

# Curriculum vitae

**Dr. PRIYAJIT BANERJEE, Ph.D.**

Assistant Professor  
Department of Biotechnology  
School of Life Sciences  
Swami Vivekananda University  
West Bengal, India.



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## PERSONAL DETAILS

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FATHER'S NAME : PARTHA SARATHI BANERJEE  
MOTHER'S NAME : SIMA BANERJEE  
DATE OF BIRTH : 28<sup>TH</sup> SEPTEMBER, 1988  
GENDER : MALE  
MARITAL STATUS : MARRIED  
NATIONALITY : INDIAN  
RELIGION : HINDU  
LANGUAGES : ENGLISH; BENGALI; HINDI  
ADDRESS : NUTANPALLY, PO- SURI, DIST. –  
BIRBHUM, WEST BENGAL, INDIA,  
PIN NO- 731101

## CAREER PROFILE

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| Exam                                   | Institute            | Board/University | Year | Percentage/CGPA                           |
|--|----------------------|------------------|------|---|
| School Certificate (10 <sup>th</sup> ) | Birbhum Zilla School | WBBSE            | 2006 | 91.37<br>(54 <sup>th</sup> rank in state) |
| Pre Degreee (12 <sup>th</sup> )        | Birbhum Zilla School | WBCHSE           | 2008 | 81.75                                     |

|                         |                             |   |      |   |
|-------------------------|-----------------------------|---|------|---|
| B.Sc<br>Hons Zoology    | Visva-Bharati<br>University | Visva-Bharati<br>University             | 2012 | 75.6<br>(2 <sup>nd</sup> in 1 <sup>st</sup> class in<br>university) |
| M.Sc<br>(Biotechnology) | Visva-Bharati               | Visva-Bharati                           | 2014 | 8.44<br>(1 <sup>st</sup> in 1 <sup>st</sup> class in<br>university) |
| JAM                     |                             | Indian Institute of<br>Technology (IIT) | 2012 | All India Rank: 128   |

## **PH.D. IN BIOTECHNOLOGY**

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Research work was carried out at **UNESCO-Regional Centre for Biotechnology (RCB)**

NCR Biotech Science Cluster, Faridabad-121 001, Haryana, India.

Affiliation: KIIT University, Bhubaneswar, Odisha, India.

TITLE OF THESIS: “Structural and functional analysis of FleQ: A master regulator of flagellar and biofilm genes in *Pseudomonas aeruginosa*”

Supervisor: Dr. Deepti Jain,

Associate Professor, RCB, Faridabad; Email: [deepti@rcb.res.in](mailto:deepti@rcb.res.in)

CGPA: 9.00/10.00 (Grade: A+)

Year of Award: 2021

## **POSTDOCTORAL RESEARCH**

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Postdoctoral researcher 2022- ongoing

**DST – SERB National Postdoctoral Fellow**

The University of Burdwan, West Bengal, India

**Principle Investigator: Dr. Priyajit Banerjee**

Grant No: PDF/2021/003023

Grant Amount: INR 20,25,600

Mentor: Prof. Nimai Chandra Saha

Vice Chancellor, The University of Burdwan, West Bengal, India.

## TEACHING EXPERIENCE

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- 1. Assistant Professor**  
**Department of Biotechnology**  
**School of Life Sciences**  
**Swami Vivekananda University**  
West Bengal, India  
Duration from 02.02.2024 to till date

**Courses taught** at the Department of Biotechnology and Department of Microbiology, Swami Vivekananda University.

- Proteomics and Protein engineering
- Drug Discovery
- Biochemistry
- Recombinant DNA Technology
- Biophysical Chemistry and Instrumentation

- 2. Subject Expert**  
**Department of Molecular Biology and Human Genetics**  
**The University of Burdwan**  
West Bengal, India  
Duration from 28.01.2022 to 27.01.2024

**Courses taught** at the Department of Molecular Biology and Human Genetics, The University of Burdwan

- Molecular Biology
- Clinical Genetics
- Biochemistry
- Genetic Engineering & Model Genetic Systems
- Pharmacogenomics

