



## Department of Molecular Biology and Biotechnology

तेजपुर विश्वविद्यालय/Tezpur University

(A Central University established by an act of Parliament)  
NAPAAM, TEZPUR- 784 028, ASSAM, INDIA

### CERTIFICATE

This is to certify that **Bipasha Choudhury**, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled “**Understanding Distribution of Insertions along human genome in Cancer**” as a requirement of partial fulfillment of her Integrated Msc in Bioscience and Bioinformatics degree, under the supervision of, **Dr. Aditya Kumar** (Assistant professor), Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else. All helps received by her from various sources have been duly acknowledged.

*Aditya Kumar*

**Dr. Aditya Kumar**

Assistant professor

Department of MBBT

Tezpur University, Assam

Date: - 23 - 6 - 21

*Robin Doley*  
25/7/2021

**Dr. Robin Doley**

Professor and Head

Department of MBBT

Tezpur University, Assam

Date:- **Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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अणुजीव विज्ञान व जैव प्रौद्योगिकी विभाग/Department of Molecular Biology and Biotechnology

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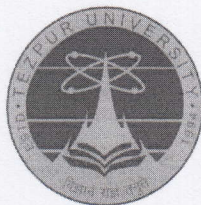
## CERTIFICATE

This is to certify that **Ms. Chainee Das**, bearing Roll No. **BBI16017**, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam has successfully completed the project work entitled “*Effect of N501Y mutation in spike protein on its interaction with ACE2 receptor*”, as a requirement of partial fulfilment of Integrated M.Sc. degree. in Bioscience and Bioinformatics (10<sup>th</sup> semester), under the supervision of **Dr. Venkata Satish Kumar Mattaparthi**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else. All helps received by her from various sources have been duly acknowledged.

**Dr. Venkata Satish Kumar Mattaparthi**  
Supervisor  
Department of Molecular Biology and  
Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



TEZPUR UNIVERSITY  
(A CENTRAL UNIVERSITY ESTABLISHED by an ACT of OARLIAMENT 1994)  
DEPARTMENT of MOLECULAR BIOLOGY and BIOTECHNOLOGY  
NAPAM, TEZPUR 784028  
ASSAM, INDIA

Prof. Manabendra Mandal  
Dept. of MBBT  
Email: [mandal@tezu.ernet.in](mailto:mandal@tezu.ernet.in)

Prof Robin Doley (H.O.D.)  
Dept of MBBT  
Email: [doley@tezu.ernet.in](mailto:doley@tezu.ernet.in)

CERTIFICATE

I certify that the project entitled “ Characterisation of Potential Probiotics Isolated from Traditional Fermented Food of North-East India” submitted by Ms. Pratiti Goswami, bearing Roll No.-BBI16002 to the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, in partial fulfillment of Integrated MSc. Degree embodies the records of original investigation carried out by her under the supervision of Prof. Manabendra Mandal. To the best of my knowledge, the project embodies account for her own finding and has not been submitted previously anywhere for any degree whatsoever by her or anyone else

Prof. Manabendra Mandal  
Dept. of MBBT  
Tezpur University, Tezpur  
Date :29-06-21

Prof Robin Doley  
H.O.D.  
Department of MBBT  
Tezpur University, Tezpur  
Date: 25-06-21

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



**Department of Molecular Biology and Biotechnology**  
**तेजपुर विश्वविद्यालय/TEZPUR UNIVERSITY**

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**CERTIFICATE**

This is to certify that **Mahasweta Goswami**, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled “**Mechanism of anticoagulant action of custom peptides mimicking the anticoagulant region of C-type lectin-like protein (snaclec) from Indian Saw-scaled viper venom**” as a requirement of partial fulfilment of her Master of Science in Molecular Biology and Biotechnology degree, under the supervision of, **Prof. A.K. Mukherjee**, Department of Molecular Biology and Biotechnology, Tezpur University on deputation, at present Director, IASST, Guwahati . To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else. All helps received by her from various sources have been duly acknowledged.

*Ashis K. Mukherjee*

(Ashis K. Mukherjee)

Department of MBBT, TU

(On deputation from TU)

Director, Institute of Advanced

Studies in Science and

Technology, Guwahati,

Assam

Date: 23/06/2021

*Robin Doley*  
26/7/21

(Robin Doley)

Professor & Head

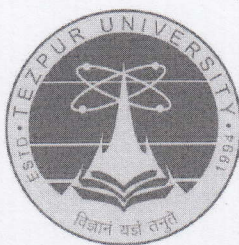
Department of MBBT,

Tezpur University, Tezpur,

Assam

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**

Date:



Department of Molecular Biology and Biotechnology

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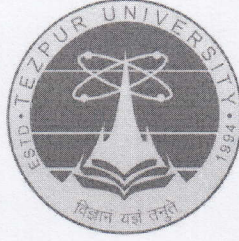
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## CERTIFICATE

This is to certify that Saptarshijyoti Gogoi, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled **“Variations among Stress Responsive Transcriptional Regulatory Networks of 10 cultivars of *Oryza sativa*”** as a requirement of partial fulfilment of his Integrated Master of Science in Bioscience and Bioinformatics degree, under the supervision of, Dr. Pankaj Barah, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by him or anyone else. All helps received by him from various sources have been duly acknowledged.

