PROFILE

Dr.K.Vijayalakshmi,

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Qualification: M.Sc., Ph.D

- B.Sc: Bharathi women's College (1980-1983), University 1st Rank
- M.Sc: University of Madras (1983-1985), University 1st Rank
- Ph.D: University of Madras, Full time Scholar (1985-1990), CSIR -fellow
- Title: Biochemical studies on the effect of perchlorate on mitochondria in rats,
- Post-Doctoral Work: CLRI, Chennai (1991-1992), Research Associate ship from CSIR,
- Title: Micro encapsulation of proteins, high molecular weight compounds and anticancer drugs.

Teaching experience

- UG: 27 years
- PG: 25 years

Research experience: 23 years

- M.Phil: Guided 30 students

Ph.D

- 25 students were awarded the doctorate degree (Full-time/part-time)
- Guided students for University of Madras, Mononmaniam Sundaranar, Bharathiar University.

Papers published

- 152 research papers have been published in peer reviewed National and International journals.

Life membership

- Life Member in Society For NeuroChemistry (INDIA)
- Life Member in Indian Association of Biomedical Scientists.

Awards/Achievements

1. Awarded 'Meenakshi Subdaranar Memorial Award' for having obtained University First Rank in M.Sc Biochemistry
2. Awarded junior and senior research fellowship by the council of scientific and industrial research
3. Awarded Dr. Yella Pragada Subbarow Memorial Award for the best biochemistry paper published in biomedicine
4. Awarded Research Associate ship by Central Leather Research Institute to work on microencapsulation of proteins, high molecular weight compound ds and anticancer drugs
5. Served as NCC officer in the rank of 2nd Lieutenant for 6 years
6. Served as NSS officer for 2 years
7. Two workshops have been conducted at Bharathi Women's College in co-ordination with the librarian on optimal use of e-Resources for research scholars held on 25th February 2014 and ICT Tools and techniques for research analysis on 17/10/2014
8. Acted as Chair person in National and International Conferences
9. Delivered invited lecture at National and International Conferences.
10. Received the Best Senior Women Scientist Award from Pearl foundation for the year 2016.
11. Awarded the best thesis entitle Professor K. Radha shanmuga sundaram endowment medal" from University of Madras for my student N.Priya who completed Ph.D in 2016
12. Authored a chapter entitled Anti-proliferative potential of Medicinal plants: An evaluation by in vivo, invitro and insilico approach" for the book entitled

Ethanomedicinal Plants with therapeutic properties" published by apple academic press in june 2018.

13. Acted as chair person in the International conference on Nutraceuticals Concepts and application s in disease" (ICNCAD-2018) held on Feb 16th to 17th 2018.
14. Received the Scientific Excellence senior award from Biozone Research technologies Pvt.Ltd held on 27th feb 2018.
15. Funding of Rs, 1,00,000 from Tamilnadu State Council for Higher Education for Minor Research Project" entitiled Phloroglucinol modulates the expression of Heat shock proteins in Rotenone induced animal model of Parkinson's disease" 2017-2018.
16. Delivered a invited lecture New insights for tracing the molecular roots of neurodegenerative disorders" Sri sankara college of arts and , Enathur kanchipuram on March 08 2018.
17. Recieved the Young scientist award for the paper entitled Comparative Molecular Docking Studies and Structural Prediction of Plant Compounds on LRRK2 from International journal for Research under Literal Access for my student P. Jayanthi who completed M.Phil in 2017. IJRULA title awards held on 2018.
18. Received the Best Researcher award for the paper entitled Molecular Docking studies of the compounds from Pergularia Daenia and Terminalia Catappa L. leaf extracts with CYP2E1, GST, UDP-Glucuronyl transferase and Nrf2 binding site in KEAP1,IL-6. From International journal for Research under Literal Access for my student Vijaya Packirisamy who completed Ph.D in 2018 . IJRULA title awards held on 2018.
19. Received the Best Researcher award for the paper entitled Antioxidant potential of phloroglucinol; an *invitro* approach" from International journal for Research under Literal Access for my student Archana. I who currently doing Ph.D under my guidance. IJRULA title awards held on 2018.
20. Presented a paper in National Conference on Recent Advances in Biotechnology for healthcare" held on 26th and 27thh September 2018 at Rajalakshmi Engineering College, Thandalam, and Chennai. Paper entitled Green synthesis of nano particle using Leucas Aspera leaf extract- A novel drug for Parkinson's disease".

21. Two days workshop have been conducted at Bharathi Women's College in co-ordination with the Stella maris College on Maximal usage of foldscope to explore the miniatures in the world" for PG and research scholars to be held on 29th & 30th Nov 2018.
22. Delivered a plenary lecture for the world cancer congress 2021, at Barcelona,Spain.

Fields of Specialization

1. Clinical Oncology
2. \Metabolic disorders-Obesity
3. Neurodegenerative disease-Parkinson's disease
4. Complications of diabetes-such as diabetic retinopathy

- Cancer represents a major health problem and ranks the second common cause of death following cardio vascular disease worldwide. Each year ten million people are diagnosed with cancer around the world and more than half of the patients eventually die from it. Therefore more effective strategies against this disease need to be developed.
- Most of the anticancer drugs currently used in chemotherapy are cytotoxic to normal cells leading to adverse side effects. Therefore treating cancer patients with natural ingredients is a significantly beneficial strategy to overcome the disease. The search for novel and innovative therapeutic compounds which can reduce the harmful side effects of anti cancer drugs in normal tissues is necessary which should be cost-effective at the same time.
- We have worked on the anticancer effect of rinds of ***Punica granatum***, seeds of ***Vitis vinefera***, floral extracts of ***Ixora coccinea***, leaf extract of ***Aegle marmelos, Annona squamosa***, ***Ruelia tuberosa*** and ***Bauhinia varigata*** by studying the crude extracts, isolating potential anticancer compounds from the extract by column chromatography and studying its structure by HPTLC, NMR, GC-MS and LC-MS and its potential by *invivo* and *invitro* models.
- Neurodegenerative diseases are multifactorial debilitating disorders of the nervous system that affect approximately 30 million individuals worldwide. Neurodegenerative diseases such as Alzheimer's, Parkinson's, Huntington's and Amyotrophic lateral sclerosis are the consequence of misfolding and dysfunctional trafficking of proteins. Besides that, mitochondrial dysfunction, oxidative stress, and/or environmental factors strongly associated with age have

also been implicated in causing neurodegeneration. After years of intense research, considerable evidence has accumulated that demonstrates an important role of these factors in the etiology of common neurodegenerative diseases. Despite the extensive effort that has attempted to define the molecular mechanisms underlying neurodegeneration, many aspects of these pathologies remain elusive.

- Parkinson's disease is a neurological disorder that affects movement, muscle control, and balance. Parkinson's disease most commonly affects people 55-75 years old, but it can also develop in younger people. The global burden of Parkinson's disease (PD) is set to rise in the years to come. The number of people with PD is likely to grow in Asia as a result of our rapidly ageing population and an increasing life expectancy.
- Several alternative approaches are also being explored in effort to increase the speed and efficiency with which natural products can be applied for drug discovery.
- We have worked on Hesperdin and Sesamol for their Anti-Parkinson effect.
- We have also worked on Cinnamaldehyde and *Benincasa Hispida* for their Anti-Obesity potential.
- we have worked on anti-obesity potential of plant extracts and anti-parkinson effect of plant derived compounds using cell line and animal models.
- Currently we are working on Green synthesis of nanoparticles and their applications for the treatment of obesity and Parkinson's disease.