Curriculum Vitae

Personal information

Name	Dr. Akhileshwar Kumar Srivastava
Designation	Research Associate (ICMR), RA
Address	PCBT Department, CSIR-Central Food Technological Research Institute, Mysore-570020, Karnataka, India
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Personal Statement:

Currently, I have completed my Research Associateship (ICMR) at CSIR-CFTRI, India on the project "**Unravel the anticancerous role of curcumin biotransformed targeting tumor suppressor protein p53 in gastric cancer"**. I completed my undergraduate (BS) and post-graduate (MS) degrees in First Class from Banaras Hindu University (BHU), Varanasi, India. I joined the PhD program at BHU after competing in a nationally held **CSIR-UGC (NET)** examination in India in which I was awarded for **Junior Research Fellowship**. My research specialization is primarily in genetics, metabolomics, bioinformatics, molecular biology and histopathological evaluations, which I am sure, will be adaptable to many challenges in biological researches. I investigated the therapeutic properties of curcumin and its metabolites especially their inhibitory potential on the CagA oncoprotein in HER2 associated-gastric cancer. Currently, I have 22-peer reviewed publications, 2-authored books, 5-edited books, 14-book chapters and several meeting presentations at local and international scientific meetings. I am currently searching for a laboratory to further increase and strengthen my research horizon. I am a highly motivated and hardworking person with a strong desire to succeed in science researches. Given a chance, I am sure I will be able to quickly learn the group specific techniques and requirements, and expedite the current project.

Academics Records

Qualification	Board/University	Subject	Year
Doctor of Philosophy	Banaras Hindu University, Varanasi, India	Botany	2016
Master in Science	Banaras Hindu University, Varanasi, India	Botany	2009
Bachelor in Science	Banaras Hindu University, Varanasi, India	Botany	2007

- ***Date of PhD degree:***
  3rd May 2016 at Department of Botany, Banaras Hindu University, Varanasi, India.

  Topic:
  "Effect of turmeric on oncogenic factors associated with *Helicobacter pylori* in gastric cancer patients".

Honors/Awards:

- **DST-AWSAR AWARD-2020**
- **Awarded for Munshi Ram Jain Cancer Scholar Award 2020**
- **Indian Council of Medical Research 2019:** Research Associate award
- **GRDUATE APTITUDE TEST OF ENGINEERING (GATE) 2010:** GATE SCORE: 93 percentiles
- **Council of Scientific & Industrial Research- University Grant Commission (CSIR-UGC) Test: Dec 20-12-2009: roll no: 350605 Awarded for Junior Research Fellow**

Life time membership:

- Indian Science Congress L38756
- Agriculture, Nutrition, and Health Academy UK

POSTDOCTORAL RESEARCH EXPERIENCES

- Research Associate, ICMR, CSIR-Central Food Technological Research Institute, Mysore, India (13 June 2019-12th June 2021)

Summary of work:

1. Culture of AGS gastric cancer cell lines to get treated with curcumin.
2. Detection of curcumin biotransformed compounds in gastric cancer cell lines by HPLC methods.
3. Culture of cell line A459 for lung cancer to get it transfected with si-RNA to analyze VDAC expression.
4. Culture of cell lines AGX-2, NCI-N87, SNCL-I, and KATO-3 for drug screening.
5. Determination of curcumin component in the collected turmeric rhizomes by HPLC techniques.
6. The collection of biopsies and blood samples from gastric cancer in sterilized vial.
7. Detection of curcumin level in blood serum by HPLC.
8. The confirmation of presence of *H. pylori* in gastric cancerous tissues using specific primer 16sRNA by PCR techniques.
9. The detection of oncogenic gene cagA of *H. pylori* in cancerous tissues by PCR.
10. Reading immunohistochemistry slides, grading molecular expression in fixed tumor tissues.
11. Expression analysis of cancer marker HER2 in fixed cancerous tissue.
12. Establishing of correlation between curcumin level in blood and HER2 expression.
13. Comparative study of the inhibitory potential of curcumin and conventional drugs for CagA oncogenic protein of *H. pylori* by Molecular Docking.
14. Investigation of inhibitory potentiality of curcumin biotransformed compounds against CagA+ *H. pylori.*

The used instrumentation in previous studies

- Western/Immunoblotting for protein expression
- Compounds and fluorescence microscope for cytology,
- Bacterial and cell line culture for IC50 study,
- HPLC (high-performing liquid chromatography) was used for curcumin detection
- UV-illuminator for amplified band of protein and DNA.
- Proteomics (isolation of protein, SDS-PAGE) for onion root against salt stress.
- Genomics (isolation of plasmid and genomic DNA, agarose gel electrophoresis, thermal polymerase chain Reaction (PCR) and gel-documentation for study of *H. pylori* genes
- Immunohistochemistry (IHC) for HER2 expression
- Software (Discovery client 4.1, Chimera 1.10.2, Python, Argus lab, Autodock, Pymol) was used for 3D visualization of interactive compound with receptors.
- ***Computer Knowledge****:*

  MS-office, Internet, Statically software (SPSS, Sigma Plot, MedCalc).

