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Career Objective

Looking for a full-time position in Research (Academic), where I can demonstrate my technical and experimental skills and contribute to the development and better understanding of science for the benefit mankind.

Academic Qualification

M-Tech: Industrial Biotechnology - (2017 to 2019) First Class **(8.60 CGPA)** in Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India.

B-Tech: Biotechnology - (2013 to 2017) - First Class **(7.79 CGPA)**, Kalasalingam Academy of Research and Education, Virudhunagar, Tamil Nadu, India.

Area of Specialization

- Regeneration, Cancer Biology and Stem Cell Research

Professional Experience

- **2020 to 2024 –** Project on, 'Exploring the molecular mechanisms of regeneration through apoptosis-induced compensatory proliferation and its target induction for therapeutic applications', in Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India.
- **2019 to 2020 -** Project entitled on, 'Identification of novel mutation in autism, Parkinson and Alzheimer disease patients in Coimbatore population', in Bharathiar University, Coimbatore, Tamilnadu, India.
- **2018 to 2019 -** Project entitled on, 'Unraveling the Molecular Mechanism of regeneration through *in-vitro* culturing of earthworm primary cells', in Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India.

- **2017 to 2018 -** Project entitled on **'**Heat-inactivated Coelomic fluid of the earthworm *Perionyx excavatus* is a possible alternative source for Fetal Bovine Serum in animal cell culture" in Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India.
- **2015 to 2017 -** Project entitled on, 'Identification and Cloning of Bacteriocin producing genes from *Lactobacillus Delbrukii*', in Kalasalingam Academy of Research and Education, Virudhunagar, Tamil Nadu, India.

Research Experience

- **Project Assistant (NRDMS-DST)** at Stem Cell and Molecular biology lab, Department of Human Genetics and Molecular Biology, Bharathiar University, Coimbatore, Tamilnadu, India. **(One Year - 2019 to 2020)**
- **Junior Research Fellow (DST-SERB)** at Molecular Biology and Stem, Cell Research Lab, Center for Molecular and Nanomedical Sciences, International Research Center, Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India. **(Two Year - 2020 to 2022)**
- **Senior Research Fellow (DST-SHRI)** at Molecular Biology and Stem, Cell Research Lab, Center for Molecular and Nanomedical Sciences, International Research Center, Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India. **(2022 - perusing)**

Technical Skills

- **Basic cell and organ culture techniques**: Isolation and culture of primary cells (T lymphocytes, dendritic and retinal cells), Maintenance of adherent (HeLa, MCF-7) and suspension cell lines (H2-kd, RMAS-kd, and P815), Earthworm organ culture, BrdU labelling Assay, ALP Assay, MTT, Wound Healing Assay, Immunofluorescence, Flow Cytometry, Histology and Immunohistochemistry.
- **Microbiology:** Laboratory safety and sterilization techniques, Microscopic methods in the identification of microorganisms, Preparation of culture media, Culturing of microorganisms, Screening of microbes from selective and differential agar media.
- **Molecular Biology:** Isolation of Genomic DNA from bacterial, plant and animal cell, Isolation of Plasmid DNA from Bacterial cell, Isolation of RNA from bacteria cell/eukaryotic tissue/cell line, MicroRNA isolation, Transcriptomic data analysis, Transformation and Gene cloning techniques, Construction of Genomic Library, PCR, TA cloning and Gateway cloning (EZ), Screening of recombinants through colony PCR/

Scoring of PCR cloning recombinant, Expression of recombinant clone in *E. coli*, R T - P C R , SDS-PAGE, cDNA synthesis, Western Blotting, Immunoprecipitation.

- **Computational immunology and Bioinformatics:** Prediction of T and B cell epitopes. Proteasomal cleavage analysis, Immunogenicity analysis, Antigenicity analysis, phylogenetic analysis and basic skills in Bioinformatics tools for Primer Designing, Multiple Sequence Alignment, Protein Modelling.
- **Software packages:** Circos plot, Mapchart, Bio render, ImageJ for data analysis of Wound healing, Angiogensis, Western Blotting and Immunofluorescence., CorelDraw, OriginPro, Image Lab (Bio-rad), Statistical analysis using GraphPad Prism and Swiss Modelling, Molecular Docking (protein-ligand and protein-protein) and Molecular Dynamics and Simulation.

