



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(AFFILIATED TO PERIYAR UNIVERSITY, SALEM AND APPROVED BY AICTE, NEW DELHI)
AN ISO 9001:2015 CERTIFIED INSTITUTION
RECOGNISED UNDER SECTION 2(F) AND 12(B) OF UGC ACT 1956 AND ACCREDITED BY NAAC
TIRUCHENGODE - 637203



AQAR (2021-2022)

CRITERION 3 – RESEARCH, INNOVATIONS AND EXTENSION

3.5 COLLABORATION

3.5.2 Number of functional MoUs with Institutions of national, international importance, other universities, industries, corporate houses etc. year wise during the Academic Year (2021-2022)



Since 1991

SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode – 637 205, Namakkal Dt., Tamilnadu



3.5 Collaboration

3.5.2.1 - Number of functional MoUs with Institutions of national, international importance, other universities, industries, corporate houses etc. year wise during the Academic Year (2021-2022)

S.No.	Name of the institution/ industry/ corporate house with whom MoU is signed	Year of signing MoU	Duration	List the actual activities under each MoU	Number of students/ teachers participated under MoUs	Page No.
1.	Alpha Omega Research Foundation, Salem	2022	5 Years	M.Sc Project	14	1-46
2.	ABS Biokare, Puducherry	2022	5 Years	Internship	7	47-71
3.	AWE Care Research Laboratories, Erode	2018	3 Years	Internship	29	72-114
4.	ExtroMind Technologies, Tiruchengode	-	-	MCA-Training Programme	3	115
5.	PBS Technology Solutions	2019	5 Years	MCA-Training Programme	2	116



தமிழ்நாடு தமில்நாடு TAMIL NADU

2.1.2022

THE PRINCIPAL, SENGUNTHAR
ARTS AND SCIENCE COLLEGE,
TIRUCHENGODE

94AB 983008

T.N.D. சுந்தரமூர்த்தி,
முத்திரைத்தாள் விற்பனையாளர்,
L.No. 6 / 1997
திருச்செங்கோடு-637 211.

SENGUNTHAR ARTS AND SCIENCE COLLEGE, TIRUCHENGODE

AND

ALPHA OMEGA RESEARCH FOUNDATION, SALEM

Educational Training, Research and Development

Memorandum of Understanding

This memorandum of understanding (MOU) is made and entered into in this 6th day of June, 2022.

BETWEEN

Sengunthar Arts and Science College, Tiruchengode, represented by Principal, having his office at Tiruchengode here in after called the First party.

AND

Alpha Omega Research Foundation, Salem represented by Dr. V. K. Evanjelene, Managing Director (by designation), having her office at 16, Anbu Nagar, Water Tank Back Side, Gorimedu, Salem - 636008 here in after called the Second party

Party 1

Sengunthar Arts and Science College Tiruchengode, engaged in offering higher education in leading to award of degree B.Sc, M.Sc, M.Phil, Ph.D.

Party 2

The aim of Alpha Omega Hi-Tech Bio Research Centre, is to serve as a means for updating the scientific knowledge in all the biological fields.

The Alpha Omega Research Centre is related with the research work/ projects for the students of B.Sc., M.Sc., M.Phil., Ph.D., and also conduct of conferences, Career oriented training programs in the various fields (Pharmaceutics, Pharmaceutical Technology, Nanotechnology, Biopharmaceutics, Pharmacokinetics, Industrial Pharmacy, Pharmaceutical Chemistry, Pharmaceutical Analysis, Organic Chemistry, Medicinal Chemistry, Green Chemistry, Pharmacology and Toxicology, Clinical Pharmacy, Pharmacognosy, Phytochemistry, Natural Products, Pharmaceutical Microbiology, Biotechnology, Biochemistry, Zoology, Botany, Medicinal plant, Synthesis of nanoparticles, Compound Isolation, Water analysis, Food and soil analysis, Microbial Biotechnology, Plant tissue culture, Pre-clinical activities and Molecular Biology, etc.,).

The Alpha Omega Hi Tech Bio Research Centre was established under the trust, "Bio Vision Trust" Reg No: 883/ 2009 on 16th Oct 2009 and the Research Centre became functional on 19th Oct 2012, when the Director of the Centre assumed charge. Later in 2021 the name changes to Alpha Omega Research Foundation.

Agreement is for a period of five years from the date of signing the agreement.

Now this MoU witnesses that

- Sengunthar Arts and Science College Tiruchengode shall permit the life science departments faculty, to act as visiting professor/ guest lecture of the Research Centre.
- Alpha Omega Research Foundation shall support in technical assistance, research support and development for the benefit of Sengunthar Arts and Science College Tiruchengode.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


Joint Responsibilities of Alpha Omega Research Foundation, Salem and Sengunthar Arts and Science College, Tiruchengode.

- Encourage direct contact and collaboration between our faculties.
- Collaborate in organising academic seminar/conference/workshop/symposium on issues of mutual consent.
- Exchange information including, but not limited to, of academic materials, research publications, collaborate in writing and publishing where possible.
- Promote teaching, research and learning activities.
- Sengunthar Arts and Science College and Alpha Omega Research Foundation, Salem shall share laboratory, equipments, library resources, databases etc.
- Collaborate in organizing training/ projects to develop students, young scientist and researchers.
- Collaborate research works will be carried out related to the phytomedicine and medicinal plants to cure the diseases like Cancer, Diabetes, Inflammation, Arthritis.. etc.,
- Collaborate to conduct the herbal awareness program and to explain the advantage of those herbal items/ herbal plants.
- Collaborate in organising the training programmes for preparation of bioproducts.
- Collaborate in organising skill development programmes for the school/ college students from rural areas.
- Collaborate in organising vocational training programmes for the Science students.
- Enhancing scientific temper among the students through imparting science based education.
- Collaborate in giving training on small scale industries specifically connected with bioproducts.
- Sengunthar Arts and Science College and Alpha Omega Research Foundation, Salem agree to publish books, magazines, journals, bulletins etc.
- Sengunthar Arts and Science College and Alpha Omega Research Foundation, Salem agree to submit joint Projects for the Government funding Agencies like DBT, CSIR, MSME, DST etc.,
- Sengunthar Arts and Science College and Alpha Omega Research Foundation Salem, agree to submit joint proposals to Indian and abroad funding

ATTESTED

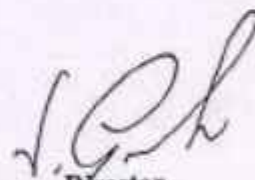

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

- agencies for collaborative research and for their upliftment of Student community.
- The Intellectual Property Rights (IPR) that arise as a result of joint research and collaborative activity under the agreement will be worked out on a case to case basis and will be consistent with officially laid down IPR policies of the two institutes.
 - The above mentioned terms and conditions are fully read and understood by both parties in presence of the following witnesses who signed here under.


Principal,
Sengunthar Arts and Science College,
Tiruchengode
PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE,
TIRUCHENGODE - 637 205,
NAMAKKAL Dt., TAMIL NADU.

Seal:

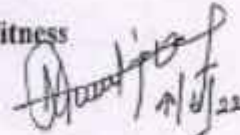




Director,
Alpha Omega Research
Foundation, Salem
Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu,
SALEM- 636 008.

Seal:



Witness

1.  P. Senthil Kumar Asst. Prof. of Biochemistry
11/8/22
2.  [P. BALAMURUGAN]
16/8/22 ISAC-coordinator

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

***STUDIES ON PHYTOCHEMICAL, ANTIMICROBIAL AND GC-MS ANALYSIS OF
LIGUSTRUM SINENSE***

Dissertation
submitted to Periyar University
in partial fulfilment of requirement for the award of the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY



Submitted by
MR.BALAJI

REG.No.20PBT1085

Under the guidance of
Mr. K. VIVEK M.Sc., (Ph.D)

**PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY
SENGUNTHAR ARTS AND SCIENCE COLLEGE**



(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognised under section 2(f) and 12(B) of the UGC Act 1956 and Accredited by NAAC

Since 1991

Tiruchengode - 637 205

TAMILNADU,INDIA

JUNE - 2022



ATTESTED


**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



**ALPHA OMEGA
RESEARCH FOUNDATION**

18, Arivu Nagar, Guindy, Salem - 636 008, Tamil Nadu, India

☎ 099 42 12061, 09445 00115
✉ ashwin@alphaomega.org
✉ info@alphaomega.org
www.alphaomega.org

01/05/2022

Ref No: AORF/PW/475/2022

CERTIFICATE

This is to certify that **Mr.M.BALAJI (Reg.No:20PBT1085), DEPARTMENT OF BIOTECHNOLOGY, Sengunthar Arts & Science College Tiruchengode, Tamil Nadu**, Has Successfully Completed The Project Titled "**STUDIES IN PHYTOCHEMICAL, ANTIMICROBIAL AND GC-MS ANALYSIS OF LIGUSTRUM SINENSE**" is record of original research work done during the period from 07/01/2022 to 08/03/2022 The above mentioned student completed him project work in exemplary manner. Him conduct and character were good



Dr. V.K. EVANJELENE
DIRECTOR

Dr. V.K. EVANJELENE,
Principal,
Alpha Omega Research Foundation,
18, Arivu Nagar, Guindy, Salem - 636 008

ATTESTED


PRINCIPAL


**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

CERTIFICATE

This is to certify that the dissertation entitled "**STUDIES IN PHYTOCHEMICAL, ANTIMICROBIAL AND GC-MS ANALYSIS OF LIGUSTRUM SINENSE**" submitted in partial fulfillment of the requirement for the award of the degree of **MASTER OF SCIENCE IN BIOTECHNOLOGY** is a record of the bonafide Research work carried out by **M.BALAJI** (Reg.No 20PBT1085) during the period of is/Reg No study in the in PG & Research Department of Biotechnology, Sengunthar Arts & Science College, Tiruchengode, under my supervision and guidance and the dissertation has not formed the basis for the award of any Degree /Diploma /Associateship /Fellowship or other similar titles to any other candidate of any other University or Institution of higher learning.

