

## Anil Kumar, Ph. D.

**Designation:** Assistant Professor  
**Area of Specialization:** Microbiology, Biotechnology and Molecular Biology  
**Teaching:** General Biology, Cell biology, Metabolism, Environmental Studies, Microbiology, Molecular Biology, Pharmacology, Nano-biotechnology  
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### EDUCATION:

		Year
<b>B. Sc.</b> (Botany-Hons., Zoology and Chemistry)	Banaras Hindu University, Varanasi, India	2001
<b>M. Sc.</b> (Biotechnology)	Banaras Hindu University, Varanasi, India	2003
<b>NET-UGC-JRF and SRF</b> (Life Sciences)	C.S.I.R./ U.G.C., (Govt. of India)	2003
<b>Ph. D.</b> (Biotechnology)	Banaras Hindu University, Varanasi, India	2009
Title of the Thesis: " <i>Physiological and Molecular Basis of Toxin Production by the Blooms of Microcystis SPP.</i> "		
Supervisor: Prof. Ashok Kumar, School of Biotechnology.		

### RESEARCH INTEREST:

- Bio-fertilizer development and its application to increase crop yield and reclamation of barren lands.
- To explore natural bioactive agents and its development for therapeutic application.
- Development of Green biosynthesis of nano-particles and its characterization.
- Biotransformation of xeno-biotic compounds and bioremediation.

### EMPLOYMENT:

**Post-Doctoral Research:** Two year DBT-Research Associateship at Central Drug Research Institute, Lucknow, U.P., India. **Topic:**-Study of mycobacterial protein Rv3097c from *Mycobacterium tuberculosis* H37Rv and elucidation of its role in lipid metabolism and virulence.

**Teaching:** Appointed on May28, 2011 to Present at Central University of Jharkhand, Brame, Ranchi-835205, Jharkhand, India.

### AWARDS:

**Best Paper Award:** Awarded for best poster presentation at International Symposium on Applied Phycology and Environmental Biotechnology (ISAPEB-2007), BITS, Pilani, Rajasthan.

**Research Associateship:** Award Funded by DBT, GOI New Delhi.

### MEMBER OF ACADEMIC AND ADMINISTRATIVE BODIES:

**Human Ethical Committee:** Member, Central University of Jharkhand.

**Member Centre Steering Committee:** Centre for Life Science, Centre for Applied Mathematics- January, 2016. Central University of Jharkhand.

**Warden, Boys hostel:** July 2011-2013, September 2015-2017, Central University of Jharkhand.

**Admission Committee (Member):** CUJ-Admission Committee-2012 and 2016, Member-Centre Admission Committee at Centre for Life Science, member other committees for Projects, Central University of Jharkhand.

**Centre Purchase Committee:** Member-Centre for Life Science, CUJ

**Freeship Committee:** Member, 2011-12, 2012-13, 2015-2016, Central University of Jharkhand.

**Board of Studies (Member):** Appointed on May, 2013, Department of Biotechnology, St. Xavier's College, Ranchi (An Autonomous College of Ranchi University).

**Editorial Board (Member):** International Journal of Sciences and Biotechnology, ISSN (Online): 2091-2609.

**Others:** As responsibilities entrusted at Central University of Jharkhand.

## PROJECTS:

1. **Co-PI (Group Leader):** Soil Microbiology (Study of plant growth promoting Rhizoplantic soil bacteria) under DBT-BUILDER Project entitled “Support to establish DBT-Boost to Central University of Jharkhand Interdisciplinary Life Science Departments for Education and Research (**BUILDER**) Programme (No.BT/PR9028/INF/22/193/2013)”. **November 2014-2019. Rs. 4.43 crore.**

