

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

Branch / Class : BT / IV YEAR Name of the Project Coordinator(s) : Dr.S.Karthikumar & Dr.A.Ronaldo Anuf

2022-2023

S. No	Roll Number	Register Number	Name of the Student	Title of the Project	Name of the Supervisor
1	19UBTE025	920419214020	Mousika R	Fabrication Of Thin Biofilm	Dr.R.Shyam Kumar
2	19UBTE012	920419214022	Niranjana Devi R	Using Boiled Rice Water Reinforsed With Microalgae, "	
3	19UBTE004	920419214029	Sudharshan G	An Ecofriendly Approache"	
4	19UBTE005	920419214014	Jenstina J	Computational Approaches For Drug Identification And Drug Designing For Throat Cancer	Dr.K.Geetha
5	19UBTE038	920419214025	Sanju Roy	Extraction And Concentration Of Fruit Juices Using Porous Membranes	Dr.K.Geetha
6	19UBTE003	920419214027	Sindhu B	Marine Derived Natural Compounds To Treat The Parkinson Disease By Using Computational Tools	Dr.K.Geetha
7	19UBTE007	920419214008	Guruharish M	Simultaneous Waste Water	Dr.S.Karthikum ar
8	19UBTE030	920419214011	Harishma R	Treatment And Bioelectricity Generation Using Algal Fuel	
9	19UBTE037	920419214016	Jeysri Malini M	Cells	
10	19UBTE014	920419214001	Aksara P	Garlic Peal Based Phyto-	Dr.A.Ronaldo Anuf & Dr.S.Karthikum ar
11	19UBTE022	920419214007	Gayathry K	Formulation To Manage Post	
12	19UBTE020	920419214031	Vaisnavi Pandi S	Harvest Loss Of Grains	
13	19UBTE019	920419214024	Sahana Anbukani I		Dr.S.Karthikum ar
14	19UBTE013	920419214030	Suyambueaswar R	Design And Fabrication Of A Self-Sustainable Integrated Bioreactor System For	
15	19UBTE002	920419214015	Jeyavarshini B	Desalination And Electricity Production	
16	19UBTE036	920419214003	Almas Jabeen A	Ultrasound Assisted Nanoemulsion Formulation Of	Dr.D.Pradiba
17	19UBTE027	920419214026	Shalini K	Coccinia Indica To Test The Larvicidal Efficiency Against	
18	19UBTE034	920419214035	Yoga Priya S G	Aedes Aegypti	

19	19UBTE023	920419214005	Deva Roshine T	Green Synthesis Of Iron Oxide	Dr.A.Ronaldo Anuf
20	19UBTE010	920419214019	Mala K P	Nanoparticles And Evaluation Of Its Potential As	
21	19UBTE028	920419214023	Nivetha S	Micronutrient Fertilizers For Plant Growth	
22	19UBTE011	920419214002	Alagudurgeshkuma r K	Identification Of Selective Neoplasm Tubulin Binding	Mr.S.Manibala n
23	19UBTE033	920419214032	Vignesh N	Mechanism Of Dolastatin And	
24	19UBTE029	920419214033	Vijaya Samyugtha M	Its Homologous Screening Against Oral And Skin Cancer	
25	19UBTE009	920419214006	Enia G	Eco-Friendly Barrier Coatings	Ms.R.Amuthala kshmi
26	19UBTE016	920419214010	Hari Krishna Raaj S H	For Paper Based Packagings Using Endolichenic	
27	19UBTE031	920419214012	Harrini K	Cyanobacterial Polysaccharides	
28	19UBTE032	920419214004	Anjana T S B	Optimization Of Process	Ms.R.Amuthala kshmi
29	19UBTE021	920419214009	Hari Haran S	Parameters For Polysaccharide Extraction From Cyanobacteria	
30	19UBTE035	920419214013	Jeevika M R		Er.K.Chitra Devi
31	19UBTE008	920419214036	Yogauthra A R	Studies On Application Of Lab	
				Isolated From Chilli Stalks	
32	19UBTE017	920419214028	Sona Shri S S		
33	19UBTE001	920419214018	Madhunila M S	Fabrication Of An AdsorptionFilter For Bioremediation OfPendimethalin From GroundSamuel	
34	19UBTE006	920419214037	Yugamithraa M	Water	
35	19UBTE018	920419214021	Mubeen S	Nanomedicine Of Metal Origin	Er.A.Ganga
36	19UBTE026	920419214034	Vikashini M	For Sepsis Treatment	

ULTRASOUND ASSISTED NANOEMULSION FORMULATION OF *Coccinia indica* LEAF EXTRACT TO TEST THE LARVICIDAL EFFICACY AGAINST *Aedes aegypti*

A PROJECT REPORT

Submitted by

ALMAS JABEEN A (920419214003) SHALINI K (920419214026) YOGA PRIYA S.G (920419214035)



In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY

DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K. VELLAKULAM, NEAR VIRUDHUNAGAR, MADURAI - 625 701 APRIL 2023

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "ULTRASOUND ASSISTED NANOEMULSION FORMULATION OF Coccinia indica LEAF EXTRACT TO TEST THE LARVICIDAL EFFICACY AGAINST Aedes aegypti is the bonafide work of "ALMAS JABEEN.A (920419214003), SHALINI.K(920419214026) & YOGA PRIYA.S.G. (920419214035)" who carried out the project work under my supervision.

ii

SIGNATURE

Dr.R.Shyam Kumar

Head of the Department,

HOD Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology VIRUDHUNAGAR. Kamaraj College of Engg & Tech, K. Vellakulam, Virudhunagar - 625 701.



SIGNATURE

Dr.D.Pradiba

SUPERVISOR,

Assistant Professor,

Dept. of Biotechnology,

Kamaraj college of Engg&Tech,

K.Vellakulam,

Virudhunagar - 625 701.

(Mash "

EXTERNAL EXAMINER



GREEN SYNTHESIS OF IRON OXIDE NANOPARTICLES ANDEVALUATION OF ITS POTENTIAL AS A MICRONUTRIENT FERTILIZER FOR PLANT GROWTH

A PROJECT REPORT

Submitted by

DEVA ROSHINE T (9204192140005) MALA K P (920419214019) NIVETHA S (920419214023)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution Affiliated to Anna University, Chennai K.VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625 701

BONAFIDE CERTIFICATE

Certified that the project report "GREEN SYNTHESIS OF IRON OXIDE NANOPARTICLES AND EVALUATION OF ITS POTENTIAL AS A MICRONUTRIENT FERTILIZER FOR PLANT GROWTH" is the bonafide work of "DEVA ROSHINE T (920419214005), MALA K P (920419214019) AND NIVETHA S (920419214023)" who carried out the project work under my supervision.

SIGNATURE

Dr. R. Shyam Kumar

Head of the Department,

HOD Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology Dept. of Biotechnology Dept. Of Biotechnology

Kamaraj College of Engg,

& Tech, K.Vellakulam,

Near Virudhunagar – 625 701.

SIGNATURE Dr. A. Ronaldo Anuf Supervisor, Assistant professor, Dept. of Biotechnology, Kamaraj College of Engg &Tech, K.Vellakulam, Near Virudhunagar – 625 701.





EFFECT OF LYNGBYASTATIN AGAINST SCREENED ORAL CANCER TARGETS AND ITS EXTRACTION FROM Lyngbya confervoides

A PROJECT REPORT

Submitted by ALAGUDURGESHKUMAR K (920419214002) VIGNESH N (920419214032) VIJAYA SAMYUGTHA M (920419214033)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625 701

BONAFIDE CERTIFICATE

Certified that the project report "EFFECT OF LYNGBYASTATIN AGAINST SCREENED ORAL CANCER TARGETS AND ITS EXTRACTION FROM Lyngbya confervoides" is the bonafide work of "ALAGUDURGESHKUMAR K (920419214002), VIGNESH N(920419214032) and VIJAYA SAMYUGTHA M (920419214033) "who carried out the project work under my supervision.

SIGNATURE

Dr. R. Shyam Kumar

HEAD OF THE DEPARTMENT,

Professor, DEPT. OF BIOTECHNOLOGY Kamaraj College of Engineering & Technology Department of Biotechnology AGAR. Department of Biotechnology

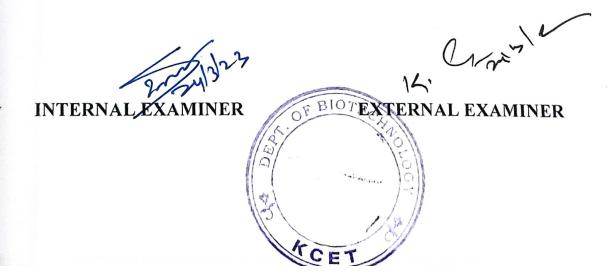
Kamaraj College of Engg.&Tech.

K.Vellakulam,

Madurai - 625701



Mr. S. Manibalan SUPERVISOR, Assistant Professor, Department of Biotechnology, Kamaraj College of Engg.&Tech. K.Vellakulam, Madurai - 625701



ECO FRIENDLY BARRIER COATINGS FOR PAPER BASED PACKAGING USING ENDOLICHENIC CYANOBACTERIAL POLYSACCHARIDES

A PROJECT REPORT Submitted by

ENIA G (920419214006)

HARI KRISHNA RAAJ S H (920419214010)

HARRINI K (920419214012)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625 701

APRIL 2023

i

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR – 625 701

BONAFIDE CERTIFICATE

ertified that the project report "ECO FRIENDLY BARRIER COATINGS FOR PAPER BASED PACKAGING USING ENDOLICHENIC CYANOBACTERIAL OLYSACCHARIDES" is the bonafide work of "G. ENIA (920419214006), S. H. HARI KRISHNA RAAJ (920419214010) and K. HARRINI (920419214012)" who carried out the project work under my supervision.

Dr.R.SHYAM KUMAR

Head of the Department,

Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology, Engineering & Technology VIRUDHUNAGAR, Kamaraj College of Engg & Tech,

K.Vellakulam,

INTERNAL EX

Virudhunagar - 625 701.



Er. R. AMUTHALAKSHMI,

Supervisor,

Assistant Professor,

Dept. of Biotechnology,

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 625 701.

1x Crantshot

EXTERNAL EXAMINER

OPTIMIZATION OF PROCESS PARAMETER FOR GROWTH AND EXOPOLYSACCHARIDE PRODUCTION FROM CYANOBACTERIA

A PROJECT REPORT

Submanul by

ANJANA. T.S.B (Reg.No.920419214004) HARIHARAN.S (Reg.No.920419214009)

in partial fulfillment for the award of the degreeof

BACHELOR OF TECHNOLOGY

in

BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

APRIL 2023

i

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "OPTIMIZATION OF PROCESS PARAMETER FOR GROWTH AND EXOPOLYSACCHARIDE PRODUCTION FROM CYANOBACTERIA" is the bonafide work of "ANJANA. T.S.B & HARIHARAN. S" who carried out the project work under my supervision.



