, deans, university presidents and Vice- chancellors from as many as 32 countries representing 118 institutions to exchange their valuable knowledge. In his talk Prof. Shastri conveyed to the world that globally there were very few Women Universities and amongst those, still very few who emphasized on value inculcation and character building of the students. He added that Banasthali University was preparing enlightened girl students and preparing them to take up leadership roles in society. His words were greatly applauded by the audience. His awe- inspiring talk motivated the QS organizing committee to hold the next conference on the theme of 'Female Leadership'.



As a follow up of the visit of Prof. Shastri to Russia, many reputed universities of the region are in talks with Banasthali for academic collaboration. These include Coventry University UK and South Ural State University Russia.

From 14th- 15th October, 2015 the OECD IMHE Conference was organized by Ministry of Education, Singapore. The Conference focussed on 'Higher Education Futures' and it witnessed the active participation of Banasthali University.



The academic session 2015- 16 has witnessed conspicuous increase in the International activities of Banasthali University. The fact is well reflected in the University's presence at many globally admired events. Banasthali University was invited in the 'QS in Conversation' Seminar held in Milan, Italy from 1-3 February, 2016. The Seminar was focalised on the theme of 'Advancing Female Leadership through Higher Education' and





being the largest fully residential women's University in the world, Banasthali was one of the most pertinent Universities in the Seminar. Prof. Aditya Shastri and Prof. Ina Shastri from Banasthali University attended the said event.

It was attended by more than 120 delegates from 63 institutions and organizations in 34 countries. The Seminar had representatives from countries including Australia, Bahrain, Bangladesh, Egypt, France, Hong Kong, India, Indonesia, Iran, Ireland, Italy, Japan, Jordan, South Korea, Lebanon, Malaysia, Morocco, Netherlands, Pakistan, The Philippines, Poland, Qatar, Saudi Arabia, Serbia, Singapore, Slovakia, South Africa, Sudan, Spain, Sri Lanka, Sweden, Switzerland, the United Kingdom, and the United States.



A diverse array of participants, from university leaders to officials of diplomatic corporations and international business, exchanged their experiences in promoting the empowerment of women in an effort to define a conceptual framework for female leadership in higher education and proposed educational programs and policies that make women's participation in society more effective.



Amidst this august audience, Prof. Aditya Shastri, Vice- Chancellor, Banasthali University was invited as a keynote speaker where he delivered his address on 'Nurturing women leaders for generations: the Banasthali way'. During his talk, Prof. Shastri shared with the audience how Banasthali University from its humble beginning in 1935 has come a long way to being the largest fully residential women's University in the world providing women leaders in all spheres of the society. He also chaired a session during the seminar.



Banasthali University in its relentless pursuit for excellence in education has signed MoU with two leading International Universities namely, University of Perpignan, France and University of Malaya, Malaysia.



Among the distinguished International visitors, Prof. Isabelle Chalendar, University of Lyon, France along with Prof. Wolfgang Arendt, University of Ulm, Germany and Dr. Sachi Srivastava, University of Delhi visited Banasthali on 18th March.

Prof. Isabelle delivered a talk in the Department of Mathematics & Statistics. They also had a ride over the campus. They well appreciated the academic facilities available here during their short visit to campus and shared their experience by saying that this is a unique university of its kind which remained unexplored.



The Academic session 2015-16 also witnessed some of the scholars from Bansthal going abroad to study for one semester. Under the Erasmus Mundus Mobility Programme, Ms. Kamy Singh, Ms. Komal Agarwal and Ms. Sandal Agrawal went to Bremen University, Germany; Ms Kanika Khurana and Ms. Soumya Shrivastava went to Reutlingen University, Germany and Ms. Shweta Panday opted to study at University of Warsaw, Poland. Ms. Anjali Joshi, Research Associate from the Department of Bioscience & Biotechnology is currently at University of Education, Weingarten for one semester from April-August 2016 under Baden-Wuerttemberg Scholarship.

