



Centre for Biotechnology, Thiruvananthapuram 695014, Kerala State, India.
An Autonomous National Institute for Discovery, Innovation & Translation
in Biotechnology and Disease Biology,
of India, Ministry of Science & Technology, Department of Biotechnology.

राजीव गांधी जैव प्रौद्योगिकी केन्द्र, तिरुवनन्तपुरम 695 014, के
जैवप्रौद्योगिकी और रोग जीवविज्ञान में आविष्कार, नवीनता एवं
की स्वायत्त राष्ट्रीय संस्थान,
भारत सरकार विज्ञान एवं प्रौद्योगिकी मंत्रालय, जैवप्रौद्योगिकी वि

CERTIFICATE

This is to certify that Ms.Aleena A.R has successfully completed her final year project work as dissertation in partial fulfillment of the award of MASTER OF SCIENCE in BIOTECHNOLOGY from St.Thomas College, Pala, under MG University, Kerala on "Estrogen mediated expression of Ezrin in Follicular Thyroid Cancer" under my guidance from 1 April 2019 to 30th June 2019 at Rajiv Gandhi Centre for Biotechnology (RGCB) Thiruvananthapuram. This work is original and the contents of the dissertation in parts or full have not been submitted for the award of any other degree, diploma or fellowship in any Indian or foreign university.

Date: 30 June 2019

Place: Thiruvananthapuram

Dr. S. Sreeja

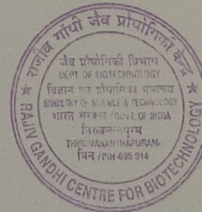
Scientist EII

Cancer Research Program

Rajiv Gandhi Centre for Biotechnology

Thiruvananthapuram-695014

S. SREEJA Ph.D
Scientist
Cancer Research Program
RGCB





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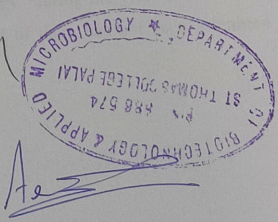
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This is to certify that the dissertation entitled **GENE EXPRESSION PROFILING OF THE IDENTIFIED POSTHARVEST PHYSIOLOGICAL DETERIORATION TOLERANT AND SUSCEPTIBLE GENOTYPES OF CASSAVA (*Manihot esculenta* Crantz)** is an authentic work done by Ms ANIT ROSE MANICHEN, under the supervision and guidance of Dr. VISALAKSHI CHANDRA C, Scientist Division of Crop improvement ICAR - Central Tuber Crops Research Institute Thiruvananthapuram. for the partial fulfillment of the requirements for the award of degree of **Master of Science in Biotechnology** during the year 2017-2019 I further declare that, this dissertation or any other part of there has not been submitted elsewhere for any other degree.

Prof. JAMES JOSEPH
Head of Department, Prof. JAMES JOSEPH
ST. THOMAS COLLEGE
Arunapuram P. O.
Palai - 686 577
Lecture In Charge: Mrs. ARCHANA CHERIAN



External Examiners:

1. *Visalakshi Chandran*
2.

ST. THOMAS COLLEGE, PALAI
MAHATMA GANDHI UNIVERSITY, KOTTAYAM, KERALA
DEPARTMENT OF BIOTECHNOLOGY & APPLIED MICROBIOLOGY



Certified that this is a bonafide record of the thesis titled
ROLE OF PAK-1 IN ORAL CANCER PROGRESSION

Done by
Ms. ASWATHY RAMACHANDRAN

Reg No: 170011020285

Submitted for the partial fulfillment for the award of Master of Science in Biotechnology
to the Department of Biotechnology

[Signature]
Internal Examiner
Examiner

[Signature]
Head of the Department
HEAD, DEPT. OF BIOTECHNOLOGY & APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.

[Signature]
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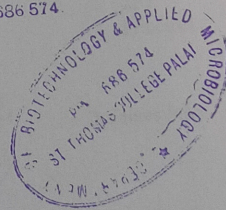
This is to certify that the dissertation entitled **PREPARATION OF DIFFERENT PREBIOTIC YOGHURT AND ITS QUALITY ANALYSIS** is an authentic work done by Ms **ATHIRA S**, under the supervision and guidance of **Prof.(Dr.) KEERTHI T R** Professor, School of Biosciences, Mahatma Gandhi University, Kottayam. for the partial fulfillment of the requirements for the award of degree of **Master of Science in Biotechnology** during the year 2017-2019.