Expertise

- Thermocycler, ChemDoc, Spectrophotometer, Nanodrop, Confocal Microscope, Phase contrast microscope, Fluorescence microscope, Electrophoresis, Ultra Centrifuge, Blotting techniques and Microtome.

Training /Workshop Attended & Conducted

- Workshop on **"Laboratory Animal Techniques in Ethics"** Conducted by the Center for Laboratory and Research at Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India. **(2018)**
- Workshop on **"Cytogenetics and Molecular Biology Techniques"** conducted and Performed as a **"Technical demonstrator"** by the Department of Human genetics and Molecular Biology, Bharathiar University, Coimbatore, Tamilnadu, India. **(2019)**
- Workshop on **"Hands-on Workshop on "Molecular Biological Techniques and Software Packages"** conducted and Performed as a **"Tutor"** by the Department of Center for Molecular and Nanomedical Sciences, International Research Center, Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India. **(2022, 2023, 2024) (13 Times).**
- Internship on **"Hands-on Internship Molecular Biological Techniques and Cell Culture Techniques"** conducted and Performed and a "**Tutor"** by the Department of Center for Molecular and Nanomedical Sciences, International Research Center, Sathyabama Institute of Science and Technology, Chennai, Tamilnadu, India. **(2022, 2023, 2024) (17 Batches).**

Patent

- Alternative supplement for serum in animal cell culture medium (487479). **(2019) – Granted**
- A deep root watering system (202241036037) **(2020).**

Publications (13), Citations (1105), h-index (8), i10 index (8)

- **Kamarajan Rajagopalan**, Chellathurai Vasantha Niranjan, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai … & Johnson Retnaraj Samuel Selvan Christyraj. "Heat-inactivated coelomic fluid of the earthworm Perionyx excavatus is a possible alternative source for fetal bovine serum in animal cell culture."Biotechnology Progress 35, no. 4 (2019): e2817. **(IF: 2.681)**
- Vellingiri, Balachandar, Kaavya Jayaramayya, Mahalaxmi Iyer, Arul Narayanasamy, Vivekanandhan Govindasamy, Bupesh Giridharan, Singaravelu Ganesan … & **Kamarajan Rajagopalan**. "COVID-19: A promising cure for the global panic." Science of Total Environment (2020): 138277. **(IF: 10.75)**
- Vellingiri, Balachandar, **Kamarajan Rajagopalan**, Kaavya Jayaramayya, Madesh Jeevanandam, and Mahalaxmi Iyer. "Mitochondrial Dysfunction: A Hidden Trigger of Autism?." Genes & Diseases (2020). **(IF: 7.103)**
- Chelladurai, Karthikeyan Subbiahanadar, Jackson Durairaj Selvan Christyraj, Ananthaselvam Azhagesan, Vennila Devi Paulraj, Muralidharan Jothimani, Beryl Vedha Yesudhason, Niranjan Chellathurai Vasantha, Mijithra ganesan, **Kamarajan Rajagopalan**, Venkatachalam, S. and Benedict, J. et al. "Exploring the effect of UV-C radiation on earthworm and understanding its genomic integrity in the context of H2AX expression." Scientific reports 10, no. 1 (2020): 1-14. (**IF: 4.37**)
- Vivekanandam, Reethu, **Kamarajan Rajagopalan**, Madesh Jeevanandam, Harsha Ganesan, Vaishnavi Jagannathan, Jackson Durairaj Selvan Christyraj, Kalishwaralal Kalimuthu, Johnson Retnaraj Samuel Selvan Christyraj, and Manikandan Mohan. "Designing of cytotoxic T lymphocyte-based multi-epitope vaccine against SARS-CoV2: a reverse vaccinology approach." Journal of Biomolecular Structure and Dynamics (2021): 1-16. (**IF: 3.392**)
- Mohan, Manikandan, Prabu Shanmugaraja, Rajeswari Krishnan, **Kamarajan Rajagopalan**, and Krishnan Sundar. "In silico prediction of b-cell epitopes of dengue virus–A reverse vaccinology approach." Journal of Applied Pharmaceutical Science 10, no. 10 (2020): 077-085 (**IF: 1.38**)

