



# SHRIMATI INDIRA GANDHI COLLEGE

(Affiliated to Bharathidasan University)

Nationally Accredited at 'A' Grade (4<sup>th</sup> Cycle) by NAAC | An ISO 9001 : 2015 Certified Institution  
Tiruchirappalli - 620 002

**Name** : Dr.T.Karpagam  
**Designation** : Assistant Professor & Head  
**Department** : Biochemistry  
**Qualification** : Ph.D  
**Experience** : Teaching: 19  
**Area of Specialization(s)** : Clinical Biochemistry, Phytomedicine, Diabetes  
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## Academic Qualifications

Degree	Branch	Institution / University Name	Year of Graduation
Ph.D	Biochemistry	Madurai Kamaraj University	2014
M.Phil	Biochemistry	Bharathidasan University	2005
M.Sc	Biochemistry	Bharathidasan University	2004
B.Sc	Nutrition, dietetics	Madras University	1990

## Additional Qualifications

Diploma / Vocational / Certification	Area of Specialization	Institution / University / Agency Name	Year
DMLT	Biochemistry	Kolkata Board	2006

## **Funds Received:**

1. Amount sanctioned INR 2,00,000/- By Ministry of Skill Development, Entrepreneurship, Youth Affairs & Sports.

## **Programme:**

1. “Health and Healthy Lifestyle” Training was provided to 100 students from National College, Kurinji College, Srimad Andavan Arts and Science College and Shrimati Indira Gandhi College on January 2016
2. Research Funds from TNSCST on Student Project Scheme for an amount of Rs 7500 in the year 2022 and 2024
  - a. Combating Pathogenic Gene Expression by Polyherbal Preparation on Vaginal Infection Causing Microorganism
  - b. Potential apoptotic activity of *Mucuna pruriens*, *Linum usitatissimum*, roots of *Rosa centifoliae*, roots of *Nelumbo* against the human breast cancer cell line (MDA-MB-231) and also induces the apoptosis against it

## **Research Publications (Indexed)**

### **International : 31**

1. *Caesalpinia bonduc (l.) roxb* as a novel drug having hypoglycemic effect on alloxan induced diabetic rats. International Journal of Pharma and Bio Sciences 2010; 2 (1): 384 – 391. ISSN 0975-6299.
2. Effect of different doses of *Cucurbita Pepo* Linn extract as an anti-inflammatory and analgesic nutraceutical agent on inflamed rats. International Journal of Pharmaceutical Research and Development 2011; 3(3):184 – 192. Online ISSN: 2664-6870.
3. An Indigenous antiulcer activity of *Musa sapientum* on peptic ulcer. Phcog Res 2011;3:232-8.
4. A comparative study on the effects of herbal and conventional medicine on cardiovascular disease International Journal of Pharmaceutical Research and Development, 2011; 3(6):221 – 225. Online ISSN: 2664-6870.
5. Synthesis and Characterization of Silver Nanoparticles From *Wrightia Tinctoria*. *International Journal of Applied Biology and Pharmaceutical Technology* 2012; **3 (1): 58 – 63. ISSN 0976-4550.**
6. Comparative Study on the Anti-Diabetic Potential of *Aloe vera* Gel and Fenugreek Seeds on experimentally induced Diabetic Rats. Pharmacognosy Communications. 2012; 2(1):57-61. ISSN: 2249-0167.