Two German Scholars namely, Ms. Anja Lohner and Ms. Jessica Geiger visited Banasthali from July-December 2015. Ms. Lohner participated in the exchange programme with Banasthali University funded by DAAD.

## East West Bonding

Banasthali University's Academic Exchange Programmes are garnering wide spread global recognition which is evident from the visits of many International Universities to our campus during the academic session 2014- 2015. Also, Banasthali marked its global presence along with distinguished International Organizations working for women's education.

Dr. Mark Dechesne from Leiden University, The Netherlands visited Banasthali University on November 21, 2014 and January 7, 2015. Leiden University and Banasthali University are partners under the Erasmus Mundus Programme for mutual cooperation with the Faculty of Humanities. Dr. Dechesne visited us to expand the agreement further. With this view, he had elaborate discussion with our Hon'ble Vice-Chancellor, Prof. Aditya Shastri and they mutually agreed upon signing generic MoU and Student Exchange Agreement between LU and BU so that students from disciplines other than Humanities could also benefit from it.



Banasthali University attended the 10<sup>th</sup> QS Apple Conference in Taipei held from 11- 13 November, 2014. It is the prime conference and exhibition for international educators in Asia, Europe, America and Australia. It supports the internationalization of Asia-Pacific Universities by providing valuable opportunities for networking, exchanging best

practice, and discussing recent developments in higher education in this dynamic region. Banasthali was among the 231 Institutions from 37 countries to exchange their valuable knowledge, learn from the discussions and presentations, and network. Shalini Chandra and Tripti Sharma met representatives of various Universities with intent to promote Banasthali University globally and also to seek academic and research collaborations abroad.



The Conference meetings resulted in establishing collaboration of Banasthali with many foreign Universities. Signing of MoUs is in process with many reputed Universities like Universiti Kuala Lumpur, University of Malaya, Binus University; Malaysia, S.Seifullin Kazakh Agro Technical Univ. Kazakhstan and National Kaohsiung Univ. of Applied Sciences, Taiwan. Recently, Banasthali has signed MoU with Kazakh National Pedagogical University named after Abai, Kazakhstan.

Mr. Dhruv Kumar, Marketing Manager, Deakin University, Australia, visited Banasthali on January 8, 2015. He visited different academic facilities of the university and was very much impressed by the holistic approach to education of our University. He met our Hon'ble Vice Chancellor, Prof. Aditya Shastri and discussed the promotion of dual degree programme in Sports Management of Deakin University which is

ranked number third in the world. He also discussed about the newly started courses on Health in Deakin University.



Banasthali University was a proud participant in the global gathering of Women's Universities and Colleges Vice-Chancellors, Presidents and Chief Academic Officers in the Women Leadership and Sustainability Conference held from January 16 - 18, 2015 on the campuses of Spelman College and Agnes Scott College in Atlanta, Georgia, USA.



The Conference was organized under the joint auspices of Women's Education Worldwide (WEW) and the Women's College Coalition (WCC), the two prominent International bodies working for Women's education globally.

The Conference provided an opportunity for participating Women's Universities and colleges to come together, learn from one another, build new friendships, and explore future partnership opportunities.





Being one of the very few Women's Universities in India, Banasthali was seen as a potential partner by many US Women's Institutions. For furthering the cause of Women's education, Banasthali University was invited over by various reputed Women's Institutions which participated in the conference to share and discuss the possibilities of working together for the same cause. The Conference gave a global view of Banasthali's march to strive excellence in Women's education internationally.



The Office Bearers from the International Relations office of Banasthali University attended the Confederation of Indian Industry (CII) Partner summit held in Jaipur from January 15-17, 2015 where they interacted with their counterparts from various countries and explored the possibility of having academic and cultural exchange in the near future.