Head of Department: Prof. JAMES JOSEPH
Lecture In Charge: Mr. Noby Mathew

Prof. JAMES JOSEPH
HEAD, DEPT. OF BIOTECHNOLOGY
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O
PALA - 686 574.

External Examiners:

1. *W. S. K.*
17/11/19
2.





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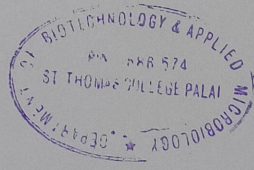
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This is to certify that the dissertation entitled “ **Microbial barrier property of the PVA nanocomposite films incorporated with TiO₂ nanoparticle and clove oil** ” is an authentic work done by **MsChinnuChacko**, under the supervision and guidance of **Dr. Radhakrishnan E.K.**, Assistant professor School of Biosciences Mahathma Gandhi University, Kottayam for the partial fulfillment of the requirements for the award of degree of **Master of Science in Biotechnology** during the year 2017-2019 I further declare that, this dissertation or any other part of there has not been submitted elsewhere for any other degree.

Head of Department: **Prof. James Joseph**

Lecture In Charge: **Ms. Praveena George**

[Handwritten Signature]
Prof. JAMES JOSEPH
HEAD, DEPT. OF BIOTECHNOLOGY
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.



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1. *[Handwritten Signature]*

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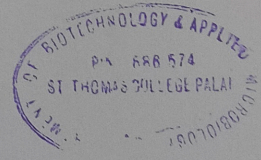
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This is to certify that the dissertation entitled “Curcumin and chitosan nanoparticle fabricated PVA nanocomposite for microbial barrier application” is an authentic work done by Ms Dhanya M. Jacob, under the supervision and guidance of Dr. Radhakrishnan E.K, Assistant professor School of Biosciences Mahathma Gandhi University, Kottayam for the partial fulfillment of the requirements for the award of degree of Master of Science in Biotechnology during the year 2017-2019 I further declare that, this dissertation or any other part of there has not been submitted elsewhere for any other degree

Head of Department: Prof. James Joseph

James Joseph
Prof. James Joseph
HEAD, DEPT. OF BIOTECHNOLOGY &
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.

Lecture In Charge: Mrs. Anupama K.S. Ramkumar *Anupama*



External Examiners:

1. *V. S. S. S.*
2.



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This is to certify that the dissertation entitled "Plant probiotic performance of *Pseudomonas* sp. encapsulated in alginate supplemented with salicylic acid and zinc oxide nanoparticle" is an authentic work done by Ms Gopika Prathap, under the supervision and guidance of Dr. Radhakrishnan E.K, Assistant Professor School of Biosciences Mahathma Gandhi University, Kottayam for the partial fulfilment of the requirements for the award of degree of Master of Science in **Biotechnology** during the year 2017-2019 I further declare that, this dissertation or any other part of there has not been submitted elsewhere for any other degree.

Head of Department: Prof. James Joseph

James Joseph
17/5/2019

Prof. JAMES JOSEPH
HEAD, DEPARTMENT OF BIOTECHNOLOGY &
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.

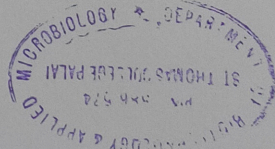
Lecture In Charge: Mrs. Priya Thomas

Priya Thomas

External Examiners:

1. *[Signature]*

2.





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This is to certify that the project dissertation entitled "ISOLATION, CLONING AND SEQUENCING OF 4-COUMARATE COA LIGASE FROM ZINGIBER OFFICINALE ROSC" is a bonafide work carried out by Ms KAVYA O, under the guidance of Dr.EV Soniya, scientist G, department of plant molecular biotechnology, Ragiv gandhi centre for biotechnology, Thiruvananthapuram, in partial fulfillment for the award of degree of Master of science in biotechnology during the academic year 2017-2019. I further assure that this work has not previously formed the basis of any degree in university.

