



# UNION CHRISTIAN COLLEGE ALUVA-2



SSR 5<sup>th</sup> CYCLE 2023



Criterion 1

## 1.3.2 Student Projects and Internships

## **DEPARTMENT OF BIOSCIENCE**



**B.Sc. Biological Techniques & Specimen Preparation  
Supporting Documents**

**M.Sc. Bioinformatics  
Supporting Document**

**M.Sc. Biotechnology  
Supporting Document**

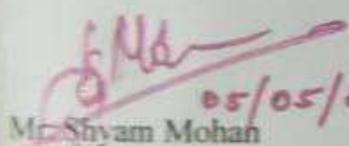
2023-2024

DEPARTMENT OF BIOSCIENCES  
UNION CHRISTIAN COLLEGE, ALUVA



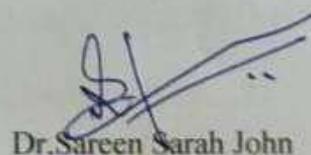
CERTIFICATE

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05/05/23  
Mr. Shyam Mohan

Supervising Teacher

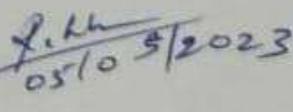


  
Dr. Sareen Sarah John

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

Submitted for the examination held on.....

Examiners

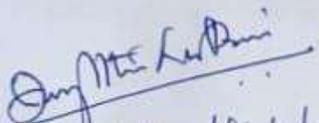
i. Dr. Lekha Parthasarathy   
05/05/2023

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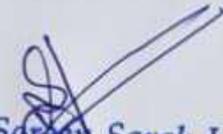


CERTIFICATE

This is to Certify that this dissertation entitled "**PHYTOCHEMICAL ANALYSIS AND IN VITRO ANTIOXIDANT ACTIVITIES OF *Pterocarpus marsupium* AND *Vernonia anthelmintica***", is a record of work done by NABEELA K J (Reg. no: 200021042485), under the guidance of Dr. JYOTHILEKSHMI S during sixth semester of BACHELORS DEGREE IN BIOLOGICAL TECHNIQUES AND SPECIMEN PREPARATION during the academic year 2020-2023.

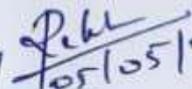
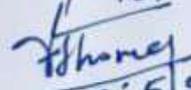
  
Dr. Jyothi Lekshmi S  
Supervising Teacher



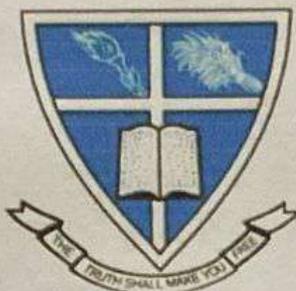
  
Dr. Sarah John  
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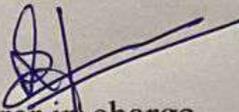
Examiners

- i. Dr. Lekhe Parthasarathy  05/05/2023
- ii Mr. Varghese Thomeek  05/5/23

# CERTIFICATE

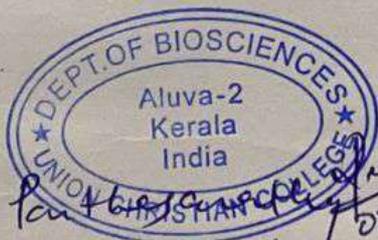


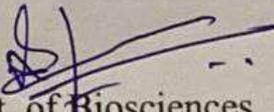
This is to certify that the dissertation entitled “**RESTRICTION DIGESTION BY EcoRI AND HindIII**”, submitted to Mahatma Gandhi University, Kottayam in partial fulfilment for the award of Bachelor of Science in Biological Techniques and Specimen Preparation, is a record of original project work done by **AISHA.N.E, Reg.no 200021042463** during the period of her study in the Department of Biosciences, Union Christian College, Aluva, under my supervision and guidance.

  
Lecturer in charge

Examiners

1. Dr. Rekha
2. Mr. Varghese Thomas



  
Head of Dept. of Biosciences

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

*Handwritten notes:*  
05/05/23  
..5/5/23

# CERTIFICATE



This is to certify that the dissertation entitled **Biochemical characterization and antibiotic resistance profile of *Streptococcus pyogenes* isolated from wound sample**, submitted to Mahatma Gandhi University, Kottayam in partial fulfillment for the award of Bachelor of Science in Biological Techniques and Specimen Preparation is a record of original project work done by **DEVIKA A A**, Reg.No. **200021042475** during the period of her study in the department of biosciences, Union Christian college, Aluva under my supervision and guidance.

Lecturer in charge



Head of dept. of biosciences

Examiners

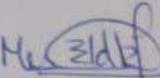
1. Dr. Rekha Parthasarathy *Rekha* 05/05/2023
2. Mr. Varghese Thomas K *Thomas* 5/5/23

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
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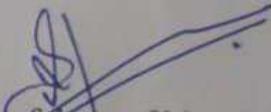
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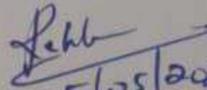
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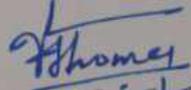
  
**MERIN K. ELDO**  
Lecturer in charge



  
Head of dept. of bioscience

Examiners

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05/05/2023

2. **Mr. Varghese Thomas**   
5/5/23

**Dr. Sareen Sarah John**  
Head of the Department  
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Aluva - 683 102

