



Dr. Anindita Banerjee

Designation: Assistant Professor

Department: Microbiology & Envs

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Ph.D Thesis Title: "Evaluation of a medicinal plant - *Phyllanthus amarus* and its improvement at the genetic level." Under Prof./Dr. S. Chattopadhyay , IICB

Research Interest: Plant secondary metabolites play an important role in the lives of human beings. The secondary metabolites are of diverse types. Due to continuous use of antibiotics against bacteria it has led to the production of enormous number of antibiotic resistant strain. My interest is to isolate novel antimicrobial compounds from plants, either from their extracts or from cell suspension cultures of plant cells and to assess the properties of them as antimicrobial compounds. The chemical characterization of the antimicrobial compounds and their applications in combinatorial drug therapy against microbes.

List of Publications:

1. Ghanta, S.; **Banerjee, A.**; Poddar, A.; Chattopadhyay, S (2007). Oxidative DNA Damage Preventive Activity and Antioxidant Potential of *Stevia rebaudiana* (Bertoni) Bertoni, a Natural Sweetener. J. Agric. Food Chem., 55 (26), 10962–10967.
2. **Banerjee, A.**; Poddar, A.; Ghanta, S.; Chakraborty, A.; Chattopadhyay, S (2007). *Nyctanthes arbor-tristis* Linn. – Spectrum of its bioactivity potential. Planta Med. 73:9. DOI: 10.1055/s-2007-986724.
3. Poddar, A.; **Banerjee, A.**; Ghanta, S.; Chattopadhyay, S (2008). In vivo efficacy of calceolarioside A against experimental visceral leishmaniasis. Planta Med., 74: 503-508.
4. **Banerjee, A.**; Chattopadhyay, S (2009). Genetic transformation of a hepatoprotective plant, *Phyllanthus amarus*. In Vitro Cell. Dev. Bio. Plant., 45: 57-64.

5. Bhattacharyya, D.; Ghanta, S.; **Banerjee, A.**; Chattopadhyay, S (2009). *Stevia rebaudiana*, anovel source of phytoceuticals with anticancer potential. *Planta Med.* 01/2009; 75(09).DOI: 10.1055/s-0029-1234301.

7. **Banerjee, A.**; Chattopadhyay, S (2009). "*Phyllanthus amarus*: a versatile plant for therapeutic interest" in: Prospective in Cytology & Genetics, (Proce. of XIV AICCG) (Eds. AK Giri, A Mukherjee & M Mukherjee), Vol. 14, pp. 251-260, 2009.

8. **Banerjee, A.**; Chattopadhyay, S (2010). Effect of over-expression of *Linum usitatissimum* PINORESINOL LARICIRESINOL REDUCTASE (LuPLR) gene in transgenic *Phyllanthus amarus*. *Plant Cell Tiss Org Cul.*, 103: 315-323.

9. Darukhshan, M.; Bhattacharyya, D.; **Banerjee, A.**; Chattopadhyay, S (2010). Oxidative DNA damage preventive activity and antioxidant potential of plants used in Unani system of medicine. *BMC Complemen Altern Med.*

10. Ghanta, S.; Bhattacharyya D.; Sinha, R.; **Banerjee, A.**; Chattopadhyay, S (2011). *Nicotiana tabacum* overexpressing γ -ECS exhibits biotic stress tolerance likely through NPR1-dependent salicylic acid-mediated pathway. *Planta* 233: 895-910.

11. Chatterjee, D.; **Banerjee, A.**; Bhattacharjee, P (2012). Phytochemical analyses and food applications on clove bud extracts obtained by liquid and supercritical carbon dioxide extraction technologies. *Proceedings of the 2012 International Conference on Engineering and Applied Science, Beijing*, pp.605.

12. Pal, R.; **Banerjee, A.**; Kundu, R (2013). Responses of Castor Bean (*Ricinus communis* L.) to Lead Stress. *Proc. Natl. Acad. Sci. India* 83; 643-650.

13. Mullick A.; Mandal S.; Bhattacharjee, R.; **Banerjee, A** (2013). IN-vitro assay of antioxidant and antibacterial activity of leaf extract and leaf derived callus extract of *Acalypha indica*L. *International Journal of Pharmacy and Biological Sciences* (e-ISSN: 2230-7605) IJPBS, 3 (1) 504-510.

14. Sett, S.; Kundu, S.; Das, S.; Mitra, A.; **Banerjee, A.**; Mitra, A.K. (2014). Screening for the total phenolic content of selected mangrove species collected from sundarban mangrove forest. *Int J Pharm Bio Sci* 5 (1): (B) 1157 – 1163.

15. Saha, D.; Shah, A.; Goswami, I.; Chakravorty, A.; **Banerjee, A.** (2015). Isolation and characterization of bacteria from iron rich mine tailings of Champa district, Chattisgarh, India. *Aviskar: A Xaverian Journal of Research*, Vol VII, 27-35.

Books:

16. Plant tissue culture In: Mitra,A.K. and Sarkar,K (2013) *Practical Manual of Modern Microbiology*. Himalaya Publishing House. New Delhi. Pp.221.

Genbank submissions:

- *Phyllanthus amarus* pinoresinol-lariciresinol reductase mRNA, partial cds submitted to GenBank (Accession No: EU660220)
- EST submission to NCBI (db EST)

GH985140 to GH985149

GH986493 to GH986516

GO344193 to GO344210

- cDNA library of *P. amarus* constructed and ESTs submitted to db EST

GT154235-GT154296

Orientation/Refresher courses attended: Attended orientation programme in Jadavpur University, Feb 11 to 15th March 2014 organized by Academic Staff College.

Experience as Paper Setter:

Paper Setter of theoretical examination of Microbiology (General) under Calcutta University and Microbiology (Hons) West Bengal State University.

Experience as Examiner:

External Examiner of different theoretical and practical examinations of Microbiology (Honours) under Calcutta University.

Experience as National Media Resource Person:

Spoken on different topics of Microbiology (for the Undergraduate students of different Indian Universities) for the Educational Multimedia Research Centre (EMMRC), St. Xavier's College (Autonomous) Kolkata, which are being telecasted on National Television.

Acted as a resource person on DST sponsored "Skills and training programme in science and technology" (STST) in 2011 on selected topics on plant biotechnology.

Member of Indian Science Congress

Research Grants:

UGC Minor research grant of Rs, 3,60,000/- for the year 2015-2017.