Dr. Pankaj Barah  
Assistant Professor  
Dept. of MBBT  
Tezpur University, Tezpur  
Date: 25.06.21

Dr. Robin Doley  
Professor & Head  
Dept. of MBBT  
Tezpur University, Tezpur  
Date: **Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



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## CERTIFICATE

This is to certify that Pranab Jyoti Deori, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled **“Antibacterial, antibiofilm, and anti-quorum sensing potentials of phytofabricated silver nanoparticles using aqueous extract of *Cuphea carthagenensis*”** as a requirement of partial fulfilment of his Integrated Master of Science in Bioscience and Bioinformatics degree, under the supervision of, Prof. Manabendra Mandal, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by him or anyone else. All helps received by him from various sources have been duly acknowledged.

Prof. Manabendra Mandal  
Dept. of MBBT,  
Tezpur University, Tezpur  
Date: 25-06-2021

Prof. Robin Doley (H.O.D.)  
Dept. of MBBT  
Tezpur University, Tezpur  
Date: **Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



Department of Molecular Biology and Biotechnology

TEZPUR UNIVERSITY

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Napaam, Tezpur- 784028, Assam, India

Dr. Robin Doley  
Head & Professor

Tel no: 91-3712-275412  
E-mail: [doley@tezu.ernet.in](mailto:doley@tezu.ernet.in)

**CERTIFICATE OF THE HEAD OF THE DEPARTMENT**

This is to certify that **Ms. Nalini Daimary**, Roll No. BBI16015, Integrated M.Sc. 10<sup>th</sup> Semester of Department of Molecular Biology and Biotechnology has successfully completed the project entitled '**Molecular characterization of group A rotaviruses**' in partial fulfilment of the degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Nima D. Namsa, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

Date:

Place: Tezpur

  
(Robin Doley)

Head & Professor

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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## CERTIFICATE

This is to certify that **Puja Kar**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **MBI18011**, carried out the Mini Project (Course: BI 350) entitled “**Characterization of *Ralstonia solanacearum* strain from brinjal plant**” under the supervision of **Dr. Suvendra Kumar Ray**, Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

**Dr. Suvendra Kumar Ray**  
Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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Biotechnology**

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## CERTIFICATE

This is to certify that **Madhurjya Kakoti**, a student of 6<sup>th</sup> Semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **MBI18001**, carried out the Mini Project (Course code: BI350) entitled “**Transcriptomic based comparative analysis of alcoholic hepatitis and liver cirrhosis**” under the supervision of **Dr. Pankaj Barah**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

.....  
**Dr. PANKAJ BARAH**

**Supervisor**

**Assistant Professor**

**Department of Molecular Biology**

**and Biotechnology**

**Tezpur University**

.....  
**Dr. ROBIN DOLEY**

**Professor and Head**

**Department of Molecular Biology**

**and Biotechnology**

**Tezpur University**

**Head,**

**Dept. of Molecular Biology & Biotechnology**

**Tezpur University**

**Napaam, Tezpur- 784028**



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## CERTIFICATE

This is to certify that **Bahni Shikha Roy**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **MBI18014**, carried out the Mini Project (Course: BI 350) entitled “**Mechanical injury and garlic clove (*Allium sativum*) polyphenol content**” under the supervision of **Dr. Jyoti Prasad Saikia**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

**Dr. Jyoti Prasad Saikia**  
Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
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## CERTIFICATE

This is to certify that Bandita Rajkhowa, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. MBI18010, carried out the Mini Project (Course: BI 350) entitled "Biopolymer from Euphorbia ingens" under the supervision of Dr. Bolin Kumar Konwar, Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

Dr. Bolin Kumar Konwar  
Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

Dr. Robin Doley  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
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Napaam, Tezpur- 784028



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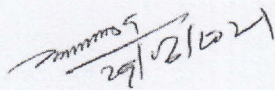
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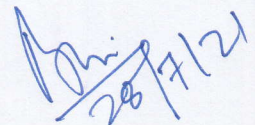
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## CERTIFICATE