2020-2023

DEPARTMENT OF BIOSCIENCE  
UNION CHRISTIAN COLLEGE ALUVA

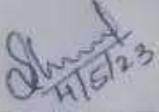


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Place : Aluva

Date : 04/05/2023

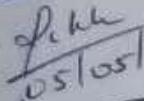
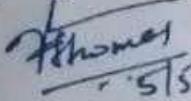
  
LECTURER IN CHARGE



  
HEAD OF THE DEPARTMENT

Dr. Sareen Sarah John  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
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EXAMINERS

1. Dr. Lekha Parthasarathy   
05/05/2023
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05/05/23

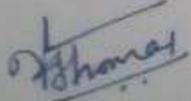
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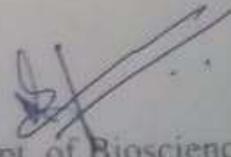
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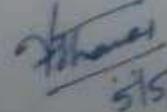
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Lecturer in charge

  
Head of Dept. of Biosciences

Examiners

1. Dr. Lekha Parthasarathy

2. Mr. Varghese Thomas   
5/5/23



  
Dr. Sareen Sarah John  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

## CERTIFICATE



This is to certify that the dissertation entitled "Assessment of Water quality parameters in Mangrove forest Malipuram, Kerala, India" ,submitted to Mahatma Gandhi University, Kottayam in partial fulfillment for the award of bachelor of science in biological techniques and specimen preparation, is a record of original project work done by **GEETHU MURALEEDHARAN**, Reg.No.200021042478 during the period of her study in the department of bioscience, Union Christian College, Aluva, under my supervision and guidance.

*Julius Dijo Dominic D. V.*  
Lecturer in charge

*[Signature]*  
Head of dept. -

bioscience



**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
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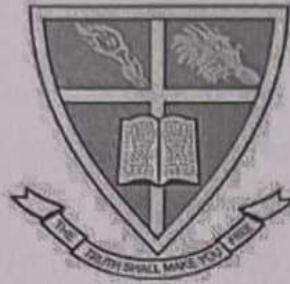
Examiners

1. *Dr. Pehla Parthasarathy* *[Signature]* 05/05/2023
2. *Mr. Varghese Thomas* *[Signature]* 5/5/23

2023-2024

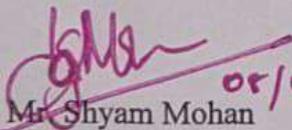
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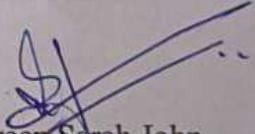
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Mr. Shyam Mohan

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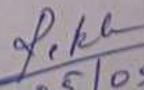
Supervising Teacher



  
Dr. Sareen Sarah John  
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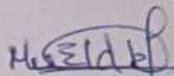
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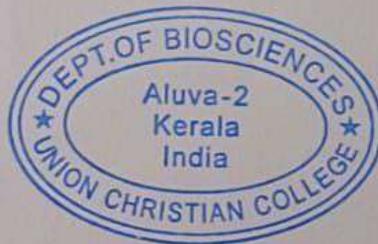
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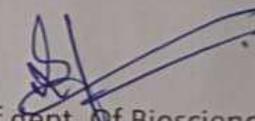
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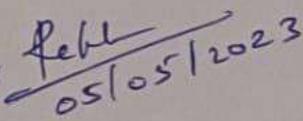
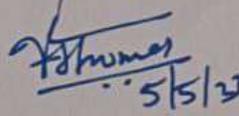
  
MERIN K. ELDO  
Lecturer in charge



  
Head of dept. of Bioscience

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

Examiners

1. Dr. Rekha Parthasarathy   
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Place : Aluva

Date : 04/05/2023

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EXAMINERS

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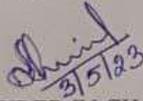
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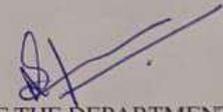
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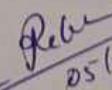
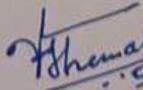
  
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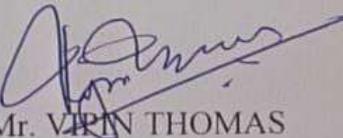
1. **Dr. Rekhe Parthasarathy**   
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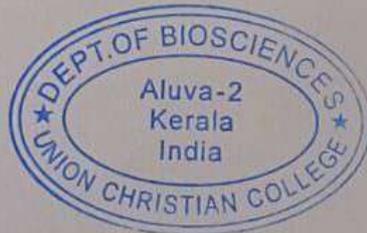


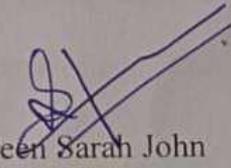
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Mr. VIPIN THOMAS

Supervising Teacher

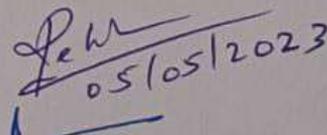
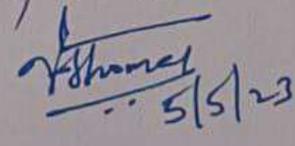


  
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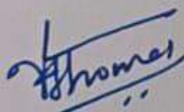
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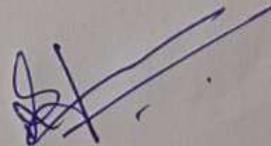


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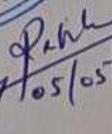
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Lecturer in charge

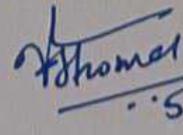


  
Head of Dept. of Biosciences

Examiners

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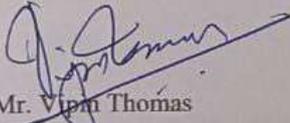
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DEPARTMENT OF BIOSCIENCES  
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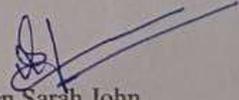
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Mr. Vipin Thomas

