Curriculum Vitae

Full name and date:

Name: Anjali Singh

Gender: Female

Marital status- Married

Date of writing the CV: 27.03.2020

Date and place of birth, nationality, current residence

Date and place of birth: February 20, 1989, UP, India,

Citizenship: Citizen of India

Address for Correspondence

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Senior Research Fellow: Currently working as senior research fellow in project entitled "DBT-TERI Centre of Excellence project on Integrated production of advanced biofuels and biocommodities" at CCUBGA, Department of Microbiology, IARI, New Delhi, India.

Doctoral Degree 2018 (Awarded)

Thesis Title - Impacts of ultraviolet-B radiation on mycosporine-like amino acids producing, crust-forming cyanobacteria

Ph.D. Supervisor- Dr. M. B. Tyagi, Professor, Department of Botany, Institute of Science, Banaras Hindu university, Varanasi, India

Ph.D. Co-Supervisor- Dr. Ashok Kumar, Professor, School of Biotechnology, Institute of Science, Banaras Hindu university, Varanasi, India

Highlights of Doctoral work

Survey, collection, isolation and characterization of crust-forming cyanobacteria from diverse habitats such as tree barks, roof top and agricultural field soil.

Effects of UV-B radiation on growth, pigmentation and ROS generation in selected crust-forming cyanobacterial isolates

Study on induction of MAAs and antioxidative enzymes under UV-B and screening, quantification and characterization of MAAs from different crust samples and few lab grown cyanobacterial isolates.

Study of induction of MAAs under abiotic stresses (temperature, salinity and desiccation) other than UV-B.

Academic Qualifications

Degree	Board/University	Subjects	Year	% Marks (Division)
10th	U.P. Board	Hindi, English, Science, Social Science, Mathematics, Sanskrit	2003	64.5 (First)
10+2	U.P. Board	Physics, Chemistry, Biology, Hindi, English	2005	65.8 (First)
B.Sc.	V.B.S. Purvanchal University, Jaunpur	Chemistry, Biotechnology	2006-2009	59.83 (Second)
M.Sc.	KIIT University Bhubaneswar	Applied Microbiology	2009-2011	7.8 (First)
Ph.D.	Banaras Hindu University Varanasi	Applied Microbiology	2013-2018	73 (First)

Award and Honours

* **BEST POSTER** award in international conference on Plant Biofactories: Strategies and Challenges (PBSC), 19-21 December, 2019 held and jointly organized by Society for Plant Research (VEGETOS) and Ramnarain Ruia Autonomous College, Mumbai.
* **GATE 2012** Biotechnology 94 Percentile
* **CSIR-UGC NET-JRF-LS 2016** 039/1514
* **ICAR-NET 2016** 64%

Technical Skills

General Lab Practices	***Spectroscopic/Microscopic Techniques***
Maintenance of bacterial and cyanobacterial cultures, Biochemical test for bacterial diversity, Enzymatic assay (SOD, CAT, APX and POD), Metagenomic approaches.	UV-Visible and Fluorescence spectroscopy, Mass spectroscopy (LC-MS/MS, ESI-MS) Light and Fluorescence microscopy.
Molecular Biology *Techniques*	
Isolation of DNA, RNA and cDNA preparation, Polymerase chain reaction (PCR), Reverse transcriptase PCR (RT-PCR), Quantitative real time PCR (qRT-PCR), PCR based techniques (ARDRA, RFLP, AFLP and DGGE), Cloning and expression, Agarose gel electrophoresis, SDS and Native-PAGE, 2-Dimensional gel electrophoresis (2-DGE), Western blotting.	
Chromatographic Techniques	**Bioinformatics and Computational tools**
Paper, Thin layer (TLC) and Column chromatography, High pressure liquid chromatography (HPLC), Fast protein liquid chromatography (FPLC).	MS-office, OriginPro 6.1, GraphPad Prism 5, SPSS 16.0, Alpha imager 2200 and Image J, Adobe Photoshop, Primer3 and Gene 5, PDQuest, ClustalW and TreeView, BLAST, SWISS-PROT, KEGG.