Countersigned by,

Head of the Department

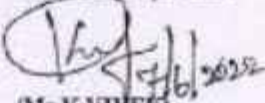

(Dr.P.VANATHI)

Dr.P. Vanathi

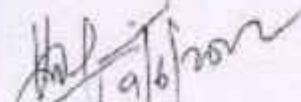
Head & Assistant Professor
& Research Department of Biotechnology
Sengunthar Arts and Science College
Tiruchengode, Namakkal District
Pincode - 637 205

Signature of


Guide and Supervisor


(Mr.K.VIVER)

Supervisor examination held on 09.06.2022


External Examiner

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

ISOLATION OF ENZYME PRODUCING MICROORGANISM FROM FISH WASTES

Dissertation submitted to Periyar University
in partial fulfillment of requirement for the degree of

MASTER OF SCIENCE IN BIOTECHNOLOGY



Submitted by

E. THANISKA

(REG.No.20PBT1094)

Under the guidance of

Mrs.K.VISHNUKUMARI M.Sc., M.Phil.,

PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognized under section 2(f) and 12(B) of the UGC Act 1956

Accredited by NAAC



Since 1991



TIRUCHENGODE - 637 205

TAMILNADU, INDIA

JUNE -2022

ATTESTED

PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



**ALPHA OMEGA
RESEARCH FOUNDATION**

W. Arbo Nagar, Germany, Salem-636 026, Tamil Nadu, India

- ① 042-42 12264, 09958 40115
- ② alphaomega@alphaomega.com
- ③ info@alphaomega.com
- ④ www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/475/2022

CERTIFICATE

This is to certify that **Ms.E.TILANISHKA** (Reg.No:20PBT1094),
DEPARTMENT OF BIOTECHNOLOGY, Sengunthar Arts & Science College
Tiruchengode, Tamil Nadu, Has Successfully Completed The Project Titled **"ISOLATION
OF ENZYME PRODUCING MICROORGANISM FROM FISH WASTES"** is record of
original research work done during the period from 07/01/2022 to 08/03/2022. The above
mentioned student completed her project work in exemplary manner. Her conduct and
character were good




DIRECTOR

Dr. V.K. EVANJELENE,
T.S. Arbo Nagar, W. Arbo Nagar, Salem-636 026,
Tamil Nadu, India
Proprietor,
Alpha Omega Research Foundation,
W. Arbo Nagar, Germany, Salem-636 026

ATTESTED

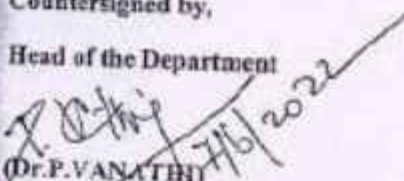

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that the dissertation entitled "*ISOLATION OF ENZYME PRODUCING MICROORGANISM FROM FISH WASTES*" submitted in partial fulfillment of the requirement for the award of the degree of **MASTER OF SCIENCE IN BIOTECHNOLOGY** is a record of the bonafide Research work carried out by **E.THANISKA** (Reg.No 20PBT1004) during the period of is/(Reg No study in the in PG & Research Department of Biotechnology, Sengunthar Arts & Science College, Tiruchengode, under my supervision and guidance and the dissertation has not formed the basis for the award of any Degree /Diploma/Associateship /Fellowship or other similar titles to any other candidate of any other University or Institution of higher learning.

Countersigned by,

Head of the Department


(Dr.P.VANATHI)

Dr.P. Vanathi

Head & Assistant Professor

PG & Research Department of Biotechnology
Sengunthar Arts and Science College
Tiruchengode, Namakkal District
Pincode - 637 205

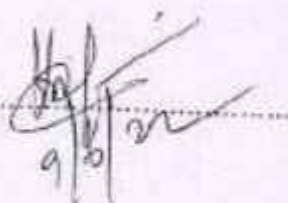


Signature of

Guide and Supervisor

(Mrs.K.VISHNUKUMARI)

Submitted for the viva-voce examination held on 09.06.2022

External Examiner I. 

ATTESTED


PRINCIPAL

**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

**"PHYTOCHEMICAL EVALUATION AND ANTI-INFLAMMATORY
ACTIVITY OF LEAVES OF *FAGONIA CRETICA*"**

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

ASHOK R M

Reg.No: 20PBC1059

UNDER THE GUIDANCE OF

Mr. P.SENTHILKUMARAN M.Sc., M.Phil.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED


**PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

15, Anbu Nagar, Gorimedu, Salem- 636 008, Tamil Nadu, India.

☎ 90942 02364, 95000 00119
✉ alphaomegafoundation@gmail.com
ind@alphaomegaresearch.com
🌐 www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/466/2022


CERTIFICATE

This is to certify that MR. R. M. ASHOK (Reg No: 20PBC1059), DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "*In vitro* Assay to Investigate the Anti-inflammatory activity of *Fugonia cretica*" is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed his project work in exemplary manner. His conduct and Character were good.




DIRECTOR
Dr. V.K. EVANJELENE.
B.Sc., M.Sc., M.Phil., Ph.D., FACS, FSI, FSI
Proprietor,
Alpha Omega Research Foundation
15, Anbu Nagar, Gorimedu, SALEM-8

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC



Since 1991

TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "PHYTOCHEMICAL EVALUATION AND ANTI-INFLAMMATORY ACTIVITY OF LEAVES OF *FAGONIA CRETICA*" a bonafide record of independent project work done by Mr.R.M.ASHOK, Reg.No.20PBC1059 under the supervision and submitted to Periyar university in partial fulfillment of the degree of MASTER OF SCIENCE IN BIOCHEMISTRY, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga), Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date: 03/06/22

Submitted for viva- voice examination held on 06/06/22

Examiners:

1. Senthil Kumar

2. J. Mallika

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"PHYTOCHEMICAL SCREENING, ANTIBACTERIAL ACTIVITY
AND SILVER NANOPARTICLE SYNTHESIS OF AQUEOUS EXTRACT
OF *TERMINALIA BELLIRICA*"**

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

BASKAR.G

Reg.No: 20PBC1060

UNDER THE GUIDANCE OF

Mrs.J.MALLIKA M.Sc., M.Phil., M.A.(YOGA),,



**DEPARTMENT OF BIOCHEMISTRY
SENGUNTHAR ARTS AND SCIENCE COLLEGE**

TIRUCHENGODE – 637205.

ATTESTED


**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 636 008, Tamilnadu, India.

☎ 98942 62364, 95005 50115

✉ alphaomegafoundation@gmail.com
md@alphaomegaresearch.com

🌐 www.alphaomegaresearch.com

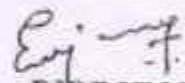
09/05/2022

Ref No: AORF/PW/467/2022

CERTIFICATE

This is to certify that **MR. G. BASKAR** (Reg No: 20PBC1060), **DEPARTMENT OF BIOCHEMISTRY**, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "**Green Synthesis of Silver Nanoparticles and its Characterization of *Terminalia bellirica***" is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed his project work in exemplary manner. His conduct and Character were good.




DIRECTOR

Dr. V.K. EVANJELENE,

B.Sc (Botany) PGDIP (MS) Ph.D (MS) (Pharmacology) / FSSAI / F&AS
Proprietor.

Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-3.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205. 15



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC



Since 1991

TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "**PHYTOCHEMICAL SCREENING, ANTIBACTERIAL ACTIVITY AND SILVER NANOPARTICLE SYNTHESIS OF AQUEOUS EXTRACT OF TERMINALIA BELLIRICA**" a bonafide record of independent project work done by **Mr.G.BASKAR, Reg.No.20PBC1060** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN M.Sc.,M.Phil**, Assistant professor and Head, **Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga)**, Assistant professor, **Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed.** Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

[Signature] 03/06/22
Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

[Signature] 03/06/22
Mrs. J.MALLIKA M.Sc., M.Phil., M.A(yoga)

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date: 06.06.2022

Submitted for viva- voice examination held on 06.06.2022

Examiners:

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

ATTESTED

[Signature]
PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"SYNTHESIS OF ZINC OXIDE NANOPARTICLES USING
METHANOLIC LEAF EXTRACT OF OLDENLANDIA
CORYMBOSA"**

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

DHINESHKUMAR K

Reg.No: 20PBC1062

UNDER THE GUIDANCE OF

Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 636 001, Tamilnadu, India.

☎ 08042 82364, 95005 60115

✉ alphaomegaresearch@gmail.com
info@alphaomegaresearch.com

🌐 www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/468/2022

CERTIFICATE

This is to certify that **MR. K. DINESH KUMAR** (Reg No: 20PBC1062),
DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College,
Tiruchengode, Tamil Nadu, has successfully completed the project titled "**Synthesis of
Zinc Oxide Nanoparticles using Methanolic Leaf Extract of *Oldenlandia
corymbosa***" as record of original research work done during the period from 07/01/2022 to
08/03/2022. The above mentioned student completed his project work in exemplary
manner. His conduct and Character were good.



Ej - f
DIRECTOR

Dr. V.K. EVANJELENE.

* Sc.D. (Ph.D.) PGDRI, USA, Ph.D. * Sc. (Ph.D.) F152, USA

Proprietor.

Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-8

ATTESTED

[Signature]
PRINCIPAL

**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution




Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991


TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "SYNTHESIS OF ZINC OXIDE NANOPARTICLES USING METHANOLIC LEAF EXTRACT OF OLDENLANDIA CORYMBOSA" a bonafide record of independent project work done by **Mr.K.DHINESHKUMAR, Reg.No.20PBC1062** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN M.Sc.,M.Phil**, Assistant professor and Head, **Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga).**, Assistant professor, **Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed.** Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.


Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,
Sengunthar arts and science college,
Tiruchengode-637205.


Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,

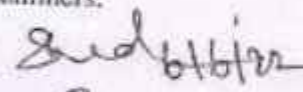
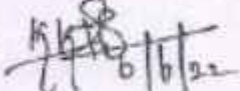
Research guide,
Sengunthar arts and science college,
Tiruchengode-637205.

Place: Tiruchengode

Date: 03/06/22

Submitted for viva- voice examination held on 06/06/22

Examiners:

1.  06/06/22
2.  06/06/22

ATTESTED


PRINCIPAL 19
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205,

**"ISOLATION AND IDENTIFICATION OF MICROORGANISMS
FROM HOUSEHOLD WASTE WATER"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

DINESHKUMAR P

Reg.No: 20PBC1063

UNDER THE GUIDANCE OF

Mrs.J.MALLIKA M.Sc., M.Phil., M.A.(YOGA),.



