



Ref. No. : NIL

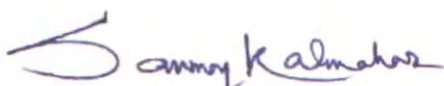
Date : 04-09-23

To whom it may concern

This is to certify that Miss. Sonakshi Saha, of the Department of Biotechnology, Heritage Institute of Technology, Kolkata, has completed a 03-month project on the topic "**Validation of Naringin rich fraction obtained from peels of *Citrus sinensis* by TLC, HPLC and it's *in vitro* antibacterial activity on some pathogenic strains**" at "Bioequivalence Study Centre, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India" under the supervision of Prof. Sanmoy Karmakar. During this period, she has gained the following skills-

- She is able to handle UV-Visible Spectroscopy, Preparative TLC, and RP-HPLC.
- She has experience performing Non-Invasive Cardiovascular measurements (BP and ECG) in experimental animals.
- She has exposure to basic microbiological experiments involving Drug Screening methods on Gram Positive and Negative Organisms.

I wish her all the success in life.



Prof. Sanmoy Karmakar

Director, Bioequivalence Study Centre,
Department of Pharmaceutical Technology,
Jadavpur University, Kolkata, India
Kolkata- 700032.



आई.सी.एम.आर. - राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

CERTIFICATE

This is to certify that Ms. Ayushi Jha (College Roll No: 2056002, Autonomy Roll No:12620004022, Department of Biotechnology, Heritage Institute of Technology, Kolkata) has completed the study, entitled "Development of computational tool for nucleotide and protein sequence analysis using Python programming" under my supervision during 01-06-2023 to 31-07-2023. To the best of my knowledge, the present work is the result of the original investigation and study. No part of the report has been ever submitted for any degree at any university.

This report of Ms. Ayushi Jha is in partial fulfillment of the degree of Bachelor of Technology (B. Tech) in Biotechnology, Heritage Institute of Technology, Kolkata.

Place: Kolkata

Date: 17/08/2023

Surajit Basak

Dr. Surajit Basak

Scientist-D, ICMR-National Institute of
Cholera and Enteric Diseases, Kolkata.



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CHOLERA AND ENTERIC DISEASES

आई. सी. एम. आर. - राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

WHO COLLABORATING CENTRE FOR RESEARCH AND TRAINING ON DIARRHOEAL DISEASES

August 25, 2023

TO WHOM IT MAY CONCERN

This is to certify that, Aishee Chakraborty, Reg no: 201260100410021 of 2020-24, an undergraduate student (B.Tech) of the Department of Biotechnology, Heritage Institute of Technology, Kolkata (affiliated to MAKAUT) has completed her summer training project work from June 15, 2023 to July 31, 2023 under my guidance in the **Division of Molecular Pathophysiology, ICMR-NICED, Kolkata**. She has worked on the project "**Induction of Autophagy by Hemagglutinin Protease (HAP) in Human Breast Cancer Cells Through Alternative Activation of PAR-1**". I wish her success in her future endeavours.

Dr. Amit Pal, Ph.D.

Scientist-'G' & Head
Division of Molecular Pathophysiology
ICMR-NICED
Beliaghata, Kolkata-700010
Contact: Mob: +91-9831361740
Email: galamit.app@gmail.com / apal7364@rediffmail.com

डॉ. अमित पाल / Dr. Amit Pal
(विज्ञानिक - एफ / Scientist F)
राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
National Institute of Cholera & Enteric Diseases
आई. सी. आई. टी रोड, स्कीम-१०एम, बेलियाघाटा
P-33, CIT Road, Scheme-XM, Beliaghata
कोलकाता-७०००१० / Kolkata-700010

पी-३३, सी.आई.टी. रोड, स्कीम - १०एम, बेलियाघाटा, कोलकाता - ७०००१०, भारत

P-33, C.I.T. Road, Scheme - XM, Beliaghata, Kolkata - 700010, India

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फैक्स / Fax : 91-33-2363 2398, 2370-5066, वेब / Website : www.niced.org.in

CERTIFICATE Of Completion

SynBiogenesis



This certificate is presented to

Souhardya Acharjee

Reg No. : SB/23-24/BT04/0004

For completing his training program for 30 days from 5 June, 2023 to 6 July, 2023 on "Microbiology" conducted by SynBiogenesis.

CEO & Co-founder

Piya Chakraborty

Course Coordinator

Supported By:

 **BIONEST**
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NOTE: Verify authenticity of this certificate from company's students datasheet available at
<https://www.synbiogenesis.com/alumni>

CERTIFICATE Of Completion

SynBiogenesis



This certificate is presented to

Diptayan Bhattacharyya

Reg No. : SB/23-24/BT04/0003

For completing his training program for 30 days from 5 June, 2023 to 6 July, 2023 on "Microbiology" conducted by SynBiogenesis.

CEO & Co-founder

Supported By:

Piyu Chakraborty

Course Coordinator



NOTE: Verify authenticity of this certificate from company's students datasheet available at

<https://www.synbiogenesis.com/alumni>



NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR
Continuing Education Cell



Internship Certificate

This Certificate has been awarded to

ARTTRA MUKHERJEE

on completion of 02 (Two) month/s of Internship from 05/06/2023 to 04/08/2023
in the area of ..Studies on potential of bacteria for textile dye decolorization.....
We found the Candidate Sincere, Hardworking, Dedicated and Result Oriented.
We wish the Candidate all the best for his/her future.