7. Antimicrobial activity and phytochemical studies of flowers of *Tribulus terrestris*. Joseph's International Journal of Biological Sciences. 2012; 1(1): 47 - 50.
8. Isolation and characterization of marine sponges –*Sigmadocia Fabulatus*. Joseph's International journal of biological sciences. 2012; 1(1):31 – 35.
9. Antibacterial Activity of *Tridax Procumbens* Linn. International Journal of Pharma Sciences and Research 2012; 3(4): 364 – 367. ISSN: 0975-9492.
10. Studies on salinity removal capacity of cost-effective adsorbents. International Journal of Pharmaceutical Research and Development 2014; 5(11):67-71. Online ISSN: 2664-6870.
11. *In vitro* Antimicrobial and Anticancer Activity of *Cinnamomum zeylanicum* Linn Bark Extracts. International Journal of Pharmacy and Pharmaceutical Sciences 2014; 6, (Suppl 1):12-18. Impact per publication 0.609 (**SCOPUS**). ISSN: 0975-1491.
12. Antidiabetic Efficiency of *Moringa Oleifera* and *Solanum*. International Journal of Pharmacy and Pharmaceutical Sciences. 2014;6, (Suppl 1):40-42. 12-18.Impact per publication 0.609..
13. *In vitro* Antioxidant and Cytotoxicity Analysis of Leaves of *Ficus racemosa*. Free Radicals and Antioxidants.2017;7(1):08-12.
14. Phytochemical Analysis of *Cinnamomum zeylanicum* Bark and Molecular Docking of Procyanidin B<sub>2</sub> against the Transcription factor Nf-  $\kappa$ B. Free radicals and Antioxidants, 2017; vol 79 (2): 195-199.
15. Genotyping of Angiotensin converting enzyme ACE-1 gene in study subject with hypertension and chronic kidney disease. Research Journal of Pharmacy and Technology, 2017: Vol 10, Issue 1, pp 2607-2010. (**SCOPUS**). UGC no:10467 ISSN: 0974-360X(online).
16. Outlining of Phytochemicals and GC-MS profile of *Centella asiatica*” in International Journal of Pharmaceutics and drug analysis. 2018: Vol 6, Issue 2, pp 252-256,
17. A combinative evaluation of antioxidant potential of *Tridox procumbens* and *Boerhaviadiffusa*” in International Journal of Pharmaceutics and drug analysis. 2018:Vol 6, Issue 2, 197-202.
18. Evaluation of anti hepatotoxic effect of *Avicennia marina* against alcohol induced liver injury” in International Journal of Pharmaceutics and drug analysis. 2018: Vol 6, Issue 2, 225-227.
19. Studies on hepatoprotective and anti-inflammatory activity of *Coix lacryma-jobi* (linn). Asian Journal of pharmaceuticals and clinical research. 2018 Vol 11, (11), 290-293.
20. Anticancer activity of *Aloe vera* ethanolic leaf extract against cancer cells”. Research journal of pharmacy and technology. 2019: 12(5), Pp 2167-2170. (**SCOPUS**). ISSN Online - 0974-360X Print - 0974-3618.
21. Phytochemical study in ethanolic leaves extract of *Aloe vera* using gas chromatography. International journal of research in pharmaceutical sciences. 2019: 10(2), pp1473-73.

22. *In vitro* free radical scavenging potential and phytochemical screening of *Pedilanthustithymaloides* . Alochana Chakra Journal. 2019: Vol 9(5); 7033-7041.
23. A review on chaotic covid-19 infection: pathophysiology and treatment insight. Journal of natural remedies. 2020: vol. 21, no. 4(s2), page 50-59.
24. COVID-19 associated thromboembolism: causing the respiratory failure. Int. J. Res. Pharm. Sci., 2020, 11 (SPL)(1), 1303-1306.
25. Antioxidant Evaluation and Molecular Docking Studies of Phytocompound from *Madhuca longifolia* as Potential Thymidylate Synthase Inhibitor. Journal of Natural Remedies. 2020: Vol. 21, No. 6(S2).
26. Antibacterial action of *Pedilanthus Tithymaloides* leaves extract and FTIR phytochemical fingerprinting. Research Journal of Pharmacy and Technology, 2021: 14, (4); 2021-2025.
27. Screening of fungi for production and purification of omega-3 fatty acids. Journal of medical pharmaceutical and allied sciences, Volume 10 - Issue 4, 1098, July - August 2021, Page - 3089-3093.
28. Nano phytoremediation for textile dye degradation using *Abutilon indicum* silver nanoparticles: photocatalytic activities. Journal of medical pharmaceutical and allied sciences, Volume 10 - Issue 4, 1939, Nov - Dec 2021, Page - 3960-3964.
29. Anti-diabetic potential of *Macrotyloma uniflorum* leaves in an *in vitro* and *in vivo* model. Studies on Ethno-Medicine. 17(3-4): 2023 133-139.
30. Vaginitis phytotherapy against vaginal pathogen and molecular identification of isolated vaginal pathogen. Journal of medical, pharmaceutical and allied sciences. Journal of medical, pharmaceutical and allied sciences. Volume 12(2), 4056, March – April 2023, Pages – 5762 - 5767.
31. Antimalarial Potential of Phytochemical Compounds from *Garcinia Griff ex. T. Anders* Targeting Multiple Proteins of *Plasmodium falciparum* 3D7: An *In Silico* Approach. *BIOI*. 29 October 2024. Vol. 5(1). DOI: 10.15212/bioi-2024-0075.