Supervising Teacher

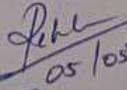
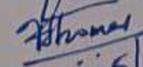


  
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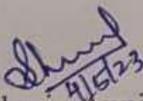
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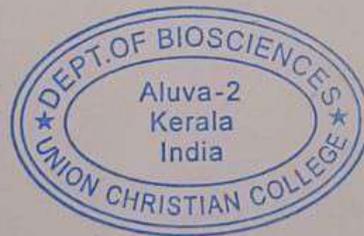


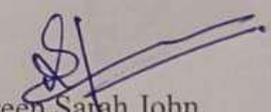
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Mrs. Sherin Annie Abraham

Supervising Teacher

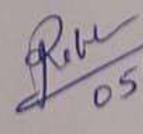
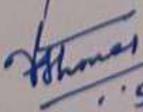


  
Dr. Sareen Sarah John

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

Submitted for the examination held on.....

Examiners

- i. **Dr. Retha Parthasarathy**  05/05/2023
- ii. **Mr. Varghese Thomack**  05/05/23

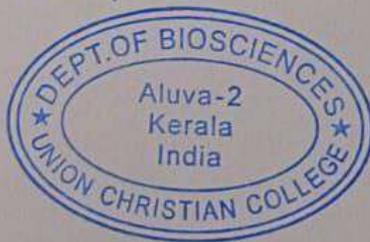
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This is to certify that the dissertation entitled “**Assessment of Water quality parameters in Mangrove forest Malipuram, Kerala, India**” ,submitted to Mahatma Gandhi University, Kottayam in partial fulfillment for the award of bachelor of science in biological techniques and specimen preparation, is a record of original project work done by **GEETHU MURALEEDHARAN**, Reg.No.200021042478 during the period of her study in the department of bioscience, Union Christian College, Aluva, under my supervision and guidance.

*Diya Dominic D.V.*  
Lecturer in charge

bioscience



*[Signature]*  
Head of dept.

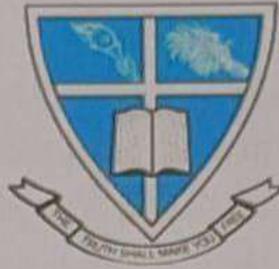
**Dr.Sareen Sarah John**  
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1. *Dr. Lekha Parthasarathy* *[Signature]* 05/05/2023
2. *Mr. Varghese Thomas* *[Signature]* 05/05/23

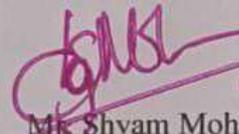
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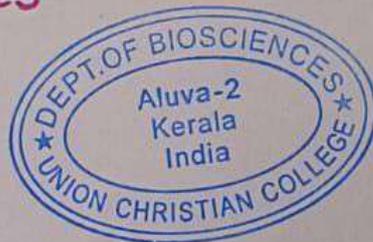
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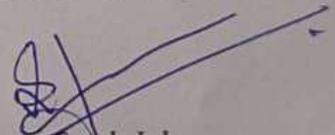
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05/05/23

Mr. Shyam Mohan

Supervising Teacher

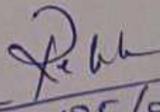
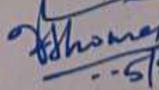


  
Dr. Sareen Sarah John

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Examiners

- i. Dr. Rekha Panthesarathy   
05/05/2023
- ii Mr. Varghese Thromack   
05/05/23

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This is to certify that the thesis 'PRELIMINARY STUDIES ON PHYTOCHEMICAL ANALYSIS AND ANTIOXIDANT ACTIVITY OF *phyllanthus emblica* and *Tribulus terrestris*' is a bonafide record of original dissertation work carried out by Ms. SANDHANA P S, Union Christian College, Aluva during the academic year 2020-2023 in partial fulfilment of the requirements for the award of Degree of Bachelor of Science in Biological Techniques and Specimen Preparation of the Mahatma Gandhi University.

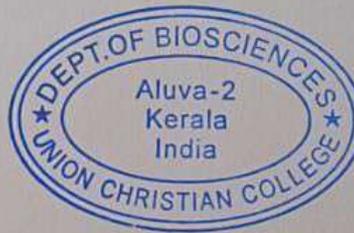
**Dr. Jyothilekshmi S**

(Internal Guide)

Assistant Professor

Department of Bioscience

Union Christian College, Aluva



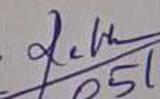
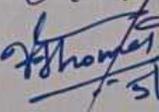
**Dr. Sareen Sarah John**

Head Of The Department

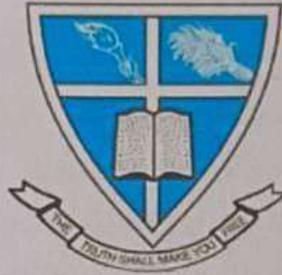
Department of Bioscience

Union Christian college, Aluva

#### Examiners

1. Dr. Rekhe Parthesarathy  05/05/2023
2. Mr. Varghese Thomack  5/5/23

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UNION CHRISTIAN COLLEGE, ALUVA



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This is to Certify that this dissertation entitled **Analysis of short sequences repeats (SSRs) in variants of tomato tomato plant** is a record of work done by Miss. **Sababi KB** Reg.No.200021042488, under the guidance of Mr. **Vipin Thomas** during sixth semester of BACHELORS DEGREE IN BIOLOGICAL TECHNIQUES AND SPECIMEN PREPARATION during the academic year 2020-2023.