Presented on day of in appreciation of your work.

Signature of Supervisor 21/9/23.

Signature of HOD of the Department 21/9/23

Signature of Chairman / Deputy Chairperson, CIC



CERTIFICATE

OF COMPLETION

This is to certified that

Kuntal Ghosh

has completed the course on

Food Science & processing technology

Organised by Learntoupgrade recognized by DBT & NSDC

Issued On: 30th July 2023

Training Partner



LIFE SCIENCES SECTOR SKILL DEVELOPMENT
COUNCIL



Hardeep Singh Puri

HARDEEP SINGH PURI
DIRECTOR LEARNTOUUPGRADE

CERTIFICATE

This is to certify that Srejani Koley, a student of B.Tech Biotechnology at Heritage Institute of Technology, Kolkata, has successfully completed the 4 weeks long summer internship at B.M BIRLA HEART RESEARCH CENTRE - 7/2 Diamond Harbour Road Kolkata -700027, under the supervision and guidance of Dr.Susrat Sen, Lab director of B.M Birla Heart Research Centre and The Calcutta Medical Research Institute and Dr. Niladri Sarkar Junior Consultant Pathologist .

18/07/23

Dr. Niladri Sarkar

Junior Consultant Pathologist

B.M Birla Heart Research Centre



**NETAJI SUBHAS CHANDRA BOSE
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(A Unit of Himadri Memorial Cancer Welfare Trust)

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Help Desk : (033) 71223000 • Mob : 9874210003 / 9874210007

Email : info@ncri.in, admin@ncri.in, Web : www.ncri.in

27.07.23

TO WHOM IT MAY CONCERN

This is to certify that Ms. Neelparna Indu (B.Tech - Biotechnology, Heritage Institute of Technology, Kolkata, West Bengal, India) has done her internship from 1st June 2023 to 15th July 2023 under my mentorship at the Department of Molecular Biology, Netaji Subhas Chandra Bose Cancer Research Institute, Kolkata. The title of her work is: "Stratification of colorectal tumours into Consensus Molecular Subtypes using Immunohistochemistry". She has learned techniques like immunohistochemistry during her work. She proved to be a hard-working and diligent worker with good theoretical knowledge.

I wish her all the success in her future endeavors.

Dr. Sudarshana Basu

Senior Scientist, Dept of Molecular Biology

Netaji Subhas Chandra Bose Cancer Research Institute.

Dr. Sudarshana Basu

Scientist

Department of Molecular Biology

Netaji Subhas Chandra Bose

Cancer Research Institute

3081 Nayabad,
Kolkata-700094

Date: 17th August, 2023

TO WHOM IT MAY CONCERN

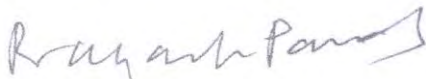
Our association with to Ms. Aditi Ghosh, (Roll No: 2056053), student of Heritage Institute of Technology, Kolkata, B Tech (Biotechnology), when she came to Britannia to pursue her organizational Summer Internship Program.

Her project was for the period of 15th June, 2023 to 30th July, 2023 in Quality Department, during the tenure of the project she was enthusiastic, resourceful and sincere.

Performance on the study was Good.

While on this we would like to state that all information and data acquired in the process is confidential in nature and the sole property of Britannia Industries Limited, and should not be shared /published /circulated without our written permission and is only meant for her academic purpose.

For BRITANNIA INDUSTRIES LIMITED.



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Sidho-Kanho-Birsha University

Dr. Sankar Bhattacharyya,
Associate Professor and Head
Department of Zoology.
And Jt. Head In Charge,
Department of Biotechnology.
Website-www.skbu.ac.in

Ranchi Road, PO - Sainik School
Dist-Purulia, PIN – 723 104
Phone : 03252 202424 Extn: 188

Date: 28.07.2023

To whom it may concern

This is to certify that **Mr. Dines Kar** of *Heritage Institute of Technology, Kolkata*... attended internship in our department during...**12/06/2023**...to...**28/07/2023**. He has learned Immunophenotyping by Flowcytometry, Cell culture, Imaging via Confocal Microscopy and application of ELIZA and PCR and quantitative real time PCR. I wish him success in his future endeavour.

Dr. Sankar Bhattacharyya

Associate Professor and Head
Department of Zoology.
And Jt. Head In Charge,
Department of Biotechnology.
Sidho Kanho Birsha University, Purulia, West Bengal.
PH No: +91 9674014065
E Mail: sankar-bhattacharyya@skbu.ac.in

Dr. Sankar Bhattacharyya
Associate Professor and Head
Department of Zoology
Sidho Kanho Birsha University
Purulia, West Bengal-723 104



CERTIFICATE

This is to certify that *Mr. Uttaran Roy Chowdhury*, student of B.Tech. Biotechnology from Heritage Institute of Technology, Kolkata has undergone summer training program work entitled "*Characterization of plant growth promoting bacteria isolated from sandalwood*" with us from *1st June 2023 to 30th June 2023* under my supervision.

Mr. Uttaran Roy Chowdhury is a sincere and diligent student. We wish him every success in his career.

Paltu K. Dhal

Dr. Paltu Kumar Dhal

30/6/23

Assistant Professor

Department of Life science and Bio-technology
Jadavpur University, Kolkata,
West Bengal-700032.