#### **National: 1**

- Comparative study on the antidiabetic effects of *Trigonellafoenumgraecum* and *Caesalpinia bonducella* in alloxan induced diabetic rats *BCAIJ*, 4(2), 2010: 89-97.

#### **Conference Proceedings: 2**

##### **National : 1**

Anti diabetic and antioxidant potential of aloe vera gel on experimentally induced Diabetic rats. Exploring Techniques in Biological Science. Edited by G.VijiStella Bai. Proceedings of UGC sponsored National level seminar at Kunthavai Nachiyar College Government Arts College for women, Thanjavur. 14, 15 December, 2011. 39 – 47.

## International : 1

- Encapsulation of Aloe vera using natural polymer. Food Processing Technologies – Challenges and Solution for Sustainable Food Security. Proceedings of MOFPI sponsored International Seminar at IICPT, Thanjavur. 4rd and 5th January 2013. 439 – 442.

## Book Publications

### BOOK CHAPTERS:9

1. **Book title** : Physical, chemical and Biological sciences: Emerging trends and milestones in 2020. Published on FEB 2020.  
**Chapter 2** : Effect of organic fertilizers on seed germination and seedling vigour of fenugreek ISBN : 978-81-942052-9-6 Publisher: V.H.N.SenthikumaraNadar College ( Autonomous). (Accredited with 'A' grade by NAAC & 53rd rank (College Category) in India ranking NIRF 2020 by MHRD, Virudhunagar, Tamil nadu, India.  
Co- Published by PEARL- A Foundation for educational excellence, Bengaluru, Karnataka, India.
2. **Book title:** Emerging Nanomaterials for Advanced Technologies,  
**Chapter title:** Nanoscale smart drug delivery systems and techniques of drug loading to nanoarchitectures. **Springer eBook**. ISBN number 978-3-030-80370-4. February 2022.
3. **Book title:** Emerging Nanomaterials for Advanced Technologies,  
**Chapter title:** An insight on emerging nanomaterials for the delivery of various nutraceuticals applications to betterment of health. **Springer eBook**. ISBN number 978-3-030-80370-4. February 2022.
4. **Book title:** Sustainable life on Earth  
**Chapter title:** “An interaction between plants, Animals and Microbes”. ISBN Number 978-93-93622-22-8.
5. **Book Title:** Aquaculture Science and Engineering.  
**Chapter Title:** “Bacterial Fish diseases and Treatment” Page number 518-565 Springer Publications 23rd July 2022.
6. **Book Title:** Plant-Microbe Interaction - Recent Advances in Molecular and Biochemical Approaches.  
**Chapter 10 title** - Advanced study of plant-microbe interactions in photosynthesis. Editor(s): Prashant Swapnil, Mukesh Meena, Harish, Avinash Marwal, Selvakumar Vijayalakshmi, Andleeb Zehra,

7. **Book Title:** Plant-Microbe Interaction - Recent Advances in Molecular and Biochemical Approaches, Academic Press, 2023, Pages 205-228, ISBN 9780323918756,

**Chapter Title:** Chapter 14 - Manipulation of cell wall components and enzymes on plant-microbe interactions, Editor(s): Prashant Swapnil, Mukesh Meena, Harish, Avinash Marwal, Selvakumar Vijayalakshmi, Andleeb Zehra,

8. **Book title:** Anti SARS- CoV-2 activity of Flavonoids.