This is to certify that **Priya Dutta**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **MBI18002**, carried out the Mini Project (Course: BI 350) entitled “**Screening and identification of potential molecules against SARS-CoV2 proteins: An *in-silico* approach**” under the supervision of **Dr. Nima D. Namsa**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

  
29/12/21

**Dr. Nima D.Namsa**  
Supervisor  
Department of Molecular  
Biology and Biotechnology  
Tezpur University

  
26/7/21

**Dr. Robin Doley**  
Head  
Department of Molecular  
Biology and Biotechnology  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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## CERTIFICATE

This is to certify that **Krishanu Choudhury**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Biosciences and Bioinformatics, bearing Roll no. **MBI18009**, carried out the Mini Project (Course: BI 350) entitled “**DNA methylation differences between human regulatory T cells and naïve CD4<sup>+</sup> T cells**” under the supervision of **Dr. Shashi Baruah**, Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

**Prof. Shashi Baruah**  
Supervisor  
Department of Molecular  
Biology and Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular  
Biology and Biotechnology  
Tezpur University  
Head,  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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## CERTIFICATE

This is to certify that **Lakhyajit Boruah**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Life Sciences, bearing Roll no. **MBI18012**, carried out the Mini Project (Course: BI 350) entitled “**Inhibition of macrophage foam cells by small molecule**” under the supervision of **Suman Dasgupta, Assistant Professor**, Department of Molecular Biology and Biotechnology, Tezpur University.

*S. Dasgupta*

Dr. Suman Dasgupta  
Supervisor  
Department of Molecular Biology and  
Biotechnology  
Tezpur University

*Robin Doley*  
26/1/21

Dr. Robin Doley  
Head  
Department of Molecular Biology and  
Biotechnology  
Tezpur University  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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### CERTIFICATE

This is to certify that the **Nayan Jyoti Borah**, a student of 6<sup>th</sup> semester, Integrated M.Sc in Bioscience And Bioinformatics, bearing roll no **MBI18005**, carried out the Mini Project (Course: BI350) entitled “**Structural and functional analysis of a few uncharacterized proteins from *Leishmania donovani***”, under the supervision of **Dr. Anupam Nath Jha**, Assistant Professor, Department Of Molecular Biology And Biotechnology, Tezpur University.

Anupam Nath Jha

**Dr Anupam Nath Jha**

**Assistant Professor**

**Department Of Molecular Biology  
And Biotechnology**

Robin Doley  
26/7/21

**Dr Robin Doley**

**Head**

**Department Of Molecular  
Biology And Biotechnology**

**Head,  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028**



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## CERTIFICATE

This is to certify that **Hrishikesh Bharali**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **BBI17014**, carried out the Mini Project (Course: BI 350) entitled “**Understanding Semi-Quantitative RT-PCR: A key experiment to study gene expression**” under the supervision of **Dr. Rupak Mukhopadhyay**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

Dr. Rupak Mukhopadhyay  
Supervisor  
Department of Molecular Biology and  
Biotechnology  
Tezpur University

Dr. Robin Doley  
Head  
Department of Molecular Biology and  
Biotechnology  
Tezpur University  
Head,  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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तेजपुर – 784028 :: असम / TEZPUR – 784028 :: ASSAM :: भारत / India

## CERTIFICATE

This is to certify that **Ms. Rachayita Bharadwaj**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics bearing Roll no. **MBI18004**, carried out the Mini Project (Course: BI 350) entitled “**Screening of Biosurfactant producing bacteria for Bioremediation of crude oil contaminated soil**” under the supervision of Dr. Manabendra Mandal, Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

Prof. Manabendra Mandal  
Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

Dr. Robin Doley  
Professor and Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
Head,  
Dept. of Molecular Biology & Biotechnology  
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## CERTIFICATE

This is to certify that **Gopu Basar**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Bioscience and Bioinformatics, bearing Roll no. **MBI18015**, carried out the Mini Project (Course: BI 350) entitled “**Biochemical and Biological characterization of snake venom** ” under the supervision of **Dr. Robin Doley**, Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

**Dr. Robin Doley**  
Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Professor  
Dept. of Molecular Biology and Biotechnology  
Tezpur University  
(A Central University)  
Napaam, Tezpur-784 028  
Sonitpur, Assam (India)



तेजपुर विश्वविद्यालय / TEZPUR UNIVERSITY

(संसद के अधिनियम द्वारा स्थापित केंद्रीय विश्वविद्यालय)

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अणुजीव विज्ञान व जैव प्रौद्योगिकी विभाग/Department of Molecular Biology and Biotechnology