Dr. Paltu Kumar Dhal
Assistant Professor, Ph. D
Life Science & Biotechnology Dept.
Jadavpur University, Kolkata - 32

Telephone No. (+91-33)-2414-6666 (Ext. 2958)



JADAVPUR UNIVERSITY
SCHOOL OF BIOSCIENCE & ENGINEERING
Kolkata-700032, India

Date: July 24, 2023

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Amit Nath, Department of Biotechnology, Heritage Institute of Technology, Kol-700107** has completed his four-week Internship program at the School of Bioscience and Engineering, Jadavpur University from 5th June 2023 to 6th July 2023 under my guidance on the topic **General Lab practice and Synthesis of metal nanoparticles using synthetic and green routes.**

I found him enthusiastic, and dedicated in his studies however there is a good scope for improvement in his work. I wish him all the best in his future endeavors.

Dr. Piyali Basak
Director
School of Bioscience & Engineering
Jadavpur University
Kolkata-700 032

Piyali Basak.
24th July 2023

Dr. Piyali Basak
Director & Associate Professor
School of Bioscience and Engineering
Jadavpur University



UNIVERSITY OF CALCUTTA

DEPARTMENT OF CHEMICAL ENGINEERING
University College of Science & Technology
92, Acharya Prafulla Chandra Road,
Kolkata-700 009, India
Tel : (033) 2350-8386/6387/6396/1397/9937
Fax : 91-33-2351-9755
Telex : 021-2752 UNIV IN
Gram : SCIENCE

Ref No.....

Date 11/07/2023.....

To Whom it May Concern

This is to certify that **ANINDYA SANKAR KAPAT**, 7th Semester student of Biotechnology Department at Heritage Institute of Technology, Kolkata, completed his internship training (12th June to 14th July, 2023) under my guidance.

I wish his success in life.

Best wishes

Barnali Mandal

Dr. Barnali Mandal

Assistant Professor
Department of Chemical Engineering
Rajabajar Science College, Calcutta University
92 A. P. C. Road
Kolkata-700009
Mobile no. 8910577686
Email id: bmchemengg@caluniv.ac.in

Assistant Professor
Dept. of Chemical Engineering
UNIVERSITY OF CALCUTTA
P. C. Road, Kolkata- 700009

Kausika Ganguly 14/07/2023

Head
Dept. of Chemical Engineering
UNIVERSITY OF CALCUTTA
92, A. P. C. Road, Kolkata- 700009



JADAVPUR UNIVERSITY
KOLKATA-700 032, INDIA

Telephone : 2414-6822

Ref. No.

Dated.....

DEPARTMENT OF FOOD TECHNOLOGY & BIOCHEMICAL ENGINEERING

Date: September 25, 2023

CERTIFICATE

This is to certify that the project work entitled "Production of White Wine from green grapes and quality enhancement." has been submitted by Ms. Adishree Kundu, a 4th year student of Biotechnology of The Heritage Institute of Technology, Kolkata.

This project report is the outcome of the wet laboratory work she has conducted in the research laboratory of the undersigned in July 2023.

I have found Adishree to be diligent and a good team worker. I wish her the best in all her academic endeavors.

P. Bhattacharjee
Prof. Paramita Bhattacharjee,
Dept. of Food Technology and Biochemical Engineering,
Jadavpur University, Kolkata 700 032, India

CERTIFICATE



icmr Niced
INDIAN COUNCIL OF MEDICAL RESEARCH
NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES

आई सी एम आर - राष्ट्रीय हैजा तथा अंत्ररोग संस्थान
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

ICMR - National Institute of Cholera and Enteric Diseases

Department of Health Research, Ministry of Health and Family Welfare, Government of India

31st July 2023

This is to certify that the project report entitled "Various Techniques used for the Purification and Characterization of *Shigella* Bacteriophage" has been submitted by Rohit Pal, final year B.Tech student (Roll No. 12620004039) of Heritage Institute of Technology, Kolkata. This project report is the outcome of the work carried out by her from 15/06/2023-31/07/2023 in the Division of Electron Microscopy, ICMR-NICED, Kolkata.

Moumita Dutta

Moumita Dutta, PhD

Scientist-D

ICMR-NICED

Division of Electron Microscopy

डॉ. मोमिता दत्ता / Dr. Moumita Dutta

वैज्ञानिक-डी / Scientist-C

आईसीएमआर-राष्ट्रीय कोलरा और अंत्र रोग संस्थान
ICMR-National Institute of Cholera and Enteric Diseases

आईसीएमआर-700 010 / Kolkata-700 010



आई.सी.एम.आर. – राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

CERTIFICATE

This is to certify that Ms. Mili Bhowmik (Autonomy Roll No: 12620004033, Department of Biotechnology, Heritage Institute of Technology, Kolkata) has completed the study, entitled "Development of computational tool for nucleotide and protein sequence analysis using Java programming" under my supervision during 01-06-2023 to 31-07-2023. To the best of my knowledge, the present work is the result of the original investigation and study. No part of the report has been ever submitted for any degree at any university.

This report of Ms. is in partial fulfillment of the degree of Bachelor of Technology (B. Tech) in Biotechnology, Heritage Institute of Technology, Kolkata.

Place: Kolkata

Date: 17/08/2023

Surajit Basak

Dr. Surajit Basak

Scientist-D, ICMR-National Institute of
Cholera and Enteric Diseases, Kolkata.



NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR
Continuing Education Cell



Internship Certificate

This Certificate has been awarded to

AGNITA DIKSHIT

on completion of 02 (two) month/s of Internship from 05/06/2023 to 31/07/2023
in the area of Bio remediation (Studies on potential of bacteria for textile dyed decontamination)
We found the Candidate Sincere, Hardworking, Dedicated and Result Oriented.
We wish the Candidate all the best for his/her future.

Presented on 19 day of SEP 2023 in appreciation of your work.

Datta Dasgupta
Signature of Supervisor

Abir Dasgupta
Signature of Head of the Department

Chandra
Signature of Chairman / Deputy Chairperson, CEC



icmr **NICED**
INDIAN COUNCIL OF
MEDICAL RESEARCH
NATIONAL INSTITUTE OF
CHOLERA AND ENTERIC DISEASES

आई सी एम आर – राष्ट्रीय हैजा तथा अंत्ररोग संस्थान
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

ICMR - National Institute of Cholera and
Enteric Diseases

Department of Health Research, Ministry of Health
and Family Welfare, Government of India

31st July 2023

This is to certify that the project report entitled "Various Techniques used for the Purification and Characterization of *Salmonella* Bacteriophage" has been submitted by **Saonika Pal**, final year **B.Tech student (Roll No. 12620004044)** of **Heritage Institute of Technology, Kolkata**. This project report is the outcome of the work carried out by her from **15/06/2023-31/07/2023** in the **Division of Electron Microscopy, ICMR-NICED, Kolkata..**

Moumita Dutta

Moumita Dutta, PhD

Scientist-D

ICMR-NICED

Division of Electron Microscopy

डॉ: मोमिता दत्ता / Dr. Moumita Dutta
वैज्ञानिक-डी / Scientist-D
आईसीएमआर-राष्ट्रीय कोलरा और अंत्र रोग संस्थान
ICMR-National Institute of Cholera and Enteric Diseases
कोलकाता-700 010 / Kolkata-700 010



NEW JERSEY INSTITUTE OF TECHNOLOGY

CERTIFICATE OF COMPLETION

of the

2023 UNDERGRADUATE SUMMER RESEARCH AND INNOVATION PROGRAM

presented to

Anushri Gupta

July 27, 2023

A handwritten signature in black ink, reading 'Atam P. Dhawan', is written over a horizontal line.

Atam P. Dhawan
Interim Provost



आई.सी.एम.आर. - राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

CERTIFICATE

This is to certify that Ms. Mili Bhowmik (Autonomy Roll No: 12620004033, Department of Biotechnology, Heritage Institute of Technology, Kolkata) has completed the study, entitled "Development of computational tool for nucleotide and protein sequence analysis using Java programming" under my supervision during 01-06-2023 to 31-07-2023. To the best of my knowledge, the present work is the result of the original investigation and study. No part of the report has been ever submitted for any degree at any university.

This report of Ms. is in partial fulfillment of the degree of Bachelor of Technology (B. Tech) in Biotechnology, Heritage Institute of Technology, Kolkata.

Place: Kolkata

Date: 17/08/2023

Surajit Basak

Dr. Surajit Basak

Scientist-D, ICMR-National Institute of
Cholera and Enteric Diseases, Kolkata.



NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR
Continuing Education Cell



Internship Certificate

This Certificate has been awarded to

MEHULI DAS

on completion of 02 (Two) month/s of Internship from 05/06/2023 to 31/07/2023
in the area of Studies on potential of bacteria for textile dye decolorization.
We found the Candidate Sincere, Hardworking, Dedicated and Result Oriented.

We wish the Candidate all the best for his/her future.

Presented on 15th day of Sep 2023 in appreciation of your work.

Signature of Supervisor

Signature of HOD of the Department

Signature of Chairman / Deputy Chairperson, CEC

Dalia Dasgupta Mondal

Abhinav Singh

Chandralekha



DEPARTMENT OF LIFE SCIENCE AND BIOTECHNOLOGY

September 20, 2023

To Whom It May Concern:

This is to certify that Miss Tiyyasha Adak, a B.Tech (Biotechnology) student of Heritage Institute of technology, Kolkata did receive some training as a summer Intern during 5th June, 2023 to 15th July, 2023. During her stay in my laboratory at the Department of Life Science and Biotechnology, Jadavpur University, Kolkata, Tiyyasha did some routine Microbiology and Molecular Biology works like Media preparation, Culture preparation, DNA isolation and visualization etc with great energy and enthusiasm. Tiyyasha has a pleasant personality and was liked by other lab mates. She has a very good command in English language which were evident from her lab note book writing.

To the best of my knowledge Tiyyasha bears a very good conduct.

Ratan Gachhui.

Ratan Gachhui

Ratan.gachhui@jadavpuruniversity.in

Ratan Gachhui, Ph. D.
Professor
Life Sc. & Biotechnology Dept.
Jadavpur University
Kolkata - 700 032

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E-mail : dankuni@bengalbeverages.com
CIN : U15549WB1995PTC074468

CERTIFICATE

TRAINING COMPLETION

This certificate is awarded to

Ms. SAONI GHOSH

For the successful completion of the training course on Water Treatment plant, Raw materials, Packaging materials, Syrup, Beverages preparation, CIP, Process (RGB & PET) under the supervision of QA team, From 5 June, 2023 to 14 JULY, 2023 at **Bengal Beverages Pvt. Ltd.** **(Unit-I)** Dankuni, Hooghly, West Bengal .

