CURRICULUM VITAE

Dr. MUTHUSAMY C

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CAREER OBJECTIVE

To pursue a career in modern biological research - basic and applied with a strong motivation to work for the advancement of science and Technology & its interface with society.

ACADEMIC PROFILE

Degree	Specialization	Institution	% of Marks	Year of passing
PhD	Biotechnology	Bharathidasan University	Commended	2017
UGC-SET	Life Science	UGC, MTWU	Qualified	2016
M. Sc.,	Biotechnology	Periyar University	75%	2021
M. Sc.,	Bioinformatics	Annamalai University	69%	2006
B. Sc.,	Microbiology	Bharathidasan University	68%	2002

PROFESSIONAL EXPERIENCE

Position	Dept./Institution	Place	Duration
Assistant Professor	Biotechnology	St. Joseph's College, Trichirappalli	16.06.2025 - Till
IQAC- Coordinator	SCAS	SCAS	Apr – 24 to May 2025
Assistant Professor	Biotechnology	Srinivasan College of Arts and Science, Perambalur	15.06.2011 to 06.05.2025
Research Scholar	Biotechnology	Bharathidasan University Tiruchirappalli	10.01.2011 to 14.06.2011
Research Associate (RA)	Graduate Institute of Biomedical Sciences	National Chung Hsing University, Taichung, Taiwan ROC.	05.09.2008 to 10.10.2010
Lecturer	Department of Bioinformatics	Thanthai Hans Roever College, Perambalur.	01.09.2006 to 02.09.2008
Technician	University Grants Commission Instrument Maintenance Facility (**UGC – IMF**)	Mother Teresa Women's University, Kodaikanal Tamilnadu, India	07.10.2005 to 31.08.2006
Technical Assistant	Dept. of Biotechnology. National Project on "Drugs from Ocean"	Mother Teresa Women's University, Kodaikanal Tamilnadu, India.	01.08.2004 to 06.10.2005
Technical Assistant	NFM, National Project on "Drugs from Ocean"	National Facility for Marine Cyanobacteria (**NFMC**), BDU, Trichy Tamilnadu, India.	17.03.2003 to 31.07.2004

Refresher Course

- Completed **UGC Sponsored Faculty induction Programme** organized by Kannur University from **14.11.2024 to 11.12.2024 with A+ grad**.
- Attended **Refresher course on Biological Science** held from **14.09.2022 to 27.09.2022** at Kannur University, Kannur, Kerala.
- Attended **Refresher Course in Life Sciences** held at Holy cross College, Tiruchurappalli from October **23rd 2007 to 30th October 2007.**

Members of Academic Bodies

- Member for Animal Ethical Committee at Mother Teresa Women's University, Kodaikanal, Dindigul. L.No.:41/WU/Rr/BS/Admn/2005 Dt. 01.09.2005
- Received Staff Qualification Approval from DBU, Trichy, L.No.:06675/D6/2006 Dt.29.05.2006
- Life Membership: Indian Association of Biomedical Scientists. IABMS L.M. NO.1069/2012 Dt.: 31.10.2012
- Member of Board of Studies (**BOS**) for Biotechnology programme (UG & PG) for the **THREE YEARS** with effected from 01.10.2021.

Invited talks

- Given Special Lecture titled "**Microbial Informatics – A Key to Unravel the Mystries" on 27th March 2025** at PG Extension Center, Bharathidasan University, Perambalur – 621 212.
- Delivered special lecture titled **"Molecular tools for Biological Research"** on 06th February 2025 for the Association Inauguration Programme at Govt. College of Arts and Science, Kurumbalur, Perambalur.
- Delivered special lecture titled **"Tools and Software in Bioinformatics"** on 15th February 2023 for the Association Inauguration Programme at Govt. College of Arts and Science, Kurumbalur, Perambalur.
- Delivered special lecture titled **"Impact of Science on Society"** on 28th February 2022 for the celebration of National Science Day Programme at Govt. College of Arts and Science, Kurumbalur, Perambalur.
- Delivered special lecture on **"Human & Natural Resource Management**" for the students of Govt. Polytechnic College, Keelakanavai, Perambalu. Under the **Unnet Bharat Abiyan** scheme on 19.02.2020.
- Delivered special invited talk on **"Nanotechnology and Its Applications"** for the students of Management studies, Srinivasan College of Arts and Sciecne, Perambalur. On 29th March 2019.
- Delivered special talk on **"Biodiversity Informatics"** a Lecture Series Programme for the year of 2016-17 held at Department of Environmental Science, Bharathidasan University, Tiruchirapalli on 01.02.2017