## PUBLICATIONS:

### Full Paper (03)

1. Tyagi, M.B., Singh, D.P., **Anil Kumar.**, Jha, P.N., Sinha, R.P. and Kumar, A. (2006). Hepatotoxicity of *Microcystis aeruginosa* Strains Growing as Blooms in Certain Eutrophic Ponds. Experimental and Clinical Sciences Journal (EXCLI). 5:66-78. **IF: 1.923.** ISSN 1611-2156. (<http://www.excli.de/vol5/Tyagi08-06proof.pdf>). **UGC 29053**
2. **Anil Kumar.**, Kumar, A., Rai, A.K. & Tyagi, M.B. (2011). PCR-based detection of *mcy* genes in blooms of *Microcystis* and extracellular DNA of pond water. Afr. J. Microbiol. Res. 5(4):374-381. 2011-IF: **0.564.** ISSN 1996-0808. (<http://www.academicjournals.org/ajmr/PDF/pdf2011/18Feb/Kumar%20et%20al.pdf>).
3. Saxena, A.K., Roy, K.K., Singh, S., Vishnoi, S.P., **Anil Kumar.**, Kashyap, V.K., Kremer, L., Srivastava, R. and Srivastava, B.S. (2013). Identification and characterization of small-molecule inhibitors of *Rv3097c*-encoded lipase (LipY) of *Mycobacterium tuberculosis* that selectively inhibit growth of bacilli in hypoxia. International Journal of Antimicrobial Agents. 42:27-35. **IF: 4.415.** ISSN 0924-8579. (<http://www.ncbi.nlm.nih.gov/pubmed/23684389>). **UGC-2548**
4. Gandhi, V.P. and **Anil Kumar\***. (2016). Isolation and characterization of microcystin degrading bacteria from holy ponds in India. Int J Appl Sci Biotechnol, 4(4): 436-447. ISSN 2091-2609. DOI: 10.3126/ijasbt.v4i4.16249.
5. **Anil Kumar\***, Swarupa, P., Gandhi, V.P. and Kumari, S. (2017). Isolation of Ethidium Bromide Degrading Bacteria from Jharkhand. Int J Appl Sci Biotechnol, 5(3): 293-301. ISSN 2091-2609. DOI: <http://dx.doi.org/10.3126/ijasbt.v5i3.18296>

### Articles as Book Chapter (02)

1. Kumar, A., Sinha, R.P., Tyagi, M.B., Jha, P. N., Pattanaik, B., Mishra, V. K. and **Anil Kumar.** (2006). Cyanotoxins: biotechnological potentials. *In: Biotechnological Applications of Cyanobacteria* (ed. Singh, K.), Academic World, Varanasi, India. pp. 81-104. (**ISBN: 81-903104-0-2**).
2. **Anil Kumar.**, Rai, A.K., Shrivastava, U.P., Tyagi, M.B. and Kumar, A. (2011). Microcystins, a novel class of toxin from cyanobacteria. *In: Plant Genome: diversity, conservation and manipulation* (eds. Roy, B.K., Chaudary, B.R. and Sinha, R.P.). Narosa Publication Pvt. Ltd., New Delhi. pp-127-139. (**ISBN: 976-81-8487-113-5**).

### Abstracts in Conferences (05)

1. **Anil Kumar.**, Kumar, A. and Tyagi, M.B. (2006). Characterization of toxic *Microcystis aeruginosa* by *mcyA* gene segment: International Conference on Applied Phycology “Algae in Biotechnology and Environment”. Delhi, India. pp. 198.
2. **Anil Kumar.**, Kumar, A. and Tyagi, M.B. (2006). Screening of Toxic Cyanobacterial Blooms by Multiplex PCR of *mcy*. 7th Asia Pacific Marine Biotechnology conference. Kochi, India. pp. 62.
3. **Anil Kumar.**, Kumar, A. and Tyagi, M.B. (2007). Toxicity assessment of *Microcystis aeruginosa* infested ponds by multiplex PCR assay. International symposium on Applied Phycology and Environmental Biotechnology (ISAPEB-2007). BITS Pilani, Rajasthan, India. pp. 57-58.
4. **Anil Kumar.**, Kumar, A. (2009). Analysis of *mcy* genes cluster for screening of microcystins producing cyanobacteria. National Conference on Current Challenges in Plant Sciences: Gene to Ecosystem. CAS in Botany, B.H.U., Varanasi, India. pp. 34-35.
5. **Anil Kumar.**, Rai, A. K., Kumar, A and Tyagi, M. B. (2010). Group specific PCR-based screening and identification of *Microcystis*. International Symposium on Phycological Research. Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi, India. pp. 101.
6. Gandhi, V. P. and **Anil Kumar.** (2016). Screening of microcystin degrading bacteria from different water bodies. International Conference on Human Implication of Biotechnology. Centre for Biological Sciences (Biotechnology), Central University of South Bihar, Patna, India.