## GRANT RECEIVED

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| Sl. No | Title   | Amount      | Start Date | End Date   | Role as PI/CO-PI | Agency/Sponsored                       |
|--------|---|-------------|------------|------------|------------------|--|
| 1      | Reveling mechanism of infection and structure assisted drug discovery | 20,25,600/- | 28-01-2022 | 27-01-2024 | PI               | DST – SERB<br>National<br>Postdoctoral |

|   |  |             |            |          |        |                         |
|---|--|-------------|------------|----------|--------|-------------------------|
|   | to fish pathogenic oomycete <i>Saprolegnia parasitica</i>  |             |            |          |        | Fellowship (NPDF) Grant |
| 2 | Post-Covid Era and the Zero Generation: Vulnerability, Resilience and Adaptive Capacity in Ageing Communities of selected Urban Spaces of North-East India | 10,00,000/- | 20-09-2024 | On going | Co- PI | ICSSR                   |

## RESEARCH SUPERVISION

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Co - Supervise a dissertation thesis at the Department of Molecular Biology and Human Genetics, The University of Burdwan for the partial fulfilment of M.Sc. degree.

**Title of the thesis:** “Study on COVID-19 Therapeutics & Cardiotoxicity”

## JOURNAL ROLE

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Reviewer of reputed journal-

Journal of Hazardous Materials (IF: 12.2)

Comparative Biochemistry and Physiology Part C (Elsevier) (IF: 3.9)

Frontiers in Immunology (IF: 7.8)

## HONORS/FELLOWSHIPS

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- 2012 - 1st class 2<sup>nd</sup> in B.Sc (Hons Zoology) in Visva-Bharati University
- 2014 - 1st class 1<sup>st</sup> in M.Sc (Biotechnology) in Visva-Bharati University
- 2014 - Qualified the UGC – CSIR NET
- 2014 - Qualified the DBT JRF
- 2014 - Qualified the JGEBILLS
- 2014 – GATE, Life Science
- 2015 - DST INSPIRE award for PhD
- 2017 - Best Poster award at RCB – PAC meeting.
- 2017 - David Blow Studentship bursary Award, United Kingdom.

- 2018 - Best Poster award at RCB – RCB Open Day (India International Science Festival)
- 2019 – Carl Storm International Diversity Fellowship.
- 2019 – DST-SERB international travel grant.
- 2022 – National Post Doctoral Fellowship (NPDF)

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## PUBLICATIONS

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### BEST FIVE RESEARCH ARTICLES

1. Chanchal#, **Banerjee P#**, Raghav S, Goswami HN, Jain D; The antiactivator FleN uses an allosteric mechanism to regulate  $\sigma^{54}$ -dependent expression of flagellar genes in *Pseudomonas aeruginosa*. **Science Advances**. 2021 Oct 22;7(43) eabj1792. DOI: 10.1126/sciadv.abj1792. (# - equal contribution).  
**(Impact Factor: 14.1)**
2. **Banerjee P**, Sahoo PK, Sheenu, Adhikary A, Ruhai R, Jain D; Molecular and Structural facets of c-di-GMP signalling associated with biofilm formation in *Pseudomonas aeruginosa*. **Mol Aspects Med**. 2021 Oct; 81:101001. DOI: 10.1016/j.mam.2021.101001.  
**(Impact Factor: 16.3)**
3. Naskar T, Faruq M, **Banerjee P**, Khan M, Midha R, Kumari R, Devasenapathy S, Prajapati B, Sengupta S, Jain D, Mukerji M, Singh NC, Sinha S. Ancestral Variations of the PCDHG Gene Cluster Predispose to Dyslexia in a Multiplex Family. **EBioMedicine**. 2018 Feb; 28:168-179. Epub 2018 Jan 9. DOI: 10.1016/j.ebiom.2017.12.031.  
**(Impact Factor: 11.2)**
4. Sharma, P., Garai, P., **Banerjee, P.**, Saha, S., Chukwuka, AV., Chatterjee, S., Saha, NC., Faggio, C. Behavioral toxicity, histopathological alterations and oxidative stress in *Tubifex tubifex* exposed to aromatic carboxylic acids- acetic acid and benzoic acid: A comparative time-dependent toxicity assessment. **Science of The Total Environment**, 876, (2023). <https://doi.org/10.1016/j.scitotenv.2023.162739>  
**(Impact Factor: 10.75)**
5. Ganai, I.; Saha, I.; **Banerjee, P.**; Laha, A.; Sultana, S.; Sultana, N.; Biswas, H.; Moitra, S.; Podder, S. In silico analysis of single nucleotide polymorphism (rs34377097) of TBXA2R gene and pollen induced bronchial asthma susceptibility in West Bengal population, India. **Frontiers in Immunology**, 2023, 14, 1089514. DOI: 10.3389/fimmu.2023.1089514  
**(Impact Factor: 7.8)**

