



**A.V.V.M. SRI PUSHPAM COLLEGE (AUTONOMOUS),**  
**POONDI - 613503, THANJAVUR - DT.**  
**STAFF PROFILE AS ON - 31-01-2022**



1. Name of the Staff : **Dr. M. Mahadevi**  
2. Designation : Asst. Professor  
3. Academic Qualification : M.Sc, M.Phil, Ph.D.,

Course	UG	PG	M.PHIL.	PH.D.
Year	2001 -2004	2004 - 2006	2007	2018-
College & University	M.R.G.Arts college, Mannargudi. Bharathidasan university	A.V.V.M.S.P. college .poondi. Bharathidasan .University	A.V.V.M.S.P. college .poondi. Bharathidasan .University	K.N.Govt Arts College for Women Thanjavur Bharathidasan .University

4. Date of Birth & Age : 10.07.1983 , (38)
5. Date of Appointment : Self - Finance : 

D	D	M	M	Y	Y	Y	Y
1	1	0	7	2	0	0	7
FIP :							
Aided :							
0	2	1	2	2	0	1	9
6. Total Service : 12 yrs
7. Teaching Experience in completed years : UG 

14
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 PG 

14
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 M.Phil. 

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- Mobile Number : 9524347538  
E-Mail Address : Mahamadhu83@gmail.com
9. No. of Orientation / Refresher Courses and Training Programmes attended : 01 Annexure - I
10. Whether FDP availed, if yes, furnish details : - Annexure - II
11. No. of Seminars attended : 01 Annexure - III
12. No. of Papers Presented : 02 Annexure - IV
13. No. of Papers Published : 17 Annexure - V
14. No. Of Books Published : - Annexure - VI
15. No. Of Guest Lectures delivered in other institutions : - Annexure - VII
16. No. Of Research Projects undertaken : Minor Nil Major Nil Others (Specify) Nil Annexure - VIII
17. No. Of Seminars organised : Annexure - IX
18. No. Of. M.Phil. Scholars Guided : Completed Nil Ongoing Nil Annexure - X
19. No. Of. Ph.D. Scholars Guided : Awarded Nil Ongoing Nil Annexure - XI
20. Participation in Academic Research Bodies in other institutions : Nil Annexure - XII
21. Service rendered in academic / Extra Curricular/ Extension activities within the College other than teaching : Nil Annexure - XIII
22. Service rendered in Professional bodies outside the College : Nil Annexure - XIV
23. Honors / Awards received : Nil Annexure - XV

M. Mahadevi

**Signature of the Staff**

**ANNEXURE – I****DETAILS OF ORIENTATION, REFRESHER COURSES AND TRAINING PROGRAMMES ATTENDED:**

<b>SL. NO.</b>	<b>COURSE</b>	<b>UNIVERSITY</b>	<b>PERIOD</b>	<b>TITLE</b>
1.	Training Programme	Avvm S.P.College, Poondi	7 <sup>th</sup> feb 2005	Food Technology
2.	Training Programme	Avvm S.P.College, Poondi	26 <sup>th</sup> july 2005	Pancha Kavya Preparation
3.	Training Programme	Avvm S.P.College, Poondi	28 <sup>th</sup> sep 2005	Edible Mushroom Cultivation Technology
4.	Faculty Induction Programme	Madurai Kamaraj University, Madurai	01.02.2022 to 02.03.2022	Orientation programe
5.				
6.				

**ANNEXURE – II****WHETHER FDP AVAILED, IF YES, FURNISH DETAILS**

<b>Name of the institution</b>	<b>Period of Study</b>	<b>Date of submission</b>	<b>awarded</b>

**SEMINARS/CONFERENCES, SYMPOSIA, WORKSHOPS, ETC ATTENDED**

<b>Sl. No.</b>	<b>Title of the Seminars/Conferences, Symposia, Workshops</b>	<b>Level (State / National / International)</b>	<b>Sponsoring Agency and Name of the Institution</b>	<b>Date</b>
	Seminar on plant Biotechnology	state	A.V.V.M.S.P.College, Poondi	14.10.05

**PAPERS PRESENTED IN SEMINARS/CONFERENCES, SYMPOSIA, WORKSHOPS, ETC**

<b>Sl. No.</b>	<b>Title of the Paper</b>	<b>Level (State / National / International)</b>	<b>Sponsoring Agency and Name of the Institution</b>	<b>Date</b>
1	Anti Fungal activities of selected medicinal plants against Phytophthora palmivora causing root rot disease in Carica Papaya L.	National	A.,V.V.M. Sri Pushpam College ( autonomous) Poondi	5 <sup>th</sup> & 6 <sup>th</sup> October 2017
2	Green synthesis of silver nanoparticles using papaya root in aqueous extract.	International	Jamal Mohamed college, Trichy.	30.1.2020

## RESEARCH PAPERS PUBLISHED:

Sl. No.	Title of the Paper	JOURNAL			Page Number
		Name	Volume	Year / Month of Publication	
1.	Isolation of <i>Phytophthora palmivora</i> (Butl) Pathogenic to Papaya plant in Thiruvuru District	International journal of Scientific Research and Development	4	May 2016`	412-414
2.	Studies on isolation and identification of mycoflora in <i>Carica papaya</i> L. Filed soil from Perumalagram, Thiruvuru DT ,Tamil Nadu, India.	International Journal of Current Research and Academic Review	4(6)	June 2016	116-127
3.	Invitro Screening and molecular characterization of <i>T.harzianum</i> Against, <i>Phytophthora palmivora</i> causing root rot disease in <i>Carica papaya</i> .L	International journal of Scientific Research and Development	4	March 2018	156-168
4.	Invitro Studies of some medicinal plant Extract Against papaya root rot disease	International Journal of current advanced Research	7	March 2018	458-461
5.	Pharmacological effect of <i>Moringa oleifera</i> Leaves Extract on Human Hepatoma Cell Line HepG-2.	International Journal of Botany Studies.	6	Sep 2021	229-232
6.	Natural Movement and Therapeutic Different Bioactive Constituents and Biochemical Composition of ( <i>Carica papaya</i> L.)	International Journal of Botany Studies.	6	Sep 2021	
7.	People Preferences in Selection of Hospital during Covid-19 Impact on Personal Life Review	(IJERT. Journal)	9	Sep 2021	

