



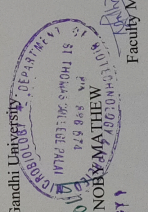
**ST. THOMAS COLLEGE, PALAI**

Re-accredited with A grade by NAAC

UGC approved College with Potential for excellence

### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "ISOLATION, IDENTIFICATION AND OPTIMIZED PRODUCTION OF POLYHYDROXYBUTYRATE (PHB) PRODUCED BY SOIL BACTERIA" Carried out by Miss. AKHILA BABU, Reg. No:170011019351 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of **NOBY MATHEW** during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University



Prof. JAMES JOSEPH  
Prof. JAMES JOSEPH  
Prof. NOBY MATHEW  
Faculty Member

ST. THOMAS COLLEGE  
Applied Dept of Applied Microbiology & Biotechnology  
PALAI - 686 514.

St. Thomas College Pala

Examiner 1 .....  
Examiner 2 .....  
26/7/19

Dr. Lucy Sara Vargha

Blessen Santhosh George



**St. Thomas College, Pala**

UGC APPROVED College with Potential for Excellence

## CERTIFICATE

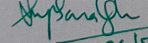
This is to certify that the thesis entitled "STUDY ON THE DEVELOPMENT OF FRUCTO OLIGOSACCHARIDES INCORPORATED CASSAVA STARCH MEMBRANE FOR PREVENTING POST HARVEST LOSS" submitted to them MG University, in partial fulfilment of the requirement for the award of the Degree of Master of Science is a record of bonafide research work done by AKHILA KURIAN, during the period from April 2019 to June 2019 of her study in the Department of Applied Microbiology at ST Thomas College, Pala under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or other similar title to any candidate of any University so far.

PROF. JAMES JOSEPH  
Head of the Department

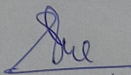
MS. PRAVEENA GEORGE

HEAD, DEPT. OF APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arunpuzha P. O.  
PALA - 686 574.

External Examiner

1:   
26/7/19  
Dr. Lincy Sara Varghese.

2:

  
26/7/19  
Blessan Sandesh George.



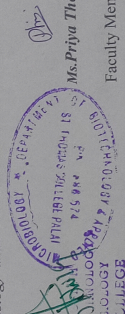
## ST. THOMAS COLLEGE, PALAI

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UGC approved College with Potential for excellence

### CERTIFICATE

*Certified that this is a bonafide report of the project work entitled "Experimental investigation and extraction of bioactive compounds from polyherbal formulations for antibacterial and antifungal potential" carried out by Miss. AMALA JOSE, Reg. No:170011019353 in the Department of Applied microbiology & Biotechnology St. Thomas College, Palai, under the internal guidance of Ms.Priya Thomas during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.*

*Prof. James Joseph*  
HEAD, DEPARTMENT OF APPLIED MICROBIOLOGY  
Course Co-ordinator, Applied Microbiology & Biotechnology  
PALAI 688374



*Ms. Priya Thomas*  
Faculty Member

St. Thomas College Palai.

Examiner 1 .....  
*Dr. Lincy Sara Vargese*

Examiner 2 .....  
*Blessen Sankish George*



# St. Thomas College, Pala

UGC APPROVED College with Potential for Excellence

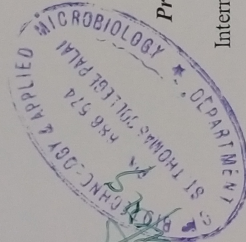
Certified that this is a bonafide report of the project work entitled "SCREENING, IDENTIFICATION AND OPTIMIZATION OF EXOGENOUS INDOLE ACETIC ACID PRODUCING SOIL BACTERIA FOR ENHANCED PLANT GROWTH" Carried out by Miss. AMALU SAJI, Reg. No:170011019354 in the Department of Applied Microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Priya Thomas during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

Prof. James Joseph

HEAD DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
APPLIED MICROBIOLOGY

ST. THOMAS COLLEGE

Armapuram Dept. of Applied Microbiology & Biotechnology  
PALA - 686 574



Priya Thomas

Internal Guide, Lecturer

St. Thomas College Palai

Examiner 1 .....