**Chapter Title:** Molecular aspects in pharmacological actions of Quercetin targeting Life cycle in SARS-CoV2. **Taylor & Francis.**

9. **Book Title:** Recent Advances in Life Sciences for Sustainable Development.

**Chapter Title:** Biochar at a Glance. 978-93-5747-960-8. IIP Books.

### **Presentations in Conference**

1. The Encapsulation Model was presented at the International Conference conducted by IICPT on “Greening food processing sector for sustainable safe food supply” on 30th & 31st Oct 2010.
2. Presented a paper in the Ministry of Food processing industries sponsored International Seminar on “Food Processing Technologies – Challenges and solution for sustainable food security” on 4th and 5th January 2013 at IICPT, Thanjavur.
3. Presented a Paper in the National Conference on “Phytochemicals in Medicinal Plants and Food” organized by the Department of Biochemistry held on 30 & 31st July 2015 at Bharathidasan University Constituent College for Women, Orathanadu.
4. **Presented poster** “Comparative analysis of amino acid content in kiwi and dragon fruits” in the International Conference on Research Trends, Strategies, and Technical Advancement in Biological and Biomedical Sciences for Sustainability held on 14th & 15th December, 2022 organized by the Research Department of Zoology, Seethalakshmi Ramaswami College, Trichy.
5. **Presented a paper on** “*In Vitro* Antidiabetic Activity of *Cuminum Cyminum*, *Coriandrum Sativum*, *Trigonella Foenum Greacum* Formulation” in the “**International Conference on Phytotherapeutics (ICPT-2023)**” organized by PG & Research Department of Biochemistry, Sengamala Thayaar Educational Trust Women’s College (Autonomous), Thiruvarur on 10<sup>th</sup> February 2023.
6. Presented a paper on “The protective effect of *Euphorbia* and *Euphorbia thymifolia* leaves against rats induced hepatotoxicity with Tetrachloride” in the DBT-CTEP Sponsored International Conference on Structural Biology and Drug Discovery (ICSBDD-2024)” organized by PG & Research Department of Biochemistry, Sengamala Thayaar Educational Trust Women’s College (Autonomous), in association with IAC and Bioinformatics and Drug Discovery Society (BIDDS) on 16th and 17 th February, 2024.

7. Presented a paper on “Gene Therapy for Cardiovascular diseases” in the Advancing frontiers in life sciences: Research, Innovations, Challenges and Global Solutions- ICACLS-2024” organized by School of life sciences, PG department of Biochemistry, Holy Cross College(Autonomous), Tiruchiarappalli, held on 12.12.2024.

## **Participation in Conference**

### ***International:***

- Participated in the International conference on “Research Trends, Strategies and Technical Advancements in Biological and Biomedical Sciences for Sustainability” from 14.12.2022 & 15.12.2022 at Research Department of Zoology, Seethalakshmi Ramaswami College, Trichy.

## **Participation in Seminars**

### ***International: 2***

1. Participated and presented paper in an International Seminar on “New frontiers and Challenges in Environmental Sciences” – BIOENVIRON-16 organized by the School of Biosciences, MaruthuPandiyar College, Thanjavur, on 11.02.2016 -12.02.2016.
2. Participated and presented poster in one day International Seminar on “Cardiovascular research” organized by the Department of Biochemistry, St.Joseph’s College (autonomous), Tiruchirappalli-2, on 15.02.2016.

### ***National: 5***

1. Attended National Seminar on “Emerging Biomedical Sciences and Potential Applications” on 7 & 8 January 2008, organized by PG and Research Department of Zoology, Holy Cross College (Autonomous), Tiruchirappalli.
2. Attended National seminar on “Current perspectives in Animal Biotechnology” on 3 & 4th February 2011, organized by Department of Animal Biotechnology, Bharathidasan University, Tiruchirappalli.
3. Presented a paper in the UGC sponsored National level seminar on “Exploring techniques in Biological Science” on 14th – 15th December 2011 at Kunthavai Nachiyar Government Arts College for women, Thanjavur.
4. Participated and presented posters in the National seminar on “Whole Grains for Healthy Life – Whole Grains -2015” organized by IICPT, Thanjavur on 16.10.2015.