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637205.**



 www.alphaomegaresearch.com

PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



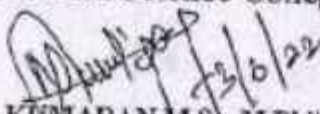
Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE – 637205

CERTIFICATE

This is to certify that the dissertation entitled **"ISOLATION AND IDENTIFICATION OF MICROORGANISMS FROM HOUSEHOLD WASTE WATER"** a bonafide record of independent project work done by **Mr.P.DINESHKUMAR, Reg.No.20PBC1063** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN M.Sc.,M.Phil**, Assistant professor and Head, **Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga)**, Assistant professor, **Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed.** Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.


Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,



Tiruchengode-637205.


Place: Tiruchengode

Date: 06.06.2022

Submitted for viva- voice examination held on 06.06.2022

Examiners:

- 
- 



Mrs. J.MALLIKA M.Sc., M.Phil., M.A(yoga)

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205, 22

**"ISOLATION AND IDENTIFICATION OF MICROORGANISMS
FROM MASTITIS MILK"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

NANTHAGOPAL R

Reg.No: 20PBC1064

UNDER THE GUIDANCE OF

Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED

PRINCIPAL

**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 636 008, Tamilnadu, India.

90942 62364, 95005 50115
alphaomegaresearch@gmail.com
md@alphaomegaresearch.com
www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/470/2022

CERTIFICATE

This is to certify that MR. R. NANDHA GOPAL (Reg No: 20PBC1064),
DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College,
Tiruchengode, Tamil Nadu, has successfully completed the project titled "Isolation and
Identification of Micro-organisms from Mastitis Milk" is record of original research
work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student
completed his project work in exemplary manner. His conduct and Character were good.



Evanjele

DIRECTOR

Dr. V.K. EVANJELENE,

16, Anbu Nagar, Gorimedu, Salem- 636 008, Tamilnadu, India.

Proprietor,

Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-8.

ATTESTED

[Signature]
PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "ISOLATION AND IDENTIFICATION OF MICROORGANISMS FROM MASTITUS MILK" a bonafide record of independent project work done by **Mr.R.NANTHAGOPAL**, Reg.No.20PBC1064 under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN** M.Sc.,M.Phil, Assistant professor and Head, **Mrs.J.MALLIKA** M.Sc.,M.Phil., M.A(yoga), Assistant professor, **Mrs. K.KARTHIKA** M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

[Signature] 23/6/22
Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

[Signature] 23/6/22
Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date: 23/06/22

Submitted for viva-voice examination held on 06/06/22

Examiners:

1. *[Signature]*

2. *[Signature]* 6/6/22

ATTESTED

[Signature]
PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"PHYTOCHEMICAL EVALUATION AND ANTI ARTHRITIC
ACTIVITY OF LEAVES OF *ACACIA NILOTICA*"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

DEEPIKA R

Reg.No: 20PBC1066

UNDER THE GUIDANCE OF

Mr. P.SENTHILKUMARAN M.Sc., M.Phil.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE - 637205.

ATTESTED

**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 636 000, Tamilnadu, India.

☎ 08542 62264, 95005 50115
✉ alphaomegaresearch@gmail.com
md@alphaomegaresearch.com
www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/471/2022

CERTIFICATE

This is to certify that MS. R. DEEPIKA (Reg No: 20PBC1066), DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "*In Vitro* Anti-arthritis Activity of *Acacia nilotica*" is record of original research work done during the period from 01/01/2022 to 08/03/2022. The above mentioned student completed her project work in exemplary manner. Her conduct and Character were good.



DIRECTOR

Dr. V.K. EVANJELENE,

32-Batch, 7026, 89A, 862, # 32, Puzos, 1558, 7548

Proprietor,

Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-8.

ATTESTED

PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution

Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC



Since 1991

TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "PHYTOCHEMICAL EVALUATION AND ANTI ARTHRITIC ACTIVITY OF LEAVES OF ACACIA NILOTICA" a bonafide record of independent project work done by Miss.R.DEEPIKA, Reg.No.20PBC1066 under the supervision and submitted to Periyar university in partial fulfillment of the degree of MASTER OF SCIENCE IN BIOCHEMISTRY, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga), Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode.

Date: 03/06/22

Submitted for viva- voice examination held on 06/06/22

Examiners:

1. [Signature] 06/06/22
2. [Signature] 06/06/22

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"ISOLATION AND IDENTIFICATION OF MICROORGANISMS
FROM HUMAN SKIN"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

JANANI P

Reg.No: 20PBC1067


UNDER THE GUIDANCE OF

Mrs.J.MALLIKA M.Sc., M.Phil., M.A.(YOGA),,



**DEPARTMENT OF BIOCHEMISTRY
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE – 637205.**

ATTESTED


**PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

15, Anbu Nagar, Gorimedu, Salem- 636 006, Tamilnada, India.

- ☎ 98942 82354, 95005 50115
- ✉ alphaomegabiovision@gmail.com
md@alphaomegaresearch.com
- 🌐 www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/472/2022

CERTIFICATE

This is to certify that **MS. P. JANANI** (Reg No: 20PBC1067), **DEPARTMENT OF BIOCHEMISTRY**, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled **"Isolation and Identification of Micro-organisms from Skin"** is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed her project work in exemplary manner. Her conduct and Character were good.



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 405


DIRECTOR
Dr. V.K. EVANJELENE,
M.Sc. Botany, PGD2, WBA, Ph.D. M.Sc. (Hort) 1998, FSAE
Proprietor,
Alpha Omega Research Foundation
15, Anbu Nagar, Gorimedu, SALEM-6.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



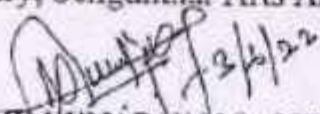
Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

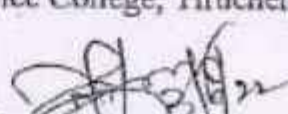
TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled " " a bonafide record of independent project work done by Miss.P.JANANI, Reg.No.20PBC1067 under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga)., Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.


Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,
Sengunthar arts and science college,
Tiruchengode-637205.


Mrs. J.MALLIKA M.Sc., M.Phil., M.A(yoga)

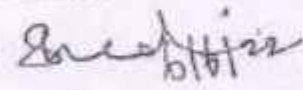

Research guide,
Sengunthar arts and science college,
Tiruchengode-637205.

Place: Tiruchengode


Date: 6/6/2022

Submitted for viva- voice examination held on 06/06/2022

Examiners:

1.  6/6/22
2.  6/6/22

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"SYNTHESIS OF ALUMINIUM NANOPARTICLE FROM
SWERTIA CHIRATA"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

MYTHILI M

Reg.No: 20PBC1068

UNDER THE GUIDANCE OF

Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,




DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE - 637205.

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gollmedu, Salem- 636 008, Tamilnadu, India.

☎ 080-42 02364, 05005 50115
✉ alphaomegaresearch@gmail.com
✉ md@alphaomegaresearch.com
🌐 www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/473/2022

CERTIFICATE

This is to certify that MS. M. MYTHILI (Reg No: 20PBC1068), DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "Synthesis of Aluminium Nanoparticles and Its Characterization of *Swerla chirata*" is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed her project work in exemplary manner. Her conduct and Character were good.



Ej. V.K.
DIRECTOR

Dr. V.K. EVANJELENE,
2 Sriroshan, AG28, 4th Fl, 4th St, Ponn. 1558 1548
Proprietor,
Alpha Omega Research Foundation,
Anbu Nagar, Gollmedu, SALEM-3.

ATTESTED

[Signature]
PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991


TIRUCHENGODE – 637205

CERTIFICATE

This is to certify that the dissertation entitled "SYNTHESIS OF ALUMINIUM NANOPARTICLE FROM SWERTIA CHIRATA" a bonafide record of independent project work done by Miss.M.MYTHILI, Reg.No.20PBC1068 under the supervision and submitted to Periyar university in partial fulfillment of the degree of MASTER OF SCIENCE IN BIOCHEMISTRY, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga), Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.


Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,
Sengunthar arts and science college,
Tiruchengode-637205.


Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,

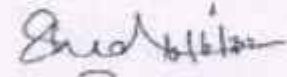
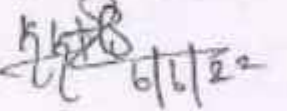
Research guide,
Sengunthar arts and science college,
Tiruchengode-637205.

Place: Tiruchengode

Date: 03/06/22

Submitted for viva- voice examination held on 06/06/22

Examiners:

- 
- 

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"ANTIDIABETIC ACTIVITY AND PHYTOCHEMICAL SCREENING
OF CRUDE EXTRACT OF *LIMONIA CRENULATA*"**

Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

PONMANIM

Reg.No: 20PBC1069

UNDER THE GUIDANCE OF

Mr. P.SENTHILKUMARAN M.Sc., M.Phil.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



ALPHA OMEGA RESEARCH FOUNDATION

16, Arbu Nagar, Gorimedu, Salem- 636 008, Tamilnadu, India.

☎ 98942 62364, 95305 50115

✉ alphaomegabioreson@gmail.com
md@alphaomegaresearch.com

🌐 www.alphaomegaresearch.com

09/05/2022

Ref No: AORF/PW/474/2022

CERTIFICATE

This is to certify that **MS. M. PONMANI** (Reg No: 20PBC1069), DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "*In Vitro* Evaluation of Antidiabetic Activity of *Limonia crenulata*" is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed her project work in exemplary manner. Her conduct and Character were good.





DIRECTOR

Dr. V.K. EVANJELENE,

B.Sc., M.Sc., Ph.D., M.A., Ph.D., M.Sc. (Pharm), 1988-1998,
Proprietor,

Alpha Omega Research Foundation,
Arbu Nagar, Gorimedu, SALEM-3

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE-637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE – 637205

CERTIFICATE

This is to certify that the dissertation entitled “**ANTIDIABETIC ACTIVITY AND PHYTOCHEMICAL SCREENING OF CRUDE EXTRACT OF *LIMONIA CRENULATA***” a bonafide record of independent project work done by **Mrs.M.PONMANI,Reg.No.20PBC1069** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga), Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

Mr. P.SENTHILKUMARAN,M.Sc.,M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date;

Submitted for viva- voice examination held on

06/06/22

Examiners:

- 1.
- 2.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**INVITRO ANTIOXIDANT AND ANTICANCER ACTIVITY OF MCF
7 CELL LINE IN METHANOLIC EXTRACT OF
*TINOSPORA CORDIFOLIA***

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

PRIYADHARANI A

Reg.No: 20PBC1070

UNDER THE GUIDANCE OF

Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 636 008, Tamilnadu, India.