8.	<b>Phytochemicals Screening of Physico-Chemical Parameters and Fluorescence Analysis of Plant Ethanolic Leaf Extract <i>Costus pictus</i></b>	Asian Journal of Advances in Medical Science	4	<b>March 2020</b>	
9.	<b>Anticancer Activity of <i>Piper Nigrum</i> Methanolic Extract Against A549 Human Lung Cancer Cell Line</b>	Sambodhi Journal.	43	<b>Oct 2020</b>	<b>57-62</b>
10.	<b>Phytochemicals As Potential and <i>In Vitro</i> Anticancer Activity of <i>Piper Nigrum</i> Ethanolic Extract Against A549 Human Lung Cancer Cell Line.</b>	Kala Sarovar Journal	23	<b>Dec 2020</b>	<b>166-173</b>
11.	<b>Anticancer Activity of <i>Pedaliium Murex</i> Linn Methanolic Leaves Extract Against A549 Human Lung Cancer Cell Line</b>	Asian Journal of Advances in Research	5	<b>Sep 2020</b>	<b>34-40</b>
12.	<b>Covid-19 Therapeutics &amp; Recent Developments in Current Evidence Reviews.</b>	International Research Journal of Modernization in Engineering Technology and Science	2	<b>Sep 2020</b>	<b>1445-1451</b>
13.	<b>Pharmacognostical and Phytochemical Screening of Physico-Chemical Parameters and Fluorescence Analysis on Ethanolic Leaves Extract of <i>Ipomoea Sepiaria</i> Koenig</b>	Waffen-und Kostumkunde Journal`	9	<b>Sep 2020</b>	<b>69-87</b>
14.	<b>Anti – Hyperglycemia Activity of <i>Aloe Vera</i> Ethanolic Extract against Mouse 3t3-L1 Adipocyte Cell Line.</b>	International Journal of Applied Chemical and Biological Sciences	1	<b>Sep 2020</b>	<b>58-66</b>
15.	<b>Pharmacognostical And Phytochemical Screening of Ethanolic Extract of <i>Silybum marianum</i> (L).</b>	International Journal of Applied Chemical and Biological Sciences.	1	<b>Sep 2020</b>	<b>35-45</b>

16.	<b><i>In Vitro</i> Antioxidant Properties and Free Radical Scaveneing Activity of Aqueous Extract of <i>Papaya</i> Root ).</b>	Aochana Chakra Journal	9	May 2020	2315- 2327
17.	<b>Isolation and Purification of <i>Cyanobacteria</i> in Marine water sample at Ramanathapuram (Dt)</b>	Aochana Chakra Journal	9	May 2020	2306- 2314

**BOOKS PUBLISHED:**

<b>Sl. No.</b>	<b>Name of the Book / Title of the Article/Book/Editor</b>	<b>Publisher</b>	<b>Place and Year of Publication</b>

## ANNEXURE - VII

**GUEST LECTURES DELIVERED:**

<b>Sl. No.</b>	<b>Title of the Guest Lecture</b>	<b>Place</b>	<b>Date</b>

## ANNEXURE - VIII

**RESEARCH PROJECTS - ONGOING AND COMPLETED:**

<b>SL. No.</b>	<b>Title of the project</b>	<b>Minor/ Major</b>	<b>Name of the Funding Agency</b>	<b>Period</b>	<b>Amount Sanctioned</b>	<b>UC Submitted If Yes, Date and Year</b>

## ANNEXURE - IX

**SEMINARS, CONFERENCES, SYMPOSIA, WORKSHOPS ORGANIZED:**

<b>Sl. No.</b>	<b>Title of the Seminar/Conference/Symposia Workshop</b>	<b>Name of the Sponsoring Agency</b>	<b>Amount Sanctioned</b>	<b>Period</b>	<b>UC submitted If Yes, Date and Year</b>



## ANNEXURE - X

## Research Experience (M.Phil.) - Guided and Guiding

Sl. No.	Name of the Scholar	Title of the Dissertation	Year of Study	University

## ANNEXURE - XI

## Research Experience (Ph.D.) - Awarded, Submitted and Guiding

Sl. No.	Name of the Scholar	Title of the Thesis	Year of Study	University

## ANNEXURE - XII

**PARTICIPATION IN ACADEMIC RESEARCH BODIES IN OTHER INSTITUTIONS:**  
(Mention the period in the relevant column)

Name of the Institution	Academic Council	BOS	Research committee	Academic Audit committee	Member in University committee	Any other (specify)

## ANNEXURE - XIII

## SERVICE IN ACADEMIC / EXTRA CURRICULAR/ EXTENSION ACTIVITIES

Sl. No.	Name of the Activity	Period

**MEMBERSHIP IN PROFESSIONAL BODIES**

<b>Name of the Professional Body</b>	<b>National/International</b>	<b>Period</b>

**HONORS AND AWARDS RECEIVED**

# Invitro Screening and Molecular Characterization of *Trichoderma Harzianum* Against *Phytophthora Palmivora* (Butl.) Causing Root Rot Disease in *Caricapapaya* L.

M. Mahadevi<sup>1</sup>, A.Thavaselvi<sup>2</sup>, V. Latha<sup>1</sup>, A. Panneerselvam<sup>2</sup>

<sup>1</sup>Kundavai Naachiyaar Government Arts College For Women (Autonomous), Thanjavur, Tamil Nadu, India

<sup>2</sup>PG and Research Department of Botany and Microbiology, A.V.V.M Sri Pushpam College (Autonomous), Poondi, Thanjavur, Tamil Nadu, India

## ABSTRACT

The present investigation showed *Trichoderma. harzianum* exhibited promising biocontrol ability against *P. palmivora* (Butl.) by dual culture experiment and poisoned food technique. *T. harzianum* was found to be the most effective antagonists against *P. palmivora* (Butl.). GC-MS analysis of ethyl acetate extract of the filtrate of *T. harzianum* revealed the presence of 17 compounds by representing 17 prominent peaks. The major phytocompound of *T. harzianum* was Diethyl Phthalate (RT= 4.105 min) with 29.994 % of peak area. The ITS region gene sequence of potential biocontrol fungus obtained in this study were deposited in GenBank under the accession number KY346985. The sequence of potential biocontrol fungus showed the maximum homology with *T. harzianum* (GenBank Accession Number KC33021) by BLAST homology analysis. Therefore potential biocontrol fungus was further confirmed as *T. harzianum* by molecular analysis. The secondary structure of ITS region gene of *T. harzianum* showed 45 stems, 28 bulge loops and 12 hairpin like structure respectively. The free energy of ITS region gene of *T. harzianum* secondary structure was – 291.0 kkal/mol. The total restriction enzyme sites of ITS region gene of *T. harzianum* were 35. The GC and AT content of ITS region gene of *T. harzianum* were found to be 56 and 44% respectively. These exacting results suggested that fungicide play an important role in controlling the phytopathogenic fungi.