During her training we found her to be sincere & hardworking.
We wish her very best for her future endeavor.

Joydeb Mukherjee
General Manager – HR & Admin
Bengal Beverages Pvt. Ltd.



Learntoupgrade

Serial No : ZEPHPFAS

CERTIFICATE

OF COMPLETION

This is to certified that

Archit Bhattacharya

has completed the course on

Industrial Biotechnology

Organised by Learntoupgrade recognized by DBT & NSDC

Issued On: {30th June 2023}}



LIFE SCIENCES SECTOR SKILL DEVELOPMENT
COUNCIL

Hardeep Singh Puri

HARDEEP SINGH PURI
DIRECTOR LEARNTOUPGRADE





भा.आ.अ.प. - राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR-NATIONAL INSTITUTE OF CHOLERA & ENTERIC DISEASES

(भारतीय आयुर्विज्ञान अनुसंधान परिषद)

(INDIAN COUNCIL OF MEDICAL RESEARCH)

स्वास्थ्य और परिवार कल्याण मंत्रालय अधीन, भारत सरकार

Under Ministry of Health and Family Welfare, Govt. Of India

WHO COLLABORATING CENTRE FOR RESEARCH AND TRAINING ON DIARRHOEAL DISEASES

CERTIFICATE

To Whom It May Concern

This is to certify that **Ms. SREYEE BISWAS** (Autonomy Roll No.: 12620004057; College Roll No.: 2056072; Registration No.: 201260100410045; Session: 2020-2024), has undergone her research training in the project entitled "**Combination of Traditional Antibiotic and a Herbal Compound against *Shigella flexneri***" in the Division of Biochemistry, ICMR-NICED, Kolkata under my supervision from **1st June 2023 to 15th July 2023** for partial fulfillment of the requirements for the degree of Bachelor of Technology (B.Tech.) in Biotechnology, Department of Biotechnology, Heritage Institute of Technology.

During this summer training, she has been acquainted with several biochemical and basic microbiological techniques. Her performance during this period has been satisfactory. She is sincere, responsible, and efficient in her work.

I wish her success in her future endeavors.

Sushmita Bhattacharya

Dr. Sushmita Bhattacharya

Scientist C

Division of Biochemistry

National Institute of Cholera and Enteric Diseases

Indian Council of Medical Research

P-33, C.I.T. Road, Scheme XM, Belegghata

Kolkata – 700010, India

पी-३३, सी.आई.टी रोड, स्किम-१० एम, बेलियाघाटा, कोलकाता-७०००१०

P-33, C.I.T. Road, Scheme - XM, Beliaghata, Kolkata - 700 010, India

निदेशक / Director : 91-33-2363 3373, 2370 1176, पि.बी.एक्स / PBX : 91-33-2353 7469/7470, 2370 5533/4478/0448

फैक्स / Fax : 91-33-2363 2398, 2370-5066, वेब / Website : www.niced.org.in



ITC Limited
ITC Life Sciences & Technology Centre
No.3, 1st Main Road,
Peenya Industrial Area, 1st Phase,
Bengaluru - 560058. (India)
Phone : 91 080 42787000
Fax : 91 080 42787115

25th July, 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Adhiraj Basu** was associated with us as a Research Intern from 5th June, 2023 to 25th July, 2023. His project title was "**Purification of recombinant protein expressed as inclusion bodies in E. coli**".

During the project period his performance was found to be **Good**.

Yours faithfully,

ITC LIMITED

Krisna Murari

Krisna Murari
Manager - Human Resources
ITC Life Sciences & Technology Centre

Certificate Attached :



Serial No : H5GIXTC3

CERTIFICATE

OF COMPLETION

This is to certified that

Siddhartha Halder

has completed the course on
Bioinformatics tools & software

Organised by Learntoupgrade recognized by DBT & NSDC
Issued On: 27th June 2023



LIFE SCIENCES SECTOR SKILL DEVELOPMENT
COUNCIL

Hardeep Singh Puri

HARDEEP SINGH PURI
DIRECTOR LEARNTOUPGRADE



UNIVERSITY OF CALCUTTA

Maitrayee DasGupta
JC Bose National Fellow

Professor,
Department of Biochemistry
University of Calcutta



Mobile: 9830776131
Email: maitrayee_d@hotmail.com
mdgbiochem@caluniv.ac.in
Address: 35, Ballygunge circular road
Kolkata 700019

TO WHOM IT MAY CONCERN

This is to certify that **Aritra Shyamal**, a student of B.Tech final year, Department of Biotechnology, Heritage Institute of Technology (An autonomous institute under Maulana Abul Kalam Azad University of Technology, West Bengal, formerly WBUT) has done his dissertation at the Department of Biochemistry, University of Calcutta, (Ballygunge Science College Campus) under my supervision from 5th June, 2023 to 31st July, 2023 (2 months) in the partial fulfillment of the degree of 'Bachelor of Technology'. The project work entitled "**To study the dimerization of a Plant Receptor Kinase (SYMRK) from *Arachis hypogaea*.**" embodies the work done by Aritra during his project training period. During the project he has gone through some molecular biology work like: generation of BiFC constructs using gateway cloning, DNA transformation, plasmid DNA isolation etc. During this project I am impressed with his ability to learn and absorb as much as possible. I am absolutely certain of his honesty, dedication and diligence towards the cause of Science.