☎ 98942 62304, 95005 60115

✉ alphaomegablogvision@gmail.com
info@alphaomegaresearch.com

🌐 www.alphaomegaresearch.com

09/05/2022


Ref No: AORF/PW/475/2022

CERTIFICATE

This is to certify that **MS. A. PRIYADHARANI** (Reg No: 20PBC1070),
DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College,
Tiruchengode, Tamil Nadu, has successfully completed the project titled "*In Vitro*
Antioxidant and Anticancer Activity of MCF-7 cell line in Methanolic extract of
Tinospora cordifolia" is record of original research work done during the period from
07/01/2022 to 08/03/2022. The above mentioned student completed her project work in
exemplary manner. Her conduct and Character were good.



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


DIRECTOR

Dr. V.K. EVANJELENE,
V.Sc.B.Sc., PGD, M.A., Ph.D., M.Sc., P.H.D., I.S.S.E., P.S.A.E.
Proprietor,
Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-8.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



Recognized Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE - 637205

CERTIFICATE

This is to certify that the dissertation entitled "INVITRO ANTIOXIDANT AND ANTICANCER ACTIVITY OF MCF 7 CELL LINE IN METHANOLIC EXTRACT OF *TINOSPORA CORDIFOLIA*" a bonafide record of independent project work done by Miss.A.PRIYADHARANI, Reg.No.20PBC1070 under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, Mr.P.SENTHILKUMARAN M.Sc.,M.Phil, Assistant professor and Head, Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga), Assistant professor, Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed. Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date: 03/06/22

Submitted for viva- voice examination held on

Mrs. K.KARTHIKA M.Sc., M.Phil., B.Ed.,

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Examiners:

1. [Signature] 06/06/22
2. [Signature] 06/06/22

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"INVITRO ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL
ANALYSIS OF *BROPHYLLUM PINNATUM*"**

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

TAMIZHARASI S

Reg.No: 20PBC1071

UNDER THE GUIDANCE OF

Mr. P.SENTHILKUMARAN M.Sc., M.Phil.,




DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem- 638 006, Tamilnadu, India

☎ 0842 62364, 95005 50115
✉ alphanomegrebvision@gmail.com
✉ info@alphamegaresearch.com
🌐 www.alphanomegaresearch.com

09/05/2022

Ref No: AORF/PW/476/2022

CERTIFICATE

This is to certify that **MS. S. TAMIZHARASI** (Reg No: 20PBC1071),
DEPARTMENT OF BIOCHEMISTRY, Sengunthar Arts & Science College,
Tiruchengode, Tamil Nadu, has successfully completed the project titled "*Evaluation of
In Vitro* antimicrobial activity from *Bryophyllum pinnatum*" is record of original
research work done during the period from 07/01/2022 to 08/03/2022. The above
mentioned student completed her project work in exemplary manner. Her conduct and
Character were good.



ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


DIRECTOR

Dr. V.K. EVANJELENE,
M.Sc (Botany), PGDB, MBA, Ph.D M.Sc (Pharm), FSSSI, FSIAB,
Proprietor,
Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-6.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution



Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE – 637205

CERTIFICATE

This is to certify that the dissertation entitled **“INVITRO ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF BROPHYLLUM PINNATUM”** a bonafide record of independent project work done by **Miss.S.TAMIZHARASI, Reg.No.20PBC1071** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN M.Sc.,M.Phil**, Assistant professor and Head, **Mrs.J.MALLIKA M.Sc.,M.Phil., M.A(yoga).**, Assistant professor, **Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed.** Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.

Mr. P.SENTHILKUMARAN,M.Sc.,M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.

Mr. P.SENTHILKUMARAN,M.Sc.,M.Phil.,

Research guide,

Sengunthar arts and science college,

Tiruchengode-637205.

Place: Tiruchengode

Date: 03/06/22

Submitted for viva- voice examination held on 06/06/22

Examiners:

- 1.
- 2.

ATTESTED

PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

**"INVITRO ANTIOXIDANT ACTIVITY AND PHYTOCHEMICAL
ANALYSIS OF *MORUS NIGRA*"**

**Dissertation thesis submitted to Periyar University for partial fulfillment of
requirements for the degree of**

MASTER OF SCIENCE BIOCHEMISTRY

PERIYAR UNIVERSITY, SALEM-11

Submitted By

VINOTHINI S

Reg.No: 20PBC1072

UNDER THE GUIDANCE OF

Mrs.J.MALLIKA M.Sc., M.Phil., M.A.(YOGA)-,



DEPARTMENT OF BIOCHEMISTRY

SENGUNTHAR ARTS AND SCIENCE COLLEGE

TIRUCHENGODE – 637205.

ATTESTED

PRINCIPAL

**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**



ALPHA OMEGA RESEARCH FOUNDATION

16, Anbu Nagar, Gorimedu, Salem-636 008, Tamilnadu, India

98942 62364, 05005 50115

alphanmegabivision@gmail.com
info@alphanmegaresearch.com

www.alphanmegaresearch.com

09/05/2022

Ref No: AORF/PW/477/2022

CERTIFICATE

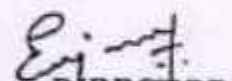
This is to certify that **MS. S. VINODHINI** (Reg No: 20PBC1072), **DEPARTMENT OF BIOCHEMISTRY**, Sengunthar Arts & Science College, Tiruchengode, Tamil Nadu, has successfully completed the project titled "*In Vitro* Antioxidant Activity from Methanolic leaf extract of *Morus nigra*" is record of original research work done during the period from 07/01/2022 to 08/03/2022. The above mentioned student completed her project work in exemplary manner. Her conduct and Character were good.



ATTESTED


PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


DIRECTOR

Dr. V.K. EVANJELENE.

M.Sc. Botany, PGD, 1984, M.A. & B.A., 1980, PGD, 1983, 1984

Proprietor,

Alpha Omega Research Foundation,
16, Anbu Nagar, Gorimedu, SALEM-8



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem And Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution




Recognised Under Section 2(f) and 12(B) of UGC Act 1956 and Accredited by NAAC

Since 1991

TIRUCHENGODE – 637205

CERTIFICATE


This is to certify that the dissertation entitled **"INVITRO ANTIOXIDANT ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF MORUS NIGRA"** a bonafide record of independent project work done by **Miss.S.VINOTHINI, Reg.No.20PBC1072** under the supervision and submitted to Periyar university in partial fulfillment of the degree of **MASTER OF SCIENCE IN BIOCHEMISTRY**, **Mr.P.SENTHILKUMARAN M.Sc.,M.Phil**, Assistant professor and Head, **Mrs.J.MALLIKA M.Sc.,M.Phil, M.A(yoga)**, Assistant professor, **Mrs. K.KARTHIKA M.Sc.,M.Phil.,B.Ed.** Department of Biochemistry, Sengunthar Arts And Science College, Tiruchengode-637205.


Mr. P.SENTHILKUMARAN, M.Sc., M.Phil.,

Head department of Biochemistry,

Sengunthar arts and science college,

Tiruchengode-637205.


Mrs. J.MALLIKA M.Sc., M.Phil., M.A(yoga)

Research guide,

Sengunthar arts and science college,

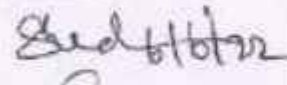
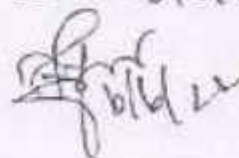
Tiruchengode-637205.

Place: Tiruchengode

Date: 3/6/2022

Submitted for viva- voice examination held on 6/6/2022

Examiners:

- 
- 

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



தமிழ்நாடு தமில்நாடு TAMILNADU 100/-

BP 953465

19.7.2022

The Secretary and Correspondent
Sengunthar Arts and Science College
Tiruchengode

ந.இரத்தினம் குமார், DTP.,
மு.தள.விநியோகமயாளன்,
புதினியாளையம் அகிலாசாரம்,
சென்னை - 605 006, நாமக்கல் DL,
L.No.10/2003/NMKL

SENGUNTHAR ARTS AND SCIENCE COLLEGE, TIRUCHENGODE
AND
ABS BIOKARE, VILLIANUR, PUDUCHERRY-605110
Labs, Educational Training, Research and Publications

Memorandum of Understanding

This memorandum of understanding (MOU) is made and entered into in this 22nd day of July, 2022.

BETWEEN

Sengunthar Arts and Science College, Tiruchengode, represented by Principal,
having his office at Tiruchengode here in after called the First party.

AND

ABS Biokare laboratory, Puducherry represented by Dr. K.Sundar, Managing Director (by designation), having her office at No. 2, Madha koil street, Villianur, Puducherry -605110 here in after called the Second party

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Party 1

Sengunthar Arts and Science College Tiruchengode, engaged in offering higher education in leading to award of degree B.Sc., M.Sc., M.Phil., Ph.D.

Party 2

The aim of ABS Biokare laboratory, is to serve as a means for updating the scientific knowledge in all the biological fields.

The ABS Biokare laboratory is related with the research work/ projects for the students of B.Sc., M.Sc., M.Phil., Ph.D., and also conduct of conferences, Career oriented training programs in the various fields (Pharmaceutics, Pharmaceutical Technology, Nanotechnology, Biopharmaceutics, Pharmacokinetics, Industrial Pharmacy, Pharmaceutical Chemistry, Pharmaceutical Analysis, Organic Chemistry, Medicinal Chemistry, Green Chemistry, Pharmacology and Toxicology, Clinical Pharmacy, Pharmacognosy, Phytochemistry, Natural Products, Pharmaceutical Microbiology, Biotechnology, Biochemistry, Zoology, Botany, Medicinal plant, Synthesis of nanoparticles, Compound Isolation, Water analysis, Food and soil analysis, Microbial Biotechnology, Plant tissue culture, Pre-clinical activities and Molecular Biology, etc.,).

The ABS Biokare laboratory, Puducherry was established and Reg., ARN AA340322001444Y in Puducherry dated 23-03-2022 is approved. The ARS Laboratory became functional on 23rd March 2022, Puducherry.

Agreement is for a period of five years from the date of signing the agreement.

Now this MoU witnesses that

- Sengunthar Arts and Science College Tiruchengode shall permit the life science departments faculty, to act as visiting professor/ guest lecture of the Research Centre.
- ABS Biokare laboratory shall support in technical assistance, research support and development for the benefit of Sengunthar Arts and Science College Tiruchengode.