**Key Words:** Fungicides, *T. harzianum*, GC-MS, Biocontrol.

## I. INTRODUCTION

Plant diseases caused by fungi are one of the significant destructive pathogens to economic crops of India and worldwide. The diseases produced by fungi cause a significant loss to many economic crops worldwide. The fungi generate the greatest impact in terms of reduction in crop productivity or post harvest losses and leads to a huge loss to mankind (Tapwal et al., 2011). Among the plant pathogenic fungi, *P. palmivora* (Butl.) causing root and stem rot are reported as the most destructive pathogens and cause extensive damage and yield losses (Al-Askar, 2012).

*Trichoderma* sp. are fungi that are present in nearly all soils and other diverse habitats. In soil, they frequently occur as the most prevalent culturable fungi. They are beneficial fungi that provides the most cost effective means of biocontrol preventing or controlling plant damaging pathogens. Its mechanism of action include mycoparasitism, antibiosis, competition for nutrients or space, tolerance to stress through enhanced root and plant development, solubilization and sequestration of inorganic nutrients, induced resistance and inactivation of the pathogen's enzymes (Romao-Dumaresq et al., 2012).



# A.V.V.M. SRI PUSHPAM COLLEGE (Autonomous)

Poondi - 613503, Thanjavur Dt, Tamil Nadu.

in Collaboration with  
Department of Microbiology, Bharathidasan University, Tiruchirappalli.


## **National Conference on Recent Advances in Modern Biology and Rural Development (RAMBARD - 2017)**

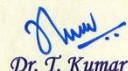
5<sup>th</sup> & 6<sup>th</sup> October

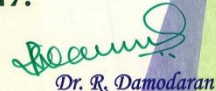
### Certificate

This is to certify that Mr/Ms/Dr. M. Mahadevi Assistant Professor  
Dept. of Botany and Microbiology A.V.V.M. S.P.C. Poondi has  
chaired/delivered invited lecture/Participated/Presented paper entitled  
Antifungal activity of  
..... in oral / poster session in the **National Conference on  
Recent Advances in Modern Biology and Rural Development (RAMBARD - 2017),**  
held at Department of Botany & Microbiology, on **5<sup>th</sup> & 6<sup>th</sup> October 2017.**

  
Dr. V. Ambikapathy  
Organizing Secretary

  
Dr. N. Thajuddin  
Co-organizer  
BDU, Trichy

  
Dr. T. Kumar  
Co-ordinator

  
Dr. R. Damodaran  
Principal





## INVITRO STUDIES OF SOME MEDICINAL PLANT EXTRACTS AGAINST PAPAYA ROOT ROT DISEASE

Mahadevi M<sup>\*</sup>, Thavasselvi A<sup>2</sup>, Latha V<sup>1</sup> and Panneerselvam A<sup>2</sup>

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### ARTICLE INFO

#### Article History:

Received 6<sup>th</sup> December, 2017  
Received in revised form 21<sup>st</sup>  
January, 2018 Accepted 05<sup>th</sup> February, 2018  
Published online 28<sup>th</sup> March, 2018

#### Key words:

Biocontrol, *V. negundo* L., Antifungal  
activity, Plant extracts.

### ABSTRACT

The antifungal activity of Benzene, Diethyl ether, Distilled water extract and Ethyl acetate extracts of selected medicinal plants such as *A. indica* A. Juss., *C. roseus* (L.) G. Don, *Jadhatoda* L., *O. tenuiflorum* L. and *V. negundo* L. against the *P. palmivora* (Butl.) revealed that *V. negundo* L. plant extracts exhibited maximum antifungal activity. The antifungal activity of the *V. negundo* L. ethyl acetate extract was found to be comparable to the standard fungicides Copper oxychloride and Bordeaux mixture tested. The results indicated that the *V. negundo* L. plant extracts are good antifungal agents. Totally 29 prominent peaks were obtained in the mass spectrum of *V. negundo* L. plant extract. The major phytochemicals were 2-Butanol, 4-(2,2-dimethyl-6-methylenecyclohexylidene)-(18.115 %) and 4,8,13-Cyclotetradecatriene-1,3-diol, 1,5,9-trimethyl-12-1-met (15.226 %). Present study showed that *V. negundo* L. plant extracts are potential biocontrol agents for root rot disease in Papaya plant.

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### INTRODUCTION

Higher plants are much more important in the production of economically important organic compounds, pharmaceuticals, pesticides and fungicides (Aslam *et al.*, 2010). The antifungal activity from the plant extracts have been shown to be effective against plant pathogen and ecofriendly to the environment (Daru and Onyedeneke, 2010). Previously, the various plant extracts that have been reported as a source of biofungicide because of the substances of plant extract inhibited the growth of plant pathogens and reduced the hazard to human health and environment. The presence of antifungal compounds in higher plants has long been recognized as important factors for controlling some plant diseases (Tapwal *et al.*, 2011).

Natural plant products can be alternatives to currently used synthetic fungicides, since they provide unlimited opportunities for the discovery of new fungicides because of their rich bioactive chemical constituents. Plants produce secondary metabolites such as flavonoids, saponins, alkaloids, tannins, and phenols that are important for survival. These metabolites allow plants to defend themselves from herbivory effects, pathogens and from other plants, and also provide

protection from adverse physical effects, such as damaging UV-radiation, water loss, and low temperatures (Salehan *et al.*, 2013).

*P. palmivora* infects multiple hosts that hold an economic significance including cacao, coconut, papaya, mango, and black pepper making this a pathogen of great concern. Hence, in the present investigation to evaluate the five selected medicinal plants against *P. palmivora* (Butl.). Identify the bioactive compounds of potential biocontrol plant *V. negundo* L. by GC-MS analysis.

### MATERIALS AND METHODS

#### *In vitro* biological control of *P. palmivora* (Butl.) by using some medicinal plants

##### Collection of plant leaves

The medicinal plant leaves such as *Azadirachta indica* A. Juss., *Catharanthus roseus* (L.) G. Don, *Justicia adhatoda* L., *Ocimum tenuiflorum* L. and *Vitex negundo* L. were collected from Perumalagaram village, Thiruvarur Dt. and identified with the help of regional floras (Gamble, 1935; Matthew, 1983; Nair and Henry, 1983). Herbarium specimens were prepared by following Jeffrey (1982). Specimen was further confirmed with reference to Herbarium sheets available in the Department of Botany, Tiruchirappalli, Tamil Nadu, India and a voucher herbarium specimen was deposited in the Herbarium, Tiruchirappalli.

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## Natural movement and therapeutic different bioactive constituents and biochemical composition of (*Carica papaya* L.)

