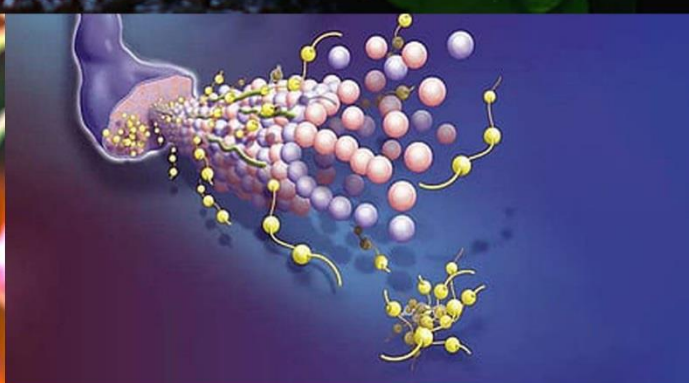


# RESEARCH JOURNAL OF BIOTECHNOLOGY

VOL. 18(8), AUGUST 2023



**JOURNAL IS INDEXED IN SCOPUS,  
CHEMICAL ABSTRACTS, NAAS, UGC,  
WEB OF SCIENCE AND  
ESCI HAVING IMPACT FACTOR 0.233**

# RESEARCH JOURNAL OF BIOTECHNOLOGY

An International Peer Reviewed Research Journal of Biotechnology, Nanotechnology, Biological Sciences  
*Res. J. Biotech.*, Volume 18(8), Pages 1-195, August 2023, SCI Impact Factor 0.233

Editor- in- Chief (Hon.)  
**Dr. Wan Keung Wong**  
 Kowloon, HONG KONG

Correspondence Address:  
**"Research Journal of Biotechnology"**  
 Sector AG/80, Scheme No. 54, Indore 452 010 (M.P.) INDIA  
 Mobile: +91-94250-56228

Web Site: <https://www.worldresearchersassociations.com>

E-mail: [info@worldresearchersassociations.com](mailto:info@worldresearchersassociations.com)

## CONTENTS

<b>Research Papers:</b>		
1.	<b>Studying Production of Protein Hydrolysates from Fish By-Products using <i>Bacillus</i> sp.</b> - Tran The Lam, Phan Thi Ngoc-Tram and Nguyen Duong Tam-Anh	1-10
2.	<b>Extraction and evaluation of <math>\alpha</math>-glucosidase inhibitory activity of polysaccharide from <i>Urena lobata</i> L. roots</b> - Vu Thi Bach Phuong, Cao Minh Dai and Quach Ngo Diem Phuong	11-15
3.	<b>Induction of polyploidy in Periwinkle (<i>Catharanthus roseus</i> (L.) G. Don) by <i>in vitro</i> treatment with colchicine</b> - Huynh Thanh Thao, Le Huong Thuy and Luu Thi Thanh Tu	16-21
4.	<b>Study on gametophyte cultivation and bioactive evaluation on biomass of silver moss <i>Bryum argenteum</i> Hedw.</b> - Tan Tran-Quoc, My-Duyen Nguyen-Thi, Dat Tran-Quoc and Diem-Phuong Quach-Ngo	22-31
5.	<b>Plant diversity in a self-regenerating mangrove after disturbance by Durian typhoon in Ho Chi Minh City, Vietnam</b> - Quang Dien Tran, Xuan Huy Pham, Trung Hieu Tram, Quynh Huong Pham and Thi Lan Thi Nguyen	32-38
6.	<b>Diversity of Brachyuran crabs after 12 years natural reforestation at destroyed areas by typhoon Durian in Can Gio mangrove</b> - Diem My Tran Ngoc and Quang Ha Tran Le	39-45
7.	<b>Livelihoods and human impacts in Tan Thanh mudflat, Tien Giang Province, Vietnam</b> - Phuong-Thao Nu Nguyen, Truc-Xuan Tran, Thi-Hoa Pham and Kim-Dung Nguyen	46-53
8.	<b>Chloroquine inhibiting the activation of primary hepatic stellate cells induced by lipopolysaccharide</b> - Le Van Trinh, Ho Nguyen Van Tan, Dang Minh Thanh and Truong Hai Nhung	54-61
9.	<b>Fabrication of injectable hydrogel derived amnion extracellular matrix</b> - Nguyen Thi Ngoc My, Lam Minh Hoang, Nguyen Thuan Nho and Tran Le Bao Ha	62-67
10.	<b>Tadpoles of <i>Papurana milleti</i> (Amphibia: Anura): molecular identification and morphological description</b> - Le Thi Thuy Duong, Tran Gia Thinh, Le Tran Tuyen and Pham Manh Hung	68-73
11.	<b>The Effects of Blue and Red Light on the Hill Reaction of isolated Chloroplasts, Photosynthesis and Saponin Accumulation in Fenugreek Leaves (<i>Trigonella foenum-graecum</i> L.)</b> - Tien Anh Huy Nguyen, Thuong Kiet Do and Trang Viet Bui	74-81
12.	<b><i>In vitro</i> antagonistic effect of <i>Bacillus licheniformis</i> D7 against <i>Colletotrichum siamense</i> Pathogenic to Mango</b> - Tan-Viet Pham, Dong-Trieu Pham, Ngoc-An Nguyen and Hanh Thi-Dieu Nguyen	82-88