तेजपुर - 784028 :: असम / TEZPUR - 784028 :: ASSAM :: भारत / India

## CERTIFICATE

This is to certify that **Eshan Abbas**, a student of 6<sup>th</sup> semester, Integrated M.Sc. in Life Sciences, bearing Roll no. **MBI18008**, carried out the Mini Project (Course: BI 350) entitled "**Learning Python and Scikit-Learn for Machine Learning and Data Analysis**" under the supervision of **Dr. Aditya Kumar**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

*Aditya Kumar*

Dr. Aditya Kumar  
Supervisor

Department of Molecular Biology and  
Biotechnology  
Tezpur University

*Robin Doley*  
26/7/21

Dr. Robin Doley  
Head

Department of Molecular Biology and  
Biotechnology  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



**Department of Molecular Biology and Biotechnology,  
Tezpur University  
(A Central University established by an Act of Parliament)  
NAPAAM, TEZPUR-784028, ASSAM, INDIA**

**CERTIFICATE**

This is to certify that the project entitled “**Reaction based Pathway Analysis of Fatty acid oxidation pathway**” submitted by Miss **Jyotshna Thakuria**, bearing Roll No. **MBM19028** to the Department of Molecular Biology and Biotechnology, Tezpur University in partial fulfillment of M.Sc. degree embodies the record of original investigation carried out by her under the supervision of Prof. **Anupam Nath Jha**. To the best of my knowledge the Project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by either her or anyone else.

*Anupam Nath Jha*

**Prof. Anupam Nath Jha**  
Supervisor  
Department of MBBT  
Place: Tezpur University  
Date: 25.06.2021

*Robin Doley*  
26/9/21

**Prof. Robin Doley**  
Head of the Department  
Department of MBBT  
Place: Tezpur University  
Date: 25.06.2021

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



# TEZPUR UNIVERSITY

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Department of Molecular Biology and Biotechnology

NAPAAM, TEZPUR-784028  
DISTRICT-SONITPUR, ASSAM,  
INDIA

## CERTIFICATE

This is to certify that Sonali Singh, Roll No MBM19027 a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam has successfully completed the project work entitled "*Gene expression of specific genes in THP-1 and NK-92 cells when co-cultured with the tumor tissue extract*" for partial fulfillment of her degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Shashi Baruah, Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project contains the record of her own findings and has not been submitted previously anywhere for any degree by her or anyone else.

**Dr. Shashi Baruah**  
Supervisor

Place: Tezpur University

Date: 29.06.2021

**Dr. Robin Doley**  
Professor and Head  
Department of MBBT

Place: Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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Department of Molecular Biology and Biotechnology Napaam,

Tezpur, Sonitpur,

Assam-784028, India.

## CERTIFICATE

This is to certify that the project entitled “**AMPK Signaling Pathway Analysis using Systems biology approach**” submitted by **Miss Babli Sharma**, bearing **Roll No. MBM19009** to the Department of Molecular Biology and Biotechnology, Tezpur University in partial fulfillment of M.Sc. degree embodies the record of original investigation carried out by her under the supervision of **Dr. Anupam Nath Jha**. To the best of my knowledge the Project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by either him or any-one else.

*Anupam Nath Jha*

**Dr. Anupam Nath Jha**

**Supervisor**

**Department of MBBT**

**Place: Tezpur University**

**Date: 25/06/2021**

*Robin Doley*  
25/7/21

**Prof. Robin Doley**

**Professore & Head of the Department**

**Department of MBBT**

**Place: Tezpur University**

**Date:**

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



**TEZPUR UNIVERSITY**

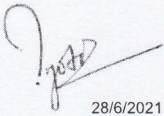
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**Department of Molecular Biology and Biotechnology, Napaam, Tezpur,**

**Sonitpur, Assam-784028, India.**

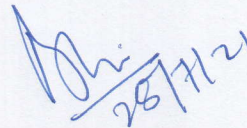
**Certificate**

This is to certify that the project entitled “**Staining and other methods to find out authenticity of ‘Eri’, ‘Muga’ and ‘Pat’ silk fabrics**”, submitted by Sunita Rai, bearing Roll No. MBM19018, to the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, in partial fulfillment of M.Sc. degree, embodies the record of original investigations carried out by her under the supervision of Dr. Jyoti Prasad Saikia. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else.



28/6/2021

**Dr. Jyoti Prasad Saikia**  
**Assistant Professor**  
**Tezpur University, Assam**  
**Date: 28/06/2020**



28/6/21

**Dr. Robin Doley**  
**Professor & Head of the Department of**  
**MBBT, Tezpur University, Assam**  
**Date: 28/06/2021**

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



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Department of Molecular Biology and Biotechnology

Napaam, Tezpur, Sonitpur,

Assam-784028, India.