Mr. Vipin Thomas

Supervising Teacher



Dr. Sareen Sarah John

Head of the Department  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

Submitted for the examination held on.....

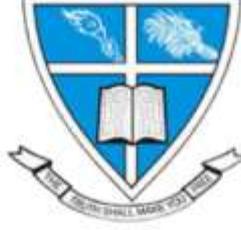
Examiners

- i. Dr. Rekha Parthasarathy 05/05/2023
- ii. Mr. Varghese Thomas 05/05/23

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SSR 5<sup>th</sup> CYCLE 2023



Criterion 1

## 1.3.2 Student Projects and Internships

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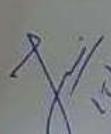
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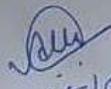
This is to certify that the dissertation entitled "Evaluating the Antimicrobial Activity of Endophytic Fluorescent *Pseudomonas* against *Phytophthora capsici*: A Potential Solution for Combating Devastating Phytopathogens" is an authentic record of a research work carried out by Ms. Roja P V (Reg. No 210011020868) under the guidance of Dr. E V Soniya, Scientist G, Transdisciplinary Biology, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

  
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Examiners

1.   
15/09/23

2.   
15/09/23

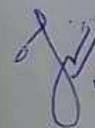


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This is to certify that the thesis entitled "DETECTION OF GENETICALLY MODIFIED MICROORGANISMS IN SOIL ENVIRONMENT USING PLATE COUNT METHOD AND DNA BASED METHODS" is a bonafide record of original dissertation work carried out by Isra M.I , at the Department of Biosciences, Union Christian College, Aluva during the period of April to June 2023 in partial fulfillment of the requirements for the award of Degree of Master of Science in Biotechnology of the Mahatma Gandhi University.

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1.  15/9/23

2.  M.I

  
Head of the Department



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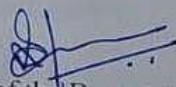


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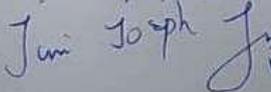
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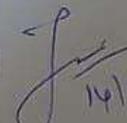
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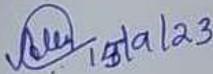
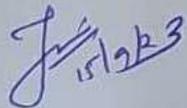
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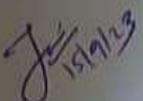
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Head of the Department: Dr. Sareen Sarah John



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14/01/23  
  
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Dr. Sareen Sarah John  
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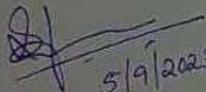


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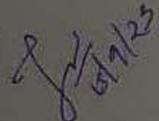
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Head of the Department:

  
5/9/2023  
Dr. Sareen Sarah John



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15/9/23  
  
15/9/23

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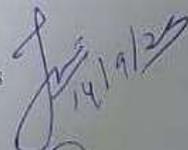
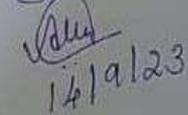
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Head of the Department:



Examiners  
1.   
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14/9/23

**Dr. Sareen Sarah John**  
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Department of Biosciences

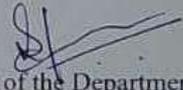


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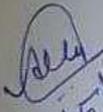


  
Head of the Department

Examiners

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This is to certify that the dissertation entitled "Phytochemicals from five indian medicinal plants as EGFR inhibitors as in silico analysis" is an authentic record of a research work carried out by Ms. Gayathri.S.Nair(Reg. No.210011020856) under the guidance of Prof. Vipin Thomas for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.



Head of the Department

Examiners

1)  15/9/23

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Head of the Department: Dr Sareen Sarah John



Examiners

1.

2.



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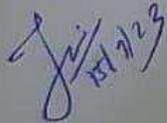
### CERTIFICATE

This is to certify that the dissertation entitled "**Development of Immunochromatographic based Rapid Diagnostic test kit for the detection of Sepsis**" is an authentic record of a research work carried out by Ms. **Jyothilekshmi M** (Reg. No **210011020858**) under the guidance of **Dr. Manoj G, Scientist E, Division of Artificial Internal Organs, Biomedical Technology Wing, SCTIMST, Thiruvananthapuram** for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

Head of the Department: Dr Sareen Sarah John



Examiners

1.   
15/11/23
2.   
15/9/23

**Dr. Sareen Sarah John**  
Head of the Department  
Department of Biosciences



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Aluva- 683102, Kerala, India  
(Affiliated to Mahatma Gandhi University,  
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Mob: +91 9447502758  
E-mail : sareensarahjohn@uccollege.edu.in

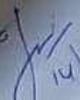
## CERTIFICATE

This is to certify that the dissertation entitled "EVALUATION OF THE EXPRESSION OF CELL CYCLE CHECKPOINT PROTEINS IN THE PROLIFERATION OF CERVICAL PRECANCEROUS AND CANCEROUS LESIONS" is an authentic record of a research work carried out by Ms. Ashna Rasheed (Reg. No. 210011020851) under the guidance of **Dr. Hariharan S**, Additional Professor, Laboratory of Cytogenetics and Molecular Diagnostics Division of Cancer Research, Thiruvananthapuram for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

  
Head of the Department

Examiners

1)  14/11/23

2)  14/11/23

Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences

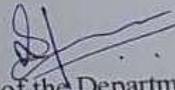


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Kottayam, India)  
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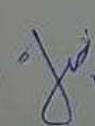
This is to certify that the dissertation entitled "Evaluation of *in vitro* and *in vivo* wound healing potential of silver nanoparticle doped polysaccharide powder formulation" is an authentic record of a research work carried out by Ms. Aswathy D. Nair (Reg. No.210011020852) under the guidance of Dr. Sareen Sarah John for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.



