

Faculty Details

Name: Dr. Dharmeswar Barhoi

Designation: Assistant Professor

Department of Zoology

Royal School of Life Sciences, Royal Global University, Guwahati, Assam

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Year of Joining: 2022



Areas of Interest/Specialization: Molecular Cell Biology, Genetic toxicology, Environmental toxicology, Medicinal plant research, Cancer Biology.

Research experience: 9 years

Teaching Experience: 1 years

Research:

The overall goal is screening the potential of medicinal plants to regress the cancer progression, and decoding molecular pathways of bioactive compounds against cancer development. The life style factors also an important factor of carcinogenesis. The role of life style factors like consumption of smokeless tobacco, areca nut in inducing oral cancer and identification of potential biomarker for early detection is one of my research areas. Besides, role of tight junction proteins in cancer progression and its mitigation by the use of potential phytochemicals is my research goal since the day of my doctoral research. An approach involving molecular biology, genetic toxicology, cell biology and analytical chemistry is used to uncover a number of questions related to effects of life style factors and carcinogenic agents in carcinogenesis. Also, the potential of antioxidants from natural sources to ameliorate such effects is also one of my research interests.

Educational Qualification:

Doctoral research (Ph.D) : Assam University, Silchar (2022)

Master of Science (M.Sc) : Assam University, Silchar (2014)

Bachelor of Science (B.Sc) : Dibrugarh University (2012)

Other Qualification : SLET (N. E region)

Research Publication:

1. Barbhuiya, S. N., **Barhoi, D.**, Datta, S. K., & Giri, S. (2018). Two major components of steel fabrication industry, benzene and thinner induce cytotoxicity in *Allium cepa* L. root cells. *Cytologia*, 83(2), 155-158. [**Impact Factor: 0.992**]

2. Das, S., Langthasa, P., **Barhoi, D.**, Upadhaya, P., & Giri, S. (2018). Effect of nutritional status on arsenic and smokeless tobacco induced genotoxicity, sperm abnormality and oxidative stress in mice in vivo. *Environmental and molecular mutagenesis*, 59(5), 386- 400. [**Impact Factor: 3.216**]
3. Das, S., Upadhaya, P., **Barhoi, D.**, Nath Barbhuiya, S., Langthasa, P., & Giri, S. (2019). GCMS analysis of sadagura (smokeless tobacco), its enhanced genomic instability causing potential due to arsenic co-exposure, and vitamin-C supplementation as a possible remedial measure: a study involving multiple model test systems. *Drug and chemical toxicology*, 1-12. [**Impact Factor: 2.597**]
4. Upadhaya, P., **Barhoi, D.**, Giri, A., Bhattacharjee, A., & Giri, S. (2019). Joint detection of claudin-1 and junctional adhesion molecule-A as a therapeutic target in oral epithelial dysplasia and oral squamous cell carcinoma. *Journal of cellular biochemistry*, 120(10), 18117-18127. [**Impact Factor: 4.481**]
5. Talukdar, D., Langthasa, P., **Barhoi, D.**, & Giri, S. (2020). Smokeless tobacco “sadagura” and areca nut extract exposure induces extensive embryotoxicity in chick embryo, *Gallus gallus domesticus*. *Toxicology and Environmental Health Sciences*, 12(1), 55-63. [**Impact Factor: 0.59**]
6. Nath Barbhuiya, S., **Barhoi, D.**, Giri, A., & Giri, S. (2020). Arsenic and smokeless tobacco exposure induces DNA damage and oxidative stress in reproductive organs of female Swiss albino mice. *Journal of Environmental Science and Health, Part C*, 38(4), 384-408. [**Impact Factor: 3.780**]
7. **Barhoi, D.**, Upadhaya, P., Barbhuiya, S. N., Giri, A., & Giri, S. (2021). Aqueous extract of *Moringa oleifera* exhibit potential anticancer activity and can be used as a possible cancer therapeutic agent: a study involving in vitro and in vivo approach. *Journal of the American College of Nutrition*, 40(1), 70-85. [**Impact Factor: 3.571**]
8. Giri, S., **Barhoi, D.**, Barbhuiya, S. N., Giri, A., Das, S., Das, A., ... & Singh, S. (2021). Consumption pattern and genotoxic potential of various smokeless tobacco products in Assam, India: A public health concern. *Mutation Research/Genetic Toxicology and Environmental Mutagenesis*, 866, 503349. [**Impact Factor: 3.189**]
9. Upadhaya, P., Giri, S., **Barhoi, D.**, & Bhattacharjee, A. (2021). Altered expression of junctional proteins as a potential biomarker in oral precancerous and cancerous patients. *Tissue Barriers*. [**Cite Score: 7.2**]
10. **Barhoi, D.**, Upadhaya, P., Barbhuiya, S. N., Giri, A., & Giri, S. (2022). Extracts of *Tagetes erecta* exhibit potential cytotoxic and antitumor activity that could be employed as a promising therapeutic agent against cancer: A study involving in vitro and in vivo approach. *Phytomedicine Plus*, 2(1), 100187.
11. Langthasa, P., **Barhoi, D.**, Devi, S.H., Giri, A., & Giri, S. (2022). Genotoxic and cytotoxic potential of Bisphenol A in the early developing stages of chick embryo (*Gallus gallus domesticus*) evidenced by HET-MN and Comet assay. *Res. J. Biotech*, 17(1), 19-28.