**CERTIFICATE**

This is to certify that the project entitled “Screening of selected ethno-medicinal plants of North East India against biofilm formation, virulence factors and *In-silico* study of Oleic acid against biofilm related proteins of *Pseudomonas aeruginosa*” submitted by Miss Kaushika Olymon, bearing Roll No.MBM19019 to the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, in partial fulfilment of M.Sc. degree, embodies the record of original investigations carried out by her under the supervision of Prof. Manabendra Mandal. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else.

Prof. Manabendra Mandal

Supervisor

Department of MBBT

Place: Tezpur University

Date: 24.06.2021

Prof. Robin Doley

Professor & Head of the Department

Department of MBBT

Place: Tezpur University

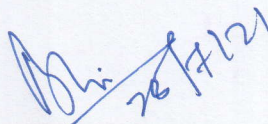
Date: 24.06.2021

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028

## CERTIFICATE OF HEAD OF THE DEPARTMENT

This is to certify that, Miss Alecsandria Marwein, a student of IV<sup>th</sup> semester of department of Molecular Biology and Biotechnology, Tezpur University, Assam has successfully completed the project entitled “Biopolymer analysis from Biopolymer Analysis from *Euphorbia splendens*, *Aloe barbadensis miller*, *Jatropha curcas* and *Alstonia scholaris*” as a part of partial fulfilment of her Master of Science in Molecular Biology and Biotechnology under the supervision of Prof. B. K. Konwar, Department of Molecular Biology and Biotechnology, Tezpur University.

Place: Tezpur  
Date: 25 June 2021

  
(Prof. Robin Doley)  
Professor and Head  
Dept. of MBBT  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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### Department of Molecular Biology and Biotechnology

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## CERTIFICATE

This is to certify that **Rohit Mallick**, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled “**To study the effect of Vanillin on the inhibition of TLR4 mediated inflammation in THP-1 macrophages**” as a requirement of partial fulfilment of her Master of Science in Molecular Biology and Biotechnology degree, under the supervision of Dr. Suman Dasgupta, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else. All helps received by her from various sources have been duly acknowledged.

Project Supervisor  
Dr. Suman Dasgupta  
Assistant Professor  
Department of MBBT  
Tezpur University

HOD, MBBT  
Prof. Robin Doley  
Professor & HOD  
Department of MBBT  
Tezpur University

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



Department of Molecular Biology and Biotechnology  
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## CERTIFICATE

This is to certify that **RIA LODH**, a student of M.Sc IV Semester of Department of Molecular Biology and Biotechnology bearing roll no. MBM19025 has successfully completed the project entitled "*Identification of Integrated Systems Level Unique & Overlapping Molecular Signatures in Hepatobiliary Cancers*" in partial fulfillment of her Master of Science in Molecular Biology and Biotechnology, 2019-21 under the supervision of **Dr. Pankaj Barah**, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies an account of her own findings and no part has been submitted previously anywhere for any degree whatsoever by either her or anyone else.

**Dr. Pankaj Barah**  
Assistant Professor  
Department of MBBT  
Tezpur University  
Assam

**Dr. Robin Doley**  
Professor & HOD  
Department of MBBT  
Tezpur University  
Assam

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028

Department of Molecular Biology and Biotechnology

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TEZPUR – 784028: ASSAM

Certificate

Date: 25 JUNE 2021

This is to certify that Ms. Pooja Kushwaha, Roll No. MBM19022, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam has successfully completed the project work entitled "**Comparative system analysis of Blister Blight pathogen, *Exobasidium vexans* and related phytopathogenic fungus**" for partial fulfilment of her degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Aditya kumar, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account of her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else.

Aditya Kumar  
25/6/21

Dr. Aditya kumar

Assistant Professor of MBBT

Tezpur University, Assam

Robin Doley  
26/7/21

Robin Doley

Professor and Head of the Department of MBBT

Tezpur University, Assam

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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## CERTIFICATE

This is to certify that **Pranab Jyoti Hazarika**, a student of 4<sup>th</sup> semester, M.Sc in Molecular Biology and Biotechnology, bearing Roll no. **MBM19020**, carried out the dissertation work entitled “**Effect of double mutation (L452R and E484Q) in RBD of Spike Protein on its interaction with ACE2 Receptor Protein**” in partial fulfilment of the academic curriculum for the degree of Master of Science in Molecular Biology and Biotechnology, **2019-21** under the supervision of **Dr. Venkata Satish Kumar Mattaparthi**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies an account of his own findings and no part has been submitted previously anywhere for any degree whatsoever by either him or anyone else.