Dr. R. SHYAM KUMAR, Head of the Department, OF BIOTECHNOLOGY Department of Biotechnology, Department of Biotechnology,

Kamaraj College of Engg&Tech,

K.Vellakulam, Near Virudhunagar

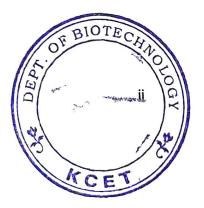
INTERNAL EXAMINER

Kamaraj College of Engg&Tech,

K.Vellakulam, Near Virudhunagar

Maria

EXTERNAL EXAMINER



FABRICATION OF AN ADSORPTION FILTER FOR **BIOREMEDIATION OF PENDIMETHALIN FROM** GROUNDWATER

A PROJECT REPORT

Submitted by

MADHUNILA M S(920419214018)

YUGAMITHRAA M (920419214037)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN

BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 626001

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai)

K. VELLAKULAM, VIRUDHUNAGAR - 626 001

BONAFIDE CERTIFICATE

Certified that the project report " FABRICATION OF AN ADSORPTION FILTER FOR BIOREMEDIATION OF PENDIMETHALIN FROM GROUNDWATER" is the bonafide work of MADHUNILA M S (920419214018) and YUGAMITHRAA M (92041214037) who carried out the work under my supervision.

Professor,

Dr. R. Shyam Kumar

HEAD OF THE DEPARTMENT

Kamaraj College of Engg. & Tech.

HOD

DEPT. OF BIOTECHNOLOGY



Er. Karl Joseph Samuel SUPERVISOR

Assistant Professor,

K. Vellakulam

Department of Biotechnologys & Technolog Department of Biotechnology

Kamaraj College of Engg. & Tech.

K. Vellakulam

Madurai - 625701

INTERNAL EXAMINER

Madurai - 625701 (Northand

EXTERNAL EXAMINER R E

SILVER NANOPARTICLES ASSISTED TREATMENT APPROACH FOR SEPSIS

A PROJECT REPORT

Submitted by

MUBEEN S(920419214021)

VIKASHINI M(920419214034)

In partial fulfillment of the award of the degree of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING

AND TECHNOLOGY

(An Autonomous Institution- Affiliated to





An Autonomeux Anna University, Chennai)

K.VELLAKULAM, VIRUDHUNAGAR - 625 701 APRIL 2023

I

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 625 701 BONAFIDE CERTIFICATE

Certified that the project report "SILVER NANOPARTICLE ASSISTED TREATMENT APPROACH FOR SEPSIS" is the Bonafide work of "S.MUBEEN (920419214021) & M.VIKASHINI (920419214034)" who

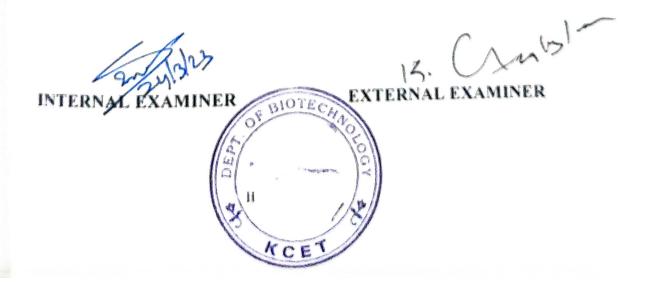
carried out the project work under my supervision.

SIGNATURE

Dr.R.Shyam Kumar Head of the Department Professor, DEPT. OF BIOTECHNOLOGY Kamaraj College of Engineering & Technology Dept of Biotechoology, 10NAGAR. Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar - 625 701.

SIGNATURE

Er.A.Ganga Project Supervisor, Assistant Professor, Dept of Biotechnology, Kamaraj College of Engg &Tech K.Vellakulam, Virudhunagar – 625 701.



DESIGN AND FABRICATION OF A SELF-SUSTAINABLE INTEGRATED BIOREACTOR SYSTEM FOR DESALINATION AND ELECTRICITY PRODUCTION

A PROJECT REPORT

Submitted by

JEYAVARSHINI B (920419214015) SAHANA ANBUKANI I (920419214024) SUYAMBUEASWAR R (920419214030)

In partial fulfillment for the award of the degree of



BACHELOR OF TECHNOLOGY IN



BIOTECHNOLOGY

DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR, MADURAI DISTRICT - 625 701

APRIL 2023

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "DESIGN AND FABRICATION OF A SELF-SUSTAINABLE **INTEGRATED** BIOREACTOR SYSTEM FOR DESALINATION AND ELECTRICITY PRODUCTION" is the bonafide work of **"B.JEYAVARSHINI** (920419214015), **I.SAHANA** ANBUKANI (920419214024) & R.SUYAMBUEASWAR (920419214030)" who carried out the project work under my supervision.

SIGNATURE

Dr.R.Shyam Kumar

Head of the Department,

HOD Professor, Associate Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology, of Engineering & Technolog Dept. of Biotechnology, Kamaraj College of Engg & Tech, K.Vellakulam, K.Vellakulam,

Virudhunagar - 625 701.

INTERNAL EXAMINER

SIGNATURE

Dr.S.Karthikumar SUPERVISOR,

Kamaraj College of Engg & Tech,

Virudhunagar - 625 701

(Norim)m 12.

EXTERNAL EXAMINER

GARLIC PEEL BASED PHYTO-FORMUALTION TO MANANGE POST-HARVEST LOSE OF GRAINS A PROJECT REPORT

Submitted by AKSARA P (920419214001) GAYATHRY K (920419214007) VAISNAVI PANDI S (920419214031)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai)

K. VELLAKULAM, VIRUDHUNAGAR - 626 001

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 626 001

BONAFIDE CERTIFICATE

project report "GARLIC Certified that the PEEL РНҮТО-BASED FORMULATION TO MANAGE POST-HARVEST LOSS OF GRAINS" is the bonafide work of "AKSARA P (920419214001), GAYATHRY K (920419214007) & VAISNAVI PANDI S (920419214031)" who carried out the project work under our supervision.

Dr. R. Shyam Kumar,

HEAD OF THE DEPARTMENT,

SICNATURE

Dr. S. Karthikumar, SUPERVISOR, ASSOCIATE PROFESSOR,

HOD PROFESSOR, OTECHNOLOG Bept. of Biotechnology, Dept. of Biotechnolo neering & Technology. Tech. Kamaraj College of Engg &Tech, Kamaraj Collége o RUDHUN K.Vellakulam, Virudhunagar-626 001. K. Vellakulam, Virudhunagar-626 001. K. Vellakulam, Virudhunagar-626 001.

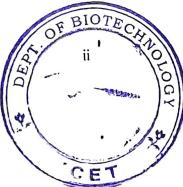
SIGNATURE

Dr. A. Ronaldo Anuf, **CO-SUPERVISOR**, ASSISTANT PROFESSOR, Dept. of Biotechnology, Kamaraj College of Engg & Tech,

INTER

(man Bri

EXTERNAL EXAMINER



SIMULTANEOUS WASTEWATER TREATMENT AND BIOELECTRICITY GENERATION THROUGH ALGAL-ASSISTED MICROBIAL FUEL CELL

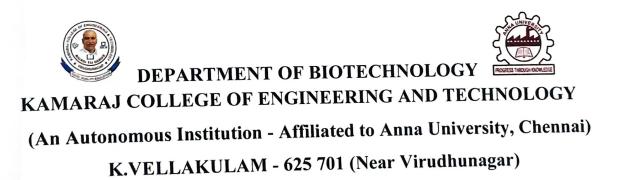
A THESIS

Submitted by

M.GURUHARISH (920419214008) R. HARISHMA (920419214011) M.JEYSRI MALINI (920419214016)

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this Thesis titled "SIMULTANEOUS WASTEWATER TREATMENT AND BIOELECTRICITY GENERATION THROUGH ALGAL-ASSISTED MICROBIAL FUEL CELL" is the bonafide work of "M.GURUHARISH (920419214008), R.HARISHMA (920419214011) & M.JEYSRI MALINI(920419214016)" who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE Dr. R. Shyam kumar

Dr. S. Karthikumar Head of the Department, SUPERVISOR, HOD DEPT. OF BIOTECHNOLOGY Professor, Dept. of Biotechnology, Engineering & TeDeptg of Biotechnology, VIRUDHUNAGAR, Kamaraj College of Engg & Tech, Kamaraj College of Engg & Tech, K.Vellakulam, Near Virudhunagar K.Vellakulam, Near Virudhunagar

SIGNATURE

Cran me BIOTE 14. ENNAL EXAMINER INTERNAL EXAMINE KCE

INSILICO ANALYSIS OF MARINE DERIVED NATURAL COMPOUNDS AS EFFECTIVE DRUG CANDIDATES AGAINST PARKINSON DISEASE A PROJECT REPORT

Submitted by SINDHU B (920419214027)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY IN BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K. VELLAKULAM, NEAR VIRUDHUNAGAR - 625 701

APRIL 2023

i

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, NEAR VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that the project report "INSILICO ANALYSIS OF MARINE DERIVED NATURAL COMPOUNDS AS EFFECTIVE DRUG CANDIDATES AGAINST PARKINSON DISEASE" is the bonafide work of "SINDHU B (920419214027)" who carried out the project work under our supervision.

IGNATURE

Dr. R.ShyamKumar, HEAD OF THE DEPARTMENT, SIGNTURE

Dr.K.Geetha, SUPERVISOR,

PROFESSOR, HOD ASSOCIATE PROFESSOR, DEPT. OF BIOTECHNOLOGY Dept.of Biotechnology, Kamaraj College of Figge Acchr. Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar-625 701. K. Vellakulam, Virudhunagar-625 701.

SIGNATURE

Dr. A. Ronaldo Anuf, CO-SUPERVISOR, ASSISTANT PROFESSOR, Dept. of Biotechnology, Kamaraj College of Engg & Tech, K. Vellakulam, Virudhunagar-625 701.

INTERNALEXAMINER

EXTERNAL EXAMINER

FABRICATION OF THIN BIOFILM USING BOILED RICE WATER REINFORCED WITH MICROALGAE -AN ECO-FRIENDLY APPROACH

A PROJECT REPORT

Submitted by

MOUSIKA R (920419214020) NIRANJANA DEVI R (920419214022) SUDHARSHAN G (920419214029)

in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN



BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution – Affiliated to Anna University, Chennai)

K.VELLAKULAM, NEAR VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution – Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625 701

BONAFIDE CERTIFICATE

Certified that the project report "FABRICATION OF THIN BIOFILM USING BOILED RICE WATER REINFORCED WITH MICROALGAE -AN ECO-FRIENDLY APPROACH" is the bonafide work of "MOUSIKA R (920419214020), NIRANJANA DEVI R (920419214022) & SUDHARSHAN G (920419214029)" who carried out the project work under my supervision.

J' me SIGNATURE

Dr. R. Shyam Kumar

HEAD OF THE DEPARTMENT, HOD Professor, DEPT. OF BIOTECHNOLOGY Dept. of Brotechildrog Fingineering & Technology VIRUDHUNAGAR. Kamaraj College of Engg. & Tech,

K.Vellakulam.

