

Curriculum Vitae

Dr. Somendra Kumar

Ph.D.

Assistant Professor

Department of Biotechnology

Govt. V.Y.T. PG Autonomous College,

Durg, Chhattisgarh, India

E-mail – somu0307@gmail.com

skumar_bt@govtsciencecollegedurg.ac.in

<https://www.researchgate.net/profile/Somendra-Kumar-2>

Corresponding Address: Village and post-Sirri,

Block- Gunderdehi, District- Balod, Chhattisgarh, India

Pin Code- 491221.



Professional Experience

▪ 2023- 2025

Assistant Professor in the Department of Biotechnology, Govt. V.Y.T. PG Autonomous College, Durg Chhattisgarh, India under Guest Lecturer scheme from 4th August, 2023 to till date.

Educational Qualification

- **Ph.D. (Biotechnology)** from Department of Biotechnology, Govt. V.Y.T. PG Autonomous College, Durg Chhattisgarh, India.
- **Master of Science in Biotechnology**, Secured 1st Division (**79.62%**) (**Gold Medalist**)
Department of Biotechnology, Govt. V.Y.T. PG Autonomous College, Durg Chhattisgarh, India.
- **Bachelor of Science in Biotechnology** with Zoology and Chemistry, Secured 1st Division (**68.11%**)
Kalyan PG College, Bhilai, Chhattisgarh, India.
- **Higher Secondary School**, secured 1st Division (**85%**) from Govt. Multi H S School, Durg, Chhattisgarh, Affiliated to CGBSE, Raipur, Chhattisgarh.

Achievements

- **CSIR-UGC NET JRF – December 2017**
- **CSIR UGC NET LS – June 2017**

Professional Qualification

- **CSIR Senior Research Fellow (CSIR, HRDG, New Delhi) – 2020-2023**
Department of Biotechnology, Govt. V.Y.T. PG Autonomous College, Durg Chhattisgarh, India.
- **CSIR Junior Research Fellow (CSIR, HRDG, New Delhi) – 2018-2020**
Department of Biotechnology, Govt. V.Y.T. PG Autonomous College, Durg Chhattisgarh, India.

Awards

- **Best Paper Presentation Award in the International Conference** on “Biological alterations and applications for next generation living world,” 1st and 2nd March, 2024.
- **Best Paper Presentation Award in the National Science Day – 2023** on “Global Science for Global Wellbeing,” 27th February, 2023.
- **Best Paper Presentation Award in the Science Summit – 2023** on “Advancement of research in Chhattisgarh for national self-reliance,” 14th February, 2023.
- **Best Paper Presentation Award in the International Seminar** on “Environmental Issues and Sustainable Development,” 2nd and 3rd February, 2023.
- **Best Paper Presentation Award in the National Conference** on “Innovation and Emerging Novel Research in Plant Sciences,” 17th and 18th January, 2023.
- **Best Poster Presentation Award in the National Science Day – 2022** on “Azadi ka Amrit Mahotsav” under Intellectual Property Office, India, (NIPAM, Chennai) 28th February, 2022.

Research Experience

- **2018 – 2025**

Ph.D.

Topic- “**Scientific Validation of Antidiabetic Features of *Bridelia retusa***” at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh under the guidance of Prof. Anil Kumar.

- **2017 - 2019**

Project assistant

Topic – “**Study of Erythrocyte Disorder among Scheduled Caste and Scheduled Tribe Population of Kabirdham District of Chhattisgarh**” at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh under guidance of Dr. Anil Kumar.

- **2018 - 2019**

- Part time project assistant**

- Topic – “**Study of mosquito fecundity and malarial infestation among population of Dantewada (Bastar), Chhattisgarh**” at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh under guidance of Dr. Anil Kumar.

- **2019 - 2022**

- Co-supervisor of Dissertation of M.Sc. students**

- Topic- **Evaluation of antioxidant potential & green synthesis of silver & zinc nanoparticles from leaf extract of *Cordia dichotoma*** at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh.
 - Topic- **Scientific validation of *Cassia tora* for its pharmacological prospective** at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh.
 - Topic- **Phytochemical analysis, antioxidant potential and green synthesis of silver nanoparticles using *Bridelia retusa* plant extract as a reducing and capping agent** at Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh.
 - Topic- **Phytochemical screening and evaluation of antioxidant property of *Gymnema sylvestre* with biofunctionalized silver nanoparticles synthesis** at Dept. of Biotechnology, Govt. V.Y.T. PG. Autonomous College, Durg, Chhattisgarh.