With regards,


Maitrayee DasGupta

Professor Maitrayee DasGupta
Department of Biochemistry
University of Calcutta



DEPT. OF PHARMACEUTICAL TECHNOLOGY

Ref. No. : NIL

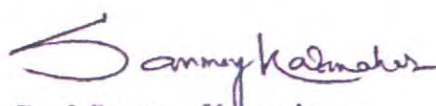
Date : 04-09-23

To whom it may concern

This is to certify that Mr. Shourjo Ghosh, of the Department of Biotechnology, Heritage Institute of Technology, Kolkata, has completed a 03-month project on the topic "Validation of Naringin rich fraction obtained from peels of *Citrus sinensis* by TLC, HPLC and its *in vitro* antibacterial activity on some pathogenic strains" at "Bioequivalence Study Centre, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India" under the supervision of Prof. Sanmoy Karmakar. During this period, he has gained the following skills-

- He is able to handle UV-Visible Spectroscopy, Preparative TLC, and RP-HPLC.
- He has experience performing Non-Invasive Cardiovascular measurements (BP and ECG) in experimental animals.
- He has exposure to basic microbiological experiments involving Drug Screening methods on Gram Positive and Negative Organisms.

I wish him all the success in life.



Prof. Sanmoy Karmakar
Director, Bioequivalence Study Centre,
Department of Pharmaceutical Technology,
Jadavpur University, Kolkata, India
Kolkata- 700032.

आई. सी. एम. आर. – राष्ट्रीय कॉलरा और आंत्र रोग संस्थान

ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES

स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार

Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

CERTIFICATE

This is to certify that Ms. Riya Adhikary (College Roll No: 2056012, Autonomy Roll No: 12620004038, Department of Biotechnology, Heritage Institute of Technology, Kolkata) has completed the study, entitled "Development of computational tool for nucleotide and protein sequence analysis using C++ programming" under my supervision during 01-06-2023 to 31-07-2023. To the best of my knowledge, the present work is the result of the original investigation and study. No part of the report has been ever submitted for any degree at any university.

This report of Ms. is in partial fulfillment of the degree of Bachelor of Technology (B. Tech) in Biotechnology, Heritage Institute of Technology, Kolkata.

Place: Kolkata

Date: 17/08/2023

Surajit Basak

Dr. Surajit Basak

Scientist-D, ICMR-National Institute of
Cholera and Enteric Diseases, Kolkata.



DEPT. OF PHARMACEUTICAL TECHNOLOGY

Ref. No. : NIL

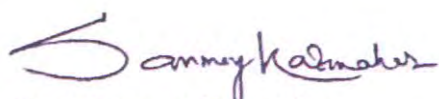
Date : 04-09-23

To whom it may concern

This is to certify that Mr. Shourjo Ghosh, of the Department of Biotechnology, Heritage Institute of Technology, Kolkata, has completed a 03-month project on the topic "Validation of Naringin rich fraction obtained from peels of *Citrus sinensis* by TLC, HPLC and it's *in vitro* antibacterial activity on some pathogenic strains" at "Bioequivalence Study Centre, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India" under the supervision of Prof. Sanmoy Karமாகar. During this period, he has gained the following skills-

- He is able to handle UV-Visible Spectroscopy, Preparative TLC, and RP-HPLC.
- He has experience performing Non-Invasive Cardiovascular measurements (BP and ECG) in experimental animals.
- He has exposure to basic microbiological experiments involving Drug Screening methods on Gram Positive and Negative Organisms.

I wish him all the success in life.



Prof. Sanmoy Karமாகar
Director, Bioequivalence Study Centre,
Department of Pharmaceutical Technology,
Jadavpur University, Kolkata, India
Kolkata- 700032.



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CHOLERA AND ENTERIC DISEASES

आई. सी. एम. आर. – राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
ICMR - NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार कल्याण मंत्रालय, भारत सरकार
Department of Health Research, Ministry of Health and Family Welfare, Govt. of India

WHO COLLABORATING CENTRE FOR RESEARCH AND TRAINING ON DIARRHOEAL DISEASES

To Whom It May Concern

This is to certify that the dissertation entitled, "Detection of *Vibrio cholerae* by Loop-Mediated Amplification Assay" submitted by Tiyasa Malik, B.Tech Seventh Semester, Department of Biotechnology, Heritage Institute of Technology, Kolkata, West Bengal. It is a bona fide record of work carried out under my direct supervision for project work for the partial fulfillment of her B.Tech degree.

She has gone through microbiological, biochemical assays, and PCR techniques during her study period. She worked in the division of Bacteriology of ICMR-NICED, Kolkata, for the period June 15th to July 31st, 2023.

Date: September 19, 2023

Place: Kolkata

R.K. Nandy 19/09/23
Ranjan K Nandy

रंजन कुमार नन्दी/Ranjan Kumar Nandy
(वैज्ञानिक-एफ / Scientist-F)
राष्ट्रीय कॉलरा और आंत्र रोग संस्थान
National Institute of Cholera & Enteric Diseases
पी-३३, सी. आई. टी. रोड, स्कीम-१०एम, बेलियाघाटा
-33, CIT Road, Scheme-XM, Beliaghata
कोलकाता-७०० ०१०/Kolkata-700 010



Ref.No. FTBE/SA/210923

Date 21/09/23

CERTIFICATE

This is to certify that the project work entitled “Isolation of Naringinase-enzyme Producing Microbial Strain from Citrus Fruit” has been submitted by Miss. Arunika Koley, a student of Final Year B.Tech. in Biotechnology, Heritage Institute of Technology affiliated to MAKAUT.