Mahadevi M<sup>1</sup>, Azhagu Madhavan S<sup>2</sup>

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### Abstract

*Papaya* (*Carica papaya* Linn.) is generally known for its food and health benefits all through the world. The restorative properties of *papaya* leafy foods parts of the plant are additionally notable in customary arrangement of medication. Since, each piece of *papaya* tree has financial worth; it is developed on business scale. During the most recent couple of many years extensive advancement has been accomplished with respect to the natural movement and therapeutic use of *papaya* and now it is considered as significant nutraceutical organic product plant. Phytochemical analysis of *papaya* leaves in presence of absences in natural for different modern and drug items for different illnesses. The fluorescence analysis presence of chemical nature. Inorganic elements iron concentration high levels and physicochemical parameters maximum Ash value 11.2% and Minimum value Sulphated Ash 9.2%. Medicinal *papaya* leaf powdered and products thereof are used in many countries in the treatment and management of diabetes. In the current survey dietary benefit of the foods grown from the ground properties of its different parts have been examined to give aggregate data on this multipurpose business organic product crop.

**Keywords:** *Carica papaya* L, fluorescence, phytochemical, physico-chemical analysis

### Introduction

*Carica papaya* L., is a herbaceous plant with conspicuous leaves (20-60 cm long), and is an individual from the Caricaceae family, native to the tropical area of Mexico, Central America and northern South America. *C. papaya* is conveyed all through the jungles and subtropics where it is widely developed [1]. The portrayed metabolites from the plant are chitinase, glutamyl cyclase and cysteine end peptidases of class-II and III from *Carica* latex. Linalool in organic product mash, and alkaloids, for example, carpaine, pseudocarpaine, dehydrocarpaine I and II and kaempferol and quercetin in the leaves. Then again, there are reports that depict the remedial impact of *C. papaya* leaf on dengue and intestinal sickness and as calming. Different reports propose that an aged *papaya* readiness altogether lessens plasma glucose levels in sound subjects and in patients with type 2 diabetes [2]. The hypoglycemic exercises of *Carica papaya* have been recently depicted for its leafy foods by and by, the accessible data with respect to the leaves is inadequate. Phytochemicals simply refer to chemicals that are found in plants [3]. It is terms that are broadly used to describe chemical constituents of plants that differ from the normal nutrients [4]. These phytochemicals work in several ways which differ from one another depending on the functional group present in the chemical. Some are effective as free radical scavengers while some have anti-bacterial, anti-viral, anti-fungal and anti-inflammatory activity [5]. Notably among these phytochemicals are phenolic compounds flavonoids, alkaloids, tannins, saponins, cardiac

glycosides, steroids, quinines and terpenoids soon with further sub-classes. Phytochemical studies on the plant's extracts revealed and justified the local use of the plants in the treatment of diseases [6]. As a consequence of the ethnobotanical survey, many species of plants and herbs with wound healing activities have been identified in Africa and other developing countries. The use of medicinal plants in wound management and care involves disinfection, debridement and the provision of adequate environment for the natural healing process [7-11]. Diabetes is characterized by metabolic dysregulation primarily of insulin secretion, impaired insulin action or both. This review mentioned healthful plant species from Bharat and showed that they need anti-diabetic activity. Also, many of these species have phenolic content, phytosterols, saponins and flavonoids [12-13]. Over the centuries, Indian herbal drugs have served as a major source of medicines for the prevention and treatment of many diseases including Ethno botany embraces a complex relationship between plants, people and culture and this relationship between plants and human cultures is not limited to the use of plants for food, clothing and shelter but also includes their use for religious ceremonies, ornamentation and health care.

### Material Methods

#### Plant Collection

The fresh leaves of *Carica papaya* L. were collected from Saliyamangalam, Thanjavur District, Tamil Nadu, India.



**IN VITRO ANTIOXIDANT PROPERTIES AND FREE RADICAL SCAVENGING  
ACTIVITY OF AQUEOUS EXTRACT OF PAPAYA ROOT**

**M. Mahadevi<sup>1\*</sup> and S. Azhagu Madhavan<sup>2</sup>**

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**ABSTRACT**

The antioxidant is reactive free radicals In the assay, DPPH radical is converted to the corresponding hydrazine, and the color of the solution is changed from violet to yellow indicates the scavenging behavior of the plant sample due to bioactive compounds such as phenolic compounds, flavonoids, tannins, and their derivatives. From the Aqueous extract *Papaya Root*, showed a percentage inhibition of  $64.61 \pm 0.227$  while ascorbic acid showed a percentage inhibition of  $85.31 \pm 0.29$  at a concentration of  $80 \mu\text{g/mL}$ . The  $\text{IC}_{50}$  46.66, 37.64 and  $28.27 \mu\text{g/mL}$  for AEP and ascorbic acid respectively higher antioxidant activity than AEP extract possessed a good radical scavenging capacity. No single inhibitor will combat the results of each atom. Just as free radicals have different effects in several areas of the body, every antioxidant behaves differently due to its chemical properties. The results obtained for the scavenging activity against hydrogen peroxide is presented in and the graphical representation. In certain contexts, however, some antioxidants may become pro-oxidants, which grab electrons from other molecules, creating chemical instability that can cause oxidative stress.

**PHARMACOGNOSTICAL AND PHYTOCHEMICAL SCREENING OF  
PHYSICO-CHEMICAL PARAMETERS AND FLUORESCENCE  
ANALYSIS ON ETHANOLIC LEAVES EXTRACT OF *Ipomoea sepiaria*  
KOENIG EX. ROXB.**

**M. Mahadevi<sup>1\*</sup> and S. Azhagu Madhavan<sup>2</sup>**

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**Thanjavur Dt., Tamilnadu, India.**

**ABSTRACT**

Several traditional medicinal plants have been investigated concerning their anti-obesity potential sources of is *Ipomoea sepiaria* Koenig ex. Roxb. which belongs to the family Convolvulaceae and is a glabrous or occasionally pubescent, slender twining climber with a slightly thickened or tuberous perennial root and leaf with dull purplish patches in the center and pink to purplish flowers. The medication is rumored in fables arrangement of medication for different helpful properties like, love potion and counteractant to arsenic harming, tonic, restoring, diuretic, purgative, uterotonic and sterility in ladies and leaves is indicated especially in diabetes. Phytochemical screening of various extracts of *Ipomoea sepiaria* revealed the presence and absence of different phytochemicals are present in ethanol extract, further studies were carried out with leaves of *Ipomoea sepiaria* ethanol extract. GC-MS Chromatogram of *Ipomoea sepiaria* is given in GC-MS analysis of *Ipomoea sepiaria* leaves ethanol extract revealed the presence of 20 bioactive compounds that are



