



ENLIGHTENMENT TO EXCELLENCE

# UNIVERSITY OF NORTH BENGAL

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Raja Rammohunpur, Dist- Darjeeling, West Bengal, Pin-734013, India.



## Department of Bio-Technology



DR. SHILPI GHOSH

### Dr. Shilpi Ghosh

M.Sc., Ph.D.

Associate Professor

Members of Learned Societies: Indian Science Congress Association, Society of Plant Physiology, New Delhi



#### Contact Addresses:

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**Subject specialization:** Molecular Biology, Genomics and Proteomics

#### Areas of Research Interest:

- Biochemical, Molecular, and Genetic studies on Plant Nitrogen Metabolism
- Production of Microbial Enzymes of Industrial importance by submerged fermentation and genetic engineering approaches
- Evaluation of Biological Activity of Plant Natural Products and derivatives
- Genomics and Proteomics of Lignocellulose Degradation

**No. of Ph.D. students:** (a) Supervised: 03 (b) Ongoing: 07 .

**No. of M.Phil. students:** (a) Supervised: NA (b) Ongoing: NA .

**No. of Publications:** 25

#### Achievement & Awards:

- Recipient of Junior and Senior Research Fellowship (CSIR, New Delhi) during PhD
- Post-Doctoral Trainee Fellowship in DST-DAAD Research Project, Bose Institute and University of Leipzig, Germany
- Recipient of INSA-NASI-IASc Summer Fellowship

#### Professional Experiences:

- Assistant Professor in Dept of Biotechnology, University of North Bengal (October 2004- till date)

#### Administrative Experiences:

- Superintendent, PG Girls Hostel (From August, 2008-till date)
- Head, Dept. of Microbiology, Dept of Microbiology, University of North Bengal (From March, 2012-till date)

#### Research Projects:

- Isolation, Characterization, Molecular Cloning and Sequencing of diverse Phytase genes from Rhizosphere and Wood Decomposing Bacteria, **UGC, New Delhi (Completed)**
- Glutamine synthetase isoenzyme -mes in rice plants: Differential regulation and organ specific expression in relation to drought stress and comparison with resurrection plant isoforms **CSIR, New Delhi (Completed)**
- Cloning and expression of a novel microbial phytase in *Pichia pastoris* for extracellular secretion and optimization of its production: An attempt to develop a commercial phytase production system. **UGC, New Delhi (Completed)**
- Evaluation of halogenated triterpenoid for anticancer properties. **University of North Bengal (Completed)**
- Physicochemical studies of Bacterial /other membranous interfaces with nonsteroidal anti-inflammatory drugs (Co-PI) **DBT, New Delhi (Ongoing)**
- Bioprospecting Thermophilic lignocellulose deconstructing microbial consortium: Mining of cellulolytic glycoside hydrolases for biotechnology, **DST, New Delhi (Ongoing)**

#### Selective List of Publications:

1. Pal Roy M, Datta S, Ghosh S (2017) A Novel Extracellular Low-Temperature Active Phytase from *Bacillus aryabhatai* RS1 with Potential Application in Plant Growth Biotechnology Progress 33:633-641
2. Ghosh S, Mukhopadhyay S, Mrinmoy Sarkar, Amitava Mandal, Vaskar Das, Anoop Kumar, Biplab Giri (2017) Biological evaluation of a halogenated triterpenoid, 2 $\alpha$ -bromo-betulinic acid as inhibitor of human topoisomerase II $\alpha$  and HeLa cell proliferation Chemico-Biological Interaction 268:68-76
3. Ghosh S, Bagchi and Majumder AL (2001) Chloroplast fructose-1,6-bisphosphatase from *Oryza Sativa* differs in salt tolerance property from the *Porteresia* enzyme and is protected by osmolytes . Plant Science 160: 1171-1181 (IF: 3.90)

