

Sai Kumari Vechalapu

Doctoral Graduate Student | Organic Chemistry

Indian Institute of Technology Kanpur

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Education

YEAR	DEGREE	INSTITUTION/BOARD/UNIVERSITY	CGPA/PERCENTAGE
2020 (Joined)	Ph.D.	Indian Institute of Technology, Kanpur, Uttar Pradesh, India	9.5/10
2019-2020	Junior Research Fellow	<ul style="list-style-type: none">Tata Institute of Fundamental Research – Mumbai (6 months)All India Institute of Medical Sciences – New Delhi (6 months)	-----
2017-2019	M.Sc. in Biotechnology	Indian Institute of Technology, Indore, Madhya Pradesh, India	9.24/10
2014-2017	B.Sc. in Biotechnology, Chemistry and Biochemistry	Andhra University (Spaces Degree College, Payakaraopeta), Visakhapatnam, Andhra Pradesh, India	9.33/10
2011-2013	Higher secondary	Board of Intermediate Education, Andhra Pradesh, Sri Chaitanya Junior College, Gopalapatnam, Visakhapatnam, Andhra Pradesh, India	96.1%
2010	Secondary	Board of Secondary School Education, Andhra Pradesh, Sree Vignan Public School, Chodavaram, Visakhapatnam, Andhra Pradesh, India	91%

Experimental skills

- Basic microbiology techniques (media Preparation; cell Staining; microscopic examination of bacterial morphology, structure, and motility)
- Basic biochemistry techniques (buffer preparation; chromatography techniques like affinity chromatography, paper chromatography, gel filtration chromatography, ion exchange chromatography; electrophoresis techniques like in-gel fluorescence and poly acrylamide gel electrophoresis (SDS), agarose gel electrophoresis), western blotting
- Basic animal cell culturing techniques, molecular and biochemical assays, immuno-fluorescence and confocal microscopy
- Genetic engineering techniques like isolation of genomic DNA, plasmid DNA, RNA; restriction digestion; PCR; recombination; competent cells preparation; transformation; primer designing

- Synthesis of complex chemical compounds and their purification by silica gel column chromatography
- Analytical techniques like HPLC (High Performance Liquid Chromatography), mass spectrometry (lipidomics and proteomics) and NMR

Publications

1. **Sai Kumari Vechalapu***, Rakesh Kumar*, Sharad Sachan, Kanchan Shaikh, Amarjyoti Mahapatra, Apparao Draksharapu, Dharmaraja Allimuthu "Organocopper and manganese complexes of pyridinecarboxaldimine induce oxidative cell death in cancer cells" (Manuscript under revision in ACS Applied Biomaterials, * co-first authors)
2. Sona Tiwari, Sathyapriya Senthil, Shweta Khanna, Santhosh Duraisamy, **Sai Kumari Vechalapu**, Sharath Chandra Mallojjala, Dharmaraja Allimuthu "Tuning isatoic anhydrides' lysine ligation chemistry for bioconjugation and drug delivery" (Manuscript under revision in Cell Reports Physical Science)
3. Raju Eerlapally, **Sai Kumari Vechalapu**, Santosh Duraisamy, Divya Lakshmi Hareendran, Jayashrita Debnath, Dharmaraja Allimuthu, Apparao Draksharapu, "A Cu(II) pseudopeptide complex: a surrogate to a *formal* Cu(III) species in water and an inhibitor of cancer cell proliferation" *Inorganic Chemistry Frontiers*, (2024)
4. **Sai Kumari Vechalapu**, Rakesh Kumar, Niranjana Chatterjee, Sikha Gupta, Shweta Khanna, Pooja Yedehalli Thimmappa, Sathyapriya Senthil, Raju Eerlapally, Manjunath B. Joshi, Santosh K. Misra, Apparao Draksharapu, Dharmaraja Allimuthu "Redox Modulator Iron Complexes Trigger Intrinsic Apoptosis Pathway in Cancer Cells" *iScience* (2024, 109899)
5. Pragya Arora, **Sai Kumari Vechalapu**, Santhosh Duraisamy, Dharmaraja Allimuthu, Apparao Draksharapu "A.Pivotal Role of Salicylates in Tuning the Formation and Reactivity of Mn (V)=O's" *European Journal of Inorganic Chemistry*, (2024, e202400079)
6. Dharmendra Yadav, Sona Tiwari, Sathya Senthil, **Sai Kumari Vechalapu**, Santhosh Duraisamy, Viral Rawat, Dharmaraja Allimuthu, "Diazepam-based covalent modifiers of GPX4 induce ferroptosis in liver cancer cells" *Chemical Communications* (2024)
7. Pragya Arora, **Sai Kumari Vechalapu**, Rakesh Kumar, Ayushi Awasthi, Sathya Senthil, Dharmaraja Allimuthu, Apparao Draksharapu "Mn (II) Polypyridyl Complexes: Precursors to High Valent Mn(V)=O Species and Inhibitors of Cancer Cell Proliferation" *Chemistry-A European Journal* (2023, 29(53), e202301506)
8. Revathy Sahadevan, Anupama Binoy, **Sai Kumari Vechalapu**, Pandurangan Nanjan, Sushabhan Sadhukhan "In situ global proteomics profiling of