This project work is the outcome of the work carried out by her from 12th June, 2023 to 5th August, 2023 in the laboratory of Food Technology & Biochemical Engineering, Jadavpur University.

The Internship report is the result of original work done by her and I am satisfied with keenness and interest shown by her during the project execution.

I wish all the best for her future career.

With regards,

Sunita Adhikari (Nee Pramanik)

[Dr.Sunita Adhikari (Nee Pramanik)]

Associate Professor, Dept. of FTBE, JU

Dr. Sunita Adhikari (Nee Pramanik)
Head
Food Technology &
Biochemical Engineering
Jadavpur University
Kolkata - 700 032



JADAVPUR UNIVERSITY
KOLKATA-700 032, INDIA

Telephone : 2414-6822

Ref. No. _____

Dated _____

DEPARTMENT OF FOOD TECHNOLOGY & BIOCHEMICAL ENGINEERING

Date: September 25, 2023

CERTIFICATE

This is to certify that the project work entitled "Production of White Wine from green grapes and quality enhancement." has been submitted by Mr. Aakash Saha, a 4th year student of Biotechnology of The Heritage Institute of Technology, Kolkata.

This project report is the outcome of the wet laboratory work he has conducted in the research laboratory of the undersigned in July 2023.

I have found Aakash to be diligent and a good team worker. I wish him the best in all his academic endeavors.

P. Paramita Bhattacharjee

Prof. Paramita Bhattacharjee,
Dept. of Food Technology and Biochemical Engineering,
Jadavpur University, Kolkata 700 032, India

যাদবপুর বিশ্ববিদ্যালয়

DR. SANMOY KARMAKAR,

M.Pharm, Ph.D., BOYSCAST Fellow (DST, Govt. of India)

Professor
Pharmacology and Toxicology



* JADAVPUR UNIVERSITY
KOLKATA - 700 032, INDIA

DEPT. OF PHARMACEUTICAL TECHNOLOGY

Ref. No. : NIL

Date : 04-09-23

To whom it may concern

This is to certify that Miss. Kallontai Talukdar, of the Department of Biotechnology, Heritage Institute of Technology, Kolkata, has completed a 03-month project on the topic "Validation of Naringin rich fraction obtained from peels of *Citrus sinensis* by TLC, HPLC and its *in vitro* antibacterial activity on some pathogenic strains" at "Bioequivalence Study Centre, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India" under the supervision of Prof. Sanmoy Karmakar. During this period, she has gained the following skills-

- She is able to handle UV-Visible Spectroscopy, Preparative TLC, and RP-HPLC.
- She has experience performing Non-Invasive Cardiovascular measurements (BP and ECG) in experimental animals.
- She has exposure to basic microbiological experiments involving Drug Screening methods on Gram Positive and Negative Organisms.

I wish her all the success in life.

Prof. Sanmoy Karmakar
Director, Bioequivalence Study Centre,
Department of Pharmaceutical Technology,
Jadavpur University, Kolkata, India
Kolkata- 700032.



Sidho-Kanho-Birsha University

Dr. Sankar Bhattacharyya,
Associate Professor and Head
Department of Zoology.
And Jt. Head In Charge,
Department of Biotechnology.
Website-www.skbu.ac.in

Ranchi Road, PO - Sainik School
Dist-Purulia, PIN – 723 104
Phone : 03252 202424 Extn: 188

Date: 28.07.2023

To whom it may concern

This is to certify that **Mr. Rudrajit Das** of *Heritage Institute of Technology, Kolkata*... attended internship in our department during...12/06/2023...to...28/07/2023. He has learned Immunophenotyping by Flowcytometry, Cell culture, Imaging via Confocal Microscopy and application of ELIZA and PCR and quantitative real time PCR. I wish him success in his future endeavour.

Dr. Sankar Bhattacharyya

Associate Professor and Head
Department of Zoology.
And Jt. Head In Charge,
Department of Biotechnology.
Sidho Kanho Birsha University, Purulia, West Bengal.
PH No: +91 9674014065
E Mail: sankar-bhattacharyya@skbu.ac.in

Dr. Sankar Bhattacharyya
Associate Professor and Head
Department of Zoology
Sidho Kanho Birsha University
Purulia, West Bengal-723 104



UNIVERSITY OF CALCUTTA

DEPARTMENT OF CHEMICAL ENGINEERING
University College of Science & Technology
92, Acharyya Prafulla Chandra Road,
Kolkata-700 009, India
Tel : (033) 2350-8386/6387/6396/1397/9937
Fax : 91-33-2351-9755
Telex : 021-2752 UNIV IN
Gram : SCIENCE

Ref No.....

Date 14/07/2023.....

To Whom it May Concern

This is to certify that **DIPROJEET DAS**, 7th Semester student of Biotechnology Department at Heritage Institute of Technology, Kolkata, completed his internship training (12th June to 14th July, 2023) under my guidance.

I wish his success in life.