FELLOWSHIPS/AWARD RECEIVED

S. No.	Name of Award	Awarding Agency	Year
1	DOD Fellowship	DOD-DRDO, India	2003
2	UGC-IMF Fellow	UGC-IMF, India	2005
3	NCHU Fellowship	National Chung Hsing University, Taichung, Taiwan ROC.	2008
4	Indra Vasudevan Award	Indian Association of Biomedical Scientists (IABMS)	2024

PROJECTS GUIDED for M.Sc., : 65 Dissertation works for postgraduate students. Produced 100% Results in Various Subjects Handled so for at SCAS & THRC

RESEARCH EXPERIENCE

Ph.D. Thesis

Title: **"Genome Wide Integration Analysis of Lung Cancer Cell Line Before & After Treatment and Prediction of Susceptible Genes for Lung Cancer"**

Genome wide integration study (GWIS) is the new branch of science that deals with complete genome of the cell type with a specific condition. It is a comprehensive approach to test the hypothesis that, multiple genes work together and account for disease. Recent advances in high-throughput technologies produce massive amount of high resolution data, that enable us to monitor molecular signals on wide genomic scale, such as gene expression levels, gene duplication, protein–protein interaction, protein–DNA binding etc., Particularly these altered gene signals plays major role in different cancers and revealing these genes is always being a difficult process. It is well known that all cancer is a complex multigenic disease; to diagnose these genes at the earlier a comprehensive analytical method is an urgent need of the hour. Hence, this study was planned to develop a comprehensive computational method to predict susceptible gene(s) for cancer by using tensor model and analysis of predicted genes as a valuable anticancer target by *in-silico* (molecular docking) & *in-vitro* (proteomic) methods. As an outcome of this study we have provided a comprehensive platform i.e., a tool, where any user can analyse their genomic data and select gene target(s) and easily carryout their work further.

RESEARCH ASSOCIATE

I joined as research associate in the Graduate Institute of Biomedical sciences, National Chung Hsing University, Taichung, Taiwan ROC, in August 2008. I was working with bioinformatics projects like RNA sequence annotation & assembly and Isoform function prediction. My research focused on plan, design and write programming code to analyze next-generation sequence data from ChIP-seq, RNA-seq, Met-seq experiments and predict gene isoforms and its function using RNA-seq data.

TECHNICAL ASSISTANT

I worked as **Technical Assistant** in the national project on "Drug from Ocean" - **"Screening Marine Cyanobacteria for Anti -Tumor Activity with a View to Develop Potential Anticancer Drug"** – funded by Department of Ocean Development, Govt. of India, New Delhi. This project was carried out in National Facility for Marine Cyanobacteria, Bharathidasan University, Tiruchirappalli. NFMC is a national facility for the study of Marine Cyanobacteria in India funded by Department of Biotechnology, Govt. of India, New Delhi. Nature of the job in this project is to maintain & mass cultivation of Marine Cyanobacteria, extract bioactive compounds from Marine Cyanobacteria, maintain animal cell lines (cancer & normal cells), asses the bioactive nature of marine flora and fauna extracts and assessment of anti-cancer, cytotoxicity and immunomodulatory activity of marine flora and fauna extracts. For bioactivity/ anti-cancer/ immunomodulatory/ cytotoxicity testing both *in-vitro* and *In-Vivo* techniques were used

***in-vitro* Techniques used**

1. Dye Exclusion Assay
2. Sulfo Rhodamine B Assay
3. MTT Assay
4. Radio Thymidine Uptake Assay.

***In-Vivo* Techniques used**

Animal model mouse (swiss albino)

TECHNICIAN

I was worked as a Technician in the Instrument Maintenance Facility (IMF) at Mother Teresa Women's University, Kodaikanal funded by University Grant Commission, Govt. of India, New Delhi. The nature of my job is to maintain the laboratory instruments available in the department of Biotechnology & Physics and overall maintenance of computers available in the university.