26/11/19

Dr. Divy Sans Varghese

Examiner 2 .....

26/11/19

Blessan Sankush George



# ST. THOMAS COLLEGE, PALAI

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UGC approved College with Potential for excellence

## CERTIFICATE

*Certified that this is a bonafide report of the project work entitled "A Study on gut microbiota of Papilio polytes romulus inhabiting on Citrus aurantifolia and its microbial potential" carried out by Miss. Anit Francis, Reg. No:170011019355 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Ms. Priya Thomas during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.*

*Prof. James Joseph*

Course Coordinator  
HEAD, DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
ST. THOMAS COLLEGE

Arunapuram P. O.  
PALA - 686 574



*Priya*

Ms. Priya Thomas

Faculty Member

Examiner 1 : *[Signature]* 26/7/19

Dr. Lucy Sara Varghese

Examiner 2 : *[Signature]* 26/7/19

Blessan Sankosh George



## ST. THOMAS COLLEGE, PALAI

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### CERTIFICATE

*Certified that this is a bonafide report of the project work entitled*  
**"BACTERIOLOGICAL PROFILE AND ANTIBIOTIC SUSCEPTIBILITY PATTERN OF METHICILLIN RESISTANT**  
*Staphylococcus aureus IN INFECTED DIABETIC FOOT ULCER PATIENTS" carried out by*  
**Miss. ANITA JAMES, Reg. No: 170011019356** *in the Department of Applied*  
*microbiology & Biotechnology St. Thomas College, Pala, under the internal*  
*guidance of Ms. Anupama during the academic year 2017- 2019 towards the*  
*partial fulfilment of the requirement for the award of Masters Degree in Applied*  
*microbiology under Mahatma Gandhi University.*

**Prof. James Joseph**

Course Coordinator

**Prof. Aradhana Cherian**

Faculty Member

ST. Dept. of Applied Microbiology & Biotechnology

Arunapuram  
PALAI - 686 574.  
St. Thomas College Palai.

Examiner 1 ... 26/11/19

*Dr. Divya Sara Varughese*

Examiner 2 ... 26/11/19

*Blasen Samkud George*



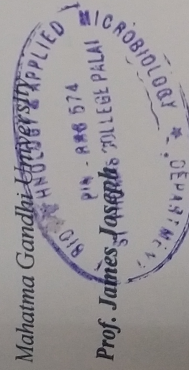
# ST. THOMAS COLLEGE, PALAI

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## CERTIFICATE

Certified that this is a bonafide report of the project work entitled "Evaluation Of Diagnostic Potential Of Immunochromatographic Test And Real-Time PCR For Rabies Virus in Decayed Brain Samplecarried out by Miss. ANITA PHILIP, Reg. No:170011019357 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Prof JAMES JOSEPH during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University



Prof. James Joseph  
Coordinator, Applied Microbiology  
ST. THOMAS COLLEGE  
Aruppukottai, K. U  
Dept. of Applied Microbiology & Biotechnology - 686 574

St. Thomas College Palai

Examiner 1 : *Dr. Lucy Sara Varghese*  
26/11/19

Examiner 2 : *Dr. Anusha George*  
26/11/19



# ST. THOMAS COLLEGE, PALAI

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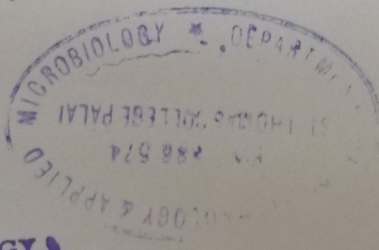
## CERTIFICATE

Certified that this is a bonafide report of the project work entitled "A Study on gut microbiota of *Papilio polytes romulus* inhabiting on *Citrus aurantifolia* and its microbial potential" carried out by Miss. Anit Francis, Reg. No:170011019355 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Ms. Priya Thomas during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

Prof. James Joseph

Course Coordinator  
HEAD, DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
ST. THOMAS COLLEGE

Arunapurem P. O  
PALA - 686 574



Ms. Priya Thomas

Faculty Member

Examiner 1 : .....