**ISOLATION AND PURIFICATION OF CYANOBACTERIA IN  
MARINE WATER SAMPLE AT RAMANATHAPURAM (DIST),****M. Mahadevi<sup>1\*</sup> and S. Azhagu Madhavan<sup>2</sup>**<sup>1</sup>PG & Research Department of Botany & Microbiology, A.V.V.M. Sri Pushpam College  
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**Thanjavur Dt, Tamilnadu, India.****Abstract**

In the present examination broke down for assorted variety of cyanobacteria from east coast condition and physicochemical parameters of soil were investigated from the four distinctive investigation destinations. The soil physicochemical character like pH, salinity, Electrical conductivity, Organic Carbon, Organic Matter, Available Nitrogen, Phosphorus, Zinc, Copper, Iron, Manganese, Calcium, Magnesium and Potassium were experimently performed from Pamban, Keelakkarai, Tondi and Uchipuli of Ramanathapuram district conducted. The soil has extraordinary content of nutrients were presented in Keelakkarai area when compared with other places. The isolation of cyanobacteria like *Anabaena azollae*, *Chroococcus limneticus*, *Dermocarpa* sp., *Gloeocapsa magma*, *Johannesbaptistia* sp., *Gloeothece* sp., *Katagnymene* sp., *Microcoleus vaginatus*, *Myxosarcina* sp., *Nostoc muscorum*, *Oscillatoria spongelliae*, *Plectonema phormidiuodes*, *Pseudanabaena* sp., *Spirulina* sp., *Stigonema* sp., *Symploca* sp., *Synechococcus* sp., *Trichodesmium* sp and *Xenococcus* sp were recorded from four different places of Pamban, Keelakkarai, Tondi and Uchipuli of Ramanathapuram district were analysed. Among the four places the Keelakkarai has maximum number of colonies and species recorded than the other places. The diversity of cyanobacteria has excellent microbial resources of our country and back bone of the marine environment.

## PHYTOCHEMICALS AS POTENTIAL IN VITRO ANTICANCER ACTIVITY OF *Piper nigrum* ETHANOLIC EXTRACT AGAINST A549 HUMAN LUNG CANCER CELL LINE

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### Abstract

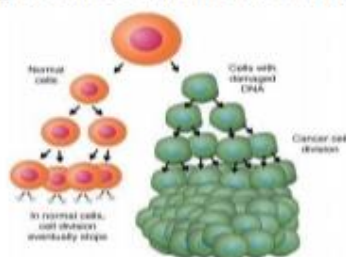
Pharmacologically, the plant has been investigated for antiulcerogenic, nephroprotective, hypolipidemic, sexual enhancer, moderating, antidermatophytic, disease counteraction specialist, antimicrobial and insecticidal activities. The present review may be a bundle of data collected from the published research articles and highlights the phytochemical and pharmacological aspects of *Piper nigrum*. Profoundly existences of ethnolic separate are data will be useful in building up the new definition with helpful and affordable incentive later on. A549 cells treated with *Piper nigrum* ethanolic extract in different hours (6, 12, 24 and 36 hours) after the 36 hours the cells growth are controlled. The information made by this particular examination gives relevant pharmacognostic and phytochemical data needed for fitting distinctive proof and confirmation of *Piper nigrum* of this particular species.

**Keywords:** Anticancer property, Human cancer cell line A549, *Piper nigrum*, Phytomedicine, tumors.

### 1. INTRODUCTION

Cancer may be a generic term of parts in the body and spread to other organs. Normally, human cells grow and divide to make new cells because the body needs them [1]. While cancer develops, though, this orderly process breaks down. The particular process becomes imbalanced and therefore the cells start dividing no end and should form growths called tumors (Fig. 1). Cancerous tumors are malignant, which suggests they will spread into, or invade, nearby tissues and even visit foreign places within the body through the blood and lymph. Unlike malignant tumors, benign tumors don't spread into, or invade, nearby tissues [2]. Benign tumors can sometimes be quite large, however.

Fig 1: Cancer cells and normal cell in multiplication



Cancer may be a group of diseases characterized by the uncontrolled growth of cells which will cause death (Fig.1). Notwithstanding numerous remedial therapies accessible for malignancy, the endurance rate and infection healing rate are extremely low. It's become an expanding public weakness that



## COVID-19 THERAPEUTICS & RECENT DEVELOPMENTS IN CURRENT EVIDENCE REVIEWS

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### ABSTRACT

The ongoing development of the novel pathogenic SARS-coronavirus 2 (SARS-CoV-2) is liable for an overall pandemic. Given the worldwide wellbeing crisis, medicate repositioning is the most solid alternative to plan a proficient treatment for contaminated patients immediately. The initial step of the viral replication cycle. The patient evaded mechanical ventilation and gained a prompt clinical and radiological improvement, after treatment of escalated plasma trade (PE) trailed by intravenous immunoglobulin (IVIG). COVID-19 may require serious consideration treatment or even consider the utilization of mechanical ventilation for patients with respiratory disappointment.

**Keywords:** SARS-CoV-2, COVID-19 infection, Respiratory disease, MoHFW, RT-PCR.

### I. INTRODUCTION

The COVID-19 pandemic caused by the SARSCoV- 2 has been an unprecedented global health challenge. There have been 24,193,010 globally affecting 216 countries and 826,141 deaths, as of August 27, 2020.<sup>1</sup> In India, there have been 3,310,234 cases with 60,472 deaths.<sup>2</sup> Given the unprecedented magnitude of the pandemic's impact on health and economy, therapies for COVID-19 are being actively investigated, and there are more than 1000 treatment and over 173 vaccine trials taking place worldwide, including 31 candidate vaccines in clinical evaluation and 142 in pre-clinical evaluation.<sup>3-4</sup> Recently, the antiviral agents remdesivir and favipiravir, which act by inhibiting viral replication, have been approved for COVID-19 treatment in severely ill patients by the Government of India.<sup>5-6</sup> Remdesivir has been shown to be effective in critically ill adults and recommended by the guidelines for hospitalized patients with severe COVID-19 (those with SpO<sub>2</sub> ≤94% on ambient air or requiring supplemental oxygen or oxygenation).<sup>7</sup> The rate and death rates were corresponded with DCI, particularly in nations with neighborhood transmission. The recommended duration of therapy non-intubated patients that may be extended to 10 days in ventilated patients. However, there is insufficient evidence to support for/against manifestations. Favipiravir, an oral medication, is mainly used for mild/moderate COVID-19 disease.