M. Sc., PROJECT: "SEQUENCE ANALYSIS OF COLD TOLERANCE PROTEINS"

As part of my M.Sc., curriculum, I worked in a project entitled **"Sequence Analysis of Cold Tolerant Proteins"** in which I have collected different protein sequences and structural information of proteins which are present in Plants, Bacteria and Yeast (cold tolerance). Sequences annotations were done making use of Blast & MSA (Clustal-W). Making use of three different visualization tools protein structure was visualised (Rasmol, Cn3D and PDB viewer) and sequence difference was analysed in detail.

TEACHING EXPERIENCE

Since 2006, I am working as Assistant Professor in SF colleges. Where I am handling theory and practical classes for life science students, which includes undergraduates and postgraduates. I teach subjects included in **Bioinformatics**, **Biotechnology, Cell biology, Molecular biology** and **Microbiology** of PG and UG curriculum.

TECHNICAL KNOWLEDGE

1. Biotechnology & Biochemistry
2. Microbiology Techniques
3. Molecular biology & Chromatography
4. Animal & Plant Biotechnology, Animal cell culture
5. Genomic & Plasmid DNA Isolation
6. Gel Electrophoresis - DNA, RNA, and Proteins (2D)
7. Animal tissue culture – Maintenance and *In-vitro* Experiments
8. Experimental animal – Breeding, maintenance and conducting *in-vivo* experiments
9. Marine Cyanobacteria - Bioactivity testing

BIOINFORMATICS KNWOLODGE

1. Molecular dynamics Study
2. Molecular Docking
3. Next generation sequence analysis
4. 2D gel analysis (*in-silico*)
5. Experience in the use and manipulation of National Centre for Biotechnology Information (NCBI), NIH molecular resources and software
6. Mining genomic and proteomic databases using techniques such as HMMs, PSI-BLAST, and Smith-Waterman algorithm.
7. Motif identification and matching
8. Protein structure visualization
9. Sequence retrieval, Primer designing, Insilco analysis of proteins and nucleic acids, phylogenetic tree construction.
10. Multiple sequence alignment
11. Phylogenetic analysis
12. Sequence and Structural Databases

COMPUTER KNOWLEDGE

1. C++, Java, Oracle, Multimedia, HTML & VB, DBMS, PHP, MySQL
2. Knowledge of Computers, MS Office (Word, Excel, Power Point)

IDEAL JOB

1. Teaching and research
2. Data Mining tools
3. Protein modelling, and designing
4. Information management
5. Data analysis and gene annotation and indexing
6. Work for a small-to-large firm
7. Can design and work independently

PAPERS PRESENTED IN CONFERENCES/ SYMPOSIA

1. "Immunological and Hematological Changes Accompanying Smoke Exposure Followed by Treatment with Oscillatoria willei BDU 130511 on mice" - Presented in Indian Association of Biomedical Science conference, 2003 New Delhi.
2. "Anti bacterial activity of some marine flora and fauna extracts" – Presented in World Herbo Expo 2004, January 2004, Bhopal
3. "Antibacterial activity of some marine flora extracts" – Presented in National Symposium on Algal Biotechnology, organised by National Facility for Marine Cyanobacteria (NFMC), Bharathidasan University, Tiruchirappalli – 24, March 21st to 23rd 2004.
4. "In-vitro Assay comparison of Three Different Methods" – poster presented in Current Developments in Herbal Drug Designing & XXVII Annual Conference of the Indian Association of Biomedical Scientists" held at TBGRI, Palod, Kerala, India, Nov 25th to 27th, 2006.
5. "Squalene as a lead molecule against HIV infection" presented in International Symposium on "Recent Trends and Advances in Biomedical Research – An Integrated Approach" held at Nitte University, Mangalore, Karnataka from 1st November to 3rd November 2012.
6. "Identification Of A Lead Molecule For Inflammation By Binding Free Energy Calculation" presented in National Symposium on "Role of Natural Resources in Health Care" held on 26th December 2013 at Dr.ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, Taramani Campus, Chennai.
7. "Green Synthesis Of Silver And Copper Nanoparticles From Ocimum Sanctum (Tulsi)" presented in 35th Annual Conference of Indian Association of Biomedical Scientists held at Department of Microbiology, CSK Himachal Pradesh Agricultural University, Palampur on 14 - 16th November 2014.
8. "Genome Wide I….. Treatment" presented in 36th Annual Conference of Indian Association of Biomedical Scientists on "Translational Sciences: Bridging Ancient and Modern Biomedicine" organized by the Department of Biotechnology, School of Life Sciences, Pondicherry University from 18th to 20th December 2015.
9. "3D Tensor analysis of Lung cancer Cell line A549" presented in National Conference on Novel Approaches and Concepts in Modern Microbiology, Organized by Department of Microbiology, Hindustan College of Arts and Science, Padur, Keelambakkam, Chennai. On 6th December 2016.