  
Head of the Department

#### Examiners

1)  14/9/23

2)  14/9/23

Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences



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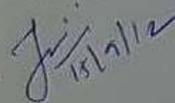
### CERTIFICATE

This is to certify that the dissertation entitled “ **KYNURENIC ACID AMELIORATES 6-OHDA INDUCED CELL DEATH IN PC12 CELLS**” is an authentic record of a Research work carried out by **Ms. Muhsina Siyad ( Reg no: 210011020861)** under the guidance of **Dr. BABY CHAKRAPANI P.S, ASSISTANT PROFESSOR AND HON. DIRECTOR, CENTRE OF NEUROSCIENCE, COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY, KOCHI** for award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

  
Head of the Department:



Examiners

1.   
15/7/22
2.   
15/9/23

Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences



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Aluva- 683102, Kerala, India  
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Kottayam, India)  
Mob: +91 9447502758  
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### CERTIFICATE

This is to certify that the dissertation entitled "**HISTOLOGY AND HISTOMORPHOMETRY OF RAT SKIN AND HEALED SURGICAL INCISION SKIN WOUND**" is an authentic record of a research work carried out by Ms. **AMALA BABY** (Reg. No **210011020848**) under the guidance of **Dr. A.SABAREESWARAN, SCIENTIST G, HISTOPATHOLOGY LABORATORY, BIOMEDICAL TECHNOLOGY WING, SCTIMST, THIRUVANTHAPURAM** for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

Head of the Department: Dr Sareen Sarah John



Examiners

1. 14/9/23  
2. 14/9/23

**Dr. Sareen Sarah John**  
Head of the Department  
Department of Biosciences



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Kottayam, India)  
Mob: +91 9447502758  
E-mail: sareensarahjohn@ucccollege.edu.in

### CERTIFICATE

This is to certify that the dissertation entitled "**Computational Fluid Dynamic Analysis of perfusion chamber designed for Cell Culture Application**" is an authentic record of a research work carried out by Ms. Akshaya (Reg. No 210011020847) under the guidance of **Dr. Anil Kumar P R, Scientist G, Division of Tissue Culture**, Biomedical Technology Wing, SCTIMST, Thiruvananthapuram for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

Head of the Department:

Examiners

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14/09/2023



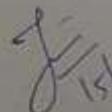


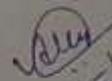
## CERTIFICATE

This is to certify that the dissertation entitled "DETECTION OF MITOCHONDRIAL DNA IN THE PLASMA DERIVED EXOSOMES" is an authentic record of a research work carried out by **Ms. Sreedurga .A** (Reg. No. 210011020865) under the guidance of **Dr. Madhusoodanan U.K**, Associate Professor, Department of Biochemistry, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

  
Head of the Department

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1)   
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2)   
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Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences



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Kottayam, India)  
Mob: +91 9447502758  
E-mail : sareensarahjohn@uccollege.edu.in

### CERTIFICATE

This is to certify that the dissertation entitled "ISOLATION AND CHARACTERIZATION OF PLANT GROWTH PROMOTING BACTERIA FROM RHIZOSPHERE AND ROOT ENDOSPHERE OF *PIPER* spp AND EVALUATION OF THEIR ANTI-OOMYCETE ACTIVITY" is an authentic record of a research work carried out by Ms. APARNA S A (Reg. No 210011020869) under the guidance of Dr E.V.SONIYA, SCIENTIST G, RGCB, TRANSDISCIPLINARY BIOLOGY THIRUVANTHAPURAM for the award of the degree of Master of Science in Biotechnology, Mahatma Gandhi University, Kottayam. The work presented in this dissertation has not been submitted for any other degree or diploma or similar title of recognition earlier.

Head of the Department: Dr Sareen Sarah John



Examiners

1. 15/9/23

2. 15/9/23

Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences  
Union Christian College, Aluva

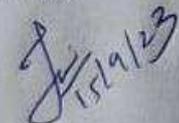


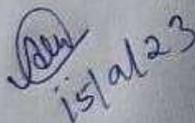
UNION CHRISTIAN COLLEGE  
Aluva- 683102, Kerala, India  
(Affiliated to Mahatma Gandhi University,  
Kottayam, India)  
Mob: +91 9447502758  
E-mail : sareensarahjohn@uccollege.edu.in

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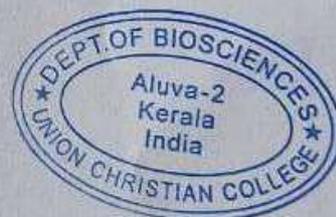
This is to certify that the thesis entitled "EXTRACTION OF DNA FROM *APIS CERNEA* AND EVALUATION OF ANTIBACTERIAL ACTIVITY OF HONEY ON BURN WOUND ISOLATES" is a bonafide record of original dissertation work carried out by Keerthi Velayudhan at the Department of Biosciences, Union Christian College, Aluva during the period of April to June 2023 in partial fulfillment of the requirements for the award of Degree of Master of Science in Biotechnology of the Mahatma Gandhi University.