#### Identification of SARS-CoV-2 cluster cases of India

In December 2019, cases of pneumonia-like illness due to an unknown aetiological agent were reported in Wuhan city, Hubei province of China. The aetiological agent was identified as a member of the Coronaviridae family and was termed due to its genetic similarity with the Viruses renamed it as SARS coronavirus 2 (SARSCoV- 2)<sup>2</sup> The first case of SARS-COV-2 was reported from Kerala, India, on January 30, 2020 and since then, the numbers are increasing continuously. The present study is a retrospective analysis of two clusters of laboratory-confirmed from India and highlights their series of events, clinical features and sequence analysis. The present study is a retrospective analysis of two clusters of laboratory-confirmed from India and highlights their series of events, clinical features and sequence analysis. People in laboratory-confirmed case and persons who had undertaken international travel within and had developed symptoms, were taken as SARS-CoV-2 suspects as per the prevailing



## PHYTOCHEMICALS SCREENING OF PHYSICO-CHEMICAL PARAMETERS AND FLUORESCENCE ANALYSIS OF PLANT ETHANOLIC LEAF EXTRACT *Costus pictus*

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This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Received: 18 October 2020

Accepted: 21 December 2020

Published: 11 January 2021

Original Research Article

### ABSTRACT

Drugs originating from plant sources are reflection to be a promising alternative for other synthetic anti-diabetics such as sulphonylureas, insulin treatment and biguanides. Plant products are believed to more preferable due to less toxicity, economic and better patient compliance. Hence, medicinal plants and products thereof are used in many countries in the treatment and management of diabetes. Vitamins are organic substances that are essential in minute amounts designed for the growth and activity of the body. They are obtained naturally on or after plant and animal foods. Organic in this definition refers in the direction of the chemistry with molecules. The word organic means that the molecules of substance contain the element carbon. The term also means that vitamins can be destroyed and become unable to perform their functions in our bodies. Every component plays an important role and deficiency of anyone constituent may lead to abnormal developments in the body. Plants are a rich source of all the elements essential for a human being. Qualitative analysis of various inorganic elements revealed the presence of calcium, magnesium, potassium, Iron, sulphates and phosphates. The present study of a good source of pharmacognostical and physicochemical parameters have pivotal roles in identification, authentication and establishment of quality parameters and vitamins of the species. Supplementation of this *Costus pictus* may be useful for human health associated emerging diseases such as diabetes, hypertension and cancer.

**Keywords:** Hyperglycemia; photochemistry; phytochemical; physico-chemical analysis; fluorescence.

### 1. INTRODUCTION

Diabetes mellitus can be described as a metabolic disorder of multiple etiologists characterized by chronic hyperglycemia by means of disturbances of carbohydrate, fat and protein metabolism due to

defects in insulin secretion, insulin action, or both [1]. Diabetes mellitus is a multidimensional disease known as a "syndrome." It is an endocrine and chronic metabolic disorder characterized by a chronic hyperglycemic state resulting from a malfunction of insulin secretion and/or insulin action caused by

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## Pharmacological effect of *Moringa oleifera* leaves extract on human hepatoma cell line HepG-2

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### Abstract

*Moringa oleifera* leaves, bioactive mixtures inside are may have malignancy particular antiproliferative properties. Past research has been guided as for this anyway helpless preliminary setup on account of nonappearance of crucial controls confines the credibility of anticancer cases. *Moringa oleifera* plant contains a various cancer prevention agents, anti-toxins and supplements (nutrients and minerals) which make it forthcoming for assorted biomedical applications. Phytochemical investigation of existences of nonattendances. Hostile to oxidant show a steady expansion in diminishing capacity with expansion in the focus which is demonstrative of the concentrate's cell reinforcement potential. Presence of powerful anticancer mixtures in the *M. oleifera* leaves remove, non-poisonous to typical cells, however liable for its compelling development hindrance of PC3 cells. Human prostate malignancy cell development of A. control, B. 100µg/ml, C.200µg/ml, D. 250µg/ml, E. 500µg/ml, F. 1000µg/ml. This further connoted the use of *M. oleifera* leaves as the useful wellspring of regular therapeutics against androgen-autonomous prostate malignant growth.

**Keywords:** phytochemical, PC3 cell line, *Moringa oleifera*, phytochemistry

### Introduction

Traditional medicinal properties, it comes as no surprise that *Moringa oleifera* is packed with chemical components to give it an astounding phytochemistry [1]. His release of material will lead to an inflammatory response by immune cells, which could possibly lead to further tumor growth. The FRAP assay also exhibit a constant increase in reducing ability with increase in the concentration which is indicative of the extract's antioxidant potential. In order for anticancer claims to be sufficient and yield the possibility of a future cancer treatment, *Moringa oleifera* leaves extract must not harm non-cancerous cells [2]. The prevention and treatment of a series of chronic diseases including inflammatory diseases, neuro-dysfunctional diseases, diabetes, and cancers which will provide a reference for its possible application in the prevention and treatment of chronic diseases or health encouragement [3]. The present study suggests that the hydro-alcoholic leaf extract of *M. oleifera* induces anticancer effect on K-562, DU-145 and HCT-15 cancer cells. *Moringa's* ability to improve the immune system, treatment of HIV and AIDS symptoms is also possible [4-5].

*M. oleifera* is rich in a wide range of secondary metabolites including proteins, vitamins, b-carotene, amino acids and various phenolics as flavonoids and phenolic acids. Medicinally, various parts of *M. oleifera* have been widely employed as cardiac and circulatory stimulants, antitumor, antiepileptic, diuretic, antihypertensive, cholesterol lowering, hepatoprotective, antioxidant, antibacterial and antifungal agents.

### Materials and Methods

#### Plant Collection

The fresh leaves of *Moringa oleifera* were collected from Saliyamangalam, Thanjavur District, Tamil Nadu, India.



Fig 1: Map 1: Study area



Fig 2: *Moringa oleifera* leaf

## Isolation of *Phytophthora Palmivora* (Butl.) Pathogenic to Papaya Plant in Thiruvavur Dt

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**Abstract**—*Phytophthora palmivora* (E. J. Butler) E. J. Butler is an important plant pathogen with a wide host range, including some very important economic crops such as cacao, papaya, black pepper, rubber, coconut, and citrus. In the present investigation, fungal organism was isolated from root rot disease affected papaya plant using PDA medium and identified as *P. palmivora* (Butl.) based on its macroscopic and microscopic features. The present study demonstrated that *P. palmivora* (Butl.) is the causative organism of the root rot disease found on Papaya tree.