## PUBLISHED RESEARCH ARTICLES

1. Chanchal, **Banerjee P**, Jain D. ATP-Induced Structural Remodeling in the Antiactivator FleN Enables Formation of the Functional Dimeric Form. **Structure**. 2017 Feb 7;25(2):243-252 DOI: 10.1016/j.str.2016.11.022.  
**(Impact Factor: 5.87)**
2. Naskar T, Faruq M, **Banerjee P**, Khan M, Midha R, Kumari R, Devasenapathy S, Prajapati B, Sengupta S, Jain D, Mukerji M, Singh NC, Sinha S. Ancestral Variations of the PCDHG Gene Cluster Predispose to Dyslexia in a Multiplex Family. **EBioMedicine**. 2018 Feb; 28:168-179. Epub 2018 Jan 9. DOI: 10.1016/j.ebiom.2017.12.031.  
**(Impact Factor: 11.2)**
3. Chanchal#, **Banerjee P**#, Raghav S, Goswami HN, Jain D; The antiactivator FleN uses an allosteric mechanism to regulate  $\sigma^{54}$ -dependent expression of flagellar genes in *Pseudomonas aeruginosa*. **Science Advances**. 2021 Oct 22;7(43) eabj1792. DOI: 10.1126/sciadv.abj1792. (# - equal contribution). **(Impact Factor: 14.1)**.
4. **Banerjee P**, Chanchal, Jain D. Sensor I Regulated ATPase Activity of FleQ Is Essential for Motility to Biofilm Transition in *Pseudomonas aeruginosa*. **ACS Chem Biol**. 2019 Jul 19;14(7):1515-1527. DOI: 10.1021/acscchembio.9b00255. Epub 2019 Jul 3.  
**(Impact Factor: 5.1)**
5. **Banerjee P**, Sahoo PK, Sheenu, Adhikary A, Ruhel R, Jain D; Molecular and Structural facets of c-di-GMP signalling associated with biofilm formation in *Pseudomonas aeruginosa*. **Mol Aspects Med**. 2021 Oct; 81:101001. DOI: 10.1016/j.mam.2021.101001.  
**(Impact Factor: 16.3)**
6. Sharma G, Aminedi R, Saxena D, Gupta A, **Banerjee P**, Jain D, Chandran D. Effector mining from the *Erysiphe pisi* haustorial transcriptome identifies novel candidates involved in pea powdery mildew pathogenesis. **Mol Plant Pathol**. 2019 Nov;20(11):1506-1522. DOI: 10.1111/mpp.12862. Epub 2019 Oct 11. PMID: 31603276.  
**(Impact Factor: 5.6)**
7. Garai, P#, **Banerjee P**#, Sharma, P# et al. Nitrate-Induced Toxicity and Potential Attenuation of Behavioural and Stress Biomarkers in *Tubifex tubifex*. **Int J Environ Res** 16, 63 (2022). DOI: 10.1007/s41742-022-00443-4. (# - equal contribution).  
**(Impact Factor: 3.22)**.
8. **Banerjee, P.**, Saha, I., Sarkar, D. et al. Contributions and Limitations of Mitochondria-Targeted and Non-Targeted Antioxidants in the Treatment of Parkinsonism: an Updated Review. **Neurotox Res**. 40, 847–873 (2022). DOI: 10.1007/s12640-022-00501-x.  
**(Impact Factor: 3.97)**.