5. Presented a paper on “Credible Health benefits of Centella asiatica” in the symposium on “Medicinal and Aromatic Plants (NASYMP’17)” on 15th February 2017 at St Joseph College, Trichy.

### **Participation in Workshop**

1. Attended a workshop on “IT-Enabled Services” held at Shrimati Indira Gandhi College, Trichy on 9th August 2003.
2. Attended the “One Day Workshop on SPSS 19.0 Software” conducted by Shivani School of Business Management in association with SPSS South Asia on 9th September 2011 held at Shivani School Of Business Management, Tiruchirappalli.
3. Participated in the International workshop on “ Biochemical Techniques” Held on 02.01.2017 at Shrimati Indira Gandhi College, Trichy
4. Participated in the two day workshop on “Strategies for Biotech Entrepreneurship” on 27th and 28th January 2017 at Sastra University, Thanjavur.
5. Participated in the workshop on “Cytochemical Staining Techniques” on 15.09.2022 at Shrimati Indira Gandhi College, Trichy.
6. Attended a workshop on Bioinformatics for Drug Discovery 2023. organised by Decode Life from 20.05.2023 to 13.06.2023

### **Participation in Orientation Programme / Short Term Courses**

- Participation in Orientation Programme/Short Term Courses: Innovation Ambassador training at Foundation level, Advanced level, Re-skilling level

### **Participation in Faculty Development Programme**

1. Attended a FDP/ Skill based training program on “e – LITERACY” conducted by ICT Academy of Tamil Nadu and Bharathidasan University on 11th - 13th August 2011 held at Shrimati Indira Gandhi College, Tiruchirappalli.
2. Attended NEP 2020 orientation & Sensitization programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organised by UGC - Malaviya Mission Teacher Training Centre (UGC- MMTTC) Bharathidasan University, Tiruchirappalli, Tamilnadu from 05.02,2024-14.02.2024.
3. Attended a FDP on IP Awareness/Training Programme under "National Intellectual Property Awareness Mission on 14.07.2022.
4. Participated in the Educational administrators round table on Capacity Building of faculty held on 07.05.2025



#### Patent Details: 4

1. Investigate the potential anti-diabetic and hypolipidemic effects of Psidium guajava leaf ethanolic extract against streptozotocin-induced diabetes and lipidosi s in rats. Dr.R.Manikandan, Dr.T.Karpagam, Dr.A.Shanmugapriya, Dr.B.Varalakshmi, Dr.V.Suganya. Utility patent. Patent No. 202341037660
2. Smart Device for Detecting Frozen Shoulders. Dr.T.Karpagam, Dr.R.Manikandan, Dr.V.Suganya, Dr.B.Varalakshmi, Dr.A.Shanmugapriya. Design Patent. Patent No. 392678-001
3. Medical Waste Treatment Device. Dr.R.Manikandan, Dr.T.Karpagam, Dr.A.Shanmugapriya, Dr.B.Varalakshmi, Dr.V.Suganya. Design Patent. patent no. 405416-001
4. Brain Tumor Detection Device. Dr.B.Varalakshmi, Dr.T.Karpagam, Dr.A.Shanmugapriya, Ms.S.Gomathi, Dr.V.Suganya, Dr.T.Abarna. Design Patent. Patent No. 407914-001

#### Editorial / Review Board Member

##### Reviewer

- Indian Journal of Gastroenterology,
- A & V Publication and
- **BMC Alternative medicine.**
- IGI Global Scientific Publishing's integration

#### Awards / Honors

Awards / Honors	Agency / Institute	Year of Award
Best contributor to Education	NSKD Techno Research & Innovation Solution % RAAL TECH Publications	2025