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


Joint Responsibilities of ABS Biokare laboratory, Pudhcherry and Sengunthar Arts and Science College, Tiruchengode.

- Encourage direct contact and collaboration between our faculties.
- Collaborate in organizing academic seminar/conference/workshop/symposium on issues of mutual consent.
- Exchange information including, but not limited to, of academic materials, research publications, collaborate in writing and publishing where possible.
- Promote teaching, research and learning activities.
- Sengunthar Arts and Science College and ABS Biokare laboratory shall share laboratory, equipments, library resources, databases etc.
- Collaborate in organizing training/ projects to develop students, young scientist and researchers.
- Collaborate in organising the training programmes for preparation of bioproducts.
- Collaborate in organising skill development programmes for the school/ college students from rural areas.
- Collaborate in organising vocational training programmes for the Science students.
- Enhancing scientific temper among the students through imparting science based education.
- Collaborate in giving training on small scale industries specifically connected with bioproducts.
- Sengunthar Arts and Science College and ABS Biokare laboratory, Pudhcherry agree to publish books, magazines, journals, bulletins etc.
- Sengunthar Arts and Science College and ABS Biokare laboratory, Pudhcherry agree to submit joint Projects for the Government funding Agencies like DBT, CSIR, MSME, DST etc.,.
- Sengunthar Arts and Science College and ABS Biokare laboratory, Pudhcherry agree to submit joint proposals to Indian and abroad funding agencies for collaborative research and for their upliftment of Student community.
- The Intellectual Property Rights (IPR) that arise as a result of joint research and collaborative activity under the agreement will be worked out on a case to case basis and will be consistent with officially laid down IPR policies of the two institutes.

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

- The above mentioned terms and conditions are fully read and understood by both parties in presence of the following witnesses who signed here under.


Principal,
Sengunthar Arts and Science College,
Tiruchengode


Director,
ABS Biokare laboratory,
Pudhcherry



Witness

1.  A.P. L.  HEAD
DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN).

2. 

 19/3/22



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	P.INDIRAJITH
2	University Examination Register Number	C21PG127MIB004
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	*M.Sc., Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare labs/Research/Publication Puducherry.
6	Guide/Supervisor under whom the training undertaken	Dr.K.SUNDAR,M.Sc.,Ph.D.,
7	Title of the training	Microbiological Examination & Identification of food borne bacteria From meat
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	The predominant bacteria isolated from meat samples are <i>Staphylococcus</i> sp. <i>Klebsiella</i> sp
10	Outcome of the Training	Isolation of contaminated organisms from meat products.

P.Indirajith
Signature of the Student
P.Indirajith

Ar. L. Srinivasan
Signature of the Guide
(Internal)

A.P.L. Srinivasan
Head of the department
DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE,
TIRUCHENGODE - 637 205, (TN)

S. Srinivasan
Principal

ATTESTED

[Signature]
PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : P.INDIRAJITH
REG.NO : C21PG127MIB004

ANNEXURE - I

BRIEF OUTPUT OF TRAINING

This study showed varying levels of bacterial contamination of retailed chicken sold in selected open markets Pondicherry. According to the Health Protection Agency guidelines for assessing microbiological safety of ready-to eat foods, The observation showed presence of different bacteriological profiles and loads still represents a public health hazard and signals the possible occurrence of foodborne intoxication and infection. Therefore, strict hygiene conditions, proper handling, and proper storage of poultry products by retailers should be adhered to. Also, continuous monitoring of bacteriological profiles and loads in abattoirs and sales points should be implemented.

RESULT

- Overall demographics, educational status, and food safety awareness of chicken retailers are summarized.
- With respect to what causes diseases, 80% were aware that microorganisms are responsible for diseases, while 18% said they were not aware of what causes diseases.
- In terms of inspection, sampling, and control by health authorities, 85% of the respondents claimed to have regular experience in the matters, while 8% rarely confront that issue.
- The predominant bacteria isolated from the samples are *Staphylococcus sp*, *Klebsiella sp*.

ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHERUR - 627 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

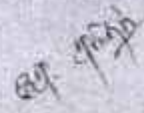
This is to certify that Mr. P. INDIRAJITH (Reg no: C21PGH2TMIB004), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205 has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25.07.2022 to 19.08.2022 as a partial fulfillment of his course study.

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 2, Madhukalvi, Villanur, Pudukottai-605110
94420 11111

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	R.KESAVAMURTHY
2	University Examination Register Number	C21PG127MIB005
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc, Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare Labs/Research/Publication Puducherry - 10
6	Guide/Supervisor under whom the training undertaken	Dr.K.SUNDAR, M.Sc.,Ph.D.,
7	Title of the training	Microbiological Examination and Identification of food borne bacteria in Poultry eggs
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	The pathogenic bacteria such as <i>E.coli</i> , <i>Staphylococcus sps.</i> , <i>Salmonella sps.</i>
10	Outcome of the Training	I have gained knowledge about Food microbes

R.Kesavamurthy
Signature of the Student

R KESAVAMURTHY


Signature of the Guide

(Internal)


Head of Department
DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205 (TN)


Principal

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : R.KESAVAMURTHY

ANNEXURE - I

REG.NO : C21PG127MIB005

BRIEF OUTPUT OF TRAINING

Chicken egg is one of the most nutritious and versatile human foods. On average, it consists of 10% shell, 58% albumin (white), and 32% yolk. Nutritionally, on average, whole freshly laid egg consists of 76.1% water, 12.6% protein, 9.5% fat, 0.7% carbohydrates, and 1.1% ash. Despite all the nutritional and economic attractions of the egg sector, there are also associated challenges, especially the risk of transmission of food-borne microbial diseases and spoilage. Contaminated eggs have been incriminated as the major cause of foodborne salmonellosis. A freshly laid hen's egg is generally devoid of microorganism, but soon after oviposition, the shell surface becomes contaminated by various spoilage and pathogenic microorganisms. Sources of eggshell microbial contamination may include the fecal matter, the nesting material, the feed, air and the collecting person, or the storage equipment. Moreover, eggs can also be inherently colonized from the natural flora of the laying hen. On average, the microbial load of the eggshell with regard to aerobic mesophilic bacterial count may range between 3.8 and 6.3 CFU/egg. Most commonly encountered microbial contaminants include *Pseudomonas*, *Alcaligenes*, *Proteus mirabilis*, *Salmonella typhimurium*, *Salmonella* Dublin, *Salmonella braenderup*, *Citrobacter*, *Escherichia coli*, *Enterobacter cloacae*, *Klebsiella pneumoniae*, *Enterococcus faecalis*, *Micrococcus*, *Staphylococcus* species, *Bacillus*, and *Sterotrophomonas maltophilia*. A total of 60 eggs were considered in the study consisting of 15 egg samples from the HU Poultry Farm (HUPF) and nine samples from each of five randomly selected retail shops located in five different city zones in Pondicherry. The egg samples were subjected to bacteriology laboratory to determine the microbial activity on the eggs.

ATTESTED



PRINCIPAL,
SENGUNTHAR ARY'S AND SCIENCE COLLEGE
TIRUCHENGUR - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN


This is to certify that **Mr. R. KESAVAMURTHY** (Reg.no: C21PG127MIB005), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205 has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25.07.2022 to 10.08.2022 as a partial fulfillment of his course study.

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 2, Moolakkal St., Villanur, Pudukkottai-605110
absbiokare@gmail.com

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

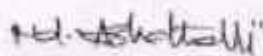


SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu




**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**


1	Name of the Candidate	M.MOHAMED ARESHATHALI
2	University Examination Register Number	C21PG127MIB006
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc. Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokate Labs/Research/Publication Puducherry-10
6	Guide/Supervisor under whom the training undertaken	Dr.K.Sundar,M.Sc,Ph.D.
7	Title of the training	Microbiological Examination & Identification of food borne bacteria in soft drinks.
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	Gram positive, <i>Staphylococcus aureus</i> was found from soft drinks.
10	Outcome of the Training	I have gained knowledge about soft drinks quality checking.


Signature of the Student

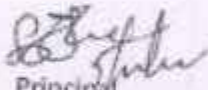
M. MOHAMED ARESHATHALI


Signature of the Guide

(Internal)


Head of the Department

DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN)


Principal

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME :Mohamed Areshathali

ANNEXURE -I

REG NO: C21PG127MIB006

BRIEF OUTPUT OF TRAINING

Microbiological Examination and Identification of food borne bacteria in soft drinks

- Isolation and identification of microbes on fruit containing soft drinks were studied because soft drinks contain low pH and they are heat resistant.
- The number of organisms present in sample decreases when the dilution factor increases, by serial dilution technique, colony forming unit per ml were studied.
- Spread plate count technique(SPCT) and streak plate method was carried out to obtain the isolated colonies from the mixed cultures at the end of 24 hrs and it was sub-cultured on nutrient broth.
- The specific isolated colonies were subjected to gram staining and motility techniques from the nutrient broth within 12 hrs.
- Gram staining procedure was carried out to differentiate both gram positive and negative organisms based on morphological characteristics.
- Motility test was carried out to identify motile and non-motile organisms to confirm the presence or absence of flagella.
- Identification of the particular isolates were carried out by doing bio-chemical reactions for all samples at the end of 24 hrs.
- Confirmatory tests such as urease test, catalase test and sugar fermentation test were carried out to confirm the presence of particular species of that organism within 24hrs of incubation.

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN


This is to certify that Mr. M. MOHAMED ARESHATHALI (Reg.no: C21PG127MIB06),
M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205
has undergone internship training on "Microbiological examination and identification of food
borne bacteria" in our organization from 25.07.2022 to 10.08.2022 as a partial fulfillment of
his course study.

During the period of internship program with us he had been exposed to different
Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 2, Mallakudi St., Vilianur, Putucherry-605110
absbiokare@gmail.com

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**


1	Name of the Candidate	D.MOHANRAJ
2	University Examination Register Number	C21PG127MIB007
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc. Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare Labs/Research/Publication Puducherry
6	Guide/Supervisor under whom the training undertaken	Dr.K.SUNDAR, M.Sc., Ph.D.,
7	Title of the training	Microbiological Examination & Identification of food borne bacteria in Canned foods.
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	The canned food materials frequently spoiled with Bacillus (or) Butric acid bacteria.
10	Outcome of the Training	I know about canned food sampling and quality analysis.