13.	<b>Effects of signal peptides on the secreted green fluorescent protein (GFP) expression by recombinant <i>Saccharomyces cerevisiae</i></b> - Tran Ha Lac, Phan Thai Hien, Nguyen Bui Truc Uyen, Le Kha Han, Nguyen Thi My Trinh, Dang Thi Phuong Thao and Nguyen Hieu Nghia	89-96
14.	<b>Biological Activities of Thymine extracted from Ethyl Acetate of <i>Cordyceps neovolkiana</i> DL0004 isolated in Vietnam</b> - Khac Ky Lam, Minh Hiep Dinh, Dai-Hung Ngo, Gia-Buu Tran and Dam Sao Mai	97-105
15.	<b>The change of zooplankton communities in three areas for co-management of coastal fisheries in Can Gio, Ho Chi Minh City</b> - Diem My Tran Ngoc, Quang Ha Tran Le and Song Nhi La Duong	106-112
16.	<b>Improving yield and polyphenol content of <i>Perilla frutescens</i> (L.) by foliar methionine application</b> - Tran Thanh Thang and Nguyen Thi Thuy Linh	113-118
17.	<b>Comparing of antioxidant ability, <math>\alpha</math>-glucosidase inhibition and cytotoxicity of three fruiting body shapes of <i>Ganoderma lingzhi</i></b> - Phuong Lam-Huy, Dai Cao-Minh, Diem-Phuong Quach-Ngo and Tan Tran-Quoc	119-127
18.	<b>Cytokinin application improving growth, sugar content, polyphenol and flavonoid content in Yacon tuberous roots</b> - Tran Thi Thanh Hien and Pham Thi Xuan	128-134
19.	<b>Isolation of Endophytic Bacteria from Cavendish Banana pseudostem (<i>Musa acuminata</i>) and Plant Growth Promoting Characterization</b> - Vo T.M.D., Vo B.T., Vo T.X. and Nguyen N.N.	135-144
20.	<b>Heterologous Expression, Purification and Characterization of Fusion-type Pediocin PA-1 in <i>Escherichia coli</i></b> - Nguyen Pham Anh Thu, Dao Thi Hong Thuy, Nguyen Van Hau, Dang Thi Phuong Thao and Nguyen Hieu Nghia	145-152
21.	<b>Study on induction of <i>Allium sativum</i> L. hairy roots with antibacterial activity against <i>Vibrio</i></b> - Vu Thi Bach Phuong, Nguyen Phuong Anh, Nguyen Phuoc Quy Thang, Tran Phi and Quach Ngo Diem Phuong	153-162
22.	<b>Investigation on the biological activity of the leafy liverwort <i>Denotarisia linguifolia</i> (De Not.) Grolle</b> - Nguyen-Nhien Phan-Duy, Ky-Duyen Nguyen-Vo, Tan Tran-Quoc and Diem-Phuong Quach-Ngo	163-171
23.	<b>Characterization of Epithelial Stem Cells and Mesenchymal Stem Cells from Human Hair Follicle</b> - Dao Thi Thanh Thuy, Dang Thi Tung Loan, Nguyen Thi Ngoc Nhu, Phan Lu Chinh Nhan, Nguyen Ton Ngoc Huynh and Tran Le Bao Ha	172-180
24.	<b>Identification of four candidates circulating microRNAs in plasma as a potential biomarker for early-stage breast cancer diagnosis in Vietnamese women</b> - Luan Huu Huynh, Thuy Thi Chung Duong, Nga Thi Nguyen, Thanh Thi Ngoc Nguyen and Hue Thi Nguyen	181-187
25.	<b><i>Perilla frutescens</i> (L.) Britt extract alleviating acute liver injury in mice induced by thioacetamide</b> - Dang Minh Thanh, Duong Thi Ngoc Le, To Quoc Hoa, Le Van Trinh, Huynh Ngoc Trinh and Truong Hai Nhung	188-195

