Curriculum Vitae

Md. Sarafat Ali, PhD
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Work Experience

23.06.2023 - Present	**Associate Professor** Department of Biotechnology and Genetic Engineering, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj-8100, Bangladesh.
14.02.2016 – 22.06.23	**Assistant Professor** Department of Biotechnology and Genetic Engineering, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj-8100, Bangladesh.
Sep. 2018- Feb. 2020	**Post-doctoral Researcher** Yeungnam University, Republic of Korea
Mar. 2015- Dec. 2015	**International Faculty Member (Assistant Professor)** Yeungnam University, Republic of Korea

Educational Qualifications

School/Collage/ University	Course Duration		Degree	Division/ Class/ Grade	Year of Passing
	From	To			
Yeungnam University, Republic of Korea	2011	2014	Ph.D. in Science (Molecular Genetics and Biotechnology)	A (GPA: 4.45/4.50)	2014
Bangladesh Agricultural University, Bangladesh	2004	2005	M.S. in Biotechnology	A (CGPA: 3.773/4.00)	2005
Bangladesh Agricultural University, Bangladesh	1999	2002	B.Sc.Ag. (Hon's)	First	2002 (Held in 2004)
Carmichael College, Rangpur, Bangladesh	1996	1998	H.S.C (science)	First	1998
T. Islam Secondary High School, Thakurgaon, Bangladesh	1991	1996	S.S.C (science)	First	1996

Dissertation

- ✓ Doctoral dissertation entitled "**Role of the chaperonic part ClpC1 and ClpC2 of Clp protease in the physiology and development in plants**" supervised by Prof. Dr. Kwang-Hyun Baek, School of Biotechnology, Yeungnam University, Republic of Korea

- ✓ Master's dissertation entitled "***Agrobacterium*-mediated genetic transformation for salinity resistance in potato**" supervised by Prof. Dr. Abdul Karim, Dept. of Crop Botany, Bangladesh Agricultural University, Mymensingh, Bangladesh

Publications

	Article	Journal	Year
1.	Gene Expression Profiling in Soybean Sprouts with Elevated Disease Resistance Against Pseudomonas Putida Infection	Bangladesh Journal of Botany	2023
2.	Developing a multiepitope vaccine against dengue virus in Bangladesh using immunoinformatics approach	Journal of Advanced Biotechnology and Experimental Therapeutics	2023
3.	An In-Silico identification of potential flavonoids against kidney fibrosis targeting TGFβR-1	Life (MDPI)	2022
4.	*Aspergillus niger* grows faster than *Escherichia coli* in eosin methylene blue media and deter their growth by reducing the pH of the media	J Adv Biotechnol Exp Ther.	2022
5.	Silencing of the *phytoene desaturase* gene mitigates oxidative stress through the accumulation of free amino acids	Bangladesh Journal of Botany	2020
6.	Protective roles of cytosolic and plastidal proteasomes on abiotic stress and pathogen invasion	Plants (MDPI)	2020
7.	Co-suppression of *NbClpC1* and *NbClpC2*, encoding Clp protease chaperons, elicits significant changes in the metabolic profile of *Nicotiana benthamiana*	Plants (MDPI)	2020
8.	Jasmonic acid signaling pathway in response to abiotic stresses in plants	International Journal of Molecular Sciences (MDPI)	2020
9.	Salicylic acid-producing endophytic bacteria increase nicotine accumulation and resistance against wildfire disease in tobacco plants	Microorganisms (MDPI)	2020
10.	Biocontrol of citrus canker disease caused by *Xanthomonas citri* subsp. *citri* using an endophytic *Bacillus thuringiensis*	Plant Pathology Journal	2019
11.	Co-suppression of *NbClpC1* and *NbClpC2* alters plant morphology with changed hormone levels in *Nicotiana benthamiana*	Plant Cell Reports	2019
12.	Co-suppression of *NbClpC1* and *NbClpC2*, chaperone subunits in the Clp protease complex, accelerates hypersensitive response and increases disease susceptibility in *Nicotiana benthamiana*	Journal of Plant Pathology	2019