Dr. Liny' Sara Varghese

Examiner 2 : .....

Blessan Santhosh George





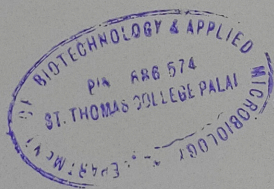
**ST. THOMAS COLLEGE, PALAI**

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## CERTIFICATE

Certified that this is a bonafide report of the project work entitled  
**"SYNTHESIS AND CHARACTERIZATION OF COPPER  
NANOPARTICLES AGAINST MAJOR FOODBORNE PATHOGENS"**  
Carried out by Miss. ARUNIMA THOMAS, Reg. No:170011019358 in the  
Department of Applied microbiology & Biotechnology St. Thomas College,  
Pala, under the internal guidance of Prof. JAMES JOSEPH, Head of the  
Department, during the academic year 2017- 2019 towards the partial fulfilment  
of the requirement for the award of Masters Degree in Applied microbiology  
under Mahatma Gandhi University.



Prof. James Joseph

Course Coordinator & Internal Guide  
HEAD, DEPT. OF BIOTECHNOLOGY &  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arundhaty P. O  
PALAI - 686 574

Dept. of Applied Microbiology & Biotechnology

St. Thomas College, Palai

Examiner 1

*Dr. Liney Sara Varghese*  
26/7/19

Examiner 2 ..... 26/7/19.

*Blessan Sanctuosh George*



# ST. THOMAS COLLEGE, PALAI

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## BONAFIDE CERTIFICATE

Certified that this is a bonafide report of the project work entitled "A study on the role of microbes and weed derived biochar towards enhancement of soil fertility and water purification" Carried out by Miss. ARYA MURALEEDHARAN, Reg.No:170011019359 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Miss, Jyothymol Joy, during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied Microbiology under Mahatma Gandhi University

Prof. James Joseph MEB JOSEPH  
HEAD, DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
Course Coordinator  
ST. THOMAS COLLEGE  
Atunapuram P. O.  
PALA - 686574  
Miss Jyothymol Joy  
Faculty Member  
DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
ST. THOMAS COLLEGE PALAI  
P.O. ATUNAPURAM  
PALA - 686574  
PH. NO. 48574

St. Thomas College Palai

Examiner 1

*[Signature]*  
26/7/19  
Dr. Lucy Sara Varghese

Examiner 2

*[Signature]*  
26/7/19  
Blessan Santhosh George



**St. Thomas College, Pala**

UGC APPROVED College with Potential for Excellence

## CERTIFICATE

This is to certify that the thesis entitled "STUDY ON THE EFFECT OF COLLAGEN AND POLYVINYL ALCOHOL ENCAPSULATION ON PROBIOTIC ACTIVITY OF *Lactobacillus spp*" submitted to them MG University, in partial fulfilment of the requirement for the award of the Degree of Master of Science is a record of bonafide research work done by ATHIRA SANAL, during the period from April 2019 to June 2019 of her study in the Department of Applied Microbiology at ST Thomas College, Pala under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or other similar title to any candidate of any University so far.