SEMINAR/WORKSHOPS – PARTICIPATED

1. Lecture programme on **"Current concepts in Biological research"** under the auspices of INDIAN ACADEMY OF SCIENCES, Bangalore held at Bharathidasan University, Tiruchirappalli-24, Tamilnadu, India. Feb 27th to 28th, 2004.

2. National Symposium on "**Micro algal biotechnology"** held at Bharathidasan University, organised by National Facility for Marine Cyanobacteria (NFMC), Bharathidasan University, Tiruchirappalli – 24, Tamilnadu, India. March 21st to 23rd, 2004.
3. National Symposium on **"Bio-informatics"** Organized by Department of Biotechnology, and computer science, Mother Teresa Women's University, Kodaikanal, Tamilnadu, India. March 27th to 28th 2004.
4. National Symposium on **"Biotechnology and Women Empowerment"** Organized by Department of Biotechnology, Mother Teresa Women's University, Kodaikanal, Tamilnadu, India. March 27th to 28th 2005.
5. International Symposium on **"Medicinal Plants and Herbal products in Biomedicine …..Annual Conference of the Indian Association of Biomedical Scientists"** held at University of Calcutta, Kolkatta, India, Nov 25th to 27th, 2005.
6. Attended workshop on the topic of **"Hands on Training for Extraction of Secondary Metabolites from Herbal Plants"** conducted by Tropical Botanic Garden & Research Institute **(TBGRI)** Palod, Kerala, India, November 25th 2006.
7. National Symposium on **"Current Developments in Herbal Drug Designing & XXVII Annual Conference of the Indian Association of Biomedical Scientists"** held at TBGRI, Palod, Kerala, India, Nov 26th to 27th, 2006.
8. Participated on National level seminar on **"Bioinformatics and Computational Biology"** organized by department of zoology (DDE) Annamalai University, Chidambaram, India. March 21st to 22nd, 2007.
9. Participated national Symposium on **"Bioresources in the Development of Medicine"** and 28th Annual Conference of Indian Association of Biomedical Scientist and NFMC, Bharathidasan University, Tiruchirappalli – 24, India, Sep. 20th – 22nd 2007.
10. Attended workshop on **"*In-vitro* Analysis of Compounds for Their Bioactivity"** conducted by Indian Association of Biomedical Scientist and National Facility for Marine Cyanobacteria, Bharathidasan University, Tiruchirappalli – 24, India, September 20th 2007.
11. International Symposium on **"Recent Trends and Advances in Biomedical Research – An Integrated Approach"** held at Nitte University, Mangalore, Karnataka on 1st November to 3rd November 2012.
12. Participated in Two days Faculty Development Programme held at SCAS, on 7th& 8th of Devember 2012. Organized by the Srinivasan College of Arts and Science, Perambalur.