Examiners:

1.   
15/12/23

2.   
15/12/23

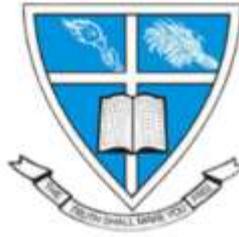
  
Head of the Department



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SSR 5<sup>th</sup> CYCLE 2023



Criterion 1

## 1.3.2 Student Projects and Internships

# MSc Bioinformatics 2021-2023

**CERTIFICATE**



**Department of Biosciences**  
**UNION CHRISTIAN COLLEGE**  
**(Affiliated to Mahatma Gandhi University, Kottayam)**  
**Aluva, Kerala, India**

This is to certify that the dissertation entitled "COMAPARATIVE METAGENOMICS ANALYSIS OF GUT MICROBIOTA IN CONTROLLED AND UNHEALTHY INDIVIDUALS:INSIGHTS INTO TAXONOMIC AND FUNCTIONAL VARIATIONS" is an authentic record of a research work carried out by **SNEHA BABURAJ(Reg. No: 210011018703)**, Union Christian College, Aluva, during the period of May to August 2023 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM.**

  
**Head of the Department**

*Dr. Sareen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683102

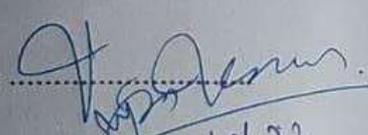
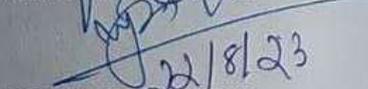


**Internal Guide**

**Examiners**

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**Examiner 2:** .....

  
  
22/8/23

Dr. Sareen Sarah John  
Head of the Department  
Department of Biosciences



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Aluva- 683102, Kerala, India  
(Affiliated to Mahatma Gandhi University,  
Kottayam, India)  
Mob: +91 9447502758  
E-mail : sareensarahjohn@uccollege.edu.in

## Certificate

This is to certify that the thesis entitled "IN SILICO SCREENING AND MOLECULAR DYNAMICS SIMULATION STUDIES IN THE IDENTIFICATION OF NATURAL COMPOUND INHIBITORS TARGETING THE HUMAN NOROVIRUS RDRP PROTEIN TO FIGHT GASTROENTERITIS" submitted to Mahatma Gandhi University, in partial fulfilment the requirements for the award of the degree of Master of Science in Bioinformatics submitted by MS. MARIA CATHARIN (Reg No: 210011018696) Under the guidance of the External Guide Dr. K.C. SIVAKUMAR Ph.D., Senior Manager, Rajiv Gandhi Centre for Biotechnology, Aakkulam and that no part of this work has previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition.

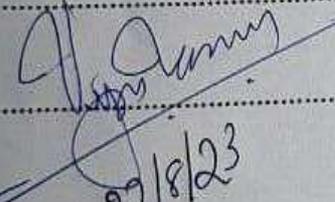
  
Dr. Sareen Sarah John  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
External  
Aluva 683102



Internal Guide

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**Department of Biosciences**

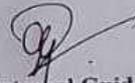
**UNION CHRISTIAN COLLEGE**

**(Affiliated to Mahatma Gandhi University, Kottayam) Aluva,  
Kerala, India**

This is to certify that the dissertation entitled "ENHANCING ALMOND PLANT DEFENSE AGAINST XYLELLA FASTIDIOSA THROUGH BIFUNCTIONAL PEPTIDE ENDOTHERAPY: RNA SEQUENCING INSIGHTS" is a bona fide record of the original dissertation work carried out by **GEORGE SABU (Reg. No: 210011018691)**, Union Christian College, Aluva, during the period of May to July 2023 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM.**

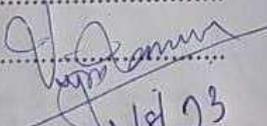
  
**Head of the Department**  
*Dr. Sareetha Sarath Jothi*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva 683 102  
**Examiners**



  
**Internal Guide**

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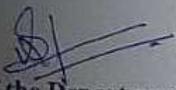
DEPARTMENT OF BIOSCIENCE

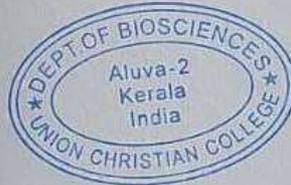
**UNION CHRISTIAN COLLEGE**

ALUVA, KERALA-683102

**Certificate**

This is to certify that the thesis entitled "METAGENOMIC ANALYSIS FOR UNDERSTANDING MICROBIAL DIVERSITY OF THAR DESERT" submitted to Mahatma Gandhi University, in partial fulfilment the requirements for the award of the degree of Master of Science in Bioinformatics submitted by GANGA A S (Reg No: 210011018690) Under the guidance of the External Guide Dr. Bipin Balan Ph.D and Aparna Balan SCITEL Scientific Solutions private limited, Kayamkulam, Alappuzha, Kerala and that no part of this work has previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition.

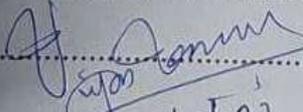
  
**Head of the Department**  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva-683102



**Internal Guide**

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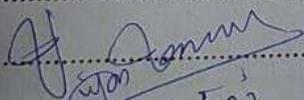
  
**Head of the Department**  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
External Aluva - 683102



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CERTIFICATE

This is to certify that Ms. APARNA K B, bearing Reg No: 210011018682 enrolled in the Msc. Biginformatics at Union Christian college Aluva, has successfully completed project work titled "Computational design of potential derivatives of Sunitinib and Lapatinib for down-regulating IGF1R mutation for controlling prostate cancer". The project was conducted the guidance and supervision of Dr P K Krishnan Namboori, Associate Professor in the Department of Computational Engineering and Networking, of Amrita Vishwa Vidyapeetham, Coimbatore Campus. The project, an essential component of the academic curriculum, showcases the student's commitment, dedication, and proficiency in the subject matter. This certificate is awarded as a testament to the successful completion of the project and the academic achievements therein.