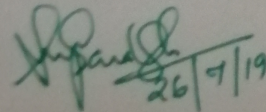
Prof. James Joseph

HEAD OF THE DEPARTMENT  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
ARUNEPURAM P. O.  
PALA - 686 574

Ms. Jyothy Mol Joy

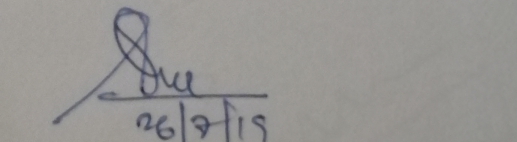
### External Examiner

1:

  
26/7/19

Dr Lincy Sara Varghese

2:

  
26/7/19  
Blessan Santhosh George



# ST. THOMAS COLLEGE, PALAI

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## CERTIFICATE

*Certified that this is a bonafide report of the project work entitled "IDENTIFICATION OF BACTERIAL PROFILE OF BLOOD STREAM INFECTIONS AND THEIR ANTIBIOTIC SUSCEPTIBILITY PATTERNS BY AUTOMATION" carried out by Miss. DONA BABU, Reg. No: 170011019361 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Ms. Anupama during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.*

*Prof. James Joseph*  
HEAD, DEPT. OF BIOTECHNOLOGY  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
PALAI - 686 574

St. Thomas College Palai.

Examiner 1 : *[Signature]*  
26/12/19

Dr. Lincy Sara Varghese

Examiner 2 : *[Signature]*  
26/12/19

Blessan Santhosh George



## ST. THOMAS COLLEGE, PALAI

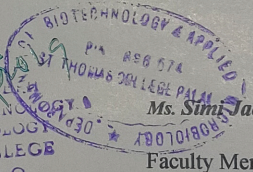
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### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "An experimental study on evaluating the sensitivity of conventional and real-time PCR in rabies diagnosis" carried out by Miss. DONA BENNY, Reg. No: 170011019362 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Ms. Simi Jacob during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

Prof. James Joseph  
HEAD, DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
ST. THOMAS COLLEGE  
Attunapuram P. O.

Dept. of Applied Microbiology & Biotechnology  
St. Thomas College Palai.



Ms. Simi Jacob  
Faculty Member

Examiner 1 : Dr. Lincy Sara Varghese  
26/7/19

Examiner 2 : Blessen Sankosh George  
26/7/19

Dr. Lincy Sara Varghese

Blessen Sankosh George



## ST. THOMAS COLLEGE, PALAI

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### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "HYPOGLYCEMIC, ANTIOXIDANT, ANTI-INFLAMMATORY AND ANTIMICROBIAL PROPERTIES OF *Psidium guajava*" Carried out by Miss. E S SUMAYYA, Reg.No:170011019363 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Mrs.SIMI JACOB during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

Prof. James Joseph  
Course Coordinator

Mrs. SIMI JACOB  
Faculty Member

Dept. of Applied Microbiology & Biotechnology

St. Thomas College Palai

Examiner 1 .....

*Dr. Lincy Sara Varghese*  
29/7/19

Examiner 2 .....

*Blessan Santos de George*  
2/7/19



## ST. THOMAS COLLEGE, PALAI

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### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "STABILITY STUDY ON PESTE DES PETITES (PPR) RUMINANT VACCINE" Carried out by **Miss.GOPIKA RAJEEV, Reg. No:170011019364** in the Department of Applied microbiology &Biotechnology St. Thomas College, Pala, under the internal guidance of **Mr.PRAVEENA GEORGE** during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

**Prof. James Joseph**

Course Coordinator

**Mr.PRAVEENA GEORGE**

Faculty Member

APPLIED MICROBIOLOGY


ST. THOMAS COLLEGE

Dept. of Applied Microbiology & Biotechnology

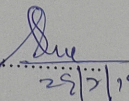
PALA - 686 674.