Number of Book Chapters contributed:

1. Barhoi, D., Giri, S., Upadhaya, P., & Barbhuiya, S. N. (2021). Chemopreventive and Therapeutic Potential of Phytopharmaceuticals Against Oral Cancer: Evidence-Based Reports From Preclinical Studies in Animal Models. In *Handbook of Research on Advancements in Cancer Therapeutics* (pp. 541-569). IGI Global.
2. Barbhuiya, S. N., Barhoi, D., & Giri, S. (2021). Impact of Arsenic on Reproductive Health. *Environmental Health*, 89.
3. Barhoi, D., Barbhuiya, S. N., & Giri, S. (2022). Potential Phytochemical Nanoemulsions in the Treatment of Oral Cancer and Oral Health: Recent Advancement in Cancer Therapy. In *Handbook of Research on Nanoemulsion Applications in Agriculture, Food, Health, and Biomedical Sciences* (pp. 330-353). IGI Global.
4. Upadhaya, P., Barhoi, D., & Giri, S. (2020). Role of Phytochemicals on Cancer Chemoprevention and Treatment via Suppressing Oxidative Stress. In *Emerging Trends in Scientific Research: International Book of Multidisciplinary Studies* (pp. 113-121). AkiNik Publications.
5. Nath Barbhuiya, S., Barhoi, D., & Giri, S. (2022). Application of nanotechnology for heavy metals remediation from contaminated water. In *Metals in Water* (pp. 369-382). Elsevier Publications.

Conference and Proceedings:

1. **Dharmeswar Barhoi**, Sweety Nath Barbhuiya, Sarbani Giri and Manabendra Dutta Choudhury, “Bioactive compounds of *Moringa oleifera* could potentially restore the tight junction disruption”, an **oral presentation** in the proceedings of National Conference on “Cancer Biology and Therapeutics” 30th -31st May, 2022, organized by Department of Department of Zoology, Patharkandi College, Patharkandi, Karimganj, Assam, India.
2. **Dharmeswar Barhoi** and Sarbani Giri, “Aqueous extract of *Moringa oleifera* exhibit potential anticancer activity and can be used as a possible cancer therapeutic agent: A study involving *in vitro* and *in vivo* approach”, an **oral presentation** in the proceedings of International Conference on “International Symposium on Emerging Trends and Challenges in Cancer Chemoprevention, Diagnosis and Therapeutics” 17th -18th Feb, 2020, organized by Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, India.
3. **Dharmeswar Barhoi** and Sarbani Giri, “Extracts prepared from the leaves of *Tagetes erecta* exhibits anticancer activity in Ehrlich ascites carcinoma (EAC) cells and *in vivo* tumor model”, an **oral presentation** in the proceedings of International Conference on “Chemical Ecology, Environment and Human Health: Emerging Frontiers and Synthesis” 9th – 10th August, 2019, organized by Department of Zoology, Sikkim University, Sikkim, India.

4. **Dharmeswar Barhoi** and Sarbani Giri, “Aqueous extract of *Moringa oleifera* inhibits tumor progression and improves survival of tumor bearing mice”, an **oral presentation** in the proceedings of 12th Annual Convention of ABAP & International Conference on “Biodiversity, Environment and Human Health: Innovations and Emerging Trends”, 12th-14th November, 2018, organized by School of Life Sciences, Mizoram University, Aizawl, Mizoram, India.
5. **Dharmeswar Barhoi** and Sarbani Giri, “Genotoxic, cytotoxic and antioxidant potential of selected medicinal plants from Southern Assam, India”, a **poster presentation** in proceedings of North east regional research scholars meet, March 17th – 18th, 2017, organized by Department of Life Science, Assam University, Silchar, Assam, India.
6. **Dharmeswar Barhoi** and Sarbani Giri, “Protective role of selected medicinal plants from Southern Assam, India against genotoxic cytotoxic and antioxidant potential”, a **poster presentation** in proceedings of International Conference on “Advances in Cellular, Genomic and Epigenomic Insights on Environmental Mutagenesis and Health” & 41st Annual Meeting of Environmental Mutagen Society of India (EMSI), January 27th -29th, 2017, organized by School of Life Sciences, Manipal University, Manipal, India.
7. Abhinandan Bhattacharjee, Puja Upadhaya, **Dharmeswar Barhoi** and Sarbani Giri, “Genotoxic Changes Associated with Oral Precancerous Lesions and OSCC: A Study of Buccal and Blood Samples from Affected Individuals from Barak Valley, Assam (India)” A **poster presentation** in proceedings of International Conference on Environmental Mutagenesis, Carcinogenesis and Health and 40th Annual meeting of Environmental Mutagen Society of India (EMSI), February 17th -19th, 2016, organized by Department of Botanical and Environmental Science, Guru Nanak Dev University, Amritsar, India.

Workshops:

1. Participated in the 20th Indo-US workshop on Flow Cytometry and Symposium on Advanced Molecular Techniques from 24th -26th March, 2019 held organized by Cachar Cancer Hospital and Research Centre, Silchar, Assam, India.
2. Participated a Workshop on Fundamentals of Drug Discovery and Drug Design from 15th -19th March, 2019 organized by Bioinformatics Centre, Assam University, Silchar, Assam, India.
3. Participated in the 4 day training programme on SPSS from 10th-13th April, 2018.
Organized by Department of Statistics, Assam University, Silchar, Assam, India.
4. Participated in the Workshop on “URKUND & MENDLEY” on 7th November, 2016. Organized by Rabindra Library, Assam University, Silchar, Assam, India.