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2.....

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Head of the Department

**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

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**Department of Biosciences**

**UNION CHRISTIAN COLLEGE**

**(Affiliated to Mahatma Gandhi University, Kottayam) Aluva,  
Kerala, India**

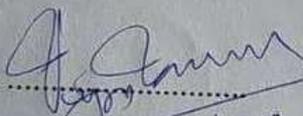
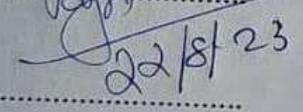
This is to certify that the dissertation entitled "**COMPARATIVE PANGENOME ANALYSIS OF NEISSERIA SPECIES: UNRAVELING GENOMIC DIVERSITY AND EVOLUTIONARY INSIGHTS**" is a bona fide record of the original dissertation work carried out by **SREELEKSHMI.B (Reg. No: 210011018704)**, Union Christian College, Aluva, during the period of April to August 2023 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM.**

  
**Head of the Department**  
*Dr. Sareen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683102



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Examiner 2:  22/8/23



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ALUVA, KERALA-683102

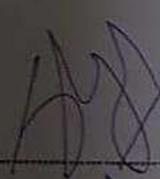
### Certificate

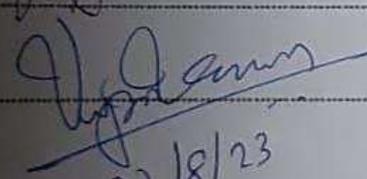
This is to certify that the thesis entitled "Microbes of Gut Health: A Comprehensive Whole Genome Sequencing Investigation of Beneficial Bifidobacterium Strains" submitted to Mahatma University, in partial fulfillment the requirements for the award of the degree of Master of Science in Bioinformatics submitted by PRIMAL DIDIMOSE PR (Reg No: 210011018698) Under the guidance of the External Guide Dr. SAREEN SARAH JOHN, senior manager of RAGIV GANDHI CENTRE FOR BIOTECHNOLOGY, Thiruvananthapuram and part of this work has previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition.

  
Head of the Department  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683102  
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22/8/23

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**CERTIFICATE**

This is to certify that **MS. KRISHNENDU S R**, bearing Reg No:210011018695 enrolled in the Msc Bioinformatics at Union Christian college, Aluva has successfully completed project work titled "Insilico design of potential derivatives of pemigatinib and futibatinib, down-regulating EPCAM mutation, effective in controlling hepatocellular carcinoma (HCC)". The project was conducted under the guidance and supervision of **Dr P K Krishnan Namboori**, Associate Professor in the Department of Computational Engineering and Networking, of Amritha Vishwa Vidyapeetham, Coimbatore Campus. The project, an essential component of the academic curriculum, showcases the student's commitment, dedication and proficiency in the subject matter. This certificate is awarded as a testament to the successful completion of the project and the academic achievements therein.

Examiners

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22/8/23



Head of the department

*Dr. Sareen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102



## CERTIFICATE

This is to certify that Ms. **ASWATHY ANILKUMAR**, bearing Reg. No: **210011018683**, enrolled in the Msc.Bioinformatics at Union Christian college Aluva, has successfully completed the project work titled "**Potential derivatives of Olaparib and enzalutamide for down-regulating CD3G mutation, controlling prostate cancer-An insilico approach**". The project was conducted under the guidance and supervision of **Dr P K Krishnan Namboori**, Associate Professor in the Department of Computational Engineering and Networking, of Amrita Vishwa Vidyapeetham, Coimbatore Campus. The project, an essential component of the academic curriculum, showcases the student's commitment, dedication, and proficiency in the subject matter. This certificate is awarded as a testament to the successful completion of the project and the academic achievements therein.

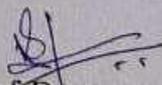


Examiners

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22/8/23

  
Head of Department  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102

# CERTIFICATE



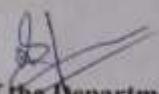
Department of Biosciences

UNION CHRISTIAN COLLEGE

(Affiliated to Mahatma Gandhi University, Kottayam) Aluva,

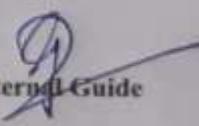
Kerala, India

This is to certify that the dissertation entitled "A COMPREHENSIVE OVERVIEW OF GENOME-WIDE VARIATIONS: SNPs AND INDELS OF THREE MANGO SPECIES USING WHOLE GENOME SEQUENCE ANALYSIS" is a bona fide record of the original dissertation work carried out by **AKHILA B (Reg. No: 210011018681)**, Union Christian College, Aluva, during the period of May to August 2023 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM.**

  
Head of the Department

*Dr. Sareen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 23102

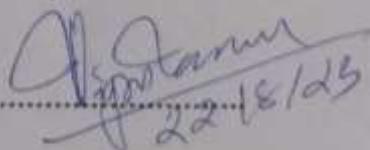
Examiners

  
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22/8/23



DEPARTMENT OF BIOINFORMATICS  
**UNION CHRISTIAN COLLEGE**

ALUVA, KERALA-683102

**Certificate**

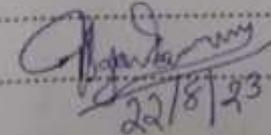
This is to certify that the thesis entitled **COMPUTATIONAL ANALYSIS OF NEWCASTLE DISEASE VIRUS: INVESTIGATING MOLECULAR INTERACTIONS OF ANTI-VIRAL PHYTOCHEMICALS AND SYNTHETIC DRUG WITH RNA POLYMERASE** submitted to Mahatma Gandhi University, in partial fulfilment the requirements for the award of the degree of Master of Science in Bioinformatics submitted by **KAVYA K** (Reg No: 210011018693) Under the guidance of the External Guide **Dr. P. Devendran Ph.D** Professor and Head of Bioinformatics Centre, Madras Veterinary College, Chennai and that no part of this work has previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition.