Lecturer in charge

Ms. Jyothy

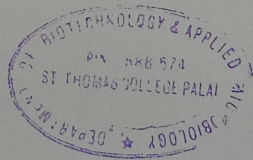
[Signature]
12/9/19

[Signature]
Prof. James Joseph

Prof JAMES JOSEPH
(Head of the Department)
APPLIED MICROBIOLOGY &
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.

Examiners

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2





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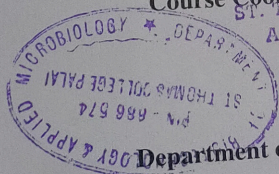
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Certified that this is a bonafied report of the project work entitled "Molecular Identification, Partial purification and Enzyme Characterization of Keratinase producing Bacteria" carried out by MANU MOHAN Reg.No 170011020292 in the Department of Biotechnology and Applied Microbiology, St. Thomas College Palai, under the supervision and guidance of **Mr. K.S. Rishad (Unibiosys Biotech Research Lab, Cochin)**, during the academic year 2017-2019 towards the partial fulfilment of the requirement for the award of Master Degree in Biotechnology under Mahatma Gandhi University and this research work has not formed the basis for the award of any other Degree or Diploma earlier.

[Signature]
Prof. James Joseph
HEAD, DEPT. OF BIOTECHNOLOGY &
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 574.

[Signature]
Mrs. Simi Jacob
Internal Guide



Department of Biotechnology and Applied microbiology

External examiners :

- 1) *[Signature]*
- 2)



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This is to certify that the dissertation entitled **ROLE OF CELL WALL SIGNALLING IN THE INCOMPATIBLE RESPONSE OF ZINGIBER ZERUMBET AGAINST PYTHIUM** is an authentic work done by Ms. MILI ROSE MICHEL, Reg. No. 170011020293, under the supervision and guidance of Dr. GEORGE THOMAS, Scientist F, Laboratory of Plant Disease Biology and Biotechnology, Rajiv Gandhi Centre for Biotechnology Thiruvananthapuram for the partial fulfillment of the requirements for the award of degree of Master of Science in Biotechnology during the year 2017-2019. I further declare that, this dissertation or any other part of there has not been submitted elsewhere for any other degree.

Head of Department: Prof. JAMES JOSEPH

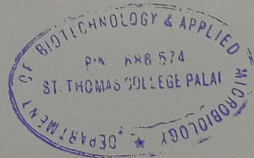
Lecture In Charge: Mrs. PRAVEENA GEORGE

Prof. JAMES JOSEPH
HEAD, DEPT. OF BIOTECHNOLOGY &
APPLIED MICROBIOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALAI - 686 574

External Examiners:

1. *Nice*

2.





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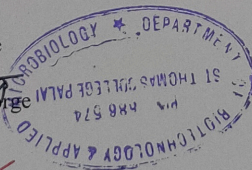
This is to certify that the dissertation entitled " **STUDY ON VARIATION AND IDENTIFICATION OF MOLECULAR MARKERS LINKED TO CYANOGEN CONTENT IN CASSAVA (*Manihot esculenta Crantz*)** " is a bonafide record of the record done by **PREEJAMOL M. R. (170011020294)** of **ST. THOMAS COLLEGE, Pala** under the supervision and guidance of **Dr. M. N SHEELA**, Principal Scientist & Head , Division of Crop Improvement, CTCRI, Sreekariyam, Thiruvananthapuram, in partial fulfillment of requirement for the award of Degree of **Master of Science in Biotechnology** during the academic period 2017 – 2019. This is also to certify that the dissertation has not been submitted for the award of any other degree, diploma, fellowship or other similar titles and that the work has not been published in part or full in any scientific or popular journal or magazine

Lecturer in charge

Prof. Praveen George

Examiners

1. *[Signature]*
2. *[Signature]*



[Signature]
Head of the Department
Prof. James Joseph
HEAD, DEPT. OF BIOTECHNOLOGY
ST. THOMAS COLLEGE
Arunapuram P. O.
PALA - 686 873



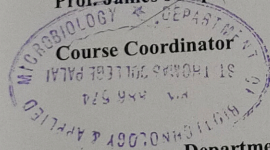
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This is to certify that the dissertation entitled "*In vitro* propagation and identification of molecular markers linked to dwarfness in white yam (*Dioscorea rotundata* Poir.)", submitted by Richu Rachel Yeldos (Reg. No. 170011020295), in the partial fulfillment of the requirements for the award of the degree of MASTER OF SCIENCE IN BIOTECHNOLOGY is a record of work done in the Division of Crop Improvement, Central Tuber Crops Research Institute (ICAR-CTCRI), Sreekariyam, Thiruvananthapuram from 01-04-2019 to 30-06-2019.

