

DR. RITAM CHATTERJEE

Assistant Professor

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*Department of Zoology, Cooch
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ACADEMICS

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|--|-----------|
| Doctor of Philosophy , Zoology, University of Calcutta, Kolkata, West Bengal, India | 2012-2018 |
| Master of Science (1 st Class, A+), Zoology, University of Calcutta, Kolkata, West Bengal, India | 2009-2011 |
| Bachelor of Science (1 st Class), Zoology (Hons.), University of Calcutta, Kolkata, WB, India | 2006-2009 |

EMPLOYMENT

- Assistant Professor**, Department of Zoology, **Cooch Behar Panchanan Barma University**, Cooch Behar, West Bengal, India. (18th February 2021 – Present)
- Post-Doctoral Fellow (DBT-RA)** at the School of Medical Science and Technology, **Indian Institute of Technology Kharagpur**, Kharagpur, West Bengal, India. (19th July 2018 – 4th February 2021)
- Assistant Professor** at the Department of Zoology (PG & UG), **Arunachal University of Studies**, Arunachal Pradesh, India. (16th April 2018 – 9th July 2018)
- Guest Faculty** at the Department of Zoology (UG), **Bankim Sardar College** (Affiliated to the University of Calcutta), West Bengal, India. (1st April 2016 – 2nd April 2018)

ACHIEVEMENTS & AWARDS

- Qualified for **DBT Research Associateship Program** of Department of Biotechnology, Government of India, conducted by IISC, Bangalore in 2018.
- Qualified **National Eligibility Test (NET)** on **Life science** conducted by CSIR & UGC in December 2012.
- Qualified **Graduate Aptitude Test for Engineering (GATE)** on **Life science** conducted by Indian Institute of Technology (IIT), Delhi in 2012.
- Best oral presentation award** for “Bone marrow aplasia and deregulation of vital signaling components: a correlative study in experimental mice”, **International Conference on Trends in Biochemical and Biomedical Research (TBRR-2018)** organized by Department of Biochemistry, Institute of Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India. (13th – 15th February 2018)

5. **Best poster presentation award** for “Aplastic anemia related hematopoietic catastrophe and kinase-phosphatase signaling”, **3rd International Conference on Perspective of Cell Signaling and Molecular Medicine** organized by Bose Institute, Kolkata, West Bengal, India. (8th – 10th January 2017)
6. **Best poster presentation award** for “Bone Marrow Pathophysiological Consequences in Aplastic Anemia, MDS and Leukemia in Experimental Mice”, **National Symposium on Frontiers in Modern Biology** organized by Indian Science Congress Association and Department of Zoology, Dr. Hari Singh Gour Central University at Sagar, Madhya Pradesh, India. (23rd - 24th March 2014).
7. **Best presentation award** for “Aplastic Anemia: Kinase-Phosphatase Regulation Scenario”, Symposium organized by **Central Calcutta Society for Advancement of Human Development and Research**, Kolkata, West Bengal, India. (21st July 2014)

RESEARCH EXPERIENCE

1. **DBT-Research Associate** (GOI) (PI: Professor (Dr.) Jyotirmoy Chatterjee) from July 2018. [Research topic: “**Elucidating Malignant Potentiality of Oral Pre-malignant Disorders Using Molecular Pathology and Mechanobiological Attributes.**”].
2. **Ph.D. Scholar** at the Department of Biochemistry and Medical Biotechnology, **Calcutta School of Tropical Medicine** (Supervisor: Dr. Sujata Law) from 2012 to January 2018.
[Title of the Ph.D. thesis: “**Bone marrow aplasia and stem-stromal microenvironmental scenario regarding pathophysiology and kinase-phosphatase balance.**”
Ph.D. registration: Department of Zoology, **University of Calcutta**]
3. **Senior Research fellowship** in WB-DBT project at the Department of Biochemistry and Medical Biotechnology, **Calcutta School of Tropical Medicine** (PI: Dr. Sujata Law) from April 2015 to March 2016. . [Project title: “**Regulatory approach of stem cells and stem cells niche in Leukemia, Aplastic anemia and Myelodysplastic syndrome (MDS): A diagnostic and therapeutic intervention.**”].
4. **Junior Research fellowship** in WB-DBT project at the Department of Biochemistry and Medical Biotechnology, **Calcutta School of Tropical Medicine** (PI: Dr. Sujata Law) from April 2013 to March 2015. [Project title: “**Regulatory approach of stem cells and stem cells niche in Leukemia, Aplastic anemia and Myelodysplastic syndrome (MDS): A diagnostic and therapeutic intervention.**”].
5. Short term project (for 6 months) under Dr. Sujata Law (Associate Professor on Stem Cell Biology) at Department of Biochemistry and Medical Biotechnology, **Calcutta School of Tropical Medicine** on **Tumor Biology**.