- **2017-2022**

- Sort term projects**

- Phytochemical Screening and Antioxidant Activity of *Neolamarckia cadamba* and *Cymbopogon citrates* from Durg District of Chhattisgarh, India.
 - Comparative phytochemical screening of *Solidago velutina* and *Cymbopogon citrates*.
 - Antimicrobial activity of silver nanoparticles synthesized from *Tinospora cordifolia*.
 - Phytochemical screening and photocatalytic degradation of crystal violet using biologically synthesized silver nanoparticles from *Gymnema sylvestre*.

- Phytochemical screening and antioxidant activity of *Bridelia retusa* from Durg district of Chhattisgarh, India.
- Green synthesis of silver nanoparticles from *Bridelia retusa* and its application as antimicrobial agent.
- **2013-2015**

M.Sc. Dissertation

Topic – “**Effectiveness of bioactive compounds isolated from entomopathogenic fungi *Beauveria bassiana* for microbial control of Termites that improves shelf life of plywood**” at Shri Guru Har Gobind Centre for Biotechnology, Jabalpur (M.P.), India.

Patents

- Title of invention – **Blood Oxygenation and Filtration Device**. 30 October 2024. (Design No. – 436103-001).
- Title of invention – **Portable Chemokine Detection Device**. 12 June 2024. (Design No. – 419798-001).
- Title of invention - **A process for developing a potent lead compound for drug development as antimicrobial and antioxidant**. 21 August 2021. (Patent number: 2021106365).

Technical & Research Skills

- **Molecular Biology:** Isolation of genomic and plasmid DNA, electrophoresis (agarose and PAGE), isolation of blood DNA, Sickle cell testing.
- **Biochemistry:** Protein estimation by Lowry and Bicinchoninic acid method.
- **Animal Cell and Tissue Culture Techniques.**
- **Plant Tissue Culture Techniques.**
- **Immunology:** ELISA, immunodiffusion, immunoelectrophoretic, blood group determination.
- **Microbiology:** Handling of microbial cultures, sterilization techniques, identification and isolation of pure cultures, Isolation of endophytic fungi.
- **Bioinformatics:** Molecular docking, Familiar with using various bioinformatics software and primary molecular biological tools

- **Computer Skills:** Familiar with using Microsoft Office (word, excel and power point).

Publications

1. Motiram Sahu, Dinesh Kumar, **Somendra Kumar**, Anil Kumar. The prevalence of chemokine receptors (CCR5-Δ32, CCR5-m303, CCR2-64I, and SDF1-3'A) in the population with sickle cell anemia, 2025, Gene Reports 40(2025):102261.
2. Dinesh Kumar, **Somendra Kumar**, Motiram Sahu, Anil Kumar. GC-MS identified bioactive compounds of *Urena lobata* L. demonstrate anti-inflammatory and immunomodulatory potentials against Rheumatoid Arthritis: An in silico, in vitro and in vivo evaluation, 2025, Pharmacological Research - Natural Products 6(1):100152.
3. Dinesh Kumar, **Somendra Kumar**, Motiram Sahu, Chandramohan Govindasamy, Anil Kumar. Trachelogenin from *Urena lobata* demonstrates promising potentials against SARS-CoV-2 Mpro (3CL Protease) of Endemic COVID, 2024, Journal of King Saud University - Science 36(11):103572.
4. **Somendra Kumar**, Dinesh Kumar, Motiram Sahu, Neha Maurya, Ashutosh Mani, Chandramohan Govindasamy, Anil Kumar. An in vitro and in silico antidiabetic approach of GC-MS detected friedelin of *Bridelia retusa*, 2024, Journal of King Saud University – Science. 36, 103411.
5. **Somendra Kumar**, Anil Kumar, Nishi Jain. Impact of Increasing Climatic Temperature on Crop Yield (Book Chapter). Recent Advances in Molecular Biology Plant Physiology Volume - 4. AkiNik Publications, 2023. ISBN: 978-93-5570-680-5.
6. Shruti Umarvaish, **Somendra Kumar**, Anil Kumar. Genomics of Human Papillomavirus-induced Cervical Cancer. Journal of Pharmaceutical Research International, 2022, 34(14A): 8-25, 2022.
7. Tripti Thakur, **Somendra Kumar**, Motiram Sahu, Dinesh Kumar, Anil Kumar. RAPD based relationship study in fungal isolates of food samples from Durg, India. Journal of Applied Bioscience, 2020, 46(1,2), 27.
8. Motiram Sahu, Dinesh Kumar, **Somendra Kumar**, Anil Kumar. Biodegradation of Crude Oil Contaminated Soil by Hydrocarbon Degrading Bacteria. International Journal of Advanced Research, 2020, 8(10), 866-873.
9. **Somendra Kumar**, Dinesh Kumar, Motiram Sahu, Anil Kumar. FTIR based pharmacological validation of *Bridelia retusa*. Saudi Journal of Medical and Pharmaceutical Science, 2020, 6(10): 658-667.