St. Thomas College Palai

Examiner 1

  
29/7/19

Examiner 2

  
29/7/19

Dr. Lincy Sara Varghese

Blessa Santhosh George



# St. Thomas College, Pala

UGC APPROVED College with Potential for Excellence

Certified that this is a bonafide report of the project work entitled "RAPID IDENTIFICATION OF E.coli PATHOTYPES BY VIRULENCE GENE BASED MULTIPLEX PCR" Carried out by Miss. HARIPRIYA H, Reg. No:170011019370 in the Department of Applied Microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Ms.Jyothy Joy during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

*James Joseph*  
Prof. James Joseph

25/7/2019  
HEALTH TECHNOLOGY &  
BIOTECHNOLOGY  
ST. THOMAS COLLEGE

Appapuram P. O.  
PALA - 689 314.  
Dept of Applied Microbiology & Biotechnology

St. Thomas College Palai

*Jyothy Joy*  
Jyothy Joy

Internal Guide, Lecturer

Examiner 1

*Dr. Lincy Sara Varghese*  
29/7/19

Dr. Lincy Sara Varghese

Examiner 2

*Blessa Santhosh George*  
29/7/19

Blessa Santhosh George





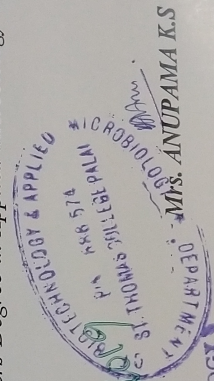
# ST. THOMAS COLLEGE, PALAI

Re-accredited with A grade by NAAC

UGC approved College with Potential for excellence

## CERTIFICATE

Certified that this is a bonafide report of the project work entitled "SYNTHESIS, CHARACTERIZATION AND FORMULATION OF CHITOSAN NANOPARTICLE AS TOPICAL DRUG DELIVERY FOR CANDIDIASIS" Carried out by Miss. JEMIMA JOSEPH, Reg. No: 1700111019366 in the Department of Applied microbiology & Biotechnology St. Thomas College, Palai, under the internal guidance of Mrs. ANUPAMA K.S during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.



Prof. James Joseph  
HEAD, DEPT. OF BIOTECHNOLOGY  
Course Coordinator  
ST. THOMAS COLLEGE  
Dep. of Applied Microbiology & Biotechnology  
PALAI - 686 574

Faculty Member

St. Thomas College Palai

Examiner 1 .....  
Dr. Divya Sara Varughese

Examiner 2 .....  
Blessan Santhosh George



# St. Thomas College, Pala

UGC APPROVED College with Potential for Excellence

This is to certify that the thesis entitled "BACTERIOCIN ADMINISTRATION ATTENUATES COLITIS BY INHIBITING COX 2 AND IL 10 EXPRESSION IN HUMAN COLORECTAL CELLS" submitted to them MG University, in partial fulfilment of the requirement for the award of the **Degree of Master of science** is a record of bonafide research work done by Jisha P S, during the period from **April 2019 to June 2019** of her study in the Department of **Applied Microbiology** at ST Thomas College, Pala under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or other similar title to any candidate of any University so far.

Prof. James Joseph

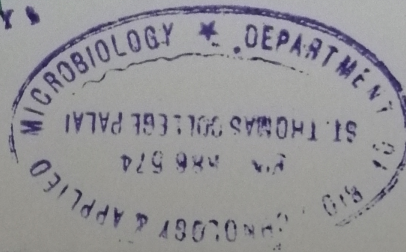
Head of the Department

External Examiner

1:

Mrs Archana Cherian

*29/7/19*  
Prof. JAMES JOSEPH  
HEAD, DEPT. OF BIOTECHNOLOGY &  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arunapuram P. O.  
PALA - 686 574.



Valued

1. *[Signature]*  
29/7/19

Dr. Liny Sara Varghese

2. Blessan Senthil George

*[Signature]*  
29/7/19



## ST. THOMAS COLLEGE, PALAI

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### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "Screening and molecular identification of *Enterobacter* species and its Quorum quenching activity against *Chromobacterium violaceum* by various methods" Carried out by Miss. **KEERTHI KANNAN**, Reg. No: 170011019368 in DRP Molecules Pvt. LTD, KINFRA HITECH Park under the guidance of Dr. Ganga.G during the academic year 2017- 2019 towards the partial fulfilment of the requirement for the award of Master's Degree in Applied microbiology under Mahatma Gandhi University.