Near Virudhunagar – 625 701

I may **SIGNATURE**

Dr. R. Shyam Kumar

SUPERVISOR,

Professor,

Dept. of Biotechnology,

Kamaraj College of Engg. & Tech,

K.Vellakulam,

lear Virudhunagar – 625 701 ED INTERNAL EXAMINER EXTERNAL EXAMINER

INSILICO ANALYSIS OF VINCRISTINE IN CATHARANTHUS ROSEUS FOR LARYNGEAL CARCINOMA AND IN-VITRO TESTING OF ALKALOIDS BY QUALITATIVE ANALYSIS

A PROJECT REPORT

Submitted by

J. JENSTINA (920419214014)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY



BIOTECHNOLOGY

IN



DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University,

Chennai)

K.VELLAKULAM,NEAR VIRUDHUNAGAR - 625 701,

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM,NEAR VIRUDHUNAGAR - 625701

BONAFIDE CERTIFICATE

Certified that the project report "Insilico analysis of vincristine in Catharanthus roseus for laryngeal carcinoma and In-Vitro testing of alkaloids by Qualitative analysis" is the bonafide work of "J. Jenstina (920419214014)" who carried out the project work under my supervision.

SIGNATURE Dr.R.Shyam Kumar Head of the Department, HOD Professor, DEPT. OF BIOTECHNOLOGY Kamarai College of Engineering & Technology Dept. of Biotechnology_{IRUDHUNAGAR}. Kamaraj College of Engg & Tech, K.Vellakulam,

Near Virudhunagar -625 701.

Dr.K.Geetha SUPERVISOR , Associate Professor, Dept. of Biotechnology, Kamaraj College of Engg&Tech K.Vellakulam, Near Virudhunagar – 625 701

Nor all and EXTERNAL EXAMINE

INTERNAL EXAMINER





CERTIFICATE

22.03.2023

This is to certify that Ms. J.Jenstina currently pursuing final year in B.Tech Biotechnology at Kamaraj College Of Engineering And Technology have successfully completed the project entitled "Insilico Analysis Of Vincristine In Catharanthus roseus For Laryngeal carcinoma And In-Vitro Testing Of Alkaloids By Qualitative Analysis" at Biozone Research Technologies Pvt. Ltd., Chennai from January 2nd, 2022 to March 21st, 2023.

Ms. Carolin Christina K Researcher & Guide

louider Tilke

Dr. Florida Tilton Managing Director & Head



Biozone Research Technologies Pvt Ltd

aran Colony, 200 ft Radial Road, Zameen Pallavaram, Chennai – 600 017 | Phone: +91 44 22250952 Mobile: +91 9952912012

Email Id: biozone.info@gmail.com | Website: www.biozone.in

STUDIES ON APPLICATION OF LACTIC ACID BACTERIA ISOLATED FROM CHILLI (CAPSICUM ANNUUM) STALKS

A PROJECT REPORT

Submitted by JEEVIKA M R (920419214013)

SONA SHRI S S (920419214028)

YOGAUTHRA A R (920419214036)

In partial fulfillment for the award of the degree

of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 626 001

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 626 001

BONAFIDE CERTIFICATE

Certified that the project report "STUDIES ON APPLICATION OF LACTIC

ACID BACTERIA ISOLATED FROM CHILI(CAPSICUM ANNUUM) STALKS" is the bonafide work of "JEEVIKA M R (920419214013),

SONA SHRI S S (920419214028) & YOGAUTHRA A R (920419214036)" who carried out the project work under my supervision.

Pincy SIGNATURE

Dr.R.Shyam Kumar PhD. HEAD OF THE DEPARTMENT,

Professor, DEPT. OF BIOTECHNOLOGY Kamaraj College of Engineering & Technology Dept. of Biotechnology, IRUDHUNAGAR.

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 626 001.

Er.K.Chitra Devi M.Tech SUPERVISOR ,

Assistant Professor,

Dept. of Biotechnology,

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 626 001.

14 INTERNAL EXAMINER EXTERNAL EXAMINER BIOTE C

Extraction of Pectin and Concentration of Fruit Juices using

Porous Membranes

A PROJECT REPORT

Submitted by

SANJU ROY (REG NO:920419214025)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR – 625701

APRIL 2023

1

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, NEAR VIRUDHUNAGAR - 625701

BONAFIDE CERTIFICATE

Certified that the project report "EXTRACTION OF PECTIN AND CONCENTRATION OF FRUIT JUICES USING POROUS MEMBRANES" is the bonafide work of "SANJU ROY(REG NO:920419214025) who carried out the project work under my supervision.

Popul

SIGNATURE Dr.R.SHYAM KUMAR Head of the Department_{HOD} Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology University Of Biotechnology VTRUDHUNAGAR. Kamaraj College of Engg & Tech, K.Vellakulam, Near Virudhunagar – 625 701.

SIGNAFURE Dr.K.GEETHA SUPERVISOR, Associate Professor Dept. of Biotechnology, Kamaraj College of Engg &Tech, K.Vellakulam, Near Virudhunagar - 625 701.

EXTERNAL EXAMINER

INTERNAL EXAMINER



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

				Name of the Guide
S.No	Name	Reg.No	Title	
1	ZIBIA KASTURI GRATIA.A	920421PMB01	Enhancement Of Nutrient Content In Ready To Eat Snack By The Addition Of Spirulina	Dr. R. Shyam Kumar
2	SUMANA.R	920421PMB02	Characterization Of Corn Husk And To Infuse Them Into Boiled Rice Water For The Development Of Bio-Film	Dr. R. Shyam Kumar
3	BHAVANI LAXMI.R	920421PMB03	Herbal Antibacterial Soap Formulation Using Azadirachta indica ,Acalypha indica And Pongamia pinnata Leaves	Dr. D. Pradiba
4	ISHWARYADEVI	920421PMB04	Cultivation Of Spirulina In Organic Medium For The Phycocyanin Recovery	Dr. S. Karthikumar
5	NIVETHITHA.V	920421PMB05	<i>Invitro</i> and <i>Insilico</i> analysis of bioactivity potential of crude extract from <i>Allium cepa</i> peel	Dr. A. Ronaldo Anuf
6	HARSHAVARDHINI .R.K	920421PMB06	Analysis of Protein Phosphatase (PP2C) gene family in Sugarcane	Dr. A. Ronaldo Anuf

EFFECT OF EXTRACTION METHODS ON THE YIELD AND PHYSIOCHEMICAL PROPERTIES OF POLYSACCHARIDE FROM GRACILARIA VERRUCOSA

PHASE I REPORT

Submitted by

5

5

5

ZIBIA KASTURI GRATIA A (920421PMB01)

In partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

JANUARY 2023

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "Effect of Extraction Methods on the Yield and Physiochemical Properties of Polysaccharide from Gracilaria verrucosa" is the bonafide work of ZIBIA KASTURI GRATIA A (920421PMB01) who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

I.mut

Signature of HOD with Date

DEPT. OF MOTLCHNOLOGY Dr., R. Shyam kumara Technology Professor and HeadAR. Department of Biotechnology Kamaraj college of Engineering and Technology, Virudhunagar.

L.M. Signature of the supervisor with Date

Dr. R. Shyam kumar Professor and Head Department of Biotechnology Kamaraj college of Engineering and Technology, Virudhunagar.

INTERNAL EXAMINER

5

c

EXTERNAL EXAMIN



ISOLATION AND SCREENING OF MICOALGAE FROM WASTE WATER SOURCES FOR ALGAL PROTEIN AND LIPID PRODUCTION

A THESIS

Submitted by

ISHWARYADEVI.M(920421PMB04)

In partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



ŝ

1.5



DEPARTMENTOFBIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai)K.VELLAKULAM-625701 (Near Virudhunagar)

JAN2023

KAMARAJ COLLEGE OFENGINEERING AND TECHNOLOGY

(AnAutonomousInstitution-AffiliatedtoAnnaUniversity,Chennai) K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this thesis titled "ISOLATION AND SCREENING OF MICOALGAE FROM WASTE WATER SOURCES FOR ALGAL PROTEIN AND LIPID PRODUCTION" is the bonafide work of ISHWARYADEVI.M (920421PMB04) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE

Dr.R.Shyamkumar Head of the Department, Professor, Department of Biotechnology Kamaraj College of Engg & Tech. K.Vellakulam,NearVirudhunagar



Dr.S.Karthikumar SUPERVISOR, Associate professor, Department of Biotechnology kamaraj college of Engg & Tech K.Vellakulam,NearVirudhunagar

EXTERNALEXAMINER



IDENTIFICATION OF PP2C GENES IN SUGARCANE GENOME

.

3

PHASE I REPORT

Ľ

5

5

C

Submitted by

R. K. HARSHAVARDHINI

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING

&TECHNOLOGY,

(An Autonomous

Institution)

VIRUDHUNAGAR

JANUARY 2023

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution) VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this report entitiled 'IDENTIFICATION OF PP2C GENES IN SUGARCANE" is the bonafide work of R.K.HARSHAVARDHINI (Reg No: 920421509002) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form any other part of thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

J. J. X Signature of HOD with Date

5

Dr. R. Shyam kumar Professor and Head Department of Biotechnology Kamaraj college of Engineering Mand Technology, Virudhunagar. HOD DEPT. OF EIOFECHNOLOGY

with Date Signature of the superv

i

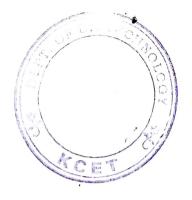
Dr. A. Ronaldo Anuf Assistant professor Department of Biotechnology Kamaraj college of Engineering and Technology, Virudhunagar.

Kamaraj College of Engineering & Torring and the sound at the sound at

INTERNAL EXAMINER

C

EXTERN





C

भा.कृ.अ.प. – गन्ना प्रजनन संस्थान, कोयम्बत्तूर 641 007 ICAR-SUGARCANE BREEDING INSTITUTE, COIMBATORE 641007

भारतीय कृषि अनुसंधान परिषद Indian Council of Agricultural Research





CERTIFICATE

4

This is to certify that the project work entitled 'Identification of PP2C genes in Sugarcane Genome' submitted by Harshavardhini R.K. (Reg No:920421509002) studying for M.Tech at the Department of Biotechnology, Kamaraj college of Engineering and Technology, Madurai during a 6 month project (15th Dec 2022 to 29th Dec 2023), comprises the result of original work carried out by the candidate under my supervision for the partial fulfilment of the award of the degree of Master of Technology. The work was entirely performed under my guidance at Bioinformatics Lab, ICAR- Sugaarcane Breeding Institute, Coimbatore during the academic year 2022 to 2023.