Publications

1. Ahirwar RK, **Srivastava AK**, Kumar DG, Bhoi DK, Jangde R. Understanding cytotoxic effects of traditional herbal remedies: A comprehensive review. ***Phytomedicine Plus*** 2026; 6(1), 100931. doi.org/10.1016/j.phyplu.2025.100931
2. **Srivastava AK**, Thulsay LS, G Doss SG, and Singh D. Cutting-edge extraction technologies for anticancer compounds from ethnomedicinal mulberry: A molecular review in cancer management. ***Notulae Scientia Biologicae*** 2025; 17(2), p. 12241. doi: 10.55779/nsb17212241.
3. Singh D, **Srivastava AK.** Do well-orchestrated pharmacokinetic properties of curcumin downregulate PYGB expression for glycogen phosphorylase in cancer cells? ***J Drug Res Ayurvedic Sci*** 2024; 9: 111-8
4. **Srivastava AK**, Singh D, Yadav P, Singh M, Singh SK and Kumar A. Paradigm of Well-Orchestrated Pharmacokinetic Properties of Curcuminoids Relative to Conventional Drugs for the Inactivation of SARS-CoV-2 Receptors: An In Silico Approach. ***Stresses*** 2023; 3: 615-628.
5. R Dikshansha, **Srivastava AK**, Singh RP, Yadav P, Singh SK, Kumar D, Bhardwaj N, Kesawat MS, Pandey KD, and Kumar A. Algae Polysaccharides (Carrageenan and Alginate)-A Treasure-Trove of Antiviral Compounds: An In Silico Approach to Identify Potential Candidates for Inhibition of S1-RBD Spike Protein of SARS-CoV2. ***Stresses*** 2023; 3: 555-569.
6. Acar A, Singh D, **Srivastava AK.** Assessment of the ameliorative effect of curcumin on pendimethalin-induced genetic and biochemical toxicity. ***Scientific Reports*** 2022; 12: Article number: 2195. doi: 10.1038/s41598-022-06278-5.
7. Kumar M, Singh SK, Singh PP, Singh VK, Rai AC, **Srivastava AK**, Shukla L, Kesawat MS, Kumar Jaiswal A, Chung S-M, Kumar A. Potential Anti-Mycobacterium tuberculosis Activity of Plant Secondary Metabolites: Insight with Molecular Docking Interactions. ***Antioxidants*** 2021; 10(12):1990. https://doi.org/10.3390/antiox10121990.
8. Shetty NP, Prabhakaran M, **Srivastava AK.** Pleiotropic nature of curcumin in targeting multiple apoptotic-mediated factors and related strategies to treat gastric cancer: A review. *Phytotherapy Research* 2021; 10: 5397-5416 DOI: 10.1002/ptr.7158.
9. Singh RK, Singh D, Yadava A, **Srivastava AK**. Molecular fossils "pseudogenes" as functional signature in biological system: A Review. *Genes & Genomics* 2020 https://doi.org/10.1007/s13258-020-00935-7.

