Name : **Dr. Rachana Sharma**

Designation : **Assistant Professor**

Department : Biotechnology

Qualification : **M.Sc., PhD., CSIR-JRF NET., Post Doc**

Experience : Teaching – 5 Years

Research : 12 Years

Area of Specialization(s) : Venom Pharmacology; Biopolymer; Feed formulations, Redox biology.

Email (Official ID) : rachanasharma@psgrkcw.ac.in

Academic qualifications

Degree	Branch	Institution/University Name	Year of Graduation
Ph.D.	Biochemistry	University of Mysore, Mysuru	2016
M. Sc.	Biochemistry	University of Mysore, Mysuru	2010
B.Sc.	CBZ (Chemistry, Botany & Zoology)	Mount Carmel College, Bangalore	2008

Research Interests

- **Snake Venom Toxicology & Therapeutics** – mechanisms of venom-induced pathologies and development of antioxidant/anti-inflammatory interventions.
- **Insect Bioproducts & Waste Valorization** – Black Soldier Fly bioconversion for chitin, chitooligosaccharides, insect oil, and sustainable biomaterial production.
- **Industrial Enzyme Biotechnology** – production and application of thermostable alkaline proteases and extremozymes for industrial use.
- **Environmental Bioremediation** – catalytic and microbial strategies for detoxifying persistent organic pollutants.

Additional Qualifications

Diploma/ Vocational/ Certification	Area of Specialization	Institution/University/ Agency Name	Year
Certification	**Completed Certification Course** – Artificial Intelligence and Machine Learning in Bioinformatics.	BIRAC E-YUVA Centre, PSGR Krishnammal College for Women	2025

Research Publications (Indexed)

- Published **8 research** papers in peer-reviewed international journals.
- Presented **5 papers** in national and international conferences.
- Contributed chapters **to 1 edited** books.

Selected Journal Publications

1. Rachana D Sharma, Katkar GD, Sundaram MS, et al. (2015). Oxidative stress-induced methemoglobinemia is the silent killer during snakebite: a novel and strategic neutralization by melatonin. Journal of Pineal Research, 59, 240-254 (**IF: 15.22**).
2. Katkar GD, Sundaram MS, Rachana D Sharma, et al. (2016). NETosis and lack of DNase activity are key factors in Echis carinatus venom-induced tissue destruction. Nature Communication 19, 11361 (**IF: 17.69**).
3. Katkar GD, Sundaram MS, Rachana D Sharma, et al. (2014). Melatonin alleviates Echis carinatus venom-induced toxicities by modulating inflammatory mediators and oxidative stress. Journal of Pineal Research, 56 (3), 295-312 (**IF: 15.22**).
4. Rachana D Sharma, Gajanan D. Katkar, Mahalingam S, et al. (2017). Melatonin inhibits snake venom and antivenom induced oxidative stress and augments treatment efficacy. ActaTropica 169, 14-25 (**IF: 3.11**).
5. Katkar GD, Rachana D Sharma, Vishalakshi GJ, et al. (2015). Lupeol derivative mitigates Echis carinatus venom-induced tissue destruction by neutralizing venom toxins and protecting collagen and angiogenic receptors on inflammatory cells. Biochim Biophys Acta, 1850, 2393-2409. (**IF: 3.8**)
6. Rachana Sharma and Prabhu Thangadurai (2023). Palladium-based catalytic treatment and a rhizobacterial-assisted detoxification for the enhanced removal of lindane. Nature Environment and Pollution Technology, vol. 22 (4), pp 1881-1890.

Book Chapter Published

Prabhu Thangadurai and Rachana Sharma (2024). Emerging trends of extremozymes in industrial biotechnology. IIP Book Series "Futuristic Trends in Biotechnology", Volume 3, 2024.

Acted as a Resource Person

- Resource Person for the *Hands-on Workshop on Fermentation Technology and Bioreactor Operation*, organized by the **BIRAC EYUVA Centre**, **PSGR Krishnammal College**.
- Resource person for invited talk on *Role of Youth in Attaining Sustainable Development Goals (SDGs)*, organized by **Mount Carmel College**, Bengaluru.

Paper Presentations in Conference

International

- Development of a low-cost biopod for the valorization of food waste using black soldier fly: Design optimization, bioconversion performance and nutritional evaluation, 4th International Conference on Waste Management held on 18th to 19th May 2023 (oral presentation), IIT Guwahati, Assam, India.

National

- Chitin from Hermetia illucens exoskeletons: A sustainable biopolymer and its derivative chitooligosaccharides for mitigating oxidative stress. 3rd International conference on Material Science and Engineering held on 23rd to 25th November 2023 (oral presentation), NIT Jalandhar, Punjab, India.
- Comparative efficacy of monovalent verses polyvalent antivenom raised against Big 4 snakes of India. National conference on Snakebite Management held on 10th to 12th December 2012 (poster presentation), University of Mysore, Mysore, Karnataka, India.

Grants

S.No	Project Title	Agency	Amount Granted	Status
1	**GRG Trust Project-** Sustainable extraction of Chitin and Bioactive Derivatives from Black Soldier Fly Exuviae for Advanced Biomaterials	GRG TRUST-PSGRKCW	1 lakh	Ongoing

Awards/Honors

- **CSIR-JRF-NET** Qualied in Life sciences , with Junior Research Fellowship + National Eligibility Test (Lectureship), All India Rank 83 (2010).
- **GATE 2010** Qualification.
- **GATE 2011** Qualification.
- **DBT Research Associateship** – awarded by the Department of Biotechnology, Government of India (2018).
- **BIRAC EYUVA Innovation Fellow** – with a research grant of ₹7.5 lakh (2022).
- Amity University Mumbai Campus Mentor – for the UN Millennium Fellowship program (2020).
- Amity University Mumbai Campus Mentor – for the UN Millennium Fellowship program (2021).

Indexing and Citations

All	Since 2020	
Citations	517	1018
h-index	9	11
i10-index	8	13