13. Endophyte *Bacillus velezensis* isolated from *Citrus* spp. controls streptomycin-resistant *Xanthomonas citri* subsp. *citri* that causes citrus bacterial canker	Agronomy (MDPI)	2019
14. *Bacillus velezensis*: A valuable member of bioactive molecules within plant microbiomes	Molecules (MDPI)	2019
15. Study on *Hemigraphis hirta* as an alternative to antibiotics against bacteria causing urinary tract infection	North American Academic Research	2019
16. Characterization of hormone levels and accumulation of free amino acids in CLPC1 and CLPC2 *Arabidopsis* heynh. In holl & heynh. Mutants.	Bangladesh Journal of Botany	2017
17. Establishment of *Agrobacterium*-mediated genetic transformation in popular rice cultivar BRRI Dhan-29 through receptor GUS gene expression system in Bangladesh.	Food and Pharma International	2017
18. Impact of environmental and stress factors on the photosynthetic capabilities of plants.	Universal Journal of Agricultural Research	2017
19. Proteasome inhibitory, antioxidant, and synergistic antibacterial and anticandidal activity of green biosynthesized magnetic Fe_3O_4 nanoparticles using the aqueous extract of corn (*Zea mays* L.) ear leaves.	Artificial Cells Nanomedicine and Biotechnology	2017
20. Systematic analysis of the anticancer agent taxol-producing capacity in *Colletotrichum* species and use of the species for taxol production.	Mycobiology	2016
21. Co-suppression of *NbClpC1* and *NbClpC2* in *Nicotiana benthamiana* lowers photosynthetic capacity via altered leaf structure	Plant Omics Journal	2015
22. Accumulation of high contents of free amino acids in the leaves of *Nicotiana benthamiana* by the co-suppression of *NbClpC1* and *NbClpC2* genes	Plant Cell Reports	2015
23. *In vitro* plant regeneration of Soybean (*Glycine max* L.) from hypocotyl explants	Bangladesh Journal of Genetics & Plant Breeding	2008
24. *In vitro* response of BRRI rice varieties for salt tolerance	Bangladesh Journal of Progressive Science & Technology	2007
25. *In vitro* root formation of *Dendrobium* orchid using BAP and IAA	Bangladesh Journal of Progressive Science & Technology	2007
26. Study on mycelial growth in different mushroom species and spawn production of Oyster mushroom in different substrates	Bangladesh Journal of Agricultural Science & Technology	2007
27. *In vitro* regeneration potentiality of three potato varieties	Molecular Biology & Biotechnology Journal	2006
28. Standardization of *in vitro* regeneration protocol for Soybean	Bangladesh Journal of Crop Science	2006
29. *In vitro* response of some BRRI released rice varieties	International Journal of Bio Research	2006

30. Effect of different organic additives on growth and yield of Oyster mushroom	International Journal of Bio Research	2006
31. Standardization of *in vitro* regeneration protocol for two potato varieties	Progressive Agriculture	2006
32. *In vitro* regeneration of garlic genotypes from root tip with BAP and NAA	Molecular Biology & Biotechnology Journal	2006
33. *Agrobacterium* mediated genetic transformation for salinity resistance in potato	Molecular Biology & Biotechnology Journal	2005
34. Organogenesis of hybrid orchid with different media supplementation	Molecular Biology & Biotechnology Journal	2004