Ri Manime Kla

Place : Coimbatore Date: 06-01-2023

c

c

Signature of the supervisor

Dr.R. MANIMEKALAI, M.Sc. (Ag.)., Ph.D., Principal Scientist (Biotechnology) ICAR - Sugarcane Breeding Institute Indian Council of Agricultural Research (ICAR) Coimbatore - 641 007, Tamil Nadu, India,

EXTRACTION OF PHYTOCHEMICALS FROM *ALLIUM CEPA* PEEL AND EVALUATION OF ITS ANTIOXIDANT AND ANTIAPOPTOTIC POTENTIAL

PHASE I REPORT

Submitted by

V.NIVETHITHA

in partial fulfillment for the award of the degree of

5

5

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING &

TECHNOLOGY,

(An Autonomous Institution)

VIRUDHUNAGAR

JANUARY 2023

KAMARAJ COLLEGE OF ENGINEERING &

TECHNOLOGY (An Autonomous Institution)

VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this Report entitled "EXTRACTION OF PHYTOCHEMICALS FROM ALLIUM CEPA PEEL AND EVALUATION OF ITS ANTIOXIDANT AND ANTIAPOPTOTIC POTENTIAL" is the bonafide work of V.NIVETHITHA (Reg No. 920421509004) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form any other part of thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Signature of HOD

With Date Dr.R.Shyam Kumar Professor and Head

HOD Department CHNOLOGY of

Signarure Date

Dr.K.Geetha Associate professor

i

supervisor with Signature of co-supervisor with Date DR.A.Ronaldo Anuf Assistant Professor

Department of Biotechnology

and technology, Virudhunagar

Department of Biotechnology

engineering and technology,

college

of

Biotechnology, GAR. of Kamaraj college of engineering college Kamaraj engineering and technology,

eering & Technolog

Virudhunagar

DEI

Kamarai

Certified that the candidate was examined by me in the viva voce examination conducted on 07.01.2023

INTERNAL EXAMINER

c

EXTERNAL EXA

Kamaraj

Virudhunagar



Boiled Rice Water and Protein-based Bio-film

5

5

r

5

development for Packaging

PHASE I REPORT

Submitted by \$ SUMANA. R (920421509005)

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY,

(An Autonomous Institution)

VIRUDHUNAGAR

JANUARY 2023

i

Scanned with ACE Scanner

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution)

VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this Report entitled "BOILED RICE WATER AND PROTEIN-BASED BIO-FILM DEVELOPMENT FOR PACKAGING" is the bonafide work of SUMANA. R (Reg No. 920421509005) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form any other part of thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

toput

c

Signature of HOD with Date

Dr. R. Shyani Kumar, HNOLOGY Annual College of Engineering & Technology Professor and Head VIRUDHUNAGAR, Department of Biotechnology

Kamaraj college of Engineering

and Technology, Virudhunagar

Signature of the supervisor with Date

Dr. R. Shyam Kumar Professor and Head Department of Biotechnology Kamaraj college of Engineering and Technology, Virudhunagar

Certified that the candidate was examined by me in the viva voce examination conducted on 07.01.2023.

INTERNAL EXAMINER

c

123 EXTERNAL EXAMIN



EXTRACTION AND CHARACTERIZATION OF PHYTOCHEMICALS FROM *PONGAMIA PINNATA,ACALYPHA INDICA AND AZADIRACHTA INDICA* FOR FORMULATION OF HERBAL SOAP

PHASE I REPORT

Submitted by

BHAVANI LAXMI R

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING &

TECHNOLOGY,

(An Autonomous Institution)

VIRUDHUNAGAR

JANUARY 2023

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution) VIRUDHUNAGAR

BONAFIDE CERTIFICATE

Certified that this Report entitled "EXTRACTION AND CHARACTERIZATION OF PHYTOCHEMICALS FROM PONGAMIA PINNATA, ACALYPHA INDICA AND AZADIRACHTA INDICA FOR FORMULATION OF HERBAL SOAP" is the bonafide work of R. BHAVANI LAXMI (Reg No. 920421509001) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form any other part of thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

L'she follows

Signature of HOD with Date Dr. R. Shyam kumar Professor and Head Department of Biotechnology Kamaraj college of Engineering Technology, Wirudhundgar, LOGY Kamaraj College of Engineering & Technology

Signature of the supervisor with Date Dr. D.Pradiba Assistant professor Department of Biotechnology Kamaraj college of Engineering and and Technology, Virudhunagar.

VIRUDHUNAGAR. Certified that the candidate was examined by me in the viva voce examination conducted on

07.01.2023

INER INTERNAL E

11

EXTERNAL EXAMINER

Invitro and *Insilico* analysis of bioactivity potential of crude extract from *Allium cepa* peel

A THESIS

Submitted by

NIVETHITHA V (Reg No.920421509004)

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701 BONAFIDE CERTIFICATE

Certified that this Thesis titled *Invitro* and *Insilico* analysis of bioactivity potential of crude extract from *Allium cepa* peel is the bonafide work of V.NIVETHITHA (Reg No. 920421509004) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.



SIGNATURE

Dr.K.Geetha,

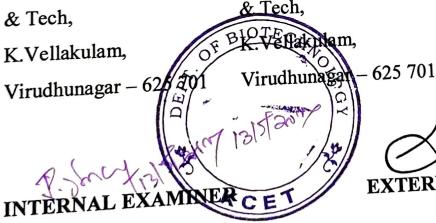
Dr.R.Shyam Kumar,

Head of theHODSupervisor,Department,
Ramaraj College of Engineering & TechnologyProfessor and Head JNAGARAssociate professor,

Dept. of Biotechnology, Dep

Dept. of Biotechnology,

Kamaraj College of Engg Kamaraj College of Engg



SIGNATURE

Dr.A.Ronaldo Anuf, Co-Supervisor,

Assistant Professor,

Dept. of Biotechnologh,

Kamaraj College of Engg

& Tech,

K.Vellakulam,

Virudhunagar – 625 701

EXTERN

ii

ANALYSIS OF PROTEIN PHOSPHATASE (PP2C) GENE FAMILY OF SUGARCANE

A THESIS

Submitted by

HARSHAVARDHINI R K (920421509002)

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

ANALYSIS OF PROTEIN PHOSPHATASE (PP2C) GENE FAMILY OF SUGARCANE

A THESIS

Submitted by

HARSHAVARDHINI R K (920421509002)

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

CHARACTERIZATION OF CORN HUSK AND TO INFUSE THEM INTO BOILED RICE WATER FOR THE DEVELOPMENT OF BIO-FILM

A THESIS

Submitted by

SUMANA. R (920421509005)

In partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K. VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K. VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that this Thesis titled "CHARACTERIZATION OF CORN HUSK AND TO INFUSE THEM INTO BOILED RICE WATER FOR THE DEVELOPMENT OF BIO-FILM" is the bonafide work of SUMANA. R (920421509005) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE SIGNATURE

Dr. R. SHYAM KUMAR, Head of the Department, HOD Professor DEPT. OF BIOTECHNOLOGY Dept. of Biotechyologymeering & Technology Kamaraj Collège of Petigg & Technology K. Vellakulam, Virudhunagar – 625 701

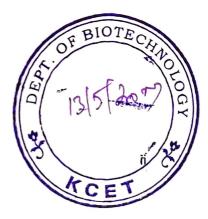
Linv for de signature

SIGNATURE Dr. R. SHYAM KUMAR, SUPERVISOR, Professor, Dept. of Biotechnology, Kamaraj College of Engg &Tech, K. Vellakulam, Virudhunagar – 625 701

Certified that the candidate was examined by me in the viva voce examination conducted on **13.05.2023**.

2. hut 3/5/2

INTERNAL EXAMINER



ENHANCEMENT OF NUTRIENT CONTENT IN READY TO EAT SNACK BY THE ADDITION OF SPIRULINA

A THESIS

Submitted by

ZIBIA KASTURI GRATIA A (920421509006)

in partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that this Thesis titled "ENHANCEMENT OF NUTRIENT CONTENT IN READY TO EAT SNACK BY THE ADDITION OF SPIRULINA" is the bonafide work of ZIBIA KASTURI GRATIA A (920421509006) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

C

phu SIGNATURE

Dr. R. Shyam Kumar

INTERNAL EX

Head of the Department,

J.J.J. SIGNATURE Dr. R. Shyam Kumar,

ent, SUPERVISOR,

Professor, HOD Professor, DEPT. OF BIOTECHNOLOGY Dept. of Biotechnology, Dept. of Biotechnology, Kamaraj College of Engmeering & Technology Kamaraj College of Engg & Tech, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar – 625 701

SIGNATURE

Dr. S. Karthi Kumar Co-SUPERVISOR, Associate Professor,

Dept. of Biotechnology, Kamaraj College of Engg K.Vellakulam Virudhunagar – 625 701

XTERNAL EXA

Scanned with ACE Scanner

CULTIVATION OF *Spirulina* IN ORGANIC MEDIUM FOR THE PHYCOCYANIN RECOVERY

A THESIS

Submitted by

ISHWARYADEVI M (920421509003)

In partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY





DEPARTMENT OF BIOTECHNOLOGY **KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY** (An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM, VIRUDHUNAGAR - 625701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution- Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that this Thesis titled "CULTIVATION OF Spirulina IN THE ORGANIC MEDIUM FOR THE PHYCOCYANIN RECOVERY" is the bonafide work of ISHWARYADEVI M (920421509003) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Pohr SIGNATURE

Dr. R.ShyamKumar,

Head of the Department, DEPT. OF BIOTECHNOLOGY Professonara) College of Engineering & Technology VIRUDHUNAGAR. Dept. of Biotechnology,

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 625 701

INTERNAL EXAM

SIGNATURE Dr. S. Karthikumar, SUPERVISOR, Associate Professor,

Dept. of Biotechnology,

Kamaraj College of Engg & Tech,

K.Vellakulam,

Virudhunagar - 625 701

Æ ERNA

HERBAL ANTIBACTERIAL SOAP FORMULATION

USING Pongamia pinnata, Acalypha indica and

Azadirachta indica.

A THESIS

Submitted by

BHAVANI LAXMI R (920421509001)

In partial fulfillment for the award of the degree of

MASTER OF TECHNOLOGY IN BIOTECHNOLOGY



DEPARTMENT OF BIOTECHNOLOGY KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY (An Autonomous Institution - Affiliated to Anna University, Chennai) K.VELLAKULAM, VIRUDHUNAGAR - 625701

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

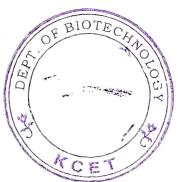
K.VELLAKULAM, VIRUDHUNAGAR - 625 701

BONAFIDE CERTIFICATE

Certified that this Thesis titled "Herbal Antibacterial Soap Formulation Using *Pongamia pinnata, Acalypha indica* And *Azadirachta indica*" is the bonafide work of Bhavani Laxmi R (920421509001) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Pohox SIGNATURE

Dr. R. Shyam Kumar HOD Head of the BEDTECHNOLOGY Parofessorlege of Engineering & Technology Dept. of Biotechnology, Kamaraj College of Engg & Tech, K.Vellakulam, Virudhunagar – 625 701.