**Dr. Venkata Satish Kumar Mattaparthi**  
Supervisor  
Department of Molecular Biology and  
Biotechnology  
Tezpur University

**Dr. Robin Doley**  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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## CERTIFICATE

This is to certify that **Priya Joshi**, a student of 4<sup>th</sup> semester, M.Sc in Molecular Biology and Biotechnology, bearing Roll no. **MBM19016**, carried out the dissertation work entitled “**Conformational accessibility and binding affinity of SARS-CoV-2 spike protein to human ACE2 (Angiotensin-Converting enzyme 2): an *in-silico* study**” in partial fulfilment of the academic curriculum for the degree of Master of Science in Molecular Biology and Biotechnology, 2019-21 under the supervision of **Dr. Venkata Satish Kumar Mattaparthi**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies an account of her own findings and no part has been submitted previously anywhere for any degree whatsoever by either her or anyone else.

Dr. Venkata Satish Kumar Mattaparthi  
Supervisor  
Department of Molecular Biology and  
Biotechnology  
Tezpur University

Dr. Robin Doley  
Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
Head,  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



**TEZPUR UNIVERSITY**

**(A Central University established by an Act of Parliament in 1994)**

**Department of Molecular Biology and Biotechnology**

**Napaam-784028, Assam, India**

## **CERTIFICATE**

This is to certify that Ms. Minu Thapa, roll no. MBM19007, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam-784028, has successfully completed the project work entitled “**Effect of Lipocalin12 on breast cancer cells**” for partial fulfillment of her degree of Masters of Science in Molecular Biology and Biotechnology under the supervision of Dr. Rupak Mukhopadhyay, Department of Molecular Biology and Biotechnology, Tezpur University, Assam.

To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by either her or anyone else.

**Dr. Rupak Mukhopadhyay**

Assistant Professor  
Department of MBBT  
Tezpur University  
Napaam, Assam-784028

Date and Place: 29.06.2021, Tezpur

**Dr. Robin Doley**

Professor and Head,  
Department of MBBT  
Tezpur University  
Napaam, Assam-784028

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



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Department of Molecular Biology and Biotechnology

NAPAAM, TEZPUR-784028

ASSAM, INDIA

Prof. Robin Doley  
Head of Department

Tel:+91 3712 275401  
E-mail:hod\_mbbt@tezu.ernet.in

### Certificate of the Head of the Department

This is to certify that Mr. Vignesh S Kumar, Roll No. MBM19026, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam has successfully completed the project work entitled '*Global gene sequence analysis of Structural proteins of SARS-CoV-2 from July 2020 to February 2021*' for partial fulfillment of his degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Nima D Namsa, Department of Molecular Biology and Biotechnology, Tezpur University.

Dr. R. Doley

Place: Tezpur University

Dated:

Head and Professor

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



Department of Molecular Biology and Biotechnology

TEZPUR UNIVERSITY

(A Central University established by an act of Parliament in 1994)

Napaam, Tezpur- 784028, Assam, India

Dr. Robin Doley  
Head & Professor

Tel no: 91-3712-275412  
E-mail: [doley@tezu.ernet.in](mailto:doley@tezu.ernet.in)

**CERTIFICATE OF THE HEAD OF THE DEPARTMENT**

This is to certify that **Ms. Emon Kalyan**, Roll No. MBM19010, a student of M.Sc 4<sup>th</sup> semester of Department of Molecular Biology and Biotechnology has successfully completed the project entitled '*Bioinformatic analysis of the type-specific 56-kDa antigen (TSA-56kDa) of Orientia tsutsugamushi for designing and expression of a multi-epitope construct for diagnosis of scrub typhus*' in partial fulfilment of the degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Nima D. Namsa, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University.

Date:

Place: Tezpur

(Robin Doley)

Head & Professor

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



## TEZPUR UNIVERSITY

(A Central University established by an Act of Parliament)

Department of Molecular Biology and Biotechnology

NAPAAM, TEZPUR-784028

ASSAM, INDIA

Dr. Robin Doley

Tel: +91 3712 275401

Head of Department

E-mail: hod\_mbbt@tezu.ernet.in

### Certificate of the Head of the Department

This is to certify that Usashi Guha Roy, Roll No- MBM19015, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam has successfully completed the project work entitled “A study on virulence of transposon induced *Ralstonia solanacearum* F1C1 mutant in tomato seedlings” for partial fulfillment of her degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Prof. Suvendra Kumar Ray, Department of Molecular Biology and Biotechnology, Tezpur University.