Prof. James Joseph

Course Coordinator



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

Ms. Jyothimol Joy

Internal Guide

Department of Biotechnology and Applied Microbiology

External Examiners

1) N. S. S. 18/01/19

2)

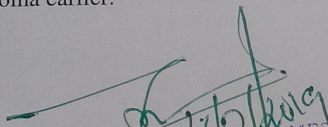


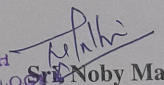
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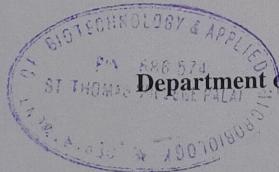
CERTIFICATE

Certified that this is a bonafied report of the project work entitled "ANALYSIS OF INFLAMMATORY CYTOKINES IN BREAST CANCER" carried out by **SARIKA CHANDRAN** Reg.No **170011020296** in the Department of Biotechnology and Applied Microbiology, St. Thomas College Palai, under the supervision and guidance of **Dr.Priya Srinivas, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram**, during the academic year 2017-2019 towards the partial fulfilment of the requirement for the award of Master Degree in Biotechnology under Mahatma Gandhi University and this research work has not formed the basis for the award of any other Degree or Diploma earlier.

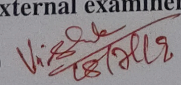

Prof. James Joseph **Head, Dept. of Biotechnology**
Course Coordinator


Sri Noby Mathew
Internal Guide

Department of Biotechnology and Applied microbiology
Arunapuram P. O
PALA - 686 574.



External examiners :

- 1) 
- 2)



Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram 695014, Kerala State, India.
An Autonomous National Institute for Discovery, Innovation & Translation
in Biotechnology and Disease Biology,
Government of India, Ministry of Science & Technology, Department of Biotechnology.

राजीव गांधी जीव प्रौद्योगिकी केन्द्र, तिरुवनन्तपुरम 695 014, केरल, भारत.
जीवप्रौद्योगिकी और रोग जीवविज्ञान में अतिकार, मनीनता एवं अनुवाद
की स्वयंसेवा राष्ट्रीय संस्थान,
भारत सरकार विज्ञान एवं प्रौद्योगिकी मंत्रालय, जीवप्रौद्योगिकी विभाग.

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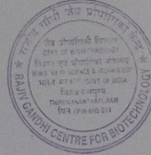
This is to certify that Ms. Sreelakshmi Prasad has successfully completed her final year project work as a dissertation in partial fulfillment of the award of MASTER OF SCIENCE in BIOTECHNOLOGY from St.Thomas College, Pala, under MG University, Kerala on "The proliferative activity of oxysterol 27 hydroxycholesterol is suppressed by pomegranate extract in breast cancer " under my guidance from 1st April 2019 to 30th June 2019 at Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram. This work is original and the contents of the dissertation in parts or full have not been submitted for the award of any other degree, diploma or fellowship in any Indian or foreign university.

Date: 30 June 2019

Place: Thiruvananthapuram

Dr. S. Sreeja
Scientist EII
Cancer Research Program
Rajiv Gandhi Centre for Biotechnology
Thiruvananthapuram-695014

S. SREEJA Ph.D
Scientist
Cancer Research Program
RGCB



तेक्काट पी.ओ., पूजप्पुरा, तिरुवनन्तपुरम -695 014, केरल, भारत. फोन: 0471-2529400 (30 लाईन्स), 2347975, 2348104, 2348753, 2345899
फैक्स: 0471-2348096. ई-मेल: director@rgcb.res.in, info@rgcb.res.in, वेब: www.rgcb.res.in
Thycaud P.O., Poojappura, Thiruvananthapuram - 695 014, Kerala, India. Phone: 0471-2529400 (30 Lines), 2347975, 2348104, 2348753, 2345899
Fax: 0471-2348096. E-mail: director@rgcb.res.in, info@rgcb.res.in, Web: www.rgcb.res.in