SIGNATURE Dr.D.Pradiba

Supervisor, Assistant Professor, Dept. of Biotechnology, Kamaraj College of Engg &Tech, K.Vellakulam, Virudhunagar – 625 701.

t. mufids



ii



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF BIOTECHNOLOGY

Academic Year 2022- 2023 (May 2022 – July 2022)

INTERNSHIP DETAIL (ODD semester)

III Year

S. No	Roll No	Reg. No	Name of the Student	No of Days	From Date	To Date	Name of the Industry	Address of the Industry
1.	20UBT001	920420UBT001	SRIDIVYA.R	15	27-06-2022	07-11-2022	Aakash Pharmaceuticals	Madurai
2.	20UBT004	920420UBT004	GIRITHARAN.S	15	27/06/2023	11/06/2023	Mahiban Foods	Tuticorin
3.	20UBT005	920420UBT005	SIVA SANKARI.K	15	27-06-2022	11-07-2022	Government Rajaji Hospital and Madurai Medical College	Madurai
4.	20UBT006	920420UBT006	THILSATH MEERAL.S	14	28-06-2022	12-07-2022	Shssa enterpries(need us packaged drinking water)	Vadakarai, Tenkasi
5.	20UBT008	920420UBT008	FAHEEMA THAHASEEN.A	15	27-06-2022	11-07-2022	Government Rajaji Hospital and Madurai Medical College	Madurai
6.	20UBT009	920420UBT009	SANDOSHMANI.R	14	27-06-2022	11-07-2022	J.J Clinical Laboratory	Virudhunagar

7.	20UBT0010	920420UBT010	RAVINA.R	15	27-06-2022	11-07-2022	Government Rajaji hospital and Madurai Medical College	Madurai
8.	20UBT011	920420UBT011	MOULI MONISHA.V	15	27-06-2022	11-07-2022	Government Rajaji hospital and Madurai Medical College	Madurai
9.	20UBT018	920420UBT018	MADHUMITHA.K	15	6/27/2022	07-11-2022	VJ Biotech	Coimbatore
10.	20UBT019	920420UBT019	DEEJITH NAATIYAAL.M.S	23	11-07-2022	3-08-2022	Centre for Development and Communication Trust	Theni
11.	20UBT020	920420UBT020	KAMALI.S	17	6/27/2022	7/15/2022	Star diagnostic centre	Paramakudi
12.	20UBT022	920420UBT022	NITHYASREE.A	12	01-07-2022	12-07-2022	SMR diagnosis centre and microbiology	Sivakasi
13.	20UBT024	920420UBT024	ABINAYA.J	17	27-06-2022	13-07-2022	AVN arogya ayurvedic hospital	Madurai
14.	20UBT025	920420UBT025	SAIBHAVADHARANI.B	15	27-06-2022	07-11-2022	Aakash Pharmaceuticals	Madurai
15.	20UBT027	920420UBT027	SUBHIKSHA.S	15	27-06-2022	07-11-2022	Aakash Pharmaceuticals	Madurai
16.	20UBT028	920420UBT028	VARSHA.G.V	15	01-07-2022	15-07-2022	Vivek laboratories	Nagercoil
17.	20UBT029	920420UBT029	RINISHA.R	13	29-06-2022	11-07-2022	Suganthi devadason marine research institue	Tuticorin
18.	20UBT035	920420UBT035	YOGASRI.M	15	6/27/2022	07-11-2022	VJ Biotech	Coimbatore

19.	20UBT038	920420UBT038	VARSHA.E	13	29-06-2022	11-07-2022	suganthi devadason marine research institute	Tuticorin
20.	20UBT040	920420UBT040	GOWSALYA.K	13	30-06-2022	12-07-2022	KG Hospital , (diagnotic lab)	Palani
21.	20UBT042	920420UBT042	VINODHINI.R	14	07-01-2022	14-07-2022	The Peninsular Export Company	Virudhunagar
22.	20UBT043	920420UBT043	CERLICLADIYA.P	15	27-06-2022	07-11-2022	VJ Biotech	Coimbatore
23.	20UBT044	920420UBT044	SHANKAR GANESH.M.V	14	07-01-2022	14-07-2022	The Peninsular Export Company	Virudhunagar
24.	20UBT046	920420UBT046	PRASANNA VENGATESH.V	15	6/27/2022	07-11-2022	Dr. Agarwal's Eye Hospital	Tirunelveli
25.	20UBT049	920420UBT049	NITHYASHREE.S.R	17	27-06-2022	13-07-2022	AVN arogya ayurvedic hospital	Madurai
26.	20UBT002	920420UBT002	SUDHARSAN.M	7	04-07-2022	10-07-2022	We care technologies	Chengalpattu
27.	20UBT014	920420UBT014	KEERTHI VASAN.V	14	27-06-2022	11-07-2022	Aravind Eye Hospital	Madurai
28.	20UBT016	920420UBT016	BENITA MARGARET.L	30	4-7-2022	4-8-2022	Archroma India Private Limited	Maharashtra
29.	20UBT017	920420UBT017	JASMINE KILDA.L	18	27-06-2022	16-07-2022	MEDALL diagnostics	Vickramasinga puram
30.	20UBT033	920420UBT033	VAIRAMUTHU.P	14	07-01-2022	14-07-2022	The Peninsular Export Company	Virudhunagar

31.	20UBT031	920420UBT031	JOHN PAUL HUDSON.S	15	6/27/2022	07-11-2022	Dr. Agarwal's Eye Hospital	Tirunelveli
-----	----------	--------------	--------------------	----	-----------	------------	----------------------------	-------------

C

(

AAKASH PHARMACEUTICALS

13, Anjal Nagar, 4th Cross Street, KoodalNagar, Madurai -625018.

Date: 11-07-2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. SRIDIVYA. R has undergone Internship Training in the Industrial Process Services from 27th June 2022 to 11th July 2022 at AAkash Pharmaceuticals, Madurai.

During the training period, her conduct was good. We wish her all the very best for her future endeavor.

Yours,

For Aakash Pharmaceuticals Proprietrix

Cell : 74182 92947 76396 27755

MAHIBAN FOODS

9A/520/2, Sahayamathapattanam, Tuticorin - 628 002.

Email : mahiban777@gmail.com

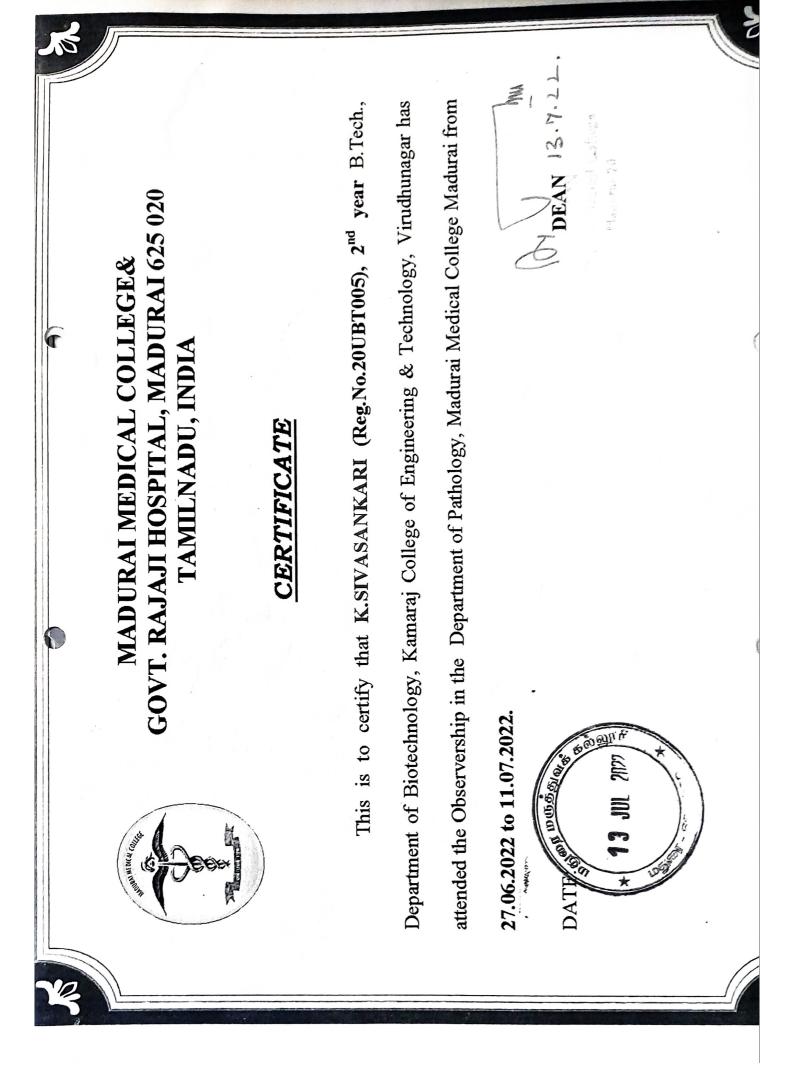
Date : 11 07 12022

This is to certify that Mr SGiritharan, student of B.Tech (Biotechnology), has successfully completed a summer internship in the field of Fisheries from 27.06.22 to 11.07.22 under guidance of D.Mahimain Raja.

During the period of her/his internship program with us,she/he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish her/him every success in her/his life and career.

For MAHIBAN



ISI No. : 3314240 GSTIN : 33ARYPR8960R1ZA

Cell : 96003 73860 97504 55526

SHSSA ENTERPRISES

Water for Life Packaged Drinking Water

15/2, Mattukal Road, Vadakaral - 627 812. Shencottah (Talk)., TENKASI (Dist). Tamil Nadu. S. India.

Date :

Date:12.07.2022

To Whom It May Concern

This is to certify that Miss S.Thilsath Meeral, Student of II Year B. Tech Bio-Technology has successfully completed a 14 days Summer Internship in the field of SHSSA ENTERPRISES from 28-06-2022 to 12-07-2022 under guidance of Sanker.

During the period of her his internship program with us she he had been exposed to different processes and was found diligent hardworking and inquisitive.

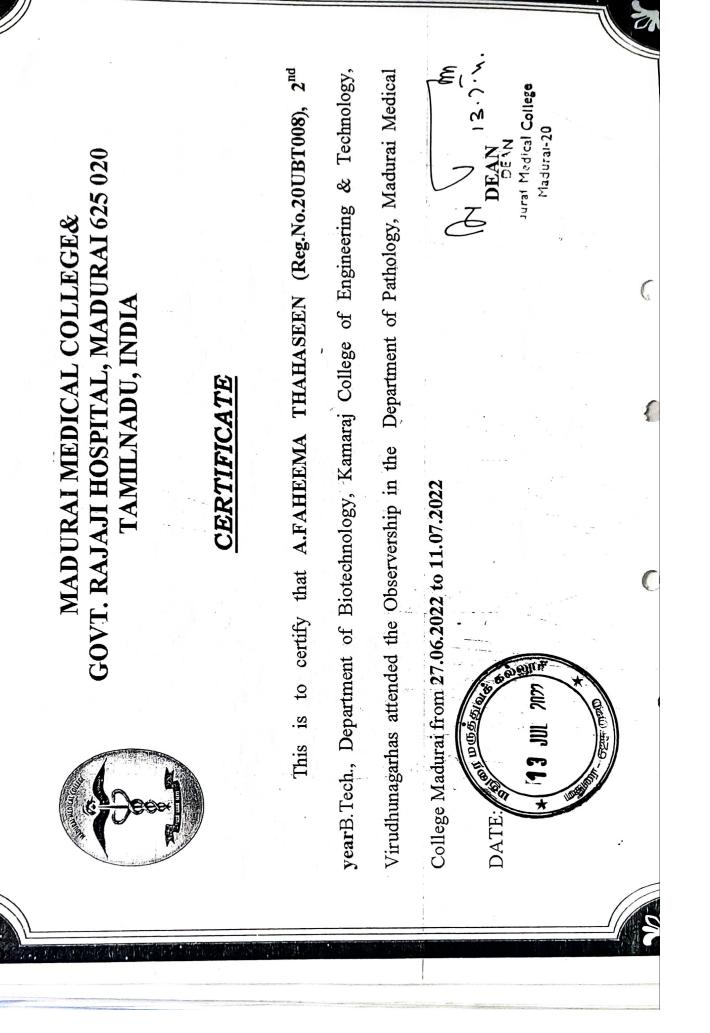
We wish her every success in her life and career.