RESEARCH EXPERTISE

1. Hematopoietic stem cell and cancer stem cell biology.
2. Development of murine models for hematopoietic disorders like leukemia, aplastic anemia, myelodysplastic syndrome and study of the alterations of hematopoietic stem/ progenitor cells and hematopoietic microenvironments.
3. Hematooncology.
4. Kinase-phosphatase biology, cell cycle and apoptosis profiling, p53 cascade, Wnt and NOTCH signaling in hematopoietic system.
5. Redox biology, epigenetic status alteration in hematopoietic system under xenobiotic stress.
6. Pesticides and hematopoietic stem cell and niche modulation.
7. Histopathological analysis of oral pre-cancer and cancer.
8. Development of murine model of peritoneal sarcomatosis and therapeutic applications of phytochemicals and probiotics.

EXPERTISE IN RELEVANT TECHNIQUES

Flowcytometry
Immunostaining (Immunohistochemistry and immunocytochemistry)
Scanning electron microscopy
Atomic force microscopy
Fourier Transform Infrared Spectroscopy
Single cell culture, tissue explant culture, CFU-assay
Hematological profiling
Histopathology, cytopathology and cytochemistry
Chromosomal study (metaphase spread analysis)

PUBLICATIONS

TOTAL PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED JOURNALS: **15**

TOTAL IMPACT FACTOR: **37.999 (Thompson & Reuters)**

TOTAL CITATIONS: **128 (Google Scholar)**

GOOGLE SCHOLAR LINK: <https://scholar.google.co.in/citations?user=7-XA9zEAAAAJ&hl=en>

1. Ritam Chatterjee, Biswajoy Ghosh, Mousumi Mandal, Debaleena Nawn, Satarupa Banerjee, Mousumi Pal, Ranjan Rashmi Paul, Swarnabindu Banerjee, and Jyotirmoy Chatterjee. Pathophysiological relationship between hypoxia associated oxidative stress, Epithelial-mesenchymal transition, stemness acquisition and alteration of Shh/Gli-1 axis during oral sub-mucous fibrosis and oral squamous cell carcinoma. *European Journal of Cell Biology* (2020): 151146. **[IF= 3.024]**

2. Ritam Chatterjee and Jyotirmoy Chatterjee. ROS and oncogenesis with special reference to EMT and stemness. *European Journal of Cell Biology* (2020), DOI: <https://doi.org/10.1016/j.ejcb.2020.151073>. **[IF= 3.024]**

3. Ritam Chatterjee, Sujata Law. Genomic insult oriented mitochondrial instability and proliferative hindrance in the bone marrow of aplastic mice including stem/progenitor population. *Pathology-Research and Practice*, 215, pp.784-793 (2019). **[IF= 2.05]**

4. Ritam Chatterjee, Sujata Law. Epigenetic and microenvironmental alterations in bone marrow associated with ROS in experimental aplastic anemia. *European journal of cell biology*, 97, pp. 32-43 (2018). **[IF= 3.024]**

5. Ritam Chatterjee, Shubhangi Gupta, Sujata Law. Hematopathological alterations of major tumor suppressor cascade, vital cell cycle inhibitors and hematopoietic niche components in experimental myelodysplasia. *Chemico-Biological Interactions*, 273, pp.1-10 (2017). **[IF= 3.723]**