Outstanding Research Activities

A. Isolation, cloning, sequencing of *ClpC1* and *ClpC2* gene from *Nicotiana benthamiana* and submission in GenBank

1. **Ali, M. S**. and K. H. Baek. *Nicotiana benthamiana* ATP-dependent Clp protease chaperone protein ClpC1A, mRNA (NCBI accession no.: KJ406176)
2. **Ali, M. S**. and K. H. Baek. *Nicotiana benthamiana* ATP-dependent Clp protease chaperone protein ClpC1B, mRNA (NCBI accession no.: KJ406177)
3. **Ali, M. S**. and K. H. Baek. *Nicotiana benthamiana* ATP-dependent Clp protease chaperone protein ClpC2A, mRNA (NCBI accession no.: KJ406178)
4. **Ali, M. S**. and K. H. Baek. *Nicotiana benthamiana* ATP-dependent Clp protease chaperone protein ClpC2B, mRNA (NCBI accession no.: KJ406179)

B. International patent

Patent Details:
Filing date: 16th April, 2014
Application No.:10-2014-0045319
Name of the invention: Method of accumulation of high contents of free amino acids by co-suppression of *ClpC1* and *ClpC2* gene
Inventor: Md. Sarafat Ali and kwang-Hyun Baek
Address: Green International Patent Law Firm, Republic of Korea.

Research Interest

- ✓ Gene silencing
- ✓ Plant molecular genetics and genomics to understand the natural resistance mechanisms of plants
- ✓ Metabolomics
- ✓ Membrane Proteomics (Chloroplast and Plasma Membrane)
- ✓ Stress Physiology using Proteomics
- ✓ Crop Quality using Proteomics
- ✓ Endophytes
- ✓ Plant-microbe interactions

Area of Specialization

- ✓ Cloning
- ✓ Transformation
- ✓ Virus-induced gene silencing (VIGS)
- ✓ HPLC
- ✓ PCR
- ✓ Microscopic analysis
- ✓ Tissue culture
- ✓ Bioinformatics (Data handling)

Paper presentation

- ✓ Presented a paper on "Role of the Chaperonic Part CLPC1 and CLPC2 of Clp Protease in the Physiology and Development in Plants" at "1st Symposium on Chemistry for Global Solidarity" organized by Jagannath University, Dhaka, Bangladesh on September, 02, 2016.

International Posters Presentation

- ✓ **Md. Sarafat Ali** and Kwang-Hyun Baek. **Role of the chaperonic part ClpC1 and ClpC2 of Clp protease in the physiology and development in plants**. 2015 International Symposium and Annual Meeting of the Korean Society for Applied Biological Chemistry (KSABC). August 17-19, 2015, Pyeonchang Campus Seoul National University, Republic of Korea

- ✓ **Md. Sarafat Ali**, Jinhee Choi and Kwang-Hyun Baek. **Co-suppression of *NbClpC1* and *NbClpC2*, chaperone subunits in the Clp protease complex accelerates hypersensitive response and increases disease susceptibility in *Nicotiana benthamiana***. "Plant-microbe interactions and phytobiomes workshop" organized by Korean Society of Plant Pathology (KSPP). April 23-24, 2015, Chungbuk National Univerisity, Cheongju, Republic of Korea

- ✓ **Md. Sarafat Ali** and Kwang-Hyun Baek. **Elucidation of the roles of ClpC1/C2 protein on the development of *Nicotiana benthamiana***. 10th International congress on "Plant Molecular Biology". Korean Society for Applied Biological Chemistry (KSABC). October 21-26, 2012, ICC Jeju, Republic of Korea

- ✓ **Md. Sarafat Ali** and Kwang-Hyun Baek. **Elucidation of the roles of ClpC1/C2 protein on development and induction of higher tolerance against heat and salt stresses by the overexpression.** International symposium & annual meeting of the KSABC. October 20-22, 2011, ICC Jeju, Republic of Korea

Professional Associations and Membership

- ✓ Life Member of Bangladesh Association for Biotechnology & Genetic Engineering (BABGE)
- ✓ Life Member of Plant Breeding and Genetics Society of Bangladesh (PBGSB)
- ✓ Life member of Bangladesh Bioinformatics and Computational Biology Association (BBCBA)
- ✓ Life member of Global Network of Bangladeshi Biotechnologist (GNOBB)