9. Garai, P.#, **Banerjee, P.#**, Sharma, P. et al. Mechanistic insights to lactic and formic acid toxicity on benthic oligochaete worm *Tubifex tubifex*. **Environ Sci Pollut Res** (2022). DOI: 10.1007/s11356-022-21361-0. (# - equal contribution).  
**(Impact Factor: 5.2)**
10. Saha, S., Saha, NC., Chatterjee. A., **Banerjee, P.**, Garai, P., Sharma, P., Patnaik, L., Nayak, S., Dhara, K., Chukwuka, AV., Faggio C. Integrated multi-biomarker responses in Mozambique tilapia, *Oreochromis mossambicus* under acute and chronic Diazinon® exposures. **Chemistry and Ecology**, 264, (2023) <https://doi.org/10.1080/02757540.2023.2178649>.  
**(Impact Factor: 2.38)**
11. Sharma, P., Garai, P., **Banerjee, P.**, Saha, S., Chukwuka, AV., Chatterjee, S., Saha, NC., Faggio, C. Behavioral toxicity, histopathological alterations and oxidative stress in *Tubifex tubifex* exposed to aromatic carboxylic acids- acetic acid and benzoic acid: A comparative time-dependent toxicity assessment. **Science of The Total Environment**, 876, (2023). <https://doi.org/10.1016/j.scitotenv.2023.162739>  
**(Impact Factor: 10.752)**
12. Garai P., **Banerjee P.**, Mondal P., Saha N.C. (2021). Effect of Heavy Metals on Fishes: Toxicity and Bioaccumulation. **Journal of Clinical Toxicology**. Vol. 11 Iss. S18 No: 001
13. **Banerjee P.**, Garai P., Saha N.C., Saha S., Sharma P., Maiti A.K. A critical review on the effect of nitrate pollution in aquatic invertebrates and fish. **Water Air Soil Pollution**. (2023) 234:333.  
**(Impact Factor: 2.98)**
14. Saha S., **Banerjee P.**, Saha N.C., Chukwuka A.V. Triazophos-induced Respiratory and Behavioral Effects and Development of Adverse Outcome Pathway (AOP) for short-term Exposed Freshwater Snail, *Bellamya Bengalensis*. **Bulletin of Environmental Contamination and Toxicology** (2023) 110:94. DOI: 10.1007/s00128-023-03734-4  
**(Impact Factor: 2.8)**
15. Garai P., Sharma P, **Banerjee P**, Chatterjee A., Saha NC., 2022. Formic acid induced acute toxicity and its sublethal effects on growth, behavioral pattern and oxidative stress parameters of the freshwater snail *Bellamya bengalensis*. **Sci. and Cult**. 2023, 89 (3–4) : 84-93
16. Chukwuka A.V., Saha S., Mukherjee D., **Banerjee P.**, Dhara K., Saha N.C. Deltamethrin-Induced Respiratory and Behavioral Effects and Adverse Outcome Pathways (AOP) in Short-Term Exposed Mozambique Tilapia, *Oreochromis mossambicus*. **Toxics**. 2022, 10(11), 701. DOI: 10.3390/toxics10110701  
**(Impact Factor: 4.47)**
17. Ganai, I.; Saha, I.; **Banerjee, P.**; Laha, A.; Sultana, S.; Sultana, N.; Biswas, H.; Moitra, S.; Podder, S. In silico analysis of single nucleotide polymorphism (rs34377097) of TBXA2R gene and pollen induced bronchial asthma susceptibility in West Bengal population, India. **Frontiers in Immunology**, 2023, 14, 1089514. DOI: 10.3389/fimmu.2023.1089514

**(Impact Factor: 7.8)**

18. Majumdar N., Saha NC., **Banerjee P.**, Bhattacharya T., Saha S. Acute and sub-acute toxic effects of cadmium to freshwater tropical oligochaete Tubifex tubifex with special reference to oxidative stress and behavioural biomarkers, **Chemistry and Ecology**, 2023, DOI: 10.1080/02757540.2023.2263439

**(Impact Factor: 2.38)**

19. Sultana S#, **Banerjee P#**, Ganai I, Laha A, Sultana N, Biswas H, Saha NC, Moitra S, Podder S. Polymorphism in ADAM33 gene associated with asthmatics in West Bengal, India - An investigation by in-silico analysis. **World Allergy Organ J.** 2023 Nov 8;16(11):100834. Doi: 10.1016/j.waojou.2023.100834. (# - equal contribution).

**(Impact Factor: 5.1)**

20. Saha NC, **Banerjee P**, Chatterjee A, Bhattacharya R, Saha S, Pastorino P. Haematological, biochemical, enzymological changes and mitochondrial dysfunction of liver in freshwater climbing perch *Anabas testudineus* during their acute and chronic exposure to sodium fluoride.