10. Dinesh Kumar, **Somendra Kumar**, Motiram Sahu, Anil Kumar. Evaluation of pharmacological features and Nanoparticle formation by *Urena lobata*. Haya: The Saudi Journal of Life Science, 2020; 5(10): 226-235.
11. **Somendra Kumar**, Dinesh Kumar, Motiram Sahu, Anil Kumar. Pharmacological and Nanobiotechnological aspects of *Gymnema sylvestre*. International Journal of Advanced Research, 2020, 8(10), 901-913.
12. Dinesh Kumar, **Somendra Kumar**, Motiram Sahu, Anil Kumar. Phytochemical Screening and Antioxidant Activity of *Neolamackia cadamba* and *Cymbopogon citrates* from Durg district of Chhattisgarh, India. Saudi Journal of Biomedical Research, 2020; 5(12): 343-348.
13. **Somendra Kumar**, Archana Sudhaker, Neha Tiwari, Swati Pandey, Ekta Singh, Laxmi Verma and Anil Kumar. Isolation and screening of endophytic fungi from a medicinal plant *Acyranthus aspera* for antibacterial activity. Int. J. Pharmacol. Bio. Sci. 9(2): 209-214.

International and National Conferences

1. **“Indian Knowledge System (IKS)-Based Evaluation of Friedelin from *Bridelia retusa* for Anti-Hyperglycemic Activity.”** National Conference on Emerging Horizons in Biological Sciences by Department of Biotechnology & Microbiology Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, February 7th & 8th 2025.
2. **“Friedelin of *Bridelia retusa*: A prospective anti-hyperglycemic compound.”** International conference on Biological Alterations and Applications for Next Generation Living World, organized by Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, March, 1st and 2nd 2024. **(First Prize)**.
3. **“Friedelin, a potent anti-hyperglycemic compound from *Bridelia retusa*.”** Natural conference on Futuristic Materials, organized by Department of Chemistry, Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, 22-23 June, 2023.
4. **“Scientific validation of traditional knowledge and discovery of antidiabetic Drug.”** National Science Day – 2023 on Global Science for Global Wellbeing. Organized by Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, 27 February, 2023. **(First Prize)**.
5. **“Scientific validation of antidiabetic potential of *Bridelia retusa*.”** Science Summit – 2023. Advancement of research in Chhattisgarh for national self-reliance, Organized by Govt. V.Y.T.

PG. Autonomous College Durg, Chhattisgarh and sponsored by CCOST -Raipur, 14th February, 2023. **(First Prize)**.