Signature of the Student

D. Mohan Raj

ATTESTED


Signature of the Guide
(Internal)


Head of the Department
DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN)


Principal


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Name : D.MOHANRAJ

ANNEXURE - I

Reg.No : CZ1PG127MIB007

BRIEF OUTPUT OF TRAINING

Canned foods is a method of food preservation in which food is processed and sealed in the airtight container. Canning provides a shelf life that typically ranges from one to five years, although under specific circumstances, it can be much longer. Spoilage is usually caused by growth of microorganisms following leakage or underprocessing. Unprocessed or leaking cans are of major concern and both pose potential health hazards. Naturally, if *Clostridium botulinum* (spores, toxin, or both) is found, the hazard is obvious. Packer seam, side panel, side seam, pinhole, cut code are the micro-leak test for analysis of canned foods.

The study was conducted during the period from July to August, 2022. The canned food samples were collected from different retail markets and super markets of Pondicherry.

A total of 5 canned samples, 3 new canned food samples from local market denoted as C1, C2 and C3, respectively with 2 in each case and rest 2 canned foods samples from different shops under specific brand name denoted as C4 and C5 with 2 in each case too, were collected. The canned food samples were subjected to bacteriology laboratory to determine the microbial spoilage of canned foods. *Bacillus thermoacidurans* (lat, sour tomato juice), *Butyric anaerobes* (tomatoes and tomato juice), Non spore formers (mostly lactic types) are examined in acid canned food samples.

It is apparent from our results that leakage is a major cause of microbiological spoilage of canned foods. Since cooling water is the primary source of microorganisms causing leakage (3) and container damage is the primary cause for leakage (2), more research needs to be done on the causes and effects of these problems. Government therefore should conduct frequent inspection of the marketed canned foods to check whether they meet the quality and should monitor the overall hygienic condition surrounding the production and handling of Canned foods. Realistic standards for the raw canned foods need to be revised and appropriate training should be given to the canned food industries in hygienic handling and canning of the canned food.

ATTESTED



PRINCIPAL

SENGUNTHAR ARY'S AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN


This is to certify that Mr. D.MOHANRAJ (Reg.no: C21PG127MIB007), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205 has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25/07/2022 to 10/08/2022 as a partial fulfillment of his course study

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10/08/2022

With best wishes



Dr. K. SUNDAR

(Director)



No. 2, Main Road, Villanur, Puducherry-605110
Phone-9943999120

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE

Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognised under section 2(f) and 12(B) of the UGC Act 1956

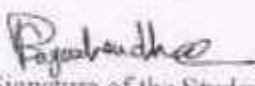
Accredited by NAAC

Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



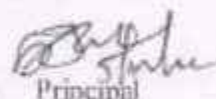
PG & RESEARCH DEPARTMENT OF MICROBIOLOGY INTERNSHIP TRAINING REPORT

1	Name of the Candidate	S.PUGAZHENDHI
2	University Examination Register Number	C21PG127MIB008
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc, Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare labs/ Research / Publication Puducherry - 10
6	Guide/Supervisor under whom the training undertaken	Dr.K.Sundar,M.Sc.,Ph.D.,
7	Title of the training	Microbiological Examination & Identification of food borne bacteria in canned fish
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	The pathogenic bacteria such as <i>E. coli</i> , <i>Staphylococcus aureus</i> , <i>Salmonella sp.</i> , are contaminant in canned fish
10	Outcome of the Training	I gained knowledge about, canning, preservation microbes and quality checking of canned fish products.


Signature of the Student
S. Pugazhendhi

ATTESTED


Signature of the Guide
(Internal) DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN).


Principal


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME :S PUGAZHENDHI

ANNEXURE - I


REG NO :C21PG127MIB008

BRIEF OUTPUT OF TRAINING

Microbiological Examination and Identification of food borne bacteria in canned fish

The present study showed that none of the canned sample was sterile. Tested samples showed the presence of different pathogenic bacteria such as *E. coli*, *Staphylococcus aureus*, *Salmonella sp*, *Vibrio sp*, *Listeria sp*. In samples where one pathogen is low in density, others also found to be low. This was true in the samples of higher density also. As samples belonged to different brands, these differences might be due to the production process itself. Though, proper canning process destroy most of the microbes present in the fish samples used for the processing, inadequate processing including heating, cooling and improper sealing etc. even the quality changes happened in fish, before processing also influence the quality of canned fish. Although, all samples analysed were taken from perfect cans, without any blown or leaky conditions and well before the expiry date, the initial quality and the processing methods might have influenced the quality of the canned fish product.

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN


This is to certify that Mr. S PUGAZHENDHI (Reg.no: C21PG127MIB008), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205 has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25.07.2022 to 10.08.2022 as a partial fulfillment of his course study.

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 7, Madhukott St., Villanur, Puducherry-605110
absbiokare@gmail.com

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE

(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)

An ISO 9001:2015 Certified Institution

Recognised under section 2(f) and 12(B) of the UGC Act 1956

Accredited by NAAC

Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERSHIP TRAINING REPORT**

1	Name of the Candidate	D.SUZZENDARAN
2	University Examination Register Number	C21PG127MIB012
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc, Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare Labs/Research/Publication - Puducherry - 10
6	Guide/Supervisor under whom the training undertaken	Dr. K. Sundar, M.Sc., Ph.D.,
7	Title of the training	Microbiological Examination and Identification of food borne bacteria in canned Meat
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	Escherichia coli was examined and identified from canned meat
10	Outcome of the Training	I have gained knowledge about research technique

Suzenduran
Signature of the Student
D.SUZZENDARAN

T.R. Prakash
Signature of the Guide
(Internal)
T.R. PRAKASH
Head of the department
DEPARTMENT OF MICROBIOLOGY
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN)

[Signature]
Principal

ATTESTED

[Signature]
PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Name : D.SUZZENDARAN

Reg.No : C21PG127MIB012

ANNEXURE - I

BRIEF OUTPUT OF TRAINING

The present study showed that none of the canned sample (Meat) was sterile. Tested samples showed the presence of different pathogenic bacteria such as *E. coli*, *Staphylococcus aureus*, *Salmonella spp.*, *Vibrio spp.*, *Listeria spp.* In samples where one pathogen is low in density, others also found to be low. This was true in the samples of higher density also. As samples belonged to different brands, these differences might be due to the production process itself. Though, proper canning process destroy most of the microbes present in the meat samples used for the processing, inadequate processing including heating, cooling and improper sealing etc, even the quality changes happened in meat, before processing also influence the quality of canned meat. Although, all samples analysed were taken from perfect cans, without any blown or leaky conditions and well before the expiry date, the initial quality and the processing methods might have influenced the quality of the canned meat product.

ATTESTED


PRINCIPAL
SENGUNTRAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN


This is to certify that Mr. DSUZZENDARAN (Reg.no. C21PG177MB012), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205, has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25.07.2022 to 10.08.2022 as a partial fulfillment of his course study.

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 2, Madhav Leela St., Villanur, Pudukkottai-605110
absbiokare@gmail.com

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.




SENGUNTHAR ARTS AND SCIENCE COLLEGE
Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	A.DHIVYARAJ
2	University Examination Register Number	C21PG127MIB001
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc, Microbiology
5	Name of the institute in which for Internship Training Undergone	ABS Biokare Labs/Research/Publication Poducherry - 10
6	Guide/Supervisor under whom the training undertaken	Dr.K.SUNDAR, M.Sc.,Ph.D.,
7	Title of the training	Microbiological Examination and Identification of food borne bacteria in Milk.
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	The risk of milk-borne infections caused <i>E.coli</i> and <i>Staphylococcus sp</i> seem to be generally well understood with the good testing strategies.
10	Outcome of the Training	Learned about sampling and isolation of microbes from milk sample.


Signature of the Student


Signature of the Guide
(Internal)


Head of the department


Principal

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, TN.

NAME : A.DHIVYARAJ

ANNEXURE – I

REG NO : C2IPGI27MIB001

BRIEF OUTPUT OF TRAINING

Milk as well as dairy products are important sources of food borne pathogens and numerous epidemiological reports have implicated inadequate heat treated milk and raw milk products to be obtained as cleanest possible and not to harm the consumer's health. The presence of pathogenic bacteria in milk emerged major public health concerns. Many milk borne epidemics of human diseases are spread through consumption of contaminated milk. Few examples of the known milk borne diseases are bovine tuberculosis, brucellosis, anthrax, listeriosis, salmonellosis, leptospirosis, Q fever, campylobacteriosis and *E.coli* O157:H7 as an emerged new milk borne bacterial pathogen reported recently with a very serious health effects. To protect consumers and public health against these milk-borne infections it require proper hygienic milk handling procedures. Common bacteria reported to be isolated from milk include *Staphylococcus spp.*, *Listeria spp.*, *Salmonella spp.*, *E.coli*, *Campylobacter spp.*, *Mycobacterium spp.*, *Brucella spp.*, *Coxiella burnetii*, *Mycobacterium spp.*, *Brucella spp.*, *Coxiella burnetii*, *Yersinia spp.*, *Pseudomonas aeruginosa* and *Corynebacterium ulcerans*. The study was conducted during the period from July to August, 2022. The milk samples were collected from different retail markets and farm house of Pondicherry.

A total of 8 liquid milk samples, 3 raw milk samples from dairy farm, chilling center and local market denoted as R1, R2 and R3, respectively with 4 in each case and rest 5 pasteurized milk samples from different shops under specific brand name denoted as P1, P2, P3, P4 and P5 with 4 in each case too, were collected. The liquid milk samples were subjected to bacteriology laboratory to determine the microbial load.

RESULT

The load of microbes was determined in raw and pasteurised milk by Total viable count (TVC), Total Staphylococcus Count (TSC) and Total Coliform Count (TCC) and Gram staining. It was resulted from the study that microbial loads of raw milk were not satisfactory. Therefore, it could be assume that the handler of raw milk do not maintain good personal hygiene. All most all brands of pasteurized milk tested in this study were of low quality based on BSTI standard. Presence of *E. coli* and *Staphylococcus spp.* were of public health concern. Government therefore should conduct frequent inspection of the marketed milks to check whether they meet the minimum legal standards and should monitor the overall hygienic condition surrounding the production and handling of milk. Realistic standards for the raw milks need to be revised and appropriate training should be given to the raw milk producers in hygienic handling of milk.

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

INTERNSHIP CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. A.DHIVYARAJ** (Reg no: CUHPC17/MB001), M.Sc., Microbiology student of Sengunthar Arts and Science College, Tiruchengode - 637205, has undergone internship training on "Microbiological examination and identification of food borne bacteria" in our organization from 25.07.2022 to 10.08.2022 as a partial fulfillment of his course study.