Publications

Singh A, Tyagi MB and Kumar A (2017) Cyanobacteria growing on tree barks possess high amount of sunscreen compound mycosporine-like amino acids (MAAs). **Plant Physiol Biochem** 119: 110-120.

Babele PK, Singh G, **Singh A**, Kumar A, Tyagi MB and Sinha RP (2017) UV-B radiation and temperature stress-induced alterations in metabolic events and defense mechanisms in a bloom-forming cyanobacterium *Microcystis aeruginosa*. **Acta Physiol Plant** 39, 248. DOI 10.1007/s11738-017-2540-4.

Book Chapter

Kumar V, **Singh A**, Tyagi MB and Kumar A (2017) Microbial community composition and functions through metagenomics. In: Singh DP, Singh HB, Prabha R (Eds.), **Plant-microbe interactions in agro-ecological perspectives**, Springer Nature Singapore. DOI 10.1007/978-981-10-5813-4_32.

Singh A, Babele PK (2020) Dynamics of harmful cyanobacterial blooms and their toxins: environmental and human health perspectives and management strategies. In: Singh PK, Kumar A, Singh VK (Eds.), **Advances in Cyanobacterial Biology,** Elsevier Inc. DOI: https://doi.org/10.1016/B978-0-12-819311-2.00020-6.

Memberships in International/National Scientific Organisations:

* Life/Annual membership of the Association of Microbiologists (AMI) of India.

Work Experience

Master Thesis- Six months Project work on **"Interaction of Phosphotidyl Inositol Tks5 Phox-homology domain"** at Indian Institute of Technology (IITG), Guwahati, Assam, India.

Senior Research Fellow- DST (2012-2013) worked on the project **"Molecular mapping of QTLs for early blight resistance in tomato''** at Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, India.

Conferences Attended

International

International conference on Radiation Biology (ICRB 2016) 09-11 November 2016 held at SRM University, Chennai in Association with Indian Society for Radiation Biology, Poster presentation on the topic **"UV-B radiation-induced mycosporine-like amino acids (MAAs) production in a brown *Nostoc* species".**

International Conference and Outreach Program on Environment & Ecology: Sustainability and Challenges, 4-6 January, 2017 held at Sri Venkateswara Collage, New Delhi, poster presentation on the topic **"UV-B-induced generation of reactive oxygen species and characterization of sunscreen mycosporine-like amino acids (MAAs) from two *Scytonema* species"**.

International conference on Plant Biofactories: Strategies and Challenges (PBSC), 19-21 December, 2019 held and jointly organized by Society for Plant Research (VEGETOS) and Ramnarain Ruia Autonomous College, Mumbai, poster presentation on the topic "**High throughput production of lipids and bio-active molecules from oleaginous microalgae *Dunaliella tertiolecta* using alternative nutrient source**".

National

National symposium on Advances in Biology of Algae and Cyanobacteria (ABAC), 8-9 Feb, 2018 held at Department of Botany, Banaras Hindu University, Varanasi, poster presentation on the topic **"Mycosporine-like-amino acids (MAAs) production by the cyanobacterium *Scytonema* Br1 under different abiotic stresses".**

Workshops/Training Attended

Attended one-month summer training organized by Department of Microbiology, Institute of Medical Sciences, Banaras Hindu University from 01-07-2010 to 31-07-2010.

Workshop on *In silico* approaches to drug designing (IADD) from 23-28 March, 2015, organized by DBT at Centre of Bioinformatics, School of Biotechnology, Banaras Hindu University, Varanasi.

Workshop on "Spirulina cultivation and value addition" from 23-25 April, 2019 organized by CCUBGA, Department of Microbiology, IARI, New Delhi.

References

1. Prof. M.B. Tyagi
   Department of Botany (MMV),
   Banaras Hindu University
   Varanasi – 221005, Uttar Pradesh, India
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2. Prof. Ashok Kumar
   School of Biotechnology
   Banaras Hindu University
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3. Prof. R.P. Sinha
   Department of Botany, Banaras Hindu University
   Varanasi-221005, Uttar Pradesh, India
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