*Prof. James Joseph*  
Prof. JAMES JOSEPH  
HEAD, DEPT. OF BIOTECHNOLOGY  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arunapuram P. O  
PALAI - 686 574  
Dept. of Applied Microbiology & Biotechnology

Faculty Member

St. Thomas College Palai

Examiner 1 *Dr. Lincy Sara Varghese*  
29/7/19

Examiner 2 *Blessan Santhosh George*  
29/7/19

*Dr. Lincy Sara Varghese*

*Blessan Santhosh George*



## ST. THOMAS COLLEGE, PALAI

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### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "PARTIAL PURIFICATION AND ENZYME CHARACTERIZATION OF ALKALINE PROTEASE FROM BACILLUS SP. ISOLATED FROM DETERGENT CONTAMINATED SOIL." Carried out by Miss. MINNUMOL RAJU, Reg. No: 170011019369 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of PRAVEENA GEORGE during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University

Prof. JAMES JOSEPH

Course Coordinator

Prof. JAMES JOSEPH  
HEAD, DEPT. OF APPLIED MICROBIOLOGY & BIOTECHNOLOGY  
ST. THOMAS COLLEGE  
PALAI

Dept. of Applied Microbiology & Biotechnology

St. Thomas College Palai

PRAVEENA GEORGE

Faculty Member

Examiner 1

Dr. Lucy Sara Varghese  
29/7/19

Examiner 2

Blessa Sandosh George  
29/7/19



# St. Thomas College, Pala

UGC APPROVED College with Potential for Excellence

Certified that this is a bonafide report of the project work entitled "ISOLATION AND ENZYME CHARACTERIZATION OF PECTINASE PRODUCING BACTERIA FOR INDUSTRIAL APPLICATIONS "Carried out by Miss. NEENA SREEDHARAN, Reg. No:170011019370 in the Department of Applied Microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Simi Jacob during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.



Prof. James Joseph  
Course Coordinator  
THOMAS COLLEGE  
Dept. of Applied Microbiology & Biotechnology  
PALA - 686 574.

Simi Jacob

Internal Guide, Lecturer

St. Thomas College Palai

Examiner 1

26/7/19

Dr. Liny Sara Varghese

Examiner 2

26/7/19

Blessan Sandesh George



## ST. THOMAS COLLEGE, PALAI

Re- accredited with A grade by NAAC  
UGC approved college with potential for excellence

### CERTIFICATE

Certified that this is a bonafide report of the project work entitled "EVALUATION OF THE EFFECT OF TWO CULTURE MEDIA ON THE SPORULATION OF BACILLUS ANTHRACIS"- STERNE STRAIN Carried out by Miss. **RUKSANA SULAIMAN**, Reg. No:170011019371 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of **Mr. NOBY MATHEW** during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

*sh*  
**Prof. James Joseph**

Course Coordinator

HEAD OF DEPARTMENT  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arunapuram P. O.  
686 574

*Mr. Noby Mathew*  
**Mr. NOBY MATHEW**

Faculty Member

Dept. of Applied Microbiology & Biotechnology

St. Thomas College Palai

Examiner 1

*Valued*  
*Dr. Lincy Sara Varghese*  
29/7/19

Examiner 2

*Blessan Sambroshi George*  
29/7/19



**St. Thomas College, Pala**

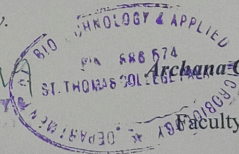
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**CERTIFICATE**

Certified that this is a bonafide report of the project work entitled ISOLAT AND INVITRO EVALUATION OF PROBIOTIC POTENTIAL OF LACTOBACILLUS AGANIST KLEBSIELLA PNEUMONIAE" Carried out by Miss.SARANYA MOHANAN, Reg.No:170011019372 in the Department of Applied microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Archana cheriyan during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

Prof. James Joseph

Course Coordinator



Archana Cherian

Faculty Member

Dept. of Applied Microbiology & Biotechnology  
PALA - 688 574.