Place: Tezpur University

(Dr. R. Doley)

Dated:

Head of the Department

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



Department of Molecular Biology and Biotechnology,  
Tezpur university  
(A Central University established by an Act of Parliament)  
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### CERTIFICATE

This is to certify that **BARASHA RANI DIHINGIA**, a student of M.Sc IV Semester of Department of Molecular Biology and Biotechnology bearing roll no. MBM19006 has successfully completed the project entitled “**A transcriptomic analysis based comparative study on Gallbladder cancer and Gall stone disease with different follow up period for identifying crucial molecular Signatures**” in partial fulfillment of her Master of Science in Molecular Biology and Biotechnology, 2019-21 under the supervision of **Dr. Pankaj Barah**, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies an account of her own findings and no part has been submitted previously anywhere for any degree whatsoever by either her or anyone else.

**Dr. Pankaj Barah**  
Assistant Professor  
Department of MBBT  
Tezpur University  
Assam

**Dr. Robin Doley**  
Professor & HOD  
Department of MBBT  
Tezpur University  
Assam  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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Department of Molecular Biology and Biotechnology

तेजपुर-784028 :: असम / TEZPUR-784028 :: ASSAM

## CERTIFICATE

This is to certify that **Mr. Rajib Lochan Debnath**, a student of 4<sup>th</sup> semester, M.Sc of the Department of Molecular Biology and Biotechnology, bearing **Roll No. MBM19001** has successfully completed the project work entitled "**Genome Wide Analysis of G-Quadruplex Distribution in Trypanosoma species**" for partial fulfilment of his degree of Master of Science in Molecular Biology and Biotechnology under the supervision of **Dr. Aditya Kumar**, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by him or anyone else.

*Aditya Kumar*

Dr. Aditya kumar,  
Assistant Professor,  
Department of MBBT  
Place: Tezpur University, Assam  
Date: 24-6-21

*Robin Doley*  
26/7/21

Dr. Robin Doley,  
Professor & Head of the Dept.  
Department of MBBT  
Place: Tezpur University, Assam

Date: **Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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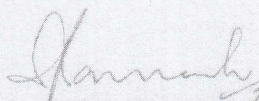
Department of Molecular Biology and Biotechnology

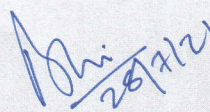
NAPAAM, TEZPUR-784028

DISTRICT-SONITPUR, ASSAM, INDIA

### CERTIFICATE

This is to certify that Somia Das, Roll No-MBM19014, A student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam has successfully completed the project work entitled "**Expression of type 1 Interferon and type 1 Interferon related genes in human DNA transfected THP1 cells**" for partial fulfilment of her degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Shashi Baruah, Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project contains the record of her own findings and has not been submitted previously anywhere for any degree by her or anyone else.

  
29/06/2021  
**Dr. Shashi Baruah**  
Supervisor  
Professor  
Department of MBBT  
Tezpur University

  
28/7/21  
**Dr. Robin Doley**  
Head of the department  
Department of MBBT  
Tezpur University  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



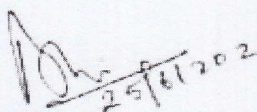
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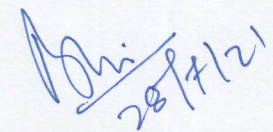
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Department of Molecular Biology and Biotechnology,  
Napaam, Tezpur, Sonitpur, Assam-784028, India.

### Certificate

This is to certify that the project entitled “**Rational design of aptamers against snake venom protein**”, submitted by Niharika Das, bearing Roll No. MBM19005, to the Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, in partial fulfillment of M.Sc. degree, embodies the record of original investigations carried out by her under the supervision of Dr. Robin Doley. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else.

  
(Robin Doley)  
Project Supervisor  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
Dr. Robin Doley  
Professor  
Dept. of Molecular Biology and Biotechnology  
Tezpur University  
(a Central University)  
Napaam, Tezpur- 784 028  
Sonitpur, Assam (India)

  
(Robin Doley)  
Professor and Head  
Department of Molecular Biology  
and Biotechnology  
Tezpur University  
**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



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तेजपुर-784028 :: असम / TEZPUR - 784028 :: ASSAM

CERTIFICATE

This is to certify that **Mr. Hem Akshay Das**, a student of 4<sup>th</sup> semester, M.Sc. in Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam, bearing Roll No. **MBM19011** has successfully completed the project work entitled “**An *in-silico* study to understand G4 distribution in Cancer genes**” for the partial fulfilment of his degree of Master of Science in Molecular Biology and Biotechnology under the supervision of **Dr Aditya Kumar**, Assistant Professor, Department of Molecular Biology and Biotechnology.

To the best of my knowledge, the project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by him or anyone else.