❖ GUEST EDITORS OF AUGUST 2023 ISSUE: P IV ❖ EDITORIAL BOARD: P V ❖

---

## GUEST EDITORS OF AUGUST 2023 ISSUE

---



**Prof. Tran Linh Thuoc**

Department of Molecular and Environmental  
Biotechnology, University of Science, Vietnam National  
University, Ho Chi Minh city, Vietnam  
Email: tlthuoc@hcmus.edu.vn



**Dr. Tran Triet**

Department of Ecology and Evolutionary Biology,  
University of Science, Vietnam National University,  
Ho Chi Minh city, Vietnam  
Email: triet@savingcranes.org

---

August 2023 issue of “**Research Journal of Biotechnology**” is a regular issue dedicated to research going at Ho Chi Minh city, Vietnam. The issue covers the recent researches being made in the field of molecular biotechnology, environmental biotechnology, ecology, and evolutionary biology, biotechnology and food technology, plant physiology, stem cell research and application, agriculture biotechnology, human genetic biotechnology, physiology and animal biotechnology, plant biotechnology, and biotransformation, tissue engineering, biochemistry at **Faculty of Biology and Biotechnology, University of Science, Vietnam National University, Ho Chi Minh, Vietnam.**

Established in 1941, the University of Science is now a member of Vietnam National University Ho Chi Minh City (VNUHCM). VNU-HCM was named among the top 1,000 universities in the world, according to the Quacquarelli Symonds (QS) World University Rankings for 2021, ranked 151-200 th in Asia by the QS ASIA University Rankings 2022. We are glad to publish 25 manuscripts of the Faculty of Biology and Biotechnology, University of Science, Vietnam National University, Ho Chi Minh, Vietnam, in this issue.

## Editorial Board

---

### Honorary Editor-in-Chief

---



**Dr. Wan Keung Wong, Ph.D.**

Associate Professor Emeritus and Adjunct Associate Professor,  
Section of Marine Ecology and Biotechnology, Division of Life Science,  
The Hong Kong University of Science Technology,  
Clear Water Bay, Kowloon, HONG KONG  
E-mail: [bcwkrw@ust.hk](mailto:bcwkrw@ust.hk); [bcwkrw@gmail.com](mailto:bcwkrw@gmail.com)

---

### Editors

---



**Dr. Shankar Lal Garg, Ph.D. (Biochemistry),  
FRSC, FWRA**

Ex Principal, Holkar Science College, Indore, INDIA  
E-mail: [sgargh@gmail.com](mailto:sgargh@gmail.com)



**Dr. Vinod Kumar, Ph.D.**

Associate Research Scientist, Biotechnology Program,  
Environment & Life Sciences Research Center, Kuwait Institute  
For Scientific Research, Safat, KUWAIT  
E-mail: [vinodk@kisar.edu.kw](mailto:vinodk@kisar.edu.kw); [vinodpcb@gmail.com](mailto:vinodpcb@gmail.com)

---



**Dr. Oguzhan Sarikaya, Ph.D.**

Faculty of Forestry, Suleyman Demirel University,  
32260 Isparta, TURKEY  
E-mail: [oguzhansarikaya@sdu.edu.tr](mailto:oguzhansarikaya@sdu.edu.tr)



**Dr. Ahmet Adiguzel, Ph.D.**

Ataturk University, Science Faculty,  
Department of Molecular Biology and Genetics,  
Erzurum, TURKEY  
E-mail: [adiguzel@atauni.edu.tr](mailto:adiguzel@atauni.edu.tr)

---



**Dr. Prabhuling G., Ph.D.**  
Centre for Horticulture Biotechnology,  
Directorate of Research,  
University of Horticultural Sciences,  
Bagalkot –587 104, Karnataka, INDIA  
E-mail: gprabhuling@gmail.com