10. **Srivastava AK,** Singh D. Assessment of malathion toxicity on cytophysiological activity, DNA damage and antioxidant enzymes in root of *Allium cepa* model. ***Scientific Reports*** 2020 DOI : 10.1038/s41598-020-57840-y.
11. Singh RK, Ranjan A, Shukla AK, **Srivastava AK**, Mishra A, Singh AK, Atri N & Singh SK. Cytotoxic and Apoptotic Inducing Activity of *Amoora rohituka* Leaf Extracts in Human Breast Cancer Cells. ***J Ayurveda Integr Med.*** 2019**; doi.org/10.1016/j.jaim.2018.12.005**.
12. Agrawal V, Mishra, Tiwari S, **Srivastava AK.** Structure-based analysis of curcumin and conventional drugs targeting tumor-inducing protein PHF20. ***Bioinformation***, 2018; 14(9): 477-481.
13. Singh AK, Singh PP, Tripathi V, Verma H, Singh SK, **Srivastava AK**, Kumar A. Distribution of cyanobacteria and their interactions with pesticides in paddy field: A comprehensive review. ***J Environ Manage*** 2018; 224: 361-375 PubMed PMID: 30059934.
14. Singh AK, Singh SK, Singh PP, **Srivastava AK**, Pandey KD, Kumar A, Yadav H. Biotechnological aspects of plants metabolites in the treatment of ulcer: A new prospective. ***Biotechnology Reports*****,** 2018; doi.org/10.1016/j.btre.2018.e00256 2215-017.
15. Singh SK, Singh PP, Singh AK, Singh M, **Srivastava AK**, Vipin Kumar Singh, Ajay Kumar. Role of plants and their metabolites in the diarrhoea treatment. ***J. of Sci. Res***., 62: 2018; 25-33.
16. **Srivastava AK**, Singh D, Roy BK. Structural Interactions of Curcumin Biotransformed Molecules with the N-Terminal Residues of Cytotoxic-Associated Gene A Protein Provide Insights into Suppression of Oncogenic Activities. ***Interdiscip Sci.*** 2017; 9: 116-129 PubMed PMID: 26798036.
17. **Srivastava AK**, Kumar V, Roy BK. Insights from the molecular docking of curcumin to the virulent factors of *Helicobacter pylori*. ***Bioinformation*** 2015; 11(10): 447-53. PubMed PMID: 26664028
18. **Srivastava AK**, Tewari M, Shukla HS, Roy BK. In Silico Profiling of the Potentiality of Curcumin and Conventional Drugs for CagA Oncoprotein Inactivation. ***Arch Pharm (Weinheim)*** 2015; 348(8): 548-55. PubMed PMID: 25996140.
19. Tewari M, Kumar M, **Kumar Akhileshwar**, Mishra RR, Shukla HS. HER2 Expression in gastric and gastroesophageal cancer: report from a tertiary care hospital in North India. ***Indian J Surg.*** 2015; 77: 447-51. PubMed PMID: 26730043.
20. **Srivastava AK**, Singh D, T Mallika, Shukla HS, Roy BK. Impact of turmeric as dietary approach on HER2 expression in blood of gastric cancer Patients. ***Int J of Phytomed***, 2014; 6: 293-299.

21. **Srivastava AK**, Mishra RR, Tewari M, Shukla HS, and Roy BK. Evaluation of major determinants in soil nutrients ameliorate for production of cancer chemopreventive agent curcumin in rhizomes of *Curcuma longa* L. ***Int J of Agri Sci and Res***. 2013; 3: 197-210.
22. Singh D, Ram TC, **Srivastava AK**, and Roy BK. Free radicals, antioxidants and culinary spices: In human health and disease response. ***Int J Bot and Res***. 2013; 3: 1-14.

Book Published:

Author book

- **Akhileshwar Kumar Srivastava**, Divya Singh and Rajesh Kumar Singh. Drug-delivery systems of phytochemicals as therapeutic strategies in cancer therapy: *Academic Press, Elsevier,* 2023 Paperback ISBN: 9780443159602
- **Akhileshwar Kumar Srivastava**, Dhruv Kumar, Divya Singh and Rajesh Kumar Singh. Xenobiotics in Chemical Carcinogenesis: Translational Aspects in Toxicology**:** *Academic Press, Elsevier*, 2022 Paperback ISBN: 9780323905602

Edited Book

- Chandrashekhar Singh, **Akhileshwar Kumar Srivastava**, Anbarasu Kannan, Deepjyoti Singh, Sunil Lingaraju. Unlocking the Secrets of Extracellular Vesicles and Exosomes: A Journey into the Cutting-Edge Frontier of Cellular Communication: *Academic Press, Elsevier,* 2026 Paperback ISBN: 978-0-443-36390-0
- Mamta Bisht, Ajay Singh and **Akhileshwar Kumar Srivastava**. Plant-Based Drug Discovery Unveiling Molecular Targets for Metabolic Conditions: *Academic Press, Elsevier*, 2025 Paperback ISBN: 978-0-443-31698-2
- **Akhileshwar Kumar Srivastava**, Ramesh Kumar Ahirwar, Deepanker Yadav, D. Guru Kumar. Ethnomedicinal Plants for Drug Discovery: Current Developments: *Springer Nature*, 2024 ISBN: 9819734045
- Divya Singh, Amit Kumar Mishra, **Akhileshwar Kumar Srivastava**. Stress-responsive Factors and Molecular Farming in Medicinal Plants: *Springer Nature*, 2023 ISBN: 978-981-99-4479-8
- **Akhileshwar Kumar Srivastava**, Vinod Kumar Kannaujiya, Rajesh Kumar Singh, and Divya Singh. Evolutionary Diversity as A Source for Anticancer Molecules: *Academic Press, Elsevier*, 2020 Paperback ISBN: 9780128217108