During the period of internship program with us he had been exposed to different Microbiological identification methods and was found prompt, diligent and inquisitive.

We wish him every success in his life and career.

Issued date: 10.08.2022

With best wishes


Dr. K. SUNDAR
(Director)



No. 2, Madhav Koil St., Villianur, Pudukkottai - 605110
absbiokare@gmail.com

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.




SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu




**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	S. DILIP
2	University Examination Register Number	C21PG127MIB002
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph.D.,
7	Title of the training	Microbial Product Design and Development - Formulation of control agent test the efficacy Citrus canker disease control by <i>Pseudomonas sps</i>
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of <i>Pseudomonas sps</i> Against Citrus canker disease was observed
10	Outcome of the Training	I learned development of plant disease control agent and the technique applied in it.


Signature of the Student
S. DILIP

ATTESTED


Signature of the Guide
(Internal)


Head of the Department

Principal

DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205 (TN)


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : S.DILIP

ANNEXURE - I

REG. NO : C21PG127MIB002

BRIEF OUT OF TRAINING

Pseudomonas is a genus of Gram-negative, Gammaproteo bacteria, belonging to the family Pseudomonadaceae and 191 described species. *Pseudomonas*, a potential bacterial antagonist to control plant diseases. Pseudomonads belong to plant Growth Promoting Rhizobacteria (PGPR), play a major role in the plant growth promotion, induced systemic resistance, biological control of pathogens etc. Since the mid-1980s, certain members of the genus *Pseudomonas* have been applied to cereal seeds or applied directly to soils as a way of preventing the growth or establishment of crop pathogens. This practice is generically referred to as biocontrol. Antimicrobial activity of the rhizobacteria *Pseudomonas* sp. were carried out against phytopathogen, *Xanthomonas* sp. Four wells were cut down on the agar plates swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of *Pseudomonas* culture. The plates were incubated at 37°C for 24 hrs. In the case of bacterial pathogen, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- The Zone of inhibition was measured in the plates of *Pseudomonas*. The result given in table No.1. The zone of inhibition various depends on the concentration of *Pseudomonas*. The *Pseudomonas* effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the *Pseudomonas* Against *Xanthomonas* sp.

Concentration	Zone diameter Test - 1	Zone diameter Test - 2	Zone Average	pH Values
0.025ml	12mm	13mm	12.5mm	7.0
0.050ml	15mm	15mm	15mm	7.0
0.075ml	17mm	16mm	16.5mm	7.0
0.100ml	18mm	20mm	19mm	7.0

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
THIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. DILIP. S

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in



An ISO 9001 : 2015 Certified Lab

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGOORE - 637 205.

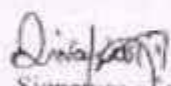



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu




**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	T. DIVAKAR
2	University Examination Register Number	C21PG127MIB003
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph. D.,
7	Title of the training	Microbial product and design development - Formulation of control agent test the efficacy citrus canker disease by Neem oil
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of Neem oil against Citrus canker disease was observed
10	Outcome of the Training	I know about formulation of Neem oil based disease control agent development


Signature of the Student
DIVAKAR, T


Signature of the Guide
(Internal)


Head of the department
DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205 (TN)


Principal

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : T.DIVAKAR

ANNEXURE - I

REG NO ; C21PGI27MIB003

BREIF OUTPUT OF TRAINING

Antimicrobial activity of the biocontrol agents was carried out against phytopathogen, *Xanthomonas* sp. Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

Neem Oil was used for this antagonistic activity against *Xanthomonas* spp. Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which were swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Neem Oil. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- The zone of inhibition was seen in the plates of neem oil and measured. The result given in table No1. The zone of inhibition various depends on the concentration of neem oil. There neem oil effectively control the causative agent *Xanthomonas citri*.

Table No. 1 Antimicrobial activity of the Neem oil against *Xanthomonas* sp.

Concentration	Test - 1	Test - 2	Average	pH Values
2%	15 mm	14 mm	14.5mm	7.0
4%	16 mm	22 mm	19mm	6.5
6%	19 mm	24 mm	21.5mm	6.5
8%	21 mm	27 mm	24mm	6.0

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. DIVAKAR.T

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENCODE - 637 205.



An ISO 9001:2015 Certified Lab



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	K.SELVAGANAPATHI
2	University Examination Register Number	C21PG127MIB009
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy, M.Sc., Ph.D.,
7	Title of the training	Microbial product and design development - Formulation of control agent test the efficacy Citrus canker disease by Neem leaf extract
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of Neem leaf extract against Citrus canker disease was observed
10	Outcome of the Training	Design and development of Neem leaf extract based pesticide against Citrus canker.

K. Selva 05/12/22
Signature of the Student
K.SELVAMANAPATHI
ATTESTED

[Signature]
Signature of the Guide
(Internal)

A. P. [Signature]
Head of the department
HEAD

[Signature]
Principal

DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205

[Signature]
PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : K. SELVAGANAPATHI

ANNEXURE - I

REG NO : CZ1PG127MIB009

BREIF OUTPUT OF TRAINING

Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

Neem leaf extract was used for this antagonistic activity against *Xanthomonas* spp. Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which was swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Neem leaf extract. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- There is formation of zone of inhibition in the plates of Neem leaf extract. The result given in table No1. The zone of inhibition various depends on the concentration of neem leaf extract. The neem leaf extract effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the Neem leaf extract against *Xanthomonas* sp.

Concentration	Zone diameter Test - 1	Zone diameter Test - 2	Zone Average	pH Values
2%	15 mm	14 mm	14.5mm	7.0
3%	16 mm	22 mm	19mm	6.5
4%	19 mm	24 mm	21.5mm	6.5
5%	21 mm	27 mm	24mm	6.0

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 639 205.

CERTIFICATE

This is to certify that Mr. SELVAGANAPATHI K

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



E. S. Karthy M.Sc., Ph.D.,
Research Director

27 Nagar, Near Geethanjali School,
Erode - 638 012, TamilNadu, India.
Ph: 9244753 | Cell: 98429 65753
awecare@gmail.com
awecare.in



An ISO 9001 : 2015 Certified Lab

ATTESTED



PRINCIPAL

SENGUNTHAR ARYS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	A.SRITHAR
2	University Examination Register Number	C21PG127MIB010
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph.D.,
7	Title of the training	Microbial product and design development -Formulation of control agent test the efficacy citrus canker disease by Black ash.
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of Black ash against Citrus canker disease was observed
10	Outcome of the Training	Formulation of disease control agent against Citrus canker and Test their efficiency

A. *[Signature]*
Signature of the Student
A. SRITHAR.

[Signature]
Signature of the Guide
(Internal)

A.P. *[Signature]*
Head of the department

[Signature]
Principal

ATTESTED

[Signature]
PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : A.SRITHAR

ANNEXURE - I

REG NO : CZ1PG127MIB010

BREIF OUTPUT OF TRAINING

Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

Black ash was used for this antagonistic activity against *Xanthomonas spp.* Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which was swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Black ash. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- The zone of inhibition was seen in the plates of Black ash. The result given in table No.1. The zone of inhibition various depends on the concentration of Black ash. The Black ash effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the Black ash against *Xanthomonas sp.*

Concentration	Zone diameter Test - 1	Zone diameter Test - 2	Zone Average	pH Values
2%	15 mm	14 mm	14.5mm	7.0
3%	16 mm	22 mm	19mm	6.5
4%	19 mm	24 mm	21.5mm	6.5
5%	21 mm	27 mm	24mm	6.0

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
THIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. SRITHAR. A

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in



An ISO 9001 - 2015 Certified Lab

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	S. SURESH
2	University Examination Register Number	C21PG127MIB011
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph.D.,
7	Title of the training	Microbial product and design development -Formulation of control agent test the efficacy Citrus canker disease by White ash.
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of White ash against Citrus canker disease was observed
10	Outcome of the Training	Development of White ash based disease control agent against <i>Xanthomonas citri</i> and its effectiveness

S. Suresh 3/12/22
Signature of the Student


Signature of the Guide
(Internal)

A. P. 
Head of the department


Principal

S. SURESH

ATTESTED


PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN).

NAME : S.SURESH

ANNEXURE - I

REG NO : C21PG127MIB011

BREIF OUTPUT OF TRAINING

Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

White ash was used for this antagonistic activity against *Xanthomonas* spp. Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which was swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Whiteash. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- The zone of inhibition was seen in the plates of White ash. The result given in table No.1. The zone of inhibition various depends on the concentration of White ash. The White ash effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the White ash against *Xanthomonas* sp.

Concentration	Zone diameter Test - 1	Zone diameter Test - 2	Zone Average	pH Values
2%	15 mm	14 mm	14.5mm	7.0
3%	16 mm	22 mm	19mm	6.5
4%	19 mm	24 mm	21.5mm	6.5
5%	21 mm	27 mm	24mm	6.0

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. SURESH.S

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship

Course of 'Microbial Product Design and Development'

Conducted by Awe Care Private Limited, Erode

from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in



An ISO 9001 : 2015 Certified Lab

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TINUCHINGODE - 637 205.






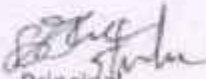
SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode – 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	S. LAVANYA
2	University Examination Register Number	C21PG127MIB013
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories – Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph.D.,
7	Title of the training	Microbial product and design development – Formulation of control agent test the efficacy citrus canker disease by Normal lime.
8	Brief output of training (Not More Than 2 pages)	Annexure I attached
9	Conclusion	Antagonistic activity of Normal lime against Citrus canker disease was observed
10	Outcome of the Training	Management of Citrus canker disease by nature lime


Signature of the Student
S. LAVANYA


Signature of the Guide
(Internal)
T.R. PRAKASH

Head of the Department

Principal
DEPARTMENT OF MICROBIOLOGY,
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, (TN)

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Name : S.LAVANYA

ANNEXURE - I

Reg.No : C21PG127MIB013

BREIF OUTPUT OF TRAINING

Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

Normal lime was used for this antagonistic activity against *Xanthomonas spp.* Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which was swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Normal lime. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.