**Environmental Toxicology and Pharmacology.** 2023 Dec. **(Impact Factor: 4.3)**

21. Ghosh S, Spoorthi BC, **Banerjee P**, Saha I, Dua TK, Sahu R, Maiti AK. 10-(6-Plastoquinonyl) decyltriphenylphosphonium imparts anti-colitogenic protection through recovery of mitochondrial dysfunction in ulcerated murine colon: Implications in ulcerative colitis. **Life Sciences.** July 2024 348, 122700. Doi: 10.1016/j.lfs.2024.122700. **(Impact Factor: 5.2)**

22. Saha, N.C.; Chaerjee, A.; **Banerjee, P.**; Bhaacharya, R.; Sadhu, A.; Pastorino, P.; Saha, S. Toxic Effects of Lead Exposure on Freshwater Climbing Perch, *Anabas testudineus*, and Bioremediation Using *Ocimum sanctum* Leaf Powder. **Toxics.** Doi: 10.3390/toxics12120927. **(Impact Factor: 3.9)**

23. Mandal S, Nag S, Mukherjee O, Das N, Banerjee P, Majumdar T, Mukhopadhyay S, Maedler K, Kundu R. CD36 inhibition corrects lipid-FetuinA mediated insulin secretory defects by preventing intracellular lipid accumulation and inflammation in the pancreatic beta cells. **BBA - Molecular Basis of Disease.** 2025 Feb;1871(2):167580. doi: 10.1016/j.bbadis.2024.167580. **(Impact Factor: 5.5)**

## **PDB DEPOSITION**

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6J7E - Crystal Structure of Central domain of FleQ in complex with ATPgS and Mg<sup>+2</sup>

6JDI - Central domain of FleQ H287N mutant in complex with ATPgS and Mg<sup>+2</sup>

6JDL - Central domain of FleQ H287A mutant in complex with ATPgS and Mg<sup>+2</sup>

7EJW - Crystal structure of FleN in complex with FleQ AAA+ doamain

5J1J - Structure of FleN-AMPPNP complex

5JVJ - Crystal Structure of Apo-FleN



## INVITED SEMINARS/SELECTED POSTER PRESENTATIONS

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- ❖ Poster presentation titled “Sensor I regulated ATPase activity of FleQ is essential for maintaining the monotrichous phenotype and for motility-to-biofilm transition of *Pseudomonas aeruginosa*” at Gordon Research Conference on Mechanisms of Microbial Transcription held (July 28<sup>th</sup> - Aug 02<sup>nd</sup> 2019) at Bates College, Lewiston, ME United States.
- ❖ Poster presentation titled “Sensor I regulated ATPase activity of FleQ is essential for maintaining the monotrichous phenotype and for motility-to-biofilm transition of *Pseudomonas aeruginosa*” at Structure Assisted Development of Novel Therapeutics Workshop (Feb 12<sup>th</sup> – 19<sup>th</sup> 2019) RCB, INDIA.
- ❖ Poster presentation titled “3-D Approach for Tuning Bacterial Motility to Halt Infections” RCB Open Day (India International Science Festival) (September 24<sup>th</sup> 2018) RCB, INDIA
- ❖ Poster presentation titled “Interplay between FleQ and FleN: Sigma54 dependent transcription activator” CCP4/Diamond Light Source Data Collection and Structure Solution Workshop, (November 30<sup>th</sup>- December 7<sup>th</sup> 2017) Rutherford Appleton Laboratory, Didcot, UK
- ❖ Oral presentation titled “Structural and Functional Analysis of FleQ: A Master Regulator of Flagellar and Biofilm genes in *Pseudomonas aeruginosa*” at BioZest 2017 (Nov 10<sup>th</sup> 2017) South Asian University, New Delhi, INDIA.
- ❖ Poster presentation titled “Probing the mechanism of ATP hydrolysis by FleQ: A master regulator of flagellar and biofilm genes in *Pseudomonas aeruginosa*” at PAC meeting (Oct5-7, 2017) RCB, INDIA
- ❖ Workshop titled “Computational Biotechnology at the Nanoscale: CCP4 Workshop 2016” at RCB (February 15<sup>th</sup> -20<sup>th</sup> 2016) Faridabad, INDIA.
- ❖ Seminar titled “New advances in X-ray diffraction and Cryo-electron Microscopy” (Dec15-17, 2014) at Indian National Science Academy, New Delhi, INDIA

I hereby declare that all the information provided above is correct to the best of my knowledge and belief. I also understand that any discrepancy found in the above information will render me liable for disqualification at any stage.

Sincerely,

*Dr. Priyajit Banerjee*

Place: Barrackpore, India.

Date: 31.02.2025