Book Chapters

1. M. Mounika S. Reddy, **Akhileshwar Kumar Srivastava**, Manoj Prabhakaran. Exosomes as cellular couriers: the mechanisms of intercellular messaging. *Unlocking the Secrets of*

Extracellular Vesicles and Exosomes: A Journey into the Cutting-Edge Frontier of Cellular Communication, Academic Press, Elsevier, 2026, pp 105-127 Paperback ISBN: 978-0-443-36390-0

2. L. Sunil, Sadashivaiah, R. Chandrakanth, **Akhileshwar Kumar Srivastava**, C. S. Shivakumara. Advancement of Analytical Techniques in Some Ethnomedicinal Plants: Current and Future Perspectives. *Ethnomedicinal Plants for Drug Discovery: Current Developments***,** Springer Nature, 2024, pp 545–557.
3. Ramesh Kumar Ahirwar, **Akhileshwar Kumar Srivastava**, Deepanker Yadav, Diptesh Kumar Bhoi & Reshma Jangde. Exploration of Ethnomedicinal Plants for Drug Discovery in High-Throughput Omics Era. *Ethnomedicinal Plants for Drug Discovery: Current Developments***,** Springer Nature, 2024, pp 423–442.
4. Aradhana Mishra, Preksha Jaiswal, **Akhileshwar Kumar Srivastava**, Divya Singh. Aquaporins gene expression in plants under stress condition. *Stress-responsive Factors and Molecular Farming in Medicinal Plants*, Springer Nature, 2023, pp 193–205.
5. **Akhileshwar Kumar Srivastava**, Ishita Chatterjee, Shreshtha Mishra, Vaishnavi Tripathi, Wafia Zehra, Khushboo Chakrwal, and Vibha Agrawal. Role of miRNA in medicinal plants under stress condition. *Stress-responsive Factors and Molecular Farming in Medicinal Plants*, Springer Nature, 2023, pp 141-153.
6. **Akhileshwar Kumar Srivastava**, Arpana Yadava, Divya Singh. Evolutionary mechanism for biosynthesis of diverse molecules. *Evolutionary Diversity as a Source for Anticancer Molecules,* Academic press Elsevier, 2020, pp 1-27.
7. **Akhileshwar Kumar Srivastava**, Pragyan Mishra, Amit Kumar Mishra. Effect of climate change on plant secondary metabolism: An ecological perspective. *Evolutionary Diversity as a Source for Anticancer Molecules*, Academic press Elsevier, 2020, pp 47-76.
8. Rajesh Kumar Singh, Amit Ranjan, Monika Singh, **Akhileshwar Kumar Srivastava**. Anticancer natural product from marine invertebrates. *Evolutionary Diversity as a Source for Anticancer Molecules*, Academic press Elsevier, 2020, pp 255-266.
9. **Akhileshwar Kumar Srivastava**, Rajesh Kumar Singh, Divya Singh. Microbe-based bioreactor system for bioremediation of organic contaminants: present and future perspective. *Microbe-Mediated Remediation of Environmental Contaminants*, Woodhead Publishing Elsevier, 2020, pp 241-253.
10. Monika, Rajesh Kumar Singh, Ankita Shrivastava, Arpana Yadav, **Akhileshwar Kumar Srivastava.** Endophytic bacteria as a source of bioactive compounds. *Microbial Endophytes,* Woodhead Publishing Elsevier, 2019, pp 175-188.

11. Rajesh Kumar Singh, Ruchita Tripathi, Amit Ranjan, **Akhileshwar Kumar Srivastava** Fungi as potential candidates for bioremediation. *Abatement of Environmental Pollutants: Trends and Strategies*, Elsevier, 2019, pp 177-191.
12. **Akhileshwar Kumar Srivastava.** The role of fungus in bioactive compound production and nanotechnology. *Role of Plant Growth Promoting Microorganisms in Sustainable Agriculture and Nanotechnology*, Woodhead Publishing Elsevier, 2019, pp 145-162.
13. Pooja Kannojia, Krishna Kumar Choudhary, **Akhileshwar Kumar Srivastava** and Amit Kishore Singh. PGPR Bioelicitors: Induced Systemic Resistance (ISR) and Proteomic Perspective on Biocontrol. PGPR Amelioration in Sustainable Agriculture: Food Security and Environmental Management, Woodhead Publishing Elsevier, 2019, pp 67-84.
14. **Akhileshwar Kumar Srivastava (2018)** Significance of medicinal plants in human life. *Synthesis of Medicinal Agents from Plants*, Elsevier, 2018, pp 1-24.