**Dr. K. Ammani, Ph.D.**  
Dept. of Botany and Microbiology,  
ANU, A.P., INDIA  
E-mail: ammani1960@gmail.com



**Dr. Guiying Li, Ph.D.**  
Institute of Environmental Health and Pollution Control,  
School of Environmental Science and Engineering,  
Guangdong University of Technology,  
Guangzhou, 510006, CHINA  
E-mail: ligy1999@gdut.edu.cn; ligy1999@163.com



**Dr. M. Ashraf Bhat, Ph.D., FWRA**  
Professor-cum-Chief Scientist  
Division of Genetics and Plant Breeding,  
Faculty of Agriculture and Regional Research Station,  
Sher-e-Kashmir University of Agricultural Sciences &  
Technology of Kashmir,  
Wadura-193 201, Sopore, Jammu and Kashmir, INDIA  
E-mail: mashrafbhat@skuastkashmir.ac.in



**Dr. Efterpi Christaki, Ph.D.**  
Professor, Laboratory of Animal Nutrition,  
Aristotle University of Thessaloniki, GREECE  
E-mail: efchris@vet.auth.gr



**Dr. Phetole Mangena, Ph.D.**  
Department of Biodiversity, Private Bag X1106,  
Sovenga, 0727, University of Limpopo,  
REPUBLIC OF SOUTH AFRICA  
E-mail: phetole.mangena@ul.ac.za



**Dr. Anil K. Sharma, Ph.D., FWRA**

Professor and Head, Department of Biotechnology,  
M.M. (Deemed to be University) Mullana,  
Ambala-133207, INDIA

E-mail: anibiotech18@gmail.com; sharma.biotech@gmail.com

---



**Dr. Nazima Habibi, Ph.D., FWRA**

Biotechnology Program, Environment  
& Life Science Research Centre (ELSRC),  
Kuwait Institute for Scientific Research (KISR), KUWAIT  
E-mail: nhabibi@kISR.edu.kw

---



**Dr. Gour Gopal Satpati, Ph.D., FWRA**

Assistant Professor, Department of Botany,  
Bangabasi Evening College,  
University of Calcutta, INDIA  
E-mail: gour\_satpati@yahoo.co.in

---



**Dr. Jayachandra S. Yaradoddi, Ph.D., FWRA**

Research Scientist, KLE Technological University,  
Vidyanagar, Hubballi-580031, INDIA  
E-mail: jsybiotech@gmail.com

---



**Dr. M. R. K. Rao, Ph.D., FWRA**

Agricultural Biotechnology,  
Bharath Institute of Higher Education and Research,  
Chennai. 173, Agaram Road, Selaiyur,  
Chennai-600073, INDIA  
E-mail: merkrao1455@gmail.com

---



**Dr. Vitthal Khode, Ph.D., FWRA**

SDM College of Medical Sciences & Hospital,  
Shri Dharmasthala Manjunatheshwara University,  
Dharwad- 580009, INDIA  
E-mail: drkhoday@yahoo.co.in

---



**Dr. Samata Kodali, Ph.D., FWRA**

F2, Jaamini Apartments,  
Road #12, Vijayawada, Andhra Pradesh, 520008, INDIA  
E-mail: gaddesamatakodali@gmail.com

---



**Dr. Tadjiev Anvar Yuldashevich, Ph.D.**

Faculty of Bioengineering and Food Safety,  
Khorezm region, Urgench city, Khamid Olimjon-14,  
post index-220100, Uzbekistan  
E-mail: anvartadjiev@mail.ru

---



**Dr. A. Sangilimuthu, Ph.D., FWRA**

Professor and Head, Department of Biotechnology,  
Karpagam Academy of Higher Education,  
Coimbatore-641 021, Tamil Nadu, INDIA  
E-mail: smuthu.al@gmail.com



**Dr. Chandra Kant Sharma, Ph.D., FWRA**

Professor and Head-Horticulture,  
School of Agriculture (ICAR Accredited),  
ITM University, Gwalior, 474001, INDIA  
E-mail: ck21sharama@gmail.com

---

**Student Editors**

---



**Ms. Pimprapa Chaijak**

Department of Biotechnology, University of Thaksin,  
Phatthalung 93210, THAILAND  
E-mail: chaijak.pimprapa@gmail.com



**Ms. Vinny Motwani**

Epizyme Inc.,  
20 Anselm Terrace Boston, MA, 02135, USA  
E-mail: vinnymotwani26@gmail.com