RESULT

- The zone of inhibition was seen in the plates of Normal lime and measured. . The result given in table No1. The zone of inhibition various depends on the concentration of Normal lime. The Normal lime effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the Normal lime against *Xanthomonas sp.*

Concentration	Zone diameter Test (1)	Zone diameter Test (2)	Average value	pH Values
2%	16mm	15mm	15.5	7.0
4%	16mm	20mm	18	6.5
6%	17mm	22mm	19.5	6.5
8%	18mm	24mm	21	6.0

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Ms. LAVANYA.S

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.



An ISO 9001 : 2015 Certified Lab



SENGUNTHAR ARTS AND SCIENCE COLLEGE
(Affiliated to Periyar University, Salem and Approved by AICTE, New Delhi)
An ISO 9001:2015 Certified Institution
Recognised under section 2(f) and 12(B) of the UGC Act 1956
Accredited by NAAC
Tiruchengode - 637 205, Namakkal Dt., Tamilnadu



**PG & RESEARCH DEPARTMENT OF MICROBIOLOGY
INTERNSHIP TRAINING REPORT**

1	Name of the Candidate	N. SRISIKAA
2	University Examination Register Number	C21PGI27MIB015
3	Name of the College	Sengunthar Arts and Science College
4	Name of the Department	M.Sc Microbiology
5	Name of the institute in which for Internship Training Undergone	AWE CARE - Analytical And Research Laboratories - Erode
6	Guide/Supervisor under whom the training undertaken	Dr. E. S. Karthy M.Sc., Ph.D.,
7	Title of the training	Microbial product and design development -Formulation of control agent test the efficacy Citrus canker disease by Oyster lime .
8	Brief output of training (Not More Than 2 pages)	Annexure - I attached
9	Conclusion	Antagonistic activity of Oyster lime against Citrus canker disease was observed
10	Outcome of the Training	Design and development of Oyster lime based pesticide against Citrus canker

N. Srisika
Signature of the Student

N. SRISIKAA

ATTESTED

T. R. Prakash *A.P. Lakshmi*
Signature of the Guide Head of the department
(Internal)

T. R. PRAKASH **DEPARTMENT OF MICROBIOLOGY,**
SENGUNTHAR ARTS & SCIENCE COLLEGE
TIRUCHENGODE - 637 205, TN

[Signature]
Principal

[Signature]
PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

NAME : N. SRISIKAA

ANNEXURE - I

REG NO : C21PG127MIB015

BRIEF OUTPUT OF TRAINING

Biological control is a method of plant disease management by inhibiting plant pathogens, improving plant immunity, and/or modifying the environment through the effects of beneficial microorganisms, compounds, or healthy cropping systems. The agents which are used for this method are called Biocontrol agents.

Oyster lime was used for this antagonistic activity against *Xanthomonas* spp. Nutrient agar was prepared and poured in the agar plates. Then, agar plates were swabbed with *Xanthomonas* culture. Four wells were cut down on the plates which was swabbed with *Xanthomonas* culture with the different concentration of 2%, 4%, 6%, 8% of Oyster lime. The plates were incubated at 37°C for 24 hrs. In the case of bacteria, they were observed for a zone of growth inhibition and the isolates which showed positive antimicrobial activities were selected for phenotypic and genotypic studies.

RESULT

- The zone of inhibition was seen in the plates of Oyster lime. The result given in Table No.1. The zone of inhibition various depends on the concentration of Oyster lime. The Oyster lime effectively control the causative agent *Xanthomonas citri*.

Table No.1: Antimicrobial activity of the Oyster lime against *Xanthomonas* sp.

Concentration	Zone diameter Test - 1	Zone diameter Test - 2	Zone Average	pH Values
2%	09 mm	14mm	11.5mm	12.0
4%	11 mm	16 mm	13.5mm	11.5
8%	14 mm	16 mm	15mm	11.5
12%	16 mm	16mm	16mm	11.0

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODI - 617 205.

CERTIFICATE

This is to certify that Ms. SRISIKAA. N

DEPARTMENT OF MICROBIOLOGY

has learned and Successfully Completed by the Internship
Course of 'Microbial Product Design and Development'
Conducted by Awe Care Private Limited, Erode
from 22.07.2022 to 09.08.2022.



Dr. E.S. Karthy M.Sc., Ph.D.,
Research Director



22, Agri nagar, Near Geethanjali School,
Thindal, Erode - 638 012, TamilNadu, India.
Tel: 91 424 2244753 | Cell: 98429 65753
E-mail: awecare@gmail.com
Web: www.awecare.in



An ISO 9001 - 2015 Certified Lab

ATTESTED

92

CERTIFICATE

This is to certify that Mr. S Dhanuskumar studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


9/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. R Dineshkumar studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


9/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agrinagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mobile: +91 98429 65753, Tel: 91 424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biotreat" for ETP & STP, Bio-fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. S Hariharan studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.



Dr. E. S. KARTHY
Research Director

ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agr. nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65753, Tel: 91 426 2264753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biotreat" for ETP & STP, **95** fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. S Karthickraja studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Mr. S Karthick studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agrinagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65753, Tel: 91 426 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects,
Products: Bacterial/enzyme "Biotreat" for ETP & STP, **97**-fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. P Meiyarasan studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED



**PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65753, Tel: 91 424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects,
Products: Bacterial/enzyme "Biotreat" for ETP & STP, **98**-fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. U G Mukesh studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 642 205.

22, Agrinagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65753; Tel: 91 424 2244753; E-mail: awecare@gmail.com; Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.

Products: Bacterial/enzyme "Bioreact" for ETP & STP, 99-fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. M Nandhakumar studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65753, Tel: 91 428 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biores" for ETP & STP, 100% fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Ms. R S Srinidhi studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.



Dr. E. S. KARTHY
Research Director



ATTESTED




PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Ms. B Sowbarnaya studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


CERTIFICATE

This is to certify that Ms. M.T Subhasri studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


9/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.


CERTIFICATE

This is to certify that Ms. P Suganeshwari studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


7/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: +91 98429 65753, Tel: 91 424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.


Products: Bacterial/enzyme "Biotreat" for ETP & STP, 104 fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. S Boopathy studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Ms. M Deepak studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


9/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agrinagar, Near Geethanjali School, Thendal, Erode - 638 012.
Mob: +91 98429 65754, Tel: 424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Bioreact" for ETP & STP, 106 Fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. S Boobalan studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


9/8/22

Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91-98429 65753, 181-91-424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects,
Products: Bacterial/enzyme "Biotreat" for ETP & STP, 107 Fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Ms. M Sunmathi studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 635012.

Mob: + 91 98429 65753, Tel: 91 424 2244753 E-mail: awecare@gmail.com, Web: www.awecare.in

Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacteria/enzyme "Biotrest" for ETP & STP, 108 Fertilizer for Apiculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Ms. M Tamilselvi studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED



PRINCIPAL

SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

Z-1, Agrahar, Near Geethanjali School, Thiridal, Erode - 638 012.

Mob: + 91 95429 65753, Tel: 91-424 2244753, E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biotreat" for ETP & STP, 100% Fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Ms. S Yogalakshmi studying II- B.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.



Dr. E. S. KARTHY
Research Director

ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 265.

CERTIFICATE

This is to certify that Mr. S Dilip studying I - M.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from **22.07.2022 to 09.08.2022** held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED



PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

22, Agri nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: + 91 98429 65253, Tel: 91 424 2244753, E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial Testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biotreat" for ETP & STP, Bio fertilizer for Agriculture, Probiotics for Aquaculture.

CERTIFICATE

This is to certify that Mr. T Divakar studying I - M.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 305.

CERTIFICATE

This is to certify that Ms. S Lavanya studying I -M.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director

ATTESTED


PRINCIPAL,
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.

CERTIFICATE

This is to certify that Ms. T Nallarasu studying I -M.Sc., Microbiology, Sengunthar Arts and Science College, Tiruchengode, Namakkal Dt, Tamilnadu, have completed internship training programme on Microbial and Molecular Techniques from 22.07.2022 to 09.08.2022 held at AWE CARE PVT LTD, ANALYTICAL AND RESEARCH LABORATORIES, Erode, Tamilnadu.


Dr. E. S. KARTHY
Research Director



ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205,

22, Agri-nagar, Near Geethanjali School, Thindal, Erode - 638 012.

Mob: +91 98429 65753, Tel: 91 424 2244755 E-mail: awecare@gmail.com, Web: www.awecare.in
Services: Water, Effluent & Microbial testing, Student Research Projects & Training, Public Research Projects.
Products: Bacterial/enzyme "Biotreat" for ETP & STP, 14 fertilizer for Agriculture, Probiotics for Aquaculture.

Feb 11, 2022

To

The Principal,

Sengunthar Arts and Science College,

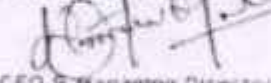
Salem road, Tiruchengode-637 205

Dear Sir,

This is to certify that the following students studying of I MCA & I M.Sc (Computer Science) have completed their Software Development Training program held on 07.02.2022 to 11.02.2022 during the academic year 2021-2022

- | | |
|----------------|-------------|
| 1. T.N.Baalaji | - 20PCA1038 |
| 2. R.Dharnesh | -20PCA1039 |
| 3. M.Revathi | -20PCS1177 |

For ExtrOMind Technologies



CEO & Managing Director

ExtrOMind Technologies
2/358, Murugan Plaza,
Syndicate Bank, Tiruchengode-637 211.
Tamilnadu, India

ATTESTED



PRINCIPAL,

**SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205.**

Perfect Immunity for Expertise



PBS TECHNOLOGY SOLUTIONS

Pollachi Main Rd, SIDCO Post,
Malumichampatti, Coimbatore, Tamil Nadu

Feb 11, 2022

To

The Principal,
Sengunthar Arts and Science College,
Salem road, Tiruchengode-637 205

Dear Sir,

This is to certify that the following students studying of I MCA have completed their Software Development Training program held on 07.02.2022 to 11.02.2022 during the academic year 2021-2022

- | | |
|----------------|-------------|
| 1. S.Rakesh | - 20PCA1040 |
| 2. K.Selvamani | -20PCA1041 |



Mrs. Sreena Sukumaran Kavil Padath
Director

CORPORATE OFFICE

ATTESTED


PRINCIPAL
SENGUNTHAR ARTS AND SCIENCE COLLEGE
TIRUCHENGODE - 637 205

PBS TECHNOLOGY SOLUTIONS

Prabinika Complex,
Pollachi Main Rd, SIDCO Post,
Malumichampatti,
Coimbatore, Tamil Nadu-641 050