6. **Ritam Chatterjee**, Sukalpa Chattopadhyay, Sujata Law. Deregulation of vital mitotic kinase–phosphatase signaling in hematopoietic stem/progenitor compartment leads to cellular catastrophe in experimental aplastic anemia. *Molecular and Cellular Biochemistry*, 422(1-2), pp.121-134 (2016). [IF= 2.795]
7. **Ritam Chatterjee**, Sukalpa Chattopadhyay, Sujata Law. Alteration of classical and hematopoiesis specific p53 pathway in the bone marrow hematopoietic stem/progenitor compartment facilitates leukemia progression in experimental mice. *Leukemia Research*, 47, pp.70-77 (2016). [IF= 2.214]
8. **Ritam Chatterjee**, Sukalpa Chattopadhyay, Shalini Sanyal, Suchismita Daw, Sujata Law. Pathophysiological Scenario of Hematopoietic Disorders: A Comparative study of Aplastic Anemia, Myelodysplastic Syndrome and Leukemia in Experimental Animals. *Proceedings of the Zoological Society*, 69 (1), pp.114-124 (2016).
9. Neha Sharma, Debaleena Nawn, Sawon Pratiher, Sayani Shome, **Ritam Chatterjee**, Karabi Biswas, Mousumi Pal, Ranjan Rashmi Paul, Srimonti Dutta, Jyotirmoy Chatterjee. *IEEE Sensors*. (2021: Accepted article) [IF= 3.076]
10. Sujata Law, Shalini Sanyal, **Ritam Chatterjee**, Atrayo Law, Aditya Law, Sukalpa Chattopadhyay. Therapeutic management of peritoneal ascitic sarcomatosis by *Ruta graveolens*: A study in experimental mice. *Pathology-Research and Practice*, 214(9), pp.1282-1290. (2018). [IF= 2.05]
11. Suchismita Daw, **Ritam Chatterjee**, Aditya Law, Sujata Law. Analysis of hematopathology and alteration of JAK1/STAT3/STAT5 signaling axis in experimental myelodysplastic syndrome. *Chemico-Biological Interactions*, 260, pp.176-185 (2016). [IF= 3.723]
12. Sukalpa Chattopadhyay, Malay Chaklader, **Ritam Chatterjee**, Aditya Law, Sujata Law. Differential expression of mitotic regulators and tumor microenvironment influences the regional growth pattern of solid sarcoma along the cranio-caudal axis. *Experimental cell research*, 340(1), pp.91-101 (2016). [IF= 3.383]
13. Sukalpa Chattopadhyay, **Ritam Chatterjee**, Sujata Law. Noncanonical Wnt5a-Ca²⁺-NFAT Signaling Axis in Pesticide Induced Bone Marrow Aplasia Mouse Model. A Study to Explore the Novel Mechanism of Pesticide Toxicity. *Environmental Toxicology*, 31(10), pp.1163-1175 (2016). [IF= 3.118]
14. Malay Chaklader, Ankita Pan, Aditya Law, Sukalpa Chattopadhyay, **Ritam Chatterjee**, Sujata Law. Differential Remodeling of Cadherins and Intermediate Cytoskeletal Filaments Influence Microenvironment of Solid and Ascitic Sarcoma. *Molecular and Cellular Biochemistry*, 382(1-2), pp.293-306 (2013). [IF= 2.795]

15. Malay Chaklader, Prasun Das, Jacintha Archana Pereira, Aditya Law, Sukalpa Chattopadhyay, **Ritam Chatterjee**, Abhradeep Mondal, Sujata Law. 17-AAG mediated targeting of HSP90 limits TERT activity in peritoneal sarcoma related malignant ascites by downregulating cyclin D1 during cell cycle entry. *Experimental Oncology*, 34(2), pp.90-96 (2012).

BOOK CHAPTER:

Sujata Law and **Ritam Chatterjee**. Association of ROS with epithelial-mesenchymal transition and acquisition of stemness during carcinogenesis. *Hand Book of Oxidative Stress and Cancer*. (ISBN No. 978-981-15-9412-0)