- Vasantha, Niranjan Chellathurai, Johnson Retnaraj Samuel Selvan Christyraj, Karthikeyan Subbiahnadar Chelladurai, **Kamarajan Rajagopalan**, Beryl Vedha Yesudhason, Saravanakumar Venkatachalam, and Jackson Durairaj Selvan Christyraj. "Prediction and possible molecular interactive role of wild type and HGPS mutant lamin A in connection with trf2." Authorea Preprints (2020).
- Chelladurai, Karthikeyan Subbiahanadar, Jackson Durairaj Selvan Christyraj, **Kamarajan Rajagopalan**, Beryl Vedha Yesudhason, Saravanakumar Venkatachalam, Manikandan Mohan, Niranjan Chellathurai Vasantha, and Johnson Retnaraj Samuel Selvan Christyraj. "Alternative to FBS in animal cell culture-An overview and future perspective." Heliyon (2021): e07686. **(IF: 2.85).**
- Jebaranjitham, J. Nimita, Jackson Durairaj Selvan Christyraj, Adhimoorthy Prasannan, **Kamarajan Rajagopalan**, Karthikeyan Subbiahanadar Chelladurai, and Jemima Kamalapriya John Samuel Gnanaraja. "Current scenario of solid waste management techniques and challenges in Covid-19-A review." Heliyon (2022): e09855 **(IF: 3.776).**
- **Kamarajan Rajagopalan**, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Jemima Kamalapriya John Samuel Gnanaraja, and Johnson Retnaraj Samuel Selvan Christyraj. "Comparative analysis of the survival and regeneration potential of juvenile and matured earthworm, *Eudrilus eugeniae*, upon *in vivo* and *in vitro* maintenance." In Vitro Cellular & Developmental Biology-Animal 58, no. 7 (2022): 587-598. **(IF: 2.73).**
- **Kamarajan Rajagopalan,** Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Puja Das, Karthikeyan Mahendran, Logeshwari Nagarajan, and Saritha Gunalan. "Understanding the multi-functional role of TCTP in the regeneration process of Earthworm, *Perionyx excavatus*." Tissue Engineering and Regenerative Medicine 21, no. 2 (2024): 353-366. **(IF: 3.6).**
- **Kamarajan Rajagopalan,** Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Johnson Retnaraj Samuel Selvan Christyraj, Puja Das, Apoorva Roy, Chaughule Vrushali, and Nehla Siraj M. Chemmet. "The molecular mechanisms underlying the regeneration process in the earthworm, Perionyx excavatus exhibit indications of apoptosis-induced compensatory proliferation (AICP)." In Vitro Cellular & Developmental Biology-Animal 60, no. 3 (2024): 222-235. **(IF: 2.73).**

- **Kamarajan Rajagopalan,** Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Kalishwaralal Kalimuthu, Puja Das, Meikandan Chandrasekar, Nivedha Balamurugan, and Karthikeyan Murugan. "Understanding the molecular mechanism of regeneration through apoptosis-induced compensatory proliferation studies-updates and future aspects." Apoptosis (2024): 1-16. **(IF: 7.2).**
- Kandaswamy, Karthikeyan, Kayalvizhi Vadivelu, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, **Kamarajan Rajagopalan**, Puja Das, Meikandan Chandrasekar, Nivedha Balamurugan, Vijayalakshmi Subramanian, and Johnson Retnaraj Samuel Selvan Christyraj. "An improved protocol for inducing the gut cleaning process in earthworm for various experiments." Animal Biology 1, no. aop (2024): 1-15. **(IF: 1.2)**
- **Kamarajan Rajagopalan,** Kalishwaralal Kalimuthu, Jackson Durairaj Selvan Christyraj, " Exploring the copper influences cancer stemness and angiogenesis in human colorectal carcinoma and earthworm model." Journal of Angiogenesis. (under review). **(IF: 8.5)**
- **Kamarajan Rajagopalan**, Jackson Durairaj Selvan Christyraj, Johnson Retnaraj Samuel Selvan, Meikandan Chandrasekar, Nivedha Balamurugan, Nandha Kumar Suresh, Puja Das, Ashwin Barath Vaidhyalingham, Leela Bharathiraja. "Enhancing the wound healing potential using earthworm clitellum factors and revealing its molecular level evidence on mouse myoblast cells C2C12 and in in vivo model". Journal of Scientific Reports. (under major revision) **(IF: 3.8)**