Presentations in Conferences

i. 107th Indian Science Congress Association 2020, January 3-7, University of Agricultural Sciences, Bangalore.
Insight from structural interaction of curcumin biotransformed compounds with CagA oncoprotein of *Helicobacter pylori*.

ii. National Symposium on Emerging Trends and Challenges in Plant Science Research (ETCPSR 2015), February 19-20, Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi.
Srivastava AK, Singh D. A comparative analysis of a natural drug (curcumin) inhibitory potential with synthetic drugs against CagA oncoprotein of *Helicobacter pylori*: A computational study.

iii. National Symposium on Current Status and New Horizons of Ecological Sciences and Environmental Biotechnology (ESEB-13) March 1-3, 2013
Singh D, Srivastava AK, Kumar V. The Effect of Salt Stress on Mitotic and Antioxidant Enzymes Activity in the Roots of *Allium cepa*.

iv. Emerging trends in plant Science March 3-4, 2011- Centre of Advance Study, Department of Botany-BHU, Varanasi
Mishra RR, Mishra P, Srivastava AK, Tewari M, Shukla HS. Molecular Cloning and Expression of recombinant antigenic Heat Shock Protein 60 gene of *Helicobacter pylori*.

v. Indian Genetic Congress, March 4-6, 2015, SRM, Chennai
Srivastava AK, Tewari M, Shukla HS, Roy BK**.** HER2 status in gastric cancer patients associated with *Helicobacter pylori* infection.

vi. International Conference on Environment, Health and Industrial Biotechnology, November 21-23, 2013, Motilal Nehru National Institute of technology, Allahabad

Srivastava AK, Tewari M, Shukla HS, Roy BK. Delivering of Cancer Chemopreventive agent Curcumin into Human Blood after using Turmeric in Diets.

vii. 2nd International Science Congress Association December 8-9, 2012, Mathura UP, India
Srivastava AK, Mishra RR, Tewari M, Shukla HS, Roy BK. Variation in production of Cancer Chemopreventive agent Curcumin in *Curcuma longa* relation to soils from some parts of North-India.

viii. International Conference on Mycology and Plant Pathology Biotechnological approaches (ICMPB-2012) February 27-29, 2012- Centre of Advance Study, Department of Botany-BHU, Varanasi
Mishra RR, Mishra P, Srivastava AK, Tewari M, Shukla HS. Gene amplification and expression of heat shock proteins from *Helicobacter pylori* and targeted on antigenic recombinant product.

Workshops attended

1. ***Hands on Training Programme on 'MATLAB'*** **,** from 10.11.2014-16.11.2014, Organized by DST-Centre for Interdisciplinary Mathematical Science (CIMS), Faculty of Science, Banaras Hindu University, Varanasi.
2. ***Science Academics'*** Lecture-Workshop on Spectroscopy in Chemical Biology. 21st-22nd March, 2014
3. ***Participation:***
   Certificate of Participation "Springer Summit on Materials & Protocol"

Future Goal

I present some of my future goals with my previous research experiences and intuition for innovation in researches for making better life on earth without disturbing nature. I am very much interested in solving biological challenges for betterment of existing life on the earth. Therefore, my research goal is to determine the morphological, physiological and molecular changes in plants as well as human life that are being affected from several factors such as environmental factors especially pollutions, host-pathogen interactions altering metabolic processes and climate changing causing for inheritable alternations in organisms. Nonetheless, natural products are playing critical role to cure the many severe diseases including cancer without producing any side effects. Looking to future, the essential studies on natural products will be well orchestrated by targeting several factors associated with diseases.

Name of References

1. **Dr. Nandini Prasad Shetty (Principal Scientist)**

   PCBT Department CSIR-CFTRI, Mysore, Karnataka, India. Contact number: +91-9449025127

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2. **Dr. Sanjay Kumar (Associate Professor)**

   Department of Botany, Banaras Hindu University, Varanasi, 221005, India. Contact number: +91- 9436607170; 8178359563 Email: ksanjay79@gmail.com

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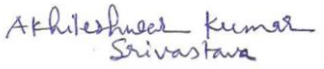
DECLARATION

I do hereby declare that the information furnished in this curriculum vitae is true to the best of my knowledge and belief.

Signature of Applicant



Akhileshwar Kumar Srivastava