



DEPARTMENT OF ZOOLOGY, UNIVERSITY OF CALCUTTA



Name: Dr. SUMAN BHUSAN CHAKRABORTY

Designation: Associate Professor in Zoology

Specialisation: Endocrinology

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Academic qualifications:

College/ university from which the degree was obtained	Abbreviation of the degree
University of Calcutta	M.Sc. in Zoology
University of Calcutta	Ph.D
University of Kaposvár, Hungary	Postdoctoral

Research interests:

- i. Use of different phytochemicals for induction of sex reversal, growth promotion and immunostimulation in fish.
- ii. Molecular mechanism of phytochemical-induced sex reversal and growth promotion in tilapia.
- iii. Effect of heavy metal, pesticide contamination and climate change on fish reproductive physiology.

Research guidance:

Number of researchers awarded Ph.D degree: 2

Number of researchers submitted thesis and yet to be awarded Ph.D degree: 2

Number of researchers pursuing Ph.D: 6

Projects:

Completed projects: 8

Current projects: 1

Membership of Learned Societies:

- i. Life Member of Zoological Society, Kolkata ii. Life member of Indian National Science Congress.
- iii. Fellow member of International Foundation for Environment and Ecology.

Awards:

- i. Gold Medal by University of Calcutta for standing First Class First in M.Sc. Examination, 2000 in Zoology.
- ii. Hungarian University and Research Scholarship (Type D) in 2010.
- iii. Best Presentation Award' and 'Best Paper Award' in the 'International Conference on Fisheries and Aquaculture, Sri Lanka in 2014.
- iv. Prof. Hiralal Chaudhuri Medal for Excellence in Innovative Research by The Zoological Society, Kolkata, 2016.
- v. 'The Best Citizens of India Award 2017' by International Publishing House, New Delhi.
- vi. 'Outstanding Faculty in Zoology 2017 Award' by Venus International Foundation, Chennai.
- vii. Awarded 'Young Scientist of the Year 2017 Award' by International Foundation for Environment and Ecology, Kolkata.
- viii. Awarded 'Clean Environment Education and Promotion Award 2018' by International Benevolent Research Foundation, Kolkata; Confederation of Indian Universities, New Delhi; World Environment Foundation, Kolkata.

Tie - ups and collaborations:

- i. Prof. Debangshu Narayan Das, Department of Zoology, Rajib Gandhi University, Arunachal Pradesh.
- ii. Prof. Mradu Gupta, Department of Dravyaguna, Institute of Postgraduate Ayurvedic Education & Research, Kolkata, West Bengal.

Select list of publications:

- 1. Das D, Das P, Moniruzzaman M, Poddar Sarkar M, Mukherjee J, **Chakraborty SB**. 2018. Consequences of oxidative damage and mitochondrial dysfunction on the fatty acid profile of muscle of Indian Major Carps considering metal toxicity. Chemosphere 207: 385-396. <https://doi.org/10.1016/j.chemosphere.2018.05.108>.