Conference Proceedings

- **Kamarajan Rajagopalan**, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahnadar Chelladurai, Johnson Retnaraj Samuel. "Unravelling the molecular mechanism of regeneration through AICP on *in-vitro* regeneration of *Perionyx excavatus* blastema". International e-Conference on Bioengineering for Health & Environment (ICBHE 2021), Organized by Sathyabama Institute of Science and Technology, Chennai, India in association with MAHSA University, Selangor, Malaysia. **(ISBN Number: 978-93-83409-66-2).**

Book Chapters (Published – 7; Accepted-2)

- Selvan Christyraj, Johnson Retnaraj Samuel, Jackson Durairaj Selvan Christyraj,Prasannan Adhimoorthy, **Kamarajan Rajagopalan**, and J. Nimita Jebaranjitham. "Impact of Biomedical Waste Management System on Infection Control in the Midset of COVID-19 Pandemic." In The Impact of the COVID- 19 Pandemic on Green Societies, pp. 235-262. Springer, Cham, 2021.
- **Kamarajan Rajagopalan,** Johnson Retnaraj Samuel Selvan Christyraj, Subbiahanadar Chelladurai Karthikeyan, Madesh Jeevanandam, Harsha Ganesan, Melinda Grace Rossan Mathews, and Jackson Durairaj Selvan Christyraj. "Biodegradation of microplastics and synthetic polymers in agricultural soils." In Microbes and Microbial Biotechnology for Green Remediation, pp. 563-573. Elsevier, 2022.
- Jackson Durairaj Selvan Chirstyraj, **Kamarajan Rajagopalan**, Pavithra Kadalpandian, and Leela Bharathi Raja. "Anti-Angiogenic Activities of Natural Compounds From Plant Sources." In Natural Products as Cancer Therapeutics, pp. 147-161. IGI Global, 2023.
- **Kamarajan Rajagopalan**, Aarya Senan Surasenan, Aparna Ramakrishnan, Harsha Haridasan, Johnson Retnaraj Samuel Selvan Christyraj, and Jackson Durairaj Selvan Christyraj. "Computational genomic sequencing and its importance for identifying theemerging variants of COVID-19."
- Raja, Srishti, Chandini Sengupta, **Kamarajan Rajagopalan**, L. Inbathamizh, S. Sudha, and Jackson Durairaj Selvan Christyraj. "Future Trends and Directives for Research on Phytochemicals in Neurological Diseases." In NeuroPhytomedicine, pp. 221-240. CRC Press.
- Subramaniam, Ravichandran, **Kamarajan Rajagopalan**, Melinda Grace Rossan Mathews, Jackson Durairaj Selvan Christyraj, and Johnson Retnaraj Samuel Selvan Christyraj. "E-Waste Management: Rising Concern on Existing Problems, Modern Perspectives, and Innovative Solutions." In Handbook of Solid Waste Management: Sustainability through Circular Economy, pp. 1-21. Singapore: Springer Singapore, 2021.
- Narasimhan A, Sivakumar SR, Chelladurai KS, **Kamarajan Rajagopalan**, Christyraj JD. The Role of Epigenetic Modifications by Phytoconstituents in Neurological Ailments. InNeuroPhytomedicine (pp. 114-124). CRC Press.
- Impact of Tele health and Telemedicine in Health Care Services accepted in Emerging technologies during the era of Covid-19 Pandemic (Royallite global)

- E-Waste Management - Rising Concern on Existed Problems, Modern Perspectives and Innovative Solution accepted in Handbook of Solid Waste Management. Sustainability through Circular Economy (Springer)

References

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