*Aditya Kumar*  
24-6-21

**Dr Aditya Kumar**

Assistant Professor

Department of MBBT

Tezpur University, Napaam

Sonitpur-784028, Assam

Date: 24-06-2021

*Robin Doley*  
20/7/21

**Dr Robin Doley**

Professor and Head

Department of MBBT

Tezpur University, Napaam

Sonitpur-784028, Assam

Date: **Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**



Department of Molecular Biology and Biotechnology  
तेजपुरविश्वविद्यालय/TEZPUR UNIVERSITY  
(संसदके अधिधियमद्वारा स्थापित केंद्रीय विश्वविद्यालय)  
(A Central University established by an Act of Parliament)  
NAPAAM, TEZPUR-784 028, ASSAM, INDIA

### Certificate of the Head of the Department

This is to certify that **Mr. Angshuman Das**, Roll No. MBM19021 is a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam and has successfully completed the project work entitled "*Designing of novel gRNA's targeting the human XRCC5 gene for in vitro genome editing via CRISPR-Cas9 system*" for the partial fulfillment of his degree of Master of Science (M.Sc.) in Molecular Biology and Biotechnology under the supervision of Dr. Surya Prakash G. Ponnamp, Department of Molecular Biology and Biotechnology, Tezpur University.

Place: Napaam

Prof. Robin Doley

Date:

Head of the Department

*Robin Doley*  
28/7/21

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028

Spring, 2021



**TEZPUR UNIVERSITY**

**Department of Molecular Biology and Biotechnology**

(A Central University established by an Act of Parliament)

**NAPAAM, TEZPUR-784 028, ASSAM, INDIA**

**CERTIFICATE**

This is to certify that **Ujjayita Chowdhury**, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled “**Investigating the role of Inflammation on Adipogenesis**” as a requirement of partial fulfilment of her Master of Science in Molecular Biology and Biotechnology degree, under the supervision of Dr. Suman Dasgupta, Assistant Professor, Department of Molecular Biology and Biotechnology, Tezpur University. To the best of my knowledge, the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by her or anyone else. All helps received by her from various sources have been duly acknowledged.

Project Supervisor  
Dr. Suman Dasgupta  
Assistant Professor  
Department of MBBT  
Tezpur University

HOD, MBBT  
Prof. Robin Doley  
Professor & HOD  
Department of MBBT  
Tezpur University

**Head,**  
Dept. of Molecular Biology & Biotechnology  
Tezpur University  
Napaam, Tezpur- 784028



**Tezpur University**

**(A Central University established by an Act of Parliament in 1994)**

**Department of Molecular Biology and Biotechnology**

**Napaam, Assam, 784028, India**

**Certificate**

This is to certify that Mr. Amit Chakraborty, Roll no. MBM19023, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Napaam, Assam-784028, has successfully completed the project work entitled "Anti-inflammatory action of plant polyphenol Rutin on Human THP-1 cells" for partial fulfilment of his degree of Master of Science in Molecular Biology and Biotechnology under the supervision of Dr. Rupak Mukhopadhyay, Department of Molecular Biology and Biotechnology, Tezpur University.

To the best of my knowledge, the project embodies account for his own findings and has not been submitted previously anywhere for any degree whatsoever by either him or anyone else.

**Dr. Rupak Mukhopadhyay**

(Assistant Professor)

Department of MBBT

Tezpur University

Napaam, Assam

**Dr. Robin Doley**

(Professor and H.O.D.)

Department of MBBT

Tezpur University

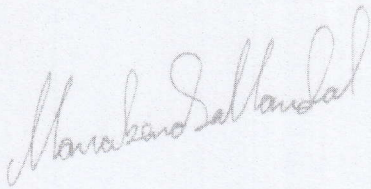
Napaam, Assam

Date & Place:

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
Date & Place: **Tezpur University**  
**Napaam, Tezpur- 784028**

## CERTIFICATE

This is to certify that Sudem Boro, bearing Roll No. MBM19002, a student of the Department of Molecular Biology and Biotechnology, Tezpur University, Assam, has successfully completed the project entitled 'Isolation and characterization of potential probiotic strains from fermented milk products of Tezpur, Assam and evaluation of their effect on Nitrate production by Caco-2 cells during LPS induced Inflammation' as a requirement of partial fulfillment of her degree of Master of Science, under the supervision of Dr. Manabendra Mandal, Professor, Department of Molecular Biology and Biotechnology, Tezpur University. The project embodies account of her own findings and no part of it has been submitted previously anywhere for any degree whatsoever by either her or anyone else.



**Dr. Manabendra Mandal**

Professor

Department of Molecular Biology  
and Biotechnology

Tezpur University, Assam

Date: 25/06/2021



**Dr. Robin Doley**

Professor & Head of the Department

Department of Molecular Biology  
and Biotechnology

Tezpur University, Assam

Date:

**Head,**  
**Dept. of Molecular Biology & Biotechnology**  
**Tezpur University**  
**Napaam, Tezpur- 784028**