For SHSSA ENTERPRISES,

Authorised Signature



Scanned with CamScanner





J J Climical Laboratory J J Digital X-Ray & E.C.G.Ceatre

AN USD BOOL : 2018 CERTIFIED LAR

10-14-65 10-19-54-56

42* Alashkay Pander Rund (Colt: Apeara Treatro) VIRUDHUMAGAR

CERTIFICATE OF INTERNSHIP

12.07.2022

This is to Certify that Mr.R.SANTHOSH MANI Reg. No : 201 BT000 Kamaraj College of engineering and technology. Virudhunagar (S.O. Radha Krishnan) student of 111 rd Year B - Tech (Bio, tech) successfully completed his Internship Programme in our Clinical Laboratory from the period of 27.06.2022 to 11.07.2022

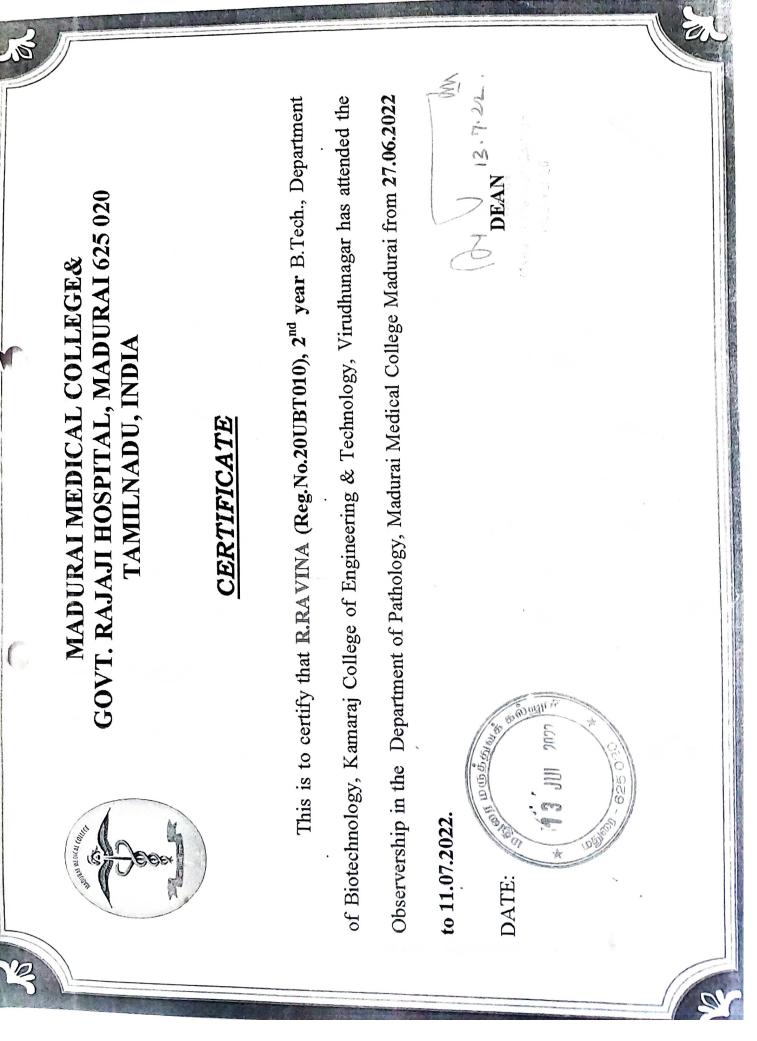
He is sincere. attentive, hard working and has keen interest to learn all the aspects of Laboratory techniques and him enriched himself through this training.

I wish all the best to his FUTURE.

22.20

Clinical Laborator Jan, Railway Feeder Road, (Opp. Apsors Theatm) VIRUDHUNAGAR. 18 420009

Screen Master 3000 Italy. Used For All Biochemical Investigations. I Counter Used for Complete Remogram. Service with Smile. Secrecy and Stabi



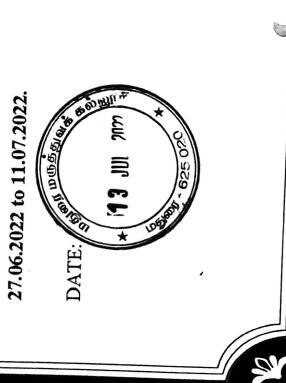


GOVT. RAJAJI HOSPITAL, MADURAI 625 020 MADURAI MEDICAL COLLEGE& TAMILNADU, INDIA

CERTIFICATE

This is to certify that V.MOULI MONISHA (Reg.No.20UBT011), 2nd year B.Tech.,

Department of Biotechnology, Kamaraj College of Engineering & Technology, Virudhunagar has attended the Observership in the Department of Pathology, Madurai Medical College Madurai from



1 13.7.22. Jural Medical Collego

MaJurai-20

Register No: 920420UBT018 conducted by has Department of Bistechnelogy, Kamarez Tellege of Engineering, and Technology, learned and successfully completed by the Internship course of Melecular Biology-Internship Training Certificate Managing Director 9.0 M VJ BIOTECH, Coimbatore from 27-06-2022 to Il-07-2024 This is to certify that Mr / Ms. K. Madhumitha and Grenetic Engineering Techniques BIOTECH Course Organizer 売し

 KPM
 : 04546 - 247245

 Theni
 : 04546 - 253242

 Mobile
 : 094430 47245



Fax e-mail Website

: 04546 - 247245 : cendect@gmail.com : www.cendect.org.in

Centre for Development and Communication Trust

KAMATCHIPURAM (S.O.)

Theni District. Tamilnadu - 625 520. India.

P

Regd.No. : 53 / 83 Home Ministry Regd. No. 075940018 Exempted Under 80 G and 35 AC of Income Tax Act.

Ref. No. 35 79/ 2022

Date: 21:11:20.22

Training certificate

This is to certify that Ms. M.S. Deejith Naatiyaal, (Roll.No. 20UBT019), undergoing II year B.Tech (Biotechnology) in Kamaraj College of Engineering and technology, S.P.G.C, Nagar, K. Vellakulam has undergone Internship Training Programme in our institution from 11.07.2022 to 03.08.2022.

During this period, she should keen interest in observation and actively participated in all sessions.

Her conduct and character are good.

We wish all the best in her future endeavors.





COMPUTERISED AUTO ANALYZER LAB, X-RAY & E.C.G.

3/37, M.S. Agragaram Street, Opp. Head Post Office, **Parmakudi** - 623 707. Ph : 04564 - 222539 Mobile : 80983 88022, 99658 92892



TO WHOM SO EVER IT MAY CONCERN

This is to certify that MISS.S.KAMALI
Has Under gone internship training in Our Lab from 27/06/2022 To 15/07/2022 during morning session
between 9.00 AM to 1.00 PM this period her
Performance is always entire satisfaction, honest, hardworking, and dedicated with technical attitude.

PARAMAKUDI 16/07/2022

SMR LABS & DIAGNOSTIICS

Date: 11/07/2021

Training Completion certificate

To whom so ever it may Concern

This is to certify that **Miss. A.NITHYASREE (20UBT022)**, a Jtudent of Biotechnology(B.Tech) in Kamaraj college of Engineering and Technology Virudhunagar has undergone training in our Lab From 01/07/2022 to 11/07/2022 She has undergone training in Laboratory During her period of training her conduct and character has being good.

I wish her all the best for further Endeavour.

SMR LABS & Diagnostilics 413-A/1,Sattur Road, Near Bus Stand SIVAKASI-626123 Signature of the Doctor

but

6

OUR BRANCHES

413-A/1, Sattur Road, Near Bus Stand, Sivakasi - 626 123. © 04562 274888 © 70107 91323

& DIAGNOSTIICS

5/753, Plot No: 83, NGO A Colony, Rajapalayam Road, Sankarankovil -

🕲 93429 43768

368, SN Puram Road, Thiruthangal - 626 130.

04562 299285
93429 43770

458, Noorullah Mall, Utthumalai Paradesi Mada Street, Srivilliputhur - 626 125.

93429 43771

Smrlabs2021@gmail.com

N.Rama Varier Ayurveda Foundation	INTERNSHIP CERTIFICATE AWARDED TO	Name <u>ABINAYA I (20UBT024)</u> Degree <u>Dy</u> <u>B.75CH Bisterbarley</u> College <u>KAMARAI</u> <u>COLBEGE DF</u> <u>ENGINERING</u> <u>AND</u> <u>75CHNOLAGy</u> Has undergone training from 27/06/22 to $13/07/22$ in our ayurvedic pharma industry & resuarch center. During the training he/she has exposed to division of ayurvedic industry such as, raw material store, production, tableting, packing, quality control, quality assurance, phytochemical analysis, research & development. He / She was curious and very interactive during the training session.	Govindan h Head
N		Plame <u>ABINAYA . T (201</u>) College <u>KAMARAT (21)</u> Pollege <u>KAMARAT (21)</u> Plas undergone training from 2.7] Center. During the training from 2.7] center. During the training from 2.7] raw material store, production, raw material store, production, analysis, research & development. He / She was curious and very	Dr. Suresh Govindan Research Head

1

MOBILE : 9448336678 PHONE: 0452*-2662666

AAKASH PHARMACEUTICALS

13, Anjal Nagar, 4th Cross Street, KoodalNagar, Madurai -625018.

Date: 11-07-2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. SAIBHAVATHARANI. B has undergone internship training in the Industrial Process Services from 27th June 2022 to 11th July 2022 at AAkash Pharmaceuticals, Madurai.

During the training period, her conduct was good. We wish her all the very best for her future endeavor.

Yours,

For Aakash Pharmaceuticals A. Lailathle

GST NO: 33AITPL4557G1ZX

C

MOBILE : 9448336678 PHONE: 0452 -2662666

AAKASH PHARMACEUTICALS

13, Anjal Nagar, 4th Cross Street, KoodalNagar, Madurai -625018.

Date: 11-07-2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. SUBHIKSHA. S has undergone Internship Training in the Industrial Process Services from 27th June 2022 to 11th July 2022 at AAkash Pharmaceuticals, Madurai.