2. Moniruzzaman M, Ghosal I, Das D, **Chakraborty SB**. 2018. Melatonin ameliorates H₂O₂-induced oxidative stress through modulation of Erk/Akt/NFκB pathway. *Biological Research* 51: 17. DOI :10.1186/s40659-018-0168-5.
3. Moniruzzaman M, Mukherjee J, Jacquin L, Mukherjee D, Mitra P, Ray S, **Chakraborty SB**. 2018. Physiological and behavioural responses to acid and osmotic stress and effects of *Mucuna* extract in guppies. *Ecotoxicology and Environmental Safety* 163: 37-46. <https://doi.org/10.1016/j.ecoenv.2018.07.053>.
4. Deyashi M, Misra KK, **Chakraborty SB**. 2019. Evaluation of the acute toxicity of Mahua oil cake aqueous extract and its effect on the behavioral responses of the freshwater grapsid crab, *Varuna litterata* (Fabricius, 1798). *Environmental Science and Pollution Research* 26: 15631-15640. DOI: 10.1080/13813455.2018.1486428.
5. Moniruzzaman M, Das D, Dhara A, **Chakraborty SB**. 2020. Enzymatic, non-enzymatic antioxidant levels and heat shock protein expression as indicators of metal induced toxicity and reproductive modulation in female Indian major carp *Cirrhinus cirrhosus*. *Bulletin of Environmental Contamination and Toxicology* 104:235-244. <https://doi.org/10.1007/s00128-019-02766-z>.
6. Moniruzzaman M, Kumar S, Das D, Sarbajna A, **Chakraborty SB**. 2020. Enzymatic, non enzymatic antioxidants and glucose metabolism enzymes response differently against metal stress in muscles of three fish species depending on different feeding niche. *Ecotoxicology and Environmental Safety* 202: 110954. <https://doi.org/10.1016/j.ecoenv.2020.110954>.
7. Moniruzzaman M, Mukherjee M, Das D, **Chakraborty SB**. 2020. Effectiveness of melatonin to restore fish brain activity in face of permethrin induced toxicity. *Environmental Pollution* 266: 115230. <https://doi.org/10.1016/j.envpol.2020.115230>.
8. De M, Ghosal I, Mukherjee D, **Chakraborty SB**. 2020. Identification of chemical constituents responsible for potential androgenic efficacy of *Withania somnifera* and *Chlorophytum borivillianum* root solvent extracts for production of monosex Nile tilapia, *Oreochromis niloticus*. *Journal of Applied Aquaculture*, DOI: 10.1080/10454438.2020.1829247.
9. Kumar S, Moniruzzaman M, Chakraborty A, Sarbajna A, **Chakraborty SB**. 2021. Crosstalk between heat shock proteins, NRF2, NF-κB and different endogenous antioxidants during lead-induced hepatotoxicity in *Puntius ticto*. *Aquatic Toxicology* 233: 105771. <https://doi.org/10.1016/j.aquatox.2021.105771>.

10. Ghosal I, Mukherjee D, **Chakraborty SB**. 2021. The effects of four plant extracts on growth, sex reversal, immunological and haemato-biochemical parameters in Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758). *Aquaculture Research* 52(2):559-576. <https://doi.org/10.1111/are.14914>.

Select list of international paper presentations:

1. 'Asian-Pacific Aquaculture 2007' organized by the World Aquaculture Society in Hanoi, Vietnam, August 2007.
2. 'World Aquaculture 2008' organized by the World Aquaculture Society in Busan, South Korea, May 2008.
3. 'World Aquaculture 2009' organized by the World Aquaculture Society in Veracruz, Mexico, September 2009.
4. 'International Conference on Fisheries, Animal and Veterinary Sciences 2010' organized by the World Academy of Science, Engineering and Technology in Paris, France, July 2010.
5. '3rd International Symposium on Cage Aquaculture in Asia 2011' organized by the Asian Fisheries Society in Kuala Lumpur, Malaysia, November 2011.
6. 'Aquaculture 2013' organized by the World Aquaculture Society in Nashville, USA, February 2013.
7. 'International Conference on Fisheries and Aquaculture - 2014' organized by the International Institute of Knowledge Management in Colombo, Sri Lanka, September 2014.
8. '10th Indian Fisheries and Aquaculture Forum' organized by the Asian Fisheries Society, Indian Branch in Lucknow, India, November 2014.
9. 'Invited Lecture' at 'Young Scientists' Meet – 2016' organized by the Zoological Society, Kolkata, India, February 2016.
10. 'International Conference on Aquatic Resources & Sustainable Management' organized by the Central Calcutta Science and Culture Organization for Youth in Kolkata, India, February 2016.
11. 'Aquaculture 2016' organized by the World Aquaculture Society in Las Vegas, USA, February 2016.
12. 'International Conference on Fisheries and Aquaculture - 2017' organized by the International

Institute of Knowledge Management in Colombo, Sri Lanka, August 2017.

13. 'Invited Lecture' at '4th International Conference on Environment and Ecology' organized by the International Foundation for Environment and Ecology', Kolkata in Guwahati, India, February 2018.
14. 'Plenary Lecture' at the International Research Conference on Recent Trends in Life Sciences at Sidho Kanho Birsha University, Purulia, West Bengal, November 2019.
15. 'Keynote Lecture' at the International Multidisciplinary Conference on Agriculture, Aquaculture, Environment and Sustainability (Webmeet) organized by Scientific and Environmental Research Institute, Kolkata, January 2021.