13. National Symposium on **"Role of Natural Resources in Health Care"** held on 26th December 2013 at Dr.ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, Taramani Campus, Chennai.
14. Attended **"Writing Science"** – One day seminar on Scientific/Technical Writings held at Department of Industrial Biotechnology, Bharatihdasan University, Tiruchirappalli on 22nd January 2014.
15. Participated in 35th Annual Conference of Indian Association of Biomedical Scientists held at Dept. of Microbiology, CSK Himachal Agricultural University, Palampur on 14 - 16th November 2014.
16. Participated in One-day seminar on **"Biotechnology based entreprenurship awarness"** organized by the Department of Industrial Biotechnology, Bharatihdasan University, Tiruchirappalli on 22nd January 2015
17. Attended **"Two-day Workshop on Computer-Aided Drug and Biologics Discovery" –** Hands-on training in the Schrodinger in PHC facility at BDU, held on 16 & 17 November 2015 at the University Informatics Centre, Bharathidasan University, Tiruchirappalli.
18. Participated in 36th Annual Conference of Indian Association of Biomedical Scientists on **"Translational Sciences: Bridging Ancient and Modern Biomedicine"** organized by the Department of Biotechnology, School of Life Sciences, Pondicherry University from 18th to 20th December 2015.
19. Participated in National Level Conference on **"Novel Approaches and Concepts in Modern Microbiology"** organized by the Department of Microbiology, Hindustan College of Arts and Science, Chennai on 06th Dec. 2016.
20. Participated in the State Level Workshop on "Opportunities and Challenges Through Mushroom Cultivation" organized by GTN ARTS College, on 8th February 2020.

No. of Conference and Publications

a) Number of Conferences attended:	Na	18	Internat	05
b) Number of Papers presented in Conferences:	National	08	International	02
c) Number of Publications in referred Journals:	National	01	International	09

LIST OF PUBLICATIONS

article title	journal name	publisher	year	Imp. Fac.
Microbial Remediation of Seafood Processing Effluent Enhances the Removal Efficiency of BOD, COD, and Nitrogenous Compounds and Evaluating its Toxicity	Water Air Soil Pollut	Springer	2025	3.8
Phytogenic Synthesis of Cuprous and Cupric Oxide Nanoparticles Using Black jack Leaf Extract: Antibacterial Effects and Their Computational Docking Insights	Antibiotics	MDPI	2024	4.3
Bovine bone-derived hydroxyapatite/carbon quantum dot nanocomposite: synthesis, characterisation, and Acid Black 210 dye removal	International Journal of Environmental Analytical Chemistry	TAYLOR & FRANCIS	2024	2.3
Green synthesis of silver and copper nanoparticles and their composites using ocimum sanctum leaf extract displayed enhanced antibacterial, antioxidant and anticancer potentials.	Artificial cells, nanomedicine and biotechnology	TAYLOR & FRANCIS	2024	4.5
Targeting sars-cov2 spike glycoprotein: molecular insights into phytocompounds binding interactions – in-silico molecular docking	Journal of biomaterials science	POLYMER EDITION	2024	3.6
A potent tyrosinase inhibitor ……. a skin lightening agent	Cosmetics	MDPI	2024	3.3
Synthesis of biogenic cadmium sulfide nanoparticles (mr03-cdsnps) ……. a novel approach	Environmental research	ELSEVIER	2023	8.3
Cleome rutidosperma leaf …… anti-cancer, and molecular docking analysis”	Biomass conversion and biorefinery	SPRINGER	2023	4.0
enhanced ferro magnetism of (cu, fe/mn) dual doped zno nano particles …… hyperthermia applications	Vacuum	ELSEVIER	2022	4.0
Role of ionic radii and electronegativity of co-dopants (co, ni and cr) on properties of cu doped zno and evaluation of in-vitro cytotoxicity	Surfaces and interfaces	ELSEVIER	2022	6.2
Genome wide integration analysis - a new approach to predict susceptible gene(s) for lung cancer	European journal of pharmaceutical and medical research	EJPMR	2016	6.222 (sjif)

Genome-wide integration analysis of cancer	Biomedicine	BIOMEDICINE	2015	0.1 (cite score)
Plant metabolites as a cure for hepatitis - an in-silico analysis	European journal of biomedical and pharmaceutical sciences	EJBPS	2015	6.044 (sjif)
Identification of a lead molecule for inflammation by molecular mechanics	International journal of biological & pharmaceutical research	IJBPR	2014	1.34
Squalene as a lead molecule against HIV infection	International journal of pharma and bio sciences	IBPBS	2013	7.165 (sjif)

PERSONAL DETAILS

Name	**Dr. C MUTHUSAMY**
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Nationality	Indian
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REFERENCES

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