CONFERENCE ATTENDED

- 1. 8th International Translational Cancer Research Conference (TCR-2020)** organized by Department of Biochemistry, Institute of Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India & Society for Translational Cancer Research (STCR). (13th- 16th February 2018)
- 2. 4th Regional State Science Congress** organized by the University of Burdwan, Burdwan, West Bengal, India. (9th-10th December 2019)
- 3. PHYSICON-2019** organized by the Department of Physiology, Bankura Christian College, Bankura, West Bengal, India. (15th-17th November)
- 4. FDMM 2019** organized by Indian Institute of Chemical Biology (CSIR), Kolkata, West Bengal, India. (1st – 3rd March 2019)
- 5. International Conference on Trends in Biochemical and Biomedical Research (TBBR-2018)** organized by Department of Biochemistry, Institute of Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India. (13th- 15th February 2018)
- 6. INTZOOCON 2018, an International Conference to celebrate 100 years of excellence from 1999-2019 of the Department of Zoology, University of Calcutta**, Kolkata, West Bengal, India. (1st – 3rd February 2018)
- 7. Frontiers in Biotechnology, 2017** organized by the Department of Biotechnology, St. Xabier`s College (Autonomous), Kolkata, West Bengal, India. (27th October 2017)
- 8. 10th Year Celebration of Excellence in Science at IISER Kolkata, “Advances in Life Science”** organized by Indian Institute of Science Education and Research Kolkata, Kalyani, West Bengal, India. (13th – 15th January 2017)
- 9. 3rd International Conference on Perspective of Cell Signaling and Molecular Medicine** organized by Bose Institute, Kolkata, West Bengal, India. (8th – 10th January 2017)
- 10. PHYSIOCON-2016** organized by the Department of Physiology, Midnapore College (Autonomous), Midnapore, West Bengal, India. (18th - 20th November 2016)
- 11. International Seminar on Frontiers in Translational and Regenerative Biology** organized by the Department of Zoology, University of Calcutta and Council of Scientific & Industrial Research, India at Kolkata, West Bengal, India. (31st January 2016)
- 12. FIPSPHYSICON-2015** at University of Calcutta, Kolkata, West Bengal, India. (18th – 20th December 2015)
- 13. 6th International Conference on Stem Cells and Cancer (ICSCC-2015)** at Pune, Maharashtra, India. (2nd – 5th October 2015)
- 14. 34th Annual Convention of Indian Association for Cancer Research** at Jaipur, Rajasthan, India. (19th-21st February 2015)

15. National Seminar on Molecular Aspects of Human Diseases organized by Dept. of Zoology, University of Calcutta, Kolkata, India. (31st January 2015)

16. PHYSICON-2014, Berhampur, West Bengal, India. (19th - 21st December 2014)

17. Symposium organized by **Central Calcutta Society for Advancement of Human Development and Research**, Kolkata, West Bengal, India. (21st July 2014).

18. National Symposium on Frontiers in Modern Biology organized by Indian Science Congress Association and Department of Zoology, Dr. Hari Singh Gour Central University at Sagar, Madhya Pradesh, India. (23rd - 24th March 2014).

19. Hematology Update 2013 (CME) organized by the Department of Hematology, NRS Medical College, Kolkata, India. (2nd – 3rd March 2013).

20. 100th Indian Science Congress at University of Calcutta, Kolkata, India. (3rd-7th January 2013).

21. Satellite symposium on “Biodiversity: Technology domains and spatial scale analysis” organized by Department of Zoology, University of Calcutta, Kolkata, India. (30th March 2011).

WORKSHOP ATTENDED

1. **“Workshop and Hands on Training on Biomedical Techniques”** organized by The Department of Biochemistry and Medical Biotechnology, Calcutta School of Tropical Medicine, Kolkata, West Bengal, India. (13th – 15th February 2017)

2. Training on **“Clinical of Flowcytometry”** organized by University of Calcutta and BD Bioscience at CRNN, Kolkata, West Bengal, India. (11th – 13th June 2013)

3. Training on **“Fluorescence Microscopy”** organized by USIC and Department of Microbiology, University of Burdwan, Burdwan, West Bengal, India. (22nd – 23rd November 2012)

PRESENTATIONS

INVITED TALKS:

1. Therapeutic potential of Stem Cell and its current status and future prospects. **ZOOLOGY WEB LECTURE SERIES** organized by the Department of Zoology, Raidighi College, West Bengal, India. (2nd August 2020)

2. Maintaining mental health in COVID pandemic situation: Vedantic Approach. **National Level Webinar on COVID-19 Pandemic: Impact on Human Health and Population** organized by the Department of Zoology, Karimpur Pannadevi College, West Bengal, India. (28th July 2020)

3. Oxidative stress in the perspective of hematopathology and oncology. **ZOOLOGY WEB LECTURE SERIES** organized by the Department of Zoology, Vivekananda College, West Bengal, India. (12th July 2020)

CONFERENCE TALKS:

1. Attribution of oxidative stress in pre-malignant and malignant oral pathophysiology. **8th International Translational Cancer Research Conference (TCR-2020)** organized by Department of Biochemistry, Institute of Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India & Society for Translational Cancer Research (STCR). (13th- 16th February 2020)

2. Elucidation of the association of oxidative stress, EMT and pathophysiological alterations of buccal mucosa during sub-mucous fibrosis and Squamous cell carcinoma. **4th Regional State Science Congress** organized by the University of Burdwan, Burdwan, West Bengal, India. (9th-10th December 2019)