St. Thomas College Palai

Examiner 1 . *[Signature]* 29/7/19

*Dr. Lincy Sara Varghese*

.Examiner 2 ..... *[Signature]* 29/7/19

*Blessan Sankhsh George*



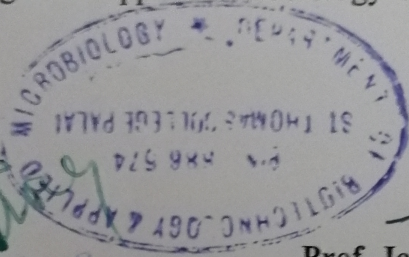
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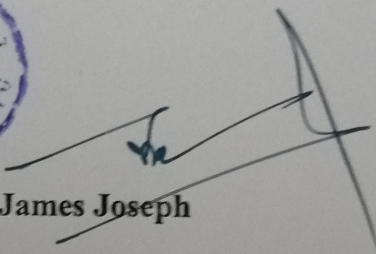
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Certified that this is a bonafide report of the project work entitled "Effect of various stabilizers on physical appearance of lyophilized cell culture vaccine in terms of its visual acceptability" Carried out by Miss. SREEKUTTY P. S, Reg.

No:170011019373 in the Department of Applied Microbiology & Biotechnology St. Thomas College, Pala, under the internal guidance of Priya Thomas during the academic year 2017- 2019 towards the partial fulfillment of the requirement for the award of Masters Degree in Applied microbiology under Mahatma Gandhi University.

  
Prof. JAMES JOSEPH  
Course coordinator &  
HEAD, DEPT. OF APPLIED MICROBIOLOGY &  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
Arunapuram P. O.  
PALA - 689 114  
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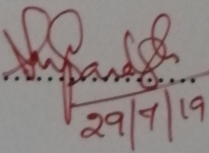


  
Prof. James Joseph

Internal Guide

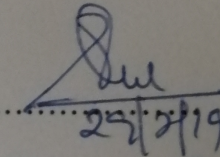
St. Thomas College Palai

Examiner 1 .....

  
29/7/19

Dr. Lucy Sara Varghese

Examiner 2 .....

  
29/7/19

Blessan Santhosh George





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## CERTIFICATE

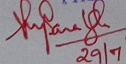
This is to certify that the thesis entitled "DESIGN AND DEVELOPMENT OF SILVER NANOPARTICLE INCORPORATED WOUND DRESSING MATERIAL" submitted to the MG University, in partial fulfilment of the requirement for the award of the Degree of Master of Science is a record of bonafide research work done by SWATHY KRISHNA, during the period from April 2019 to June 2019 of her study in the Department of Applied Microbiology at ST Thomas College, Pala under my supervision and guidance and the thesis has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or other similar title to any candidate of any University so far.

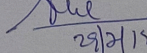
**PROF. JAMES JOSEPH**  
Head of the Department

**MR. NOBY MATHEW**

PROF. JAMES JOSEPH  
HEAD, DEPT. OF TECHNOLOGY &  
APPLIED MICROBIOLOGY  
ST. THOMAS COLLEGE  
PALA - 686 674

External Examiner

1:   
29/7/19  
Dr. Lucy Sara Varghese

2:   
29/7/19  
Blessan Sauthosh George.



# St. Thomas College, Pala

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## CERTIFICATE

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**PROF. JAMES JOSEPH**

Head of the Department

**Mr. NOBY MATHEW**

**External Examiner**

1:

*[Signature]*  
29/7/19  
**Dr. Lucy Sara Varghese**

2:

*[Signature]*  
29/7/19  
**Blessan Santhosh George**