**Key words:** *Phytophthora Palmivora*, Plant Pathogen, Papaya Plant, Root Rot Disease

### I. INTRODUCTION

*Carica papaya* L. (Papaya) belongs to the family Caricaceae and is a dicotyledonous, polygamous (having male, female or hermaphroditic flowers on the same plant). The plant is a short-lived, fast-growing, woody, herb-like tufted tree that can grow up to 10 m in height (OECD, 2005; Heywood et al., 2007). Economically, *C. papaya* is the most important plant and cultivated widely for consumption as a fresh fruit and for use in drinks, jams, jellies and ice-cream. Nutritionally, the ripe papaya fruit is a good source of calcium and an excellent source of vitamins A and C (Nakasono and Paull, 1998; USDA National Nutrient Database, 2010).

Papaya is now ranked fourth in total tropical fruit production after bananas, oranges, and mango in the world. Global papaya production has grown significantly over the last few years, mainly as a result of increased production in India (Evans and Ballen, 2012). The global production of papaya is around 2890476 metric tones of which India contributes 43.7% (Indian Horticulture Database, 2014; FAOSTAT, 2015). Papaya has become an important agricultural export for developing countries, where export revenues of the fruit provide a livelihood for thousands of people, especially in India.

*Phytophthora palmivora* (E. J. Butler) E. J. Butler is an important plant pathogen with a wide host range, including some very important economic crops such as cacao, papaya, black pepper, rubber, coconut, and citrus (Erwin and Ribeiro, 1996; Dreth and Sendall, 2004; Hung et al., 2015). The center of origin is southeastern Asia (Huang et al., 1976; McHaw and Coffey, 1994). The causative organism was first identified as *Phytophthora palmivora* by Butler in 1917. The pathogen causes root rot, stem rot and fruit rot in papaya plant. Papayas are highly susceptible to *Phytophthora* root rot. The pathogen damage and kill roots, causing the eventual mortality of the entire plant, especially seedlings. Consequently in the present investigation was designed to assess the isolation and

identification of causative organism of root rot in papaya plant.

### II. MATERIALS AND METHODS

#### A. Collection of root rot infected papaya root

Root rot disease affected papaya root (*C. papaya* L.) was collected from papaya field at Perumalagaram, Thiruvavur Dt. (Fig. 1 & 2).

#### B. Isolation and Identification of *P. Palmivora* (Butl.)

The infected root of papaya plant was cut into small bits of about 2-3 mm. These were surface sterilized with 0.1% mercuric chloride (HgCl<sub>2</sub>) solutions for 60 seconds and washed separately in sterilized and distilled water for three times to remove the traces of mercury if any and then transferred to sterilized petriplates containing potato dextrose agar (PDA) medium (Potato - 200 gms, dextrose-20 gms, agar - 15 gms, distilled water -1000 ml, pH - 6.5) supplemented with one percent streptomycin sulphate solution for preventing bacterial growth.

The petriplates were incubated at room temperature (27±2°C) for 3 - 5 days and observed periodically for the growth of pure colonies which developed from the root bits. The growth and sporulation of the fungus was observed under the microscope. The pure colonies which developed from the root bits were transferred to PDA slants.

#### C. Identification of *P. palmivora* (Butl.)

Fungal morphology was studied macroscopically by observing colony features (Colour and texture) and microscopically by staining with lacto phenol cotton blue (LPCB). A portion of the growing edge of the colony was picked up with the help of a pair of needles and mounted on a clean slide with lactophenol cotton blue stain. The slide was gently heated in a spirit lamp so as to facilitate the staining and remove air bubbles, if any. The excess stain was removed with the help of tissue paper and then the cover slip was sealed with transparent nail polish. The slide was observed under Nikon microscope. Microphotography of the fungus was also taken using Nikon phase contrast microscope (Nikon, Japan). Identification and characterization of the pathogen were made with the help of authentic manuals of fungi namely, *A Manual of Soil fungi* (Gillman, 1957) and *Fungi in agricultural Soils* (Doensch and Gams, 1972).

### III. RESULTS

#### A. Isolation of *P. Palmivora* (Butl.) Causative Agent of Root Rot Disease

The fungal organism was isolated from infected root of papaya plant using PDA medium and identified as *P.*

*palmivora* (Butl.) based on the macroscopic and microscopic features (Fig 3 & 4). *P. palmivora* has four types of spores that may directly or indirectly cause infection: sporangia, zoospores, oospores, and chlamydospores.

#### B. Scientific Classification of *P. Palmivora* (Butl.)

- Class : Oomycetes
- Order : Peronosporales
- Family : Pythiaceae
- Genus : *Phytophthora*
- Species : *palmivora*

C. A  
Colo  
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Tools



Mobile View



Share







## People Preferences in Selection of Hospital During Covid-19 Impact on Personal Life Review

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**Abstract** - Corona virus has pushed our economy a step ahead. People started relying on digital platforms rather than conventional methods. This is a positive indication. The consumption demand raised by the customers act as a potential for these micro entrepreneurs. A more personalized and customized relationship happens between the seller and the customer. Also work from home employees and home entrepreneurs could make a very good combination in the economy. That is they can create a working environment where everyone can do their job peacefully in their comfort zone with their loved ones and there by earn their income. Being adaptable is one of the important qualities during a pandemic. Thus, a crisis can be turned into an opportunity. Research during any outbreaks is a chance to gather important information which will contribute to improving pandemic control measures, like conducting clinical or vaccine trials. The COVID-19 pandemic is the new challenge for the whole world. Having done some relevant research on this area, would help to gain knowledge on various dimensions to this pandemic. The below research papers are undertaken during pandemic and these papers explores the new dimension of research.

**Keywords:** COVID-19, Industrial Production, Cyber resilience in COVID-19, Hospital during Covid-19

### INTRODUCTION

The head of the International fund (IMF) said, "The world is facing extraordinary uncertainty about the depth and duration of this crisis, the worst economic collapse since the good Recession." The IMF estimates the external financial needs of emerging markets and emerging economies at trillion dollars [1]. India also sighed under the cauldron of an epidemic. According to an Economic Times report published on March 23, 2020, economists estimate

that the cost of the Covid-19 lockdown will be \$ 120 billion, or 4 percent of GDP by 2020.

Structure of Coronavirus

Covids are minute in size (65–125 nm in breadth) and contain a solitary abandoned RNA as a nucleic material, size extending from 26 to 32kbs long. The subgroups of Covids family are alpha (a), beta (b), gamma (c) and delta (d) Covid [1,23].