#### **SYMPOSIUM/CONFERENCE ORGANIZED: (1)**

1. Member of Organizing Committee: International Symposium on “Advances in Cancer Research: Drug Discovery to Delivery” at Central University of Jharkhand, Brambe, Ranchi, Jharkhand, India.

#### **WORKSHOP/SYMPOSIUM/SEMINAR ATTENDED: (10)**

1. Participated in **research poster presentation** in an International Conference on Applied Phycology “**Algae in Biotechnology and Environment**” (February 14-15, 2006) held at Department of Botany, University of Delhi, Delhi, India.
2. Participated in workshop on “**Nanoscience and Technology**” (March 20, 2006) convened by Prof. O.N. Srivastwa and organized by DST Nanoscience and Technology center/Unit, Banaras Hindu University, Varanasi at Department of Physics, Banaras Hindu University, Varanasi, India.
3. Participated in **oral presentation** in “**7<sup>th</sup> Asia Pacific Marine Biotechnology conference**” (2-5 November, 2006) organized by National Institute of Oceanography, Goa; at Kochi, India.
4. Participated in an “**International Conference on Radiation Biology**” (November 20-22, 2006) organized at Banaras Hindu University, Varanasi, India.
5. Participated in an International Conference on “**Science, Technology & Society**” (November 23, 2006) organized at United College of Engineering & research, Naini, Allahabad, India.
6. Participated in “**3<sup>rd</sup> International BHU alumni meet and international seminar on education in the 21<sup>st</sup> century and Mahamana’s vision**” (January 6-7, 2007) organized by Banaras Hindu University in association with Mahamana Malviya Mission, at Banaras Hindu University, Varanasi, India.
7. Participated in the workshop on “**Knowledge Discovery in Life Sciences: Tools and Techniques in Bioinformatics**” (Jan 29 to Feb 2, 2007) organized by Bioinformatics Centre, University of Pune, India.
8. Participated in the “**7<sup>th</sup> Indo-US Flow Cytometry workshop**” (February 10-14, 2007) organized by the School of Biotechnology, Jawaharlal Nehru University, New Delhi, India.
9. Participated in **research poster presentation** in an “**International Symposium on Applied Phycology and Environmental Biotechnology (ISAPEB-2007)**” (October 29-31, 2007) at Birla Institute of Technology and Science, Pilani, Rajasthan, India.
10. Participated in “**National Workshop on Radiation- A Powerful Tool for Research in Physical, Chemical and Life Sciences NWR-2013**” (February 13-15, 2013) at Centre for Applied Physics, Central University of Jharkhand, Ranchi, Jharkhand, India.
11. Attended and Participated in the workshop on “**Cyber Security-The driving secured future**” (February 16, 2014) organized by CYBERFORT Technologies in Partnership with Central University of Jharkhand at Central University of Jharkhand, Ranchi-835205, Jharkhand, India.
12. Participated in “**One day Workshop on Intellectual Property Rights (IPRs) in Agricultural Biotechnology**” (September 24, 2016) organized by ICAR-Indian Institute of Agricultural Biotechnology,, Garhkhatnga, Ranchi at ICAR-IIAB, Namkum, Ranchi-834010, Jharkhand, India.
13. Participated in an “**2<sup>nd</sup> International Conference on Microelectronics computing and communication systems MCCS-2017**” (May 13-14, 2017) organized by Institution of Electronics & Telecommunication Engineers and Indian Society for VLSI Education (IETE and ISVE), Ranchi at Advanced Regional Telecom Training Centre, Hazaribag Road, Ranchi-835217, Jharkhand, India.

**Dr. Anil Kumar**