Banasthali University's International exchange programmes are gaining remarkable attention on global platform. It has become a centre of attraction for foreign students to pursue higher education. Banasthali's growing International impact is reflected from the increasing number of queries regarding admission in various courses from different parts of the world like Africa, Afghanistan, Fiji and Nepal to name a few. Recently, Dr. Dipak Kumar Sah and Ms. Jyotsna Sreshtha, Educators from Nepal visited our campus. They had very interactive discussion with various Faculties of Banasthali and admired the modern facilities available at Banasthali. They also met Hon'ble Vice Chancellor, Prof. Aditya Shastri and expressed their wish of establishing a long term academic relation with Banasthali under various exchange programmes.

Prof. Y.P. Chaubey, Head, Department of Statistics, Concordia University, Canada visited Banasthali University from January 18-21, 2015. He was invited to conduct a workshop on R held during January 19-21, 2015 by Department of Mathematics and Statistics. Banasthali already had very active research collaboration with Concordia University, during his visit we discussed to extend it further.



Under the student exchange program, Ms. Maria Müller from University of Education, Weingarten, Germany came to study for one semester at Banasthali University in July 2014. She chose to study Tabla at

Banasthali. She taught Mathematics to Class 5<sup>th</sup> at Saraswati Mandir and English to class 7<sup>th</sup> at Shakuntalam in addition to conducting classes for German Language students (Certificate level).

Prof. Dr. Gregor Lang-Wojtasik, Dean, Faculty of Education, Prof. Elke Grundler, German & Linguistic Faculty, Univ. of Education, Weingarten and Prof. Masashi Urabe, City University Hiroshima, Japan visited Banasthali on October 5, 2014. They talked about Teacher Education, Multilingualism of intercultural education.



Dr. Hamsavahini Singh was invited as Visiting Fellow to the State University of Milan from October 16- 29, 2014. During her visit she conducted classes in the Dept. of Mediation and Intercultural Studies for Bachelor and Master Students. Dr. Singh was invited by Academia Ambrosiana (Asiatica section) which is a well known academy for promoting cultural and literary activities on October 23, 2014 to give presentation on the topic of travel literature.

Mrs. Christina Fischer v. Bernus, Visiting Fellow from Munich, Germany conducted classes for students of German Language from 7<sup>th</sup> to 24<sup>th</sup> January, 2015.



Adding further to the accolades of Banasthali, B.Tech (CS) Students, Ms. Prachi Mishra, Ms. Titiksha Jain, Ms. Aishwarya Gupta, had been selected for a semester abroad programme in Vorarlberg University of Applied Sciences, Austria. Ms Somya Bhutani and Ms Puja Chaudhary were selected to pursue one semester at University of Education Weingarten, Germany from April-August 2014 under New Passage to India Programme by DAAD, Bonn, Germany.

Three students namely, Ms. Abhi Malik (MBA, Previous), Ms. Pallavi Laungani (BA, Final) and Ms. Janwee Singh (MA, Previous) got selected for the prestigious scholarship of European Union Erasmus Mundus under the IBIES Program to pursue two semesters for session 2014-2015 in Reutlingen, Warsaw and Milan respectively.

6 Students of BBA have been selected to receive full scholarship, free travel, and other expenses for pursuing one semester abroad at various European Universities under the Erasmus Mundus IBIES Program of the European Union. Ms. Kanika Khurana, Ms. Soumya Srivastava (BBA VI Sem.) have been selected by Reutlingen University, Germany. Ms. Kamyra, Ms. Komal Agarwal, Ms. Manvi (BBA IV Sem.) by Bremen University, Germany and Ms. Shweta Pandey (BA IV Sem.) by Warsaw University, Poland.

Two Faculty Members of Banasthali would receive three months fellowship under the Erasmus Mundus IBIES Program and Dr. Hamsavahini Singh would be visiting Aarhus University, Denmark and Prof. Preeti Sharma would visit Leiden University, Holland.