  
**Head of the Department:**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683102  
**External Viva**



  
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**UNION CHRISTIAN COLLEGE**

**(Affiliated to Mahatma Gandhi University, Kottayam)**

**Aluva, Kerala, India**

**CERTIFICATE**

This is to certify that the dissertation entitled “**METAGENOMIC DATA OF BACTERIAL COMMUNITY FROM DIFFERENT LAND USES AT THE RIVER BASIN, KELANTAN**” is a bona fide record of the original dissertation work carried out by **ASWATHY LAVAN (Reg. No: 210011018685)**, Union Christian College, Aluva, during the period of April to July 2021 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM**.

**Head of the Department**  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva 683 102



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# CERTIFICATE



Department of Biosciences

UNION CHRISTIAN COLLEGE

(Affiliated to Mahatma Gandhi University, Kottayam)

Aluva, Kerala, India

This is to certify that the dissertation entitled "PAN GENOME SEQUENCE ANALYSIS SALMONELLA ENTERICA FROM DIVERSE COUNTRIES" is a bona fide record of the original dissertation work carried out by **BEXY MARIA JAMES** (Reg. No: 210011018687), Union Christian College, Aluva, during the period of May to August 2023 in partial fulfilment of the award of degree **Master of Science in Bioinformatics** of the **MAHATMA GANDHI UNIVERSITY, KOTTAYAM**.

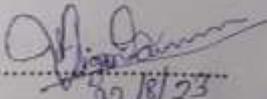
  
**Head of the Department**  
*Dr. Sureen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102



  
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ALUVA



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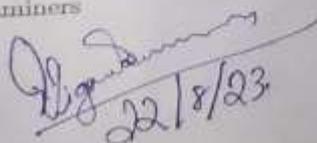
This is to certify that Ms. SANDRA SEBASTIAN, bearing Reg. No: 210011018701, enrolled in the Msc.Bioinformatics at Union Christian college, has successfully completed the project work titled "Design of Acadesine and Phenformin derivatives for downregulating PRKAA1 mutation and controlling metabolic disorder-A computational analysis". The project was conducted under the guidance and supervision of Dr P K Krishnan Namboori, Associate Professor in the Department of Computational Engineering and Networking, of Aurita Vishwa Vidyapeetham, Coimbatore Campus. The project, an essential component of the academic curriculum, showcases the student's commitment, dedication, and proficiency in the subject matter. This certificate is awarded as a testament to the successful completion of the project and the academic achievements therein.

Submitted for the examination held on.....

22/08/23

Examiners

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22/8/23



  
Head of Department

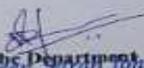
Dr.Sareen Sarah John  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102



DEPARTMENT OF BIOINFORMATICS  
UNION CHRISTIAN COLLEGE  
ALUVA, KERALA- 683 102

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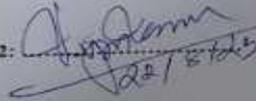
This is to certify that the project entitled, "METAGENOMIC ANALYSIS OF FECAL MICROBIOME IN PARKINSON'S DISEASE" is a bonafide record of the original dissertation work carried out by **HIBA BASHEER (REG NO: 210011018692)**, Union Christian College Aluva, during the period of May 2023 to June 2023 in partial fulfillment of the award of degree MASTER OF SCIENCE IN BIOINFORMATICS of the Mahatma Gandhi University.

  
**Head of the Department**  
*Dr. Sareen Suvath John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva - 683 102



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.....



DEPARTMENT OF BIOINFORMATICS  
**UNION CHRISTIAN COLLEGE**  
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### Certificate

This is to certify that the thesis entitled Heart Disease Prediction: Machine Learning and Personalized Doctor-Patient care with Python submitted to Mahatma Gandhi University, in partial fulfilment the requirements for the award of the degree of Master of Science in Bioinformatics submitted by ROOPALI ELIZABETH GEORGE (Reg No: 210011018699) Under the guidance of Mr. Akash M Philipe, Riss Technologies Kochi and that no part of this work has previously formed the basis for the award of any degree, diploma, associateship, fellowship or any other similar title or recognition.

Head of the Department  
*Dr. Sareen Sarah John*  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva-683102



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*[Signature]*  
22/8/23



Department of Bioinformatics

**UNION CHRISTIAN COLLEGE**

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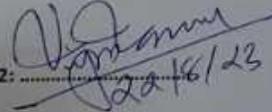
This is to certify that the dissertation entitled, "DEEP LEARNING MODEL FOR THE PREDICTION OF OXYGEN MINIMUM ZONE FROM MARINE METAGENOME SEQUENCES" is a bonafide record of the original dissertation work carried out by **ASWATHY E.A (REG NO: 210011018684)**, Union Christian College Aluva, during the period of MAY 2023 to JUNE 2023 in partial fulfillment of the award of degree **MASTER OF SCIENCE IN BIOINFORMATICS** of the Mahathma Gandhi University.

  
Head of the Department  
**Dr. Sareen Sarah John**  
Head of the Department  
Dept. of Biosciences  
Union Christian College  
Aluva 683 102



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22/11/23

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Date: 2023.12.07 14:27:05 +05'30'