Best wishes

Barnali Mandal

Dr. Barnali Mandal

Assistant Professor
Department of Chemical Engineering
Rajabajar Science College, Calcutta University
92 A. P. C. Road
Kolkata-700009
Mobile no. 8910577686
Email id: bmchemengg@caluniv.ac.in

Assistant Professor
Dept. of Chemical Engineering
UNIVERSITY OF CALCUTTA
92 A. P. C. Road, Kolkata- 700009

Kaushik Gargy
14/07/2023

Head
Dept. of Chemical Engineering
UNIVERSITY OF CALCUTTA
92, A. P. C. Road, Kolkata- 700009

Date: 17th August, 2023

TO WHOM IT MAY CONCERN

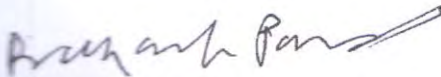
Our association with to Mr. Soham Laha, (Roll No: 2056066), student of Heritage Institute of Technology, Kolkata, B Tech (Biotechnology), when he came to Britannia to pursue his organizational Summer Internship Program.

His project was for the period of 15th June, 2023 to 30th July, 2023 in Quality Department, during the tenure of the project he was enthusiastic, resourceful and sincere.

Performance on the study was Good.

While on this we would like to state that all information and data acquired in the process is confidential in nature and the sole property of Britannia Industries Limited, and should not be shared /published /circulated without our written permission and is only meant for his academic purpose.

For BRITANNIA INDUSTRIES LIMITED.



PRAKASH PANDEY

REGIONAL MANAGER – HUMAN RESOURCE



JADAVPUR UNIVERSITY
SCHOOL OF BIOSCIENCE & ENGINEERING
Kolkata-700032, India

Date: 1st September, 2022

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Sneha Muztaba**, 4th year B. Tech. student from Department of Biotechnology of Heritage Institute of Technology, West Bengal 700107, has completed her four week internship program at School of Bioscience and Engineering, Jadavpur University from 1st August, 2022 to 31st August, 2022 under my guidance on the following topics:

1. Standard Curve Preparation
2. Phenol, Flavonoid and Alkaloid estimation from Plant Extract
3. Basic Microbiology techniques
4. Antioxidant Studies
5. Studies on polymeric biomaterials -Preparation, Swelling, Degradation and Drug Release profile.

I found her sincere, hardworking, enthusiastic and dedicated in her studies with excellent behavior.
I found her to be exceptionally good and attentive during this internship. Her performance during the internship was highly commendable and I wish her all the best for her future endeavors.

Piyali Basak.
1st September 2022
Dr. Piyali Basak

Director & Associate Professor
School of Bioscience and Engineering

Jadavpur University
Dr. Piyali Basak
Director
School of Bioscience & Engineering
Jadavpur University
Kolkata-700032



JADAVPUR UNIVERSITY
SCHOOL OF BIOSCIENCE & ENGINEERING
Kolkata-700032, India

Date: 1st September, 2022

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Saheli Banerjee**, 4th year B. Tech. student from Department of Biotechnology of Heritage Institute of Technology, West Bengal 700107, has completed her four week internship program at School of Bioscience and Engineering, Jadavpur University from 1st August, 2022 to 31st August, 2022 under my guidance on the following topics:

1. Standard Curve Preparation
2. Phenol, Flavonoid and Alkaloid estimation from Plant Extract
3. Basic Microbiology techniques
4. Antioxidant Studies
5. Studies on polymeric biomaterials -Preparation, Swelling, Degradation and Drug Release profile.

I found her sincere, hardworking, enthusiastic and dedicated in her studies with excellent behavior.

I found her to be exceptionally good and attentive during this internship. Her performance during the Internship was highly commendable and I wish her all the best for her future endeavors.

Piyali Basak.
1st September 2022

Dr. Piyali Basak

Director & Associate Professor
School of Bioscience and Engineering
Jadavpur University

Dr. Piyali Basak
Director
School of Bioscience & Engineering
Jadavpur University
Kolkata-700 032

Fortis Hospital

730 Anandapur, EM Bypass Road,
Kolkata - 700 107, West Bengal

Tel: +91 33 6628 4444

Fax: +91 33 6628 4242

Emergency: 105711

E-mail: enquiries@fortishealthcare.com

Website: www.fortishealthcare.com

MS/TC/2022/201

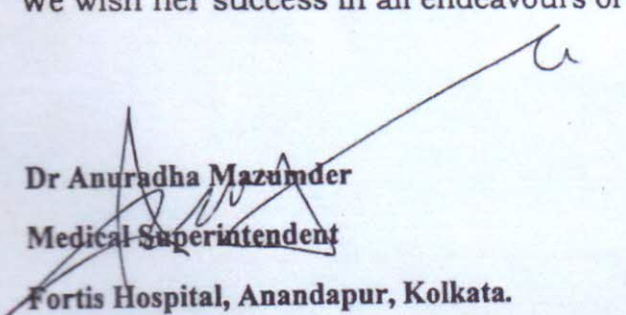
Date: - 31.08.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. Chandrika Sarkar**, student of **Heritage Institute of Technology** has completed her One month's internship in **Fortis Hospital, Anandapur, Kolkata, SRL Laboratory in Microbiology department from August 1st 2022 to August 31st 2022.**

During the training, she was found to be sincere, hardworking and showed keen interest to learn. The involvement and the sustained efforts put by the student was highly appreciable.

We wish her success in all endeavours of life.


Dr Anuradha Mazumder

Medical Superintendent

Fortis Hospital, Anandapur, Kolkata.



FORTIS HOSPITALS LIMITED

Regd. Office: Escorts Heart Institute and Research Centre, Okhla Road, New Delhi - 110 025
Tel: +91 11 2682 5000, Fax: +91 11 4162 8435 CIN: U93000DL2009PLC222166

 **Fortis SPECIALITY Hospital**