6. **“GC-MS profiling and computational screening of bioactive compounds from *Bridelia retusa* for its antidiabetic potential.”** International Seminar of Environmental Issues and Sustainable Development, organized by Department of Zoology, Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, 2-3 February, 2023. **(First Prize)**.
7. **“GC-MS Characterization of phytoconstituents from *Bridelia retusa* and Molecular Docking Interactions of Bioactive Phytoconstituents with Diabetic Target Proteins.”** National Conference on Innovation and Emerging Novel Research in Plant Sciences. Organized by Department of Botany, Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, 17-18 January, 2023. **(First Prize)**.
8. **“GC-MS Characterization and Molecular Docking Interactions of Bioactive Phytoconstituents from *Bridelia retusa* with Diabetic Target Proteins.”** International Conference on Drug Discovery, organized by BITS Pilani, K K Birla Goa Campus on 10th and 11th November, 2023.
9. **“Comparative Phytochemical screening and analysis of antioxidant activity of two medicinal plants *Annona reticulata* and *Neolamrckia cadamba* for its future use in the field of pharmacology.”** International Conference on Emerging Trends in Biotechnology, organized by Department of Biotechnology, MNNIT, Allahabad, India on March 10-12, 2022.
10. **“Exploring the Anti-Diabetic Potential of *Bridelia retusa*: GC-MS Analysis and Molecular Docking with Diabetic Target Proteins.”** National Science Day – 2022, organized by Science Club of Govt. V.Y.T. PG. Autonomous College Durg, Chhattisgarh, in collaboration with Intellectual Property Office, India, (NIPAM, Chennai) and The National Academy of Science, India, Prayagraj, 28th February, 2022. **(First Prize)**.



Workshop/Symposia/Training


- **One-day Hands-on Workshop on Molecular Biology Techniques:** HiMedia Ltd., Mumbai & Department of Biotechnology | November 3, 2023
- **Two-day Hands-on Workshop on DNA Barcoding:** CytoGene Research and Development, Lucknow & Department of Biotechnology | April 26-27, 2023
- **Three-day Workshop on DNA Barcoding:** ATG Lab, Pune & Department of Biotechnology | February 10-12, 2020

- **Two-day Workshop on CRISPR/Cas-9 Technology:** IIT Kharagpur, Department of Biotechnology & Department of Botany | February 25-26, 2019
- **Seven-day Workshop on SAS Programming in Clinical Research:** Department of Biotechnology & Venue Analytics, Kolkata | December 28, 2017 - January 11, 2018
- **Two-day Workshop on Bioinformatics:** Department of Biotechnology & Sai Bioinfosys, Nagpur | March 9-10, 2017
- **Three-day Workshop on Bioinformatics:** Sai Bioinfosys, Nagpur & Department of Biotechnology, Govt. V.Y.T. PG. Autonomous College Durg (C.G.) | January 28-30, 2014



Publication Details

- ORCID ID - **0009-0009-8857-6138**
- ResearchGate - skumar_bt@govtsciencecollegedurg.ac.in
<https://www.researchgate.net/profile/Somendra-Kumar-2>
- Google Scholar - [Somendra Kumar - Google Scholar](#)



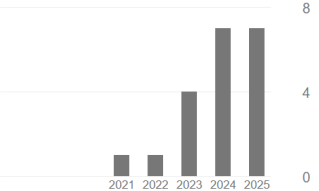
Somendra Kumar
 Research Fellow (CSIR JRF) Government V.Y.T. PG. Autonomous College Durg,
 Chhattisgarh, India
 Verified email at govtsciencecollegedurg.ac.in
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TITLE	CITED BY	YEAR
Phytochemical screening and anti-oxidant activity of Neolamarckia cadamba and cymbopogon citrates from durg district of Chhattisgarh, India D Kumar, S Kumar, M Sahu, A Kumar Saudi Journal of Biomedical Research 5 (12), 343-348	6	2020
Evaluation of pharmacological features and nanoparticle formation by Urena lobata D Kumar, S Kumar, M Sahu, A Kumar Haya: The Saudi Journal of Life Sciences 5 (10), 226-235	5	2020
Impact of Increasing Climatic Temperature on Crop Yield A Kumar, S Kumar, N Jain Mol. Biol. Plant Physiol 33 (3)	4	2023
FTIR Based Pharmacological Validation of Bridelia retusa S Kumar, D Kumar, M Sahu, A Kumar	3	2020
An in vitro and in silico antidiabetic approach of GC-MS detected friedelin of Bridelia retusa S Kumar, D Kumar, M Sahu, NS Maurya, A Mani, C Govindasamy, ... Journal of King Saud University-Science 36 (10), 103411	2	2024

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