3. Association of oxidative stress with EMT and pathophysiological alterations of buccal mucosa in pre-malignant and malignant conditions. **PHYSICON-2019** organized by the Department of Physiology, Bankura Christian College, Bankura, West Bengal, India. (15th-17th November 2019)
4. Bone marrow aplasia and deregulation of vital signaling components: a correlative study in experimental mice. **International Conference on Trends in Biochemical and Biomedical Research (TBBR-2018)** organized by Department of Biochemistry, Institute of Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India. (13th – 15th February 2018) (**Best Presentation Awarded**)
5. Bone Marrow Aplasia and Kinase-phosphatase Signaling Deregulation: A Study in Experimental Mice. **PHYSIOCON-2016**, Midnapore, West Bengal, India. (18th - 20th November 2016)
6. Dysregulated Haematopoiesis in Bone marrow of Experimental mice. **PHYSICON-2014**, Berhampur, West Bengal, India. (19th - 21st December 2014)
7. Aplastic Anemia: Kinase-Phosphatase Regulation Scenario. Symposium organized by **Central Calcutta Society for Advancement of Human Development and Research**, Kolkata, West Bengal, India. (21st July 2014) (**Best Presentation Awarded**)

SCIENTIFIC POSTERS:

1. Expressional alteration of signaling components and associated hematopoietic catastrophe during bone marrow aplasia in experimental mice. **FDMM 2019** organized by Indian Institute of Chemical Biology (CSIR), Kolkata, West Bengal, India. (1st – 3rd March 2019)
2. ROS associated hematopoietic devastation and development of aplastic anemia: a mechanistic study in experimental mice. **INTZOOCON 2018** organized by the Department of Zoology, University of Calcutta, Kolkata, West Bengal, India. (1st – 3rd February 2018)
3. Signaling deregulation regarding kinase-phosphatase scenario behind hematopoietic failure during experimental aplasia, **Frontiers in Biotechnology, 2017** organized by the Department of Biotechnology, St. Xabier's College (Autonomous), Kolkata, West Bengal, India. (27th October 2017)
4. Bone marrow failure and kinase-phosphatase signaling in experimental aplastic anemia. **10th Year Celebration of Excellence in Science at IISER Kolkata, "Advances in Life Science"** organized by Indian Institute of Science Education and Research Kolkata, Kalyani, West Bengal, India. (13th – 15th January 2017)
5. Aplastic anemia related hematopoietic catastrophe and kinase-phosphatase signaling. **3rd International Conference on Perspective of Cell Signaling and Molecular Medicine** organized by Bose Institute, Kolkata, West Bengal, India. (8th – 10th January 2017) (**Best Poster Awarded**)
6. Hematopoietic Pathophysiology: A Comparative Study through Animal Models. **International Seminar on Frontiers in Translational and Regenerative Biology** organized by University of Calcutta and Council of Scientific & Industrial Research, India at Kolkata, West Bengal, India. (31st January 2016)
7. Comparative Study of Hematopoietic Pathophysiology using Murine Models. **FIPSPHYSICON-2015** at University of Calcutta, Kolkata, West Bengal, India. (18th – 20th December 2015)
8. Involvement of Vital Kinases and Phosphatases behind Hematopoietic Catastrophe during Bone Marrow Aplasia. **6th International Conference on Stem Cells and Cancer (ICSCC-2015)** at Pune, Maharashtra, India. (2nd – 5th October 2015)
9. Hematopoietic Pathophysiological Scenario of Leukemia Involving some of the Mitotic Kinases and Phosphatases. **34th Annual Convention of Indian Association for Cancer Research** at Jaipur, Rajasthan, India. (19th-21st February 2015)

10. Aplastic anemic bone marrow: pathophysiology and enzymatic signaling study. **National Seminar on Molecular Aspects of Human Diseases** organized by Dept. of Zoology, University of Calcutta, Kolkata, West Bengal, India. (31st January 2015)

11. Bone Marrow Pathophysiological Consequences in Aplastic Anemia, MDS and Leukemia in Experimental Mice. **National Symposium on Frontiers in Modern Biology** organized by Indian Science Congress Association and Department of Zoology, Dr. Hari Singh Gour Central University at Sagar, Madhya Pradesh, India. (23rd - 24th March 2014). (**Best Poster Awarded**)

MEMBER OF HONORARY SOCIETIES

1. The Indian Science Congress Association. (Life Member)
2. Indian Society of Cell Biology. (Life Member)
3. The Zoological Society. (Life Member)
4. The Physiological Society of India. (Life Member)