4. Chatterjee A, Majee M, Ghosh S, Majumder A L (2004) SII 1722, an unassigned open reading frame of *Synechocystis* PCC 6803, codes for L-myo-inositol 1-phosphate synthase. *Planta* 218: 989-998 (IF: 3.26)
5. Das B, Goswami L, Ray S, Ghosh S, Bhattacharya S, Das S, Majumder AL (2006) Agrobacterium-mediated transformation of *Brassica juncea* with a cyanobacterial (*Synechocystis* PCC 6803) delta-6 desaturase gene leads to production of  $\gamma$ -linolenic acid. *Plant Cell Tissue Organ Culture* 86:219-231 (IF: 2.12)
6. Ray RS, Roy S, Ghosh S, Kumar M and Chatterjee M (2004) Suppression of cell proliferation, DNA-protein cross-links and induction of apoptosis in chemical rat mammary carcinogenesis. *Biochimica et Biophysica Acta* 1675(1-3):165-73 (IF: 4.38)
7. Ghosh S (2010) Effect of light on appearance of glutamine synthetase in *Pennisetum glaucum* L. (R. Br.) *Journal of Plant Biochemistry and Biotechnology* 19: 239-243 (IF:1.09)
8. Mandal A, Ghosh S, Bothra AK, Nanda AK, Ghosh P (2012) Synthesis of friedelan triterpenoid analogs with DNA topoisomerase IIa inhibitory activity and their molecular docking studies. *European Journal of Medicinal Chemistry* 54: 134-143 (IF: 3.60)
9. Chatterjee J, Patra B, Mukherjee R, Basak P, Mukherjee S, Ray S, Bhatta -charyya S, Maitra S, Ghosh Dastidar K, Ghosh, S, Sen gupta S., Majumder AL (2013) Cloning, characterization and expression of a chloroplastic fructose-1,6-bis phosphatase from *Porteresia coarctata* conferring salt tolerance in transgenic tobacco. *Plant Cell Tissue and Organ Culture* 114:395-409 (IF:2.12)
10. Singh KK, Ghosh S (2013) Regulation of glutamine synthetase isoforms in two differentially drought-tolerant rice (*Oryza sativa* L.) cultivars under water deficit conditions. *Plant Cell Reports* 32:183-193 (IF: 3.07)
11. Majumder S, Naskar B, Ghosh S, Lee CH, Chang CH, Moulik SP, Panda AK (2014) Synthesis and characterization of surfactant stabilized nanocolloidal dispersion of silver chloride in aqueous medium. *Colloids and Surfaces A: Physicochem. Engineering Aspects* 443:156-163 (IF: 2.75).
12. Saha SP, Ghosh S (2014) Optimization of xylanase production by *Penicillium citrinum* xym2 using response surface methodology and application in saccharification of agro-residues. *Biocatalyst and Agricultural Biotechnology* 3(4): 188-196 (Elsevier)
13. Mandal A, Das V, Ghosh P, Ghosh S (2015) Anti-diabetic effect of friedelan triterpenoids in streptozotocin induced diabetic rat *Natural Product Communications* 10:1683-1686 (IF: 1.0)
14. Palroy M, Mazumder D, Datta S, Ghosh S (2016) Cloning and expression of phytase appA gene from *Shigella* sp.CD2 in *Pichia pastoris* and comparison of properties with recombinant enzyme expressed in *E.coli*. *Plos one* e0145745 (IF: 3.26)
15. Mandal A, Ghosh A, Ghosh S, Shil S, Bothra AK, Ghosh P (2016) 3-epihydroxylup-20 (29)-en-19(28)-olide: Partial synthesis, antitopoisomerase activity and 3D-molecular docking. *Medicinal Chemistry Research (Accepted)* DOI:10.1007/s00044-016-1551-9 (IF:1.4)
16. Majumder AL, Hait NC, Deb I, Majee M, Chatterjee A, Ghosh Dastidar K, Ghosh S, Pattanaik SK (2003) In: *Molecular Insight in Plant Biology* Editors : Nath P, Mattu AK, Ranade SA, Weil JH. **Oxford & IBH Publishing Co. Pvt. Ltd;** New Delhi, India. ISBN:[1578081874](#) / [1-57808-187-4](#)