

In order of Importance, list of 10 best papers of the applicant highlighting the important discoveries/contributions described in them briefly:

1. Rajagopalan, Kamarajan, **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.

This study explores the multi-functional role of TCTP (Tumor Protein p53) in the regeneration process of the earthworm *Perionyx excavatus*. The research highlights how TCTP influences various aspects of tissue regeneration in earthworms, suggesting its potential as a therapeutic target in regenerative medicine.

2. Subbiahanadar Chelladurai, Karthikeyan, **Jackson Durairaj Selvan Christyraj***, Ananthaselvam Azhagesan, Vennila Devi Paulraj, Muralidharan Jothimani, Beryl Vedha Yesudhasan, Niranjana Chellathurai Vasanthan 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): 21005.

The paper investigates the impact of UV-C radiation on earthworms and its effects on genomic integrity, specifically focusing on H2AX expression. This study provides insights into how UV-C radiation affects earthworm DNA and cellular mechanisms involved in repair and maintenance.

3. Rossan Mathews, Melinda Grace, Ravichandran Subramaniam, Saravanakumar Venkatachalam, Johnson Retnaraj Samuel Selvan Christyraj, Beryl Vedha Yesudhasan, Kalishwaralal Kalimuthu, Manikandan Mohan, and **Jackson Durairaj Selvan Christyraj***. "Biochemical and functional characterization of heat-inactivated coelomic fluid from earthworms as a potential alternative for fetal bovine serum in animal cell culture." *Scientific Reports* 14, no. 1 (2024): 5606.

This research characterizes heat-inactivated coelomic fluid from earthworms, evaluating its potential as an alternative to Fetal Bovine Serum in animal cell cultures. The study demonstrates that earthworm coelomic fluid can support cell growth, making it a promising candidate for use in cell culture applications.

4. 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* 40, no. 24 (2022): 13711-13726.

This paper presents the design of a multi-epitope vaccine against SARS-CoV-2 using cytotoxic T lymphocytes, employing a reverse vaccinology approach. The study contributes to vaccine development strategies by exploring new methods for eliciting immune responses against COVID-19.

5. Paul, Sayan, Subburathinam Balakrishnan, Arun Arumugaperumal, Saranya Lathakumari, Sandhya Soman Syamala, Vijithkumar Vijayan, **Selvan Christyraj Jackson Durairaj**, Vaithilingaraja Arumugaswami, and Sudhakar Sivasubramaniam. "Importance of clitellar tissue in the regeneration ability of earthworm *Eudrilus eugeniae*." *Functional & Integrative Genomics* 22, no. 4 (2022): 1-32.
The research emphasizes the role of clitellar tissue in the regeneration capacity of the earthworm *Eudrilus eugeniae*. The study demonstrates the critical importance of clitellar tissue for successful regeneration, enhancing understanding of earthworm regenerative biology.
6. **Jackson Durairaj Selvan Christyraj***, Ananthaselvam Azhagesan, Mijithra Ganesan, Karthikeyan Subbiah Nadar Chelladurai, Vennila Devi Paulraj, and Johnson Retnaraj Samuel Selvan Christyraj. "Understanding the role of the clitellum in the regeneration events of the earthworm *Eudrilus eugeniae*." *Cells Tissues Organs* 208, no. 3-4 (2020): 134-141.
This study examines the role of the clitellum in regeneration processes of the earthworm *Eudrilus eugeniae*. It provides valuable insights into how the clitellum contributes to regeneration events, furthering knowledge on earthworm tissue repair mechanisms.
7. Subramaniam, Ravichandran, Johnson Retnaraj Samuel Selvan Christyraj, **Jackson Durairaj Selvan Christyraj**, Saravanakumar Venkatachalam, Melinda Grace Rossan Mathews, Kesavamoorthy Venkatachalam, Kalishwaralal Kalimuthu, and Beryl Vedha Yesudhasan. "Profiling microRNAs of earthworm, *Perionyx excavatus* and deciphering the expression of distinct novel miRNAs regulating epimorphosis regeneration." *Gene* (2024): 148636.
The paper profiles microRNAs in the earthworm *Perionyx excavatus* and identifies novel miRNAs that regulate epimorphic regeneration. This study contributes to the understanding of gene regulation during earthworm regeneration and highlights specific miRNAs involved in the process.
8. Rajagopalan, Kamarajan, **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.
This comparative study analyzes survival and regeneration potential of juvenile versus mature earthworms *Eudrilus eugeniae*, both in vivo and in vitro. It provides insights into how developmental stage affects regeneration capabilities and survival in different conditions.
9. Rajagopalan, Kamarajan, **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.

The research explores the molecular mechanisms of regeneration in *Perionyx excavatus*, specifically focusing on apoptosis-induced compensatory proliferation (AICP). The study reveals how AICP contributes to the regenerative process, offering a deeper understanding of the underlying molecular dynamics.

10. SC, Johnson Retnaraj Samuel, K. Amutha, S. M. Dinesh, **Jackson Durairaj SC**, R. M. Kalidas, V. Tharmaraj, K. Pitchumani, and S. Sudhakar. "Autofluorescence in BrdU-positive cells and augmentation of regeneration kinetics by riboflavin." *Stem cells and development* 21, no. 11 (2012): 2071-2083.

This study investigates autofluorescence in BrdU-positive cells and the effects of riboflavin on regeneration kinetics. The findings suggest that riboflavin enhances regeneration by influencing cell proliferation and repair mechanisms, contributing to the broader understanding of factors that affect regenerative processes.

The above publications summaries the essential contributions of each paper to the fields of regenerative medicine, molecular biology, and cellular research.