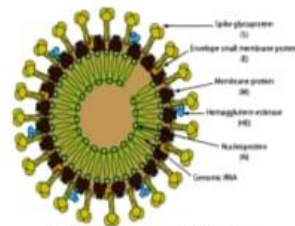


Fig. 1. Basic structure of COVID Virus

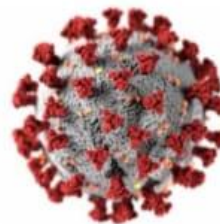


Fig. 2. Structure of SARS-CoV-2

The effects of Covid-19 outbreak pandemic on human life have been started to be investigated from different angles [1]. It is seen that there are very few studies on the effects of Covid-19 outbreak on the energy sector and the environment. With this study, the studies reported the effects of Covid-19 outbreak on the renewable energy sector and the environment were examined, the importance of the subject was revealed, and future studies were shed light on. The recently released Index of Industrial Production (IIP) shows that economic output during April' 20 contracted by over 55 % year-on year [14]. This constriction is reflected across all areas including assembling, mining, and power age. Be that as it may, the continuous lockdown has affected the monetary soundness

Diseases Act, 1897 (EDA) and the Disaster Management Act, 2005 (DMA) [27]. The instance of the govt maybe is that these two laws arm it with adequate forces and there's no need to depend on the "crisis arrangements" of the constitution. The spread of COVID-19 has had a severe impact on countries, especially social and economic life across the country [9]. The world immersed in activities has been silenced and all resources have been diverted to deal with a crisis never experienced before. The virus has a multi-sectoral impact as countries' economic activity slows. The alarm bells sounded by the World Health Organization (WHO) in 2019 about the world's inability to fight the global pandemic were shocking and noticeable [17-19]. The 2019 US report of the World Health Organization and

## Pharmacognostical and phytochemical screening of ethanolic extract of *Silybum marianum* (L).

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### ABSTRACT

The fluorescence characteristics of seed powdered extracts were determined under UV radiation of long and short wavelengths and ordinary visible light. When the small-grained drug and extracts were treated with totally different reagents and determined below ultraviolet illumination UV actinic radiation normal light, they emitted various color radiations. The colour modification for the seed powder and individual extract were distinctive and consistent revealing the solvent properties to the phytoconstituents and knowledge is gift. Phytochemical presence of absence in compounds in Plants *Silybum marianum* is the rich source of all the elements essential for humans. The moisture content was calculated through the loss of the drying method and values were recorded. Vitamin E, vitamin C, along with beta carotene is antioxidants.

**Keywords:** Fluorescence, Phytochemical, Vitamins, Hyperglycemia, Color radiations, and Inorganic substances.

### 1. INTRODUCTION

*Silybum marianum* is a widely recognized medicinal herb belongs to family Asteraceae and is originated in the Mediterranean basins, but now naturalized throughout the world. In Pakistan it grows wild in Punjab, Khyber Pakhtunkhwa and Kashmir [1]. The

plant is a herbal supplement having silymarin as an active constituent for the treatment of many liver disorders. Silymarin is a mixture of flavonolignans comprised of silybin (50 to 60%), is silybin (5%), silychristin (20%) and silydianin (10%) [2]. *Silybum marianum* (Milk thistle) is described as an annual, winter annual and biennial herb. The main stem is



## Anti-hyperglycemic activity of *Aloe vera* ethanolic extract against mouse 3T3-L1 adipocyte cell line

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### ABSTRACT

Several traditional medicinal plants have been investigated concerning their anti-obesity potential one such sources is *Aloe vera*. The medication is reported for different helpful properties like, love potion and counteractant, healing arsenic harming, tonic, restoring, diuretic, purgative, uterotonic, sterility in ladies, etc. These are medicationally very helpful especially in curing diabetes. The plants are explored for many different biopotential activities like antiulcerogenic, hypolipidemic, nephroprotective, mitigating, antidermatophytic, cancer prevention agent, antimicrobial and insecticidal exercises. In this study we performed phytochemical screening of various *Aloe vera* extracts to compare its bioactive potential. The control group of 700µg was compared with ethanolic extract of *Aloe vera* and observed that it reduced the expression of TNF  $\alpha$  (Tumor necrosis factor) and Interleukin 6 (IL-6). It even increased the expression of adiponectin which revealed the presences of different phytochemicals are present in ethanol extract. The data created by this specific investigation gives pertinent pharmacognostic and phytochemical information required for appropriate distinguishing proof and verification of this specific species. The present study emphasis in finding the anti-hyperglycemic activity of *Aloe vera* on cell lines and highlights the phytochemical and pharmacological aspects of *A. vera*.

Keywords: 3T3L1 Cell line, *Aloe vera*, Adipogenesis, antiulcerogenic, phytochemical.

### 1. INTRODUCTION

*Aloe vera* probably originated in northern Africa and believed to be from Sudan. Subsequently it was introduced in the Mediterranean region and other

warm areas of the world. It is widely naturalized in temperate and tropical regions of Australia, Barbados, Belize, Nigeria, Paraguay and the United States [1]. The plant abundantly found in India,





## ANTICANCER ACTIVITY OF *Pedaliium murex* Linn METHANOLIC LEAVES EXTRACT AGAINST A549 HUMAN LUNG CANCER CELL LINE

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### AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Received: 10 July 2020

Accepted: 17 September 2020

Published: 24 September 2020

Original Research Article

### ABSTRACT

*Pedaliium murex* (Pedaliaceae), commonly called Large Caltrops, is understood for its pharmacological uses in traditional medicine system. It is reported to possess excellent medicinal properties that helps cure reproductive disorders, mainly impotency in men, nocturnal emissions, gonorrhoea also as leucorrhoea in women. Apart from that, it also contains remedy for urinary and gastrointestinal tract disorders. Pharmacologically, the plant has been explored for antiulcerogenic, nephroprotective, hypolipidemic, sexual enhancer, mitigating, antidermatophytic, cancer prevention agent, antimicrobial and insecticidal exercises. The present review may be a bundle of data collected from the published research articles and highlights the phytochemical and pharmacological aspects of *P. murex*. Highly presences of methnolic extract are information will be helpful in developing the new formulation with therapeutic and economical value in the future. A549 cells treated with *Pedaliium murex* leaves methanolic extract in different hours (6, 12, 24 and 36 hours) after the 36 hours the cells growth are controlled.

**Keywords:** Human cancer cell line A549; inorganic elements; phytomedicine; *Pedaliium murex*.

### 1. INTRODUCTION

Cancer may be a generic term for an outsized group of diseases characterized by the expansion of abnormal cells beyond their usual boundaries which will then invade adjoining parts of the body and spread to other organs. Normally, human cells grow and divide to make new cells because the body needs them. When

cells get older or become damaged, they die, and new cells take their place. While cancer develops, though, this orderly process breaks down. The particular process becomes imbalanced and therefore the cells start dividing no end and should form growths called tumors (Fig. 1). Cancerous tumors are malignant, which suggests they will spread into, or invade, nearby tissues and even visit foreign places within the

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