During the training period, her conduct was good. We wish her all the very best for her future endeavor.

Yours,

For Aakash Pharmaceuticals lean

G.V.Vaerher

VIVEK INSTITUTE OF LABORATORY MEDICINE

(Affiliated to Tam/Inadu Dr.M.G.R. Medical University, Proc. No. Affin. V(2) / 12187 / 2011 dated 15.07.2011) 253, K/1, K.P. Road, Nagercoil - 629 003, Kanyakumari District, Tamilnadu. Phone : (04652) 230108, 230109 E.mail : vivekinstitute2011@gmail.com

Date: 16.07.2022

TRAINING CERTIFICATE

This is to certify that Ms. G.V. Varsha (Roll No.20UBT028), undergoing IInd year B.Tech (Biotechnology) in Kamaraj College of Engineering & Technology, S.P.G.C., Nagar, K. Vellakulam, had undergone 'Internship training program' in our Institution from 01.07.2022 to 15.07.2022. During this period, she showed keen interest in observation and practical sessions. Her conduct and character are good. We wish all the best in her future endeavors.

Dr. S.R. Srinivasa Kannan, MD (Path) Director.

R.Rinicha

SUGANTHI DEVADASON MARINE RESEARCH INSTITUTE

(Recognised by Manonmaniam Sundaranar University, Tirunelveli & UGC)

SDMRI ST

(

44 - Beach Road **Tuticorin - 628 001** Tamilnadu, India
 Tel
 : +91 461 2336488 / 2323007

 Fax
 : +91 461 2325692

 E-mail
 : director@sdmri.in

 Web
 : www.sdmri.in

11 July 2022

Certificate

This is to certify that **Miss. R. Rinisha**, II-year B.Tech - Biotechnology (Reg.No: 920420UBT029), Kamaraj college of Engineering and Technology, Madurai has undergone Inplant training at Suganthi Devadason Marine Research Institute, Tuticorin from 29.06.2022 to 11.07.2022. She has gained knowledge and practical experience in the following research activities:

- Analysis of physio chemical parameters from water and sediment samples
- Isolation of pathogenic microorganisms from water and sediment samples
- Instruments handling (pH meter, Turbidity meter, Millipore vacuum filtration unit, Colony counter, Laminar air flow chamber, Autoclave, Hot plate, Salinity refractometer)



2022

(J.K. Patterson Edward) Director, SDMRI

Register No: <u>92 042 0487035</u> lias conducted by Department of Bietechnelegy, Kamanoj Cellege ef Engineening; and Technelegy learned and successfully completed by the Internship course of Meleulan Bielegy Internship Training Certificate Managing Director · mere VJ BIOTECH, Coimbatore from 27-66-2022 to II-07-2022 This is to certify that Mr Ms. M. Yogashi and Grenetic Engineering Techniques BIOTECH Course Organizer to the second

(

Scanned with ACE Scanner





SUGANTHI DEVADASON MARINE RESEARCH INSTITUTE

(Recognised by Manonmaniam Sundaranar University, Tirunelveli & UGC)

44 - Beach Road **Tuticorin - 628 001** Tamilnadu, India Tel : +91 461 2336488 / 2323007 Fax : +91 461 2325692 E-mail : director@sdmri.in Web : www.sdmri.in

11 July 2022

Certificate

This is to certify that Miss. E. Varsha, II-year B.Tech - Biotechnology (Reg.No: 920420UBT038), Kamaraj college of Engineering and Technology, Madurai has undergone Inplant training at Suganthi Devadason Marine Research Institute, Tuticorin from 29.06.2022 to 11.07.2022. She has gained knowledge and practical experience in the following research activities:

- Analysis of physio chemical parameters from water and sediment samples
- Isolation of pathogenic microorganisms from water and sediment samples
- Instruments handling (pH meter, Turbidity meter, Millipore vacuum filtration unit, Colony counter, Laminar air flow chamber, Autoclave, Hot plate, Salinity refractometer)
 - SCINDASON MARINE RESEARCH 11 JUL 2022 * TUTICORIN * 3101

07/2022

(J.K. Patterson Edward) Director, SDMRI



(Registered No. : JM 2225)

Anna Nagar, PALANI - 624 601, Tamil Nadu.

Dr.M.K.Ramasamy M.S Dr.P.Selvaraj M.D.DCH Surgeon Consultant Peadiatrician Dr.Parani Selvaraj M.D. och Consultant Obstetrician & Gynaecologist

Ph: 04545 - 242623 Fax: 04545 - 243623

Cell : 91506 32594, 91506 32595, 91594 42623

Date: 11.07 2022

TRAINING CERTIFICATE

This is to certify that MISS. K. Gowsalya, has been training for in KG Hospital, Palani from 30.06.2022 to 11.67.2022.

Yours Sincerely. DR. P.SELVARAJ, MD, DCH.,

Dr.P. SELVARAJ M.D., D.C.H., Reg. No: 44437 K. G. HOSPITAL, PALANI - 624 601.



6

0

0

0



INTERNSHIP CERTIFICATE

14.07.2022

This is to certify that Ms.R.Vinodhini has successfully completed 14 Days internship programme from 01/07/2022 to 14/07/2022 at this company.

During the internship, she was exposed to the various activities in Research & Development and QC (Micro and Chemistry) department.

We found her extremely inquisitive, punctual and hard working. She was very much interested to learn the functions of the department and also willing to put her best efforts and get into the depth of the subject to understand it better.

Her association with us was very fruitful and we wish her all the best in her future endeavours.

For Peninsular Export Company, GSTIN. 33AABF T9693F 1ZW IME PENINSULAR EXPORT COMPANY No 1, Patel Road, VIRUDHUNAGAR - 626 001. No 04562 245024, 245025 Authorized Signatory S. ASHA SHEEKIN

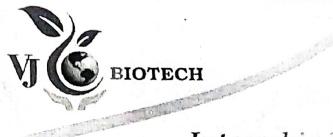
HR Manager



The Peninsular Export Company

Regd. Office : 1, Patel Road Virudhunagar 626 001 Tamilnadu, India 04562 245024

Branch Office : Shop No. B41 Koyambedu Whole Sale Food Grain Market Complex Koyambedu Chennai 600 092 044 2479 0633



Register No: 120420UBT043

Internship Training Certificate

This is to certify that Mr /Ms. _ P. Berli Gladiya Department of Biotechnology, Kamaraj Bollege of Engineering and Technology has learned and successfully completed by the Internship course of _____ Molecular Biologys conducted by and Genetic Engineering Techniques VJ BIOTECH, Coimbatore from 27-06-2022 to 11-07- 2022

Course Organizer

0 dial Managing Director



(

(



INTERNSHIP CERTIFICATE

14.07.2022

This is to certify that M.V.Shankar Ganesh has successfully completed 14 Days internship programme from 01/07/2022 to 14/07/2022 at this company.

During the internship, he was exposed to the various activities in Research & Development and QC (Micro and Chemistry) department.

We found his extremely inquisitive, punctual and hard working. He was very much interested to learn the functions of the department and also willing to put his best efforts and get into the depth of the subject to understand it better.

His association with us was very fruitful and we wish his all the best in his future endeavours.

For Peninsular Export Company, GSTIN.33AABFT9693F1ZW THE PENINSULAR EXPORT COMPANY No 1, Patel Road, VIRUDHUNAGAR - 626 001. Ph: 04562 245024, 245025 Authorized Signatory S. ASHA SHEEKIN HR Manager



The Peninsular Export Company

Regd. Office : 1, Patel Road Virudhunagar 626 001 Tamilnadu, India 04562 245024

Branch Office : Shop No. B41 Koyambedu Whole Sale Food Grain Market Complex Koyambedu Chennai 600 092 044 2479 0633





Date: 11 Jul 2022

INTERNSHIP COMPLETION CERTIFICATE

Mr. V. Prasanna Vengatesh (920420UBT046) studying B.Tech. Biotechnology at Kamaraj College of Engineering and Technology, Madurai has completed his internship at Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu between 27 June 2022 and 11 Jul 2022.

He is energetic, punctual, professional, dedicated, sincere and carries good social skills. We wish him all the best for his future endeavour.

Sincerely,

D-BODY

C

Prof. A. Heber Head of Academics & Research

Prof. HEBER ANANDAN HEAD ACADZMICS & RESEARCH Dr. Agarwai's Eye Hospital Tirunelveli, Tamilnadu.



Branch Office : Dr. Agarwal's Health Care Ltd. No. 10/1/1-5, Land Mark Towers, South Bye Pass, Opp. to BSNL, Vannarpet, Tirunelveli - 627 003. Ph : 0462-2501818, 2501819 | Mobile : 82200 13039 | Email : tirunelveli@dragarwaLcom

Regd. & Corporate Office : 3rd Floor, Buhari Towers, No.4, Moores Road, off Greams Road, Near Asan Memorial School, Chennai - 600 006. TeL : +91 44 4378 7777 | +91 44 4378 7778 | CIN : U85100TN2010PLC075403 | GST No. : 33AADCD4418M1Z0 Email : Info@dragarwaLcom | Website : www.dragarwaLcom



N.Rama Varier Ayurveda Foundation



Madurai, Tamil Nadu

INTERNSHIP CERTIFICATE AWARDED TO

Name NITHYASHREE. 8. R. (20 UBT049)

Degree Dys B. TECH Betechnology College KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

Has undergone training from 27/06/22 to 35% /07/22 in our ayurvedic pharma industry & reswarch center. During the training he/she has exposed to division of ayurvedic industry such as raw material store, production, tableting, packing, quality control, quality assurance, phytochemical analysis, research & development.

He / She was curious and very interactive during the training session.

Dr. Suresh Govindan Research Head

Dr. Ramesh R. Varier Managing Trusteee



RAL

el Tr

The AI

ar. N -43' DR.

cai e E

WE CARE TECHNOLOGIES

New No: 7/82, Old No:4/98, Nethall Street, Singaperumal Kall - 603 204, Kancheepuram District, Tamil Nadu, India

11 July 2022

TO WHOMSOEVER IT MAY CONCERN,

This is to certify that Sudharsan M. Third-Year student of B. Tech. Biotechnology from **Kamaraj College of Engineering and Technology, Virudhunagar** worked with We Care Technologies (a unit involved in eco-friendly recycling of market expiries from packaged food industries) as an intern from June 27, 2022 to July 09,2022 for seven days. During this period, he was involved in the following activities:

- Researched methods on the recycling of expired flavoured milk and conducted experiments to separate the milk solids and convert it into ingredient for animal feed.
- 2. Researched methods on the recycling of expired honey and identified different methods to generate valuable products. In this regard, he visited a microbrewery in Pondicherry and helped facilitate an experiment to use honey to produce alcohol.

During his short period of internship with us, he showed a lot of interest and enthusiasm in the assignments he was given. We believe he has the potential to excel in his field and wish him all success in his endeavor.

...

Regards,

For We Care Technologies,

Antony Samy A Proprietor

WE CARE TECHNOLOGIES Old No. 4/92 New No. 7/82, Nethaji St, Anurbanthapüram Road, Singaperumat Kotl - 603204 Kancheepuram Dist, Tamil Abdu

> Sustainable Technology Solutions for Clean and Green Environment Transforming Waste into Resources

ARAVIND EYE HOSPITAL

& Postgraduate Institute of Ophthalmology

Run by Govel Trust Affiliated to The Tamil Nadu Dr. MGR Medical University, Chennai

Madurai

1. Anna Nagar, Madurai 625 020, Tamil Nadu, India Phone: 0452-435 6100; Fax: 91-452-253 0984

Principal: Dr. R. Rathinam, dnb, ph.d, fams Chief Medical Officer: Dr. R. Kim, do, dnb Head of the Department: Dr. N.Venkatesh Prajna, dnb, frco

ARAVIND EYE CARE SYSTEM

 CHAIRMAN
 DIRECTOR - HUMAN RESC

 & DIRECTOR - QUALITY
 Dr. S.R. Krishnadas, do,

 Dr. R.D. Ravindran, MS, DO
 DIRECTOR

 CHAIRMAN - EMERITUS
 INFORMATION TECHNOLE

 & DIRECTOR - RESEARCH
 Dr. R. Kim, do, dnb

 Dr. P. Namperumalsamy, MS, FAMS
 DIRECTOR - FINANCE &

DIRECTORS - EMERITUS ACADEMICS Dr. G. Natchiar, MS, DO Dr. M. Srinivasan, MS, DO, FAMS DIRECTOR - PROJECTS Dr. S. Aravind, MS, MR

Director - operations R.D. Thulasiraj, mba DIRECTOR - HUMAN RESOURCES Dr. S.R. Krishnadas, do, dnb Director -INFORMATION TECHNOLOGY Dr. R. Kim, do, dnb Director - finance & ACADEMICS Dr. N.Venkatesh Prajna, dnb, fred Director - projects Dr. S. Aravind, MS, MBA

12/07/2022

CERTIFICATE OF PARTICIPATION

This is to certify that <u>Mr. V. KEERTHIVASAN</u> (Roll No: 20UBT014) studying second year B.Tech. Biotechnology, Kamaraj College of Engineering and Technology, Virudhunagar has completed the 2 weeks (From 27th June 2022 to 09th July 2022) observership program on "Ocular Microbiology and Molecular Biology Techniques" Organized by the Department Ocular Microbiology, Aravind Eye Hospital & Post Graduate Institute of Ophthalmology, Madurai.

S. Lally

Dr. S. Lalitha Prajna, Chief-Ocular Microbiologist Head-Department of Ocular Microbiology

Dr. Lalitha Projna, M.O. Meef-Dent of Octoor Pecrobiclopy Solvind Econospical & Sol Institute of Ophthalmology L. Ache Mudar Creace S25 and

ARAVIND EYE CARE SYSTEM



ARCHROMA INDIA PRIVATE LTD.

9th Floor, 'D' Building, MBC Park, Near HyperCITY Mall, Ghodbunder Road, Kasarvadavali, Thane (W) 400 615 Maharashtra, India. **www.archroma.com** CIN : U24246MH2013FTC242571

August 04, 2022

CERTIFICATE

This is to certify that **Ms. Benita Margaret** has successfully completed her Internship Training. This training was done in our BU Product Stewardship Lab at Thane from **04th July 2022 to 04th August 2022**.

During the above training period, the interest shown by the student in undergoing this organisation study and the conduct of the student in the learning process was **GOOD**.

We wish her all success in her career.

Yours faithfully, For Archroma India Private Limited.

D Anand Edwin Raj / Head of Human Resources

ę Kommaj College of Engineering Technology has successfully completed his / her Internship in MEDAL DIAGNOSTICS , Vickramasingapuram S. Sewthilitinn? **Managing Director** CERTIFICATE This is to certify that Mr / Ms. 1. Jasmine Kilda 678/6, PLU Building, Main Road, Vickramasingapuram -627425 **OF INTERNSHIP** from 27/06/2022 to 16/01/232 MEDALL DIAGNOSTICS Ph: 04634-212439 **MEDALL** DIAGNOSTICS D Lab Incharge addal U





INTERNSHIP CERTIFICATE

14.07.2022

This is to certify that **P.Vairamuthu** has successfully completed 14 **Days** internship programme from 01/07/2022 to 14/07/2022 at this company.

During the internship, he was exposed to the various activities in Research & Development and QC (Micro and Chemistry) department.

We found his extremely inquisitive, punctual and hard working. He was very much interested to learn the functions of the department and also willing to put his best efforts and get into the depth of the subject to understand it better.

His association with us was very fruitful and we wish his all the best in his future endeavours.

For Peninsular Export Company, GSTIN.33AABFT9693F1ZW THE PENINSULAR EXPORT COMPATE No 1, Patel Road, VIRUDHUNAGAR - 626 001 Ph : 04562 245024, 245025 ASHASHEEKIN Authorized Signatory 9 HR Manager



The Peninsular Export Company

Regd. Office : 1, Patel Road Virudhunagar 626 001 Tamilnadu, India 04562 245024 Branch Office : Shop No. B41 Koyambedu Whole Sale Food Grain Market Complex Koyambedu Chennai 600 092 044 2479 0633





Date: 11 Jul 2022

INTERNSHIP COMPLETION CERTIFICATE

Mr. S. John Paul Hudson (920420UBT031) studying B.Tech. Biotechnology at Kamaraj College of Engineering and Technology, Madurai has completed his internship at Dr. Agarwal's Eye Hospital, Tirunelveli, Tamil Nadu between 27 June 2022 and 11 Jul 2022.

He is energetic, punctual, professional, dedicated, sincere and carries good social skills. We wish him all the best for his future endeavour.

Sincerely,

St. Holson

Prof. A. Heber Head of Academics & Research

Prof. HEBER ANANDAN HEAD ACADEMICS & RESEARCH Dr. Agarwai's Eye Hospital Tirunelveli, Tamilnadu.





Branch Office : Dr. Agarwal's Health Care Ltd.

No. 10/1/1-5, Land Mark Towers, South Bye Pass, Opp. to BSNL, Vannarpet, Tirunelvell - 627 003. Ph : 0462-2501818, 2501819 | Mobile : 82200 13039 | Email : tirunelveli@dragarwal.com

Regd. & Corporate Office :

3rd Floor, Buhari Towers, No.4, Moores Road, off Greams Road, Near Asan Memorial School, Chennai - 600 006. Tet. : +91 44 4378 7777 | +91 44 4378 7778 | CIN : U85100TN2010PLC075403 | GST No. : 33AADCD4418M1ZO Email : info@dragarwal.com | Website : www.dragarwal.com



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI) S.P.G.Chidambara Nadar - C.Nagammal Campus S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF BIOTECHNOLOGY

Academic Year 2022- 2023 (Dec 2022 – Jan 2023)

INTERNSHIP DETAIL (Even semester)

II Year

S. No	Roll No	Reg. No	Name of the Student	No of Days	From Date	To Date	Name of the Industry	Address of the Industry
1.	21UBT017	920421214026	Nithya Shree.J	14	18/12/2022	31/12/2022	Balaji Medical Centre	Chennai
2.	21UBT030	920421214002	J.Adarsiya	13	19/12/2022	31/12/2022	Meenakshi Mission Hospital	Madurai
3.	21UBT031	920421214034	S.Sanmitaa	13	19/12/2022	31/12/2022	Meenakshi Mission Hospital	Madurai
4.	21UBT035	920421214029	S.Priyadharshini	13	19/12/2022	31/12/2022	Meenakshi Mission Hospital	Madurai

Internship Incharge

HoD



31.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. S. Sanmitaa, pursuing II Year B.Tech (Biotechnology) at Kamaraj College of Engineering & Technology, Virudhunagar has undergone training in the Department of Microbiology and Serology in our Institution from 19.12.2022 to 31.12.2022.

During the above period, her involvement in the subject was good.

Alagumuni General Manager - HR



Lake Area, Melur Road, Madurai - 625 107. Taminadu, INDIA, P. 0452 - 426 3000/254 3000. F. 0452 - 258 6353, info@mmhrc.com www.mmhrc.com



31.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. S. Priyadharshini, pursuing II Year B.Tech (Biotechnology) at Kamaraj College of Engineering & Technology, Virudhunagar has undergone training in the Department of Microbiology and Serology in our Institution from 19.12.2022 to 31.12.2022.

During the above period, her involvement in the subject was good.

m

K. Alagumuni General Manager - HR



Lake Area, Melur Road, Madural - 625 107. Tamilnadu, INDIA, P. 0452 - 426 3000/254 3000. F. 0452 - 258 6353, info@mmhrc.com www.mmhrc.com

CO Areenatch Contre

31.12.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. J. Adarsiya, pursuing II Year B.Tech (Blotechnology) at Kamaraj College of Engineering & Technology, Virudhunagar has undergone training in the Department of Microbiology and Serology in our Institution from 19.12.2022 to 31.12.2022.

During the above period, her involvement in the subject was good.

K. Alagumuni General Manager - HR



Late Area, Melur Road, Madural + 625 107, Tamileadu, IHDIA, P. 6452 - 428 1000/254 3000. F. 6452 - 258 6353, Info@mmArc.com waw.mmhrc.co



Balaji Medical Centre

An ISO 9001:2015 Accredited Organization Info@batajimedicalcentre.com, dr@batajimedicalcentre.com

 CHENNAI
 No 3 (3/2), Jagaileeswaran Street, TNagar, Chennal 600 017. INDIA <: 044-24364651752753</td>

 No 38, Manikodi Simirasan Nagar Main Road, Rajiv Gendhi Salal, Perungudi, Chennal 600 096. INDIA <: 044-29865513714</td>

 TUTICORIN
 Piet No 51, Door No 20/10, Roche Colony, South Beach Road, Tuticorin - 628 001. INDIA <: 0461-2332719720</td>

 KOCHI
 No 66/2345A, Veekshnam Road, Ernakulam, Kochi 682018. INDIA <: 0484-2395006707708</td>

 VUZAG
 Door No 39-11-63/4-1, Murali Nagar, Visakhapatnam, Andhra Pradesh-530.007. INDIA <: 0891-27102997399</td>

 MANGALORE
 Shop No 5, Door No 1-05/31, Kulur-Kavoor Aliport Road, Vivek Nagar, Panjimogaru, Mangalore-575.013. INDIA Sc 0824-2972719720.

Date: 10/01/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms.J.NITHYASHREE (IIYear) B.Tech(Biotechnology) at Kamaraj College of Engineering & Technology,Virudhunagar has undergone Training in the Department of Microbiology ,Serology and Medical Pathology in Our Centre (BALAJIMEDICAL CENTRE) From 18/12/2022 to 31/12/2022.

During the above Period, Her Involvement in The Subject was good.

Dr.A.H.Balaji Dr MBBS FCIP C PGDHSC (DIAB) te General of Shipping Approved b Consult Managies Dir get er sychologiat a. No. 55217



"HEALTHIER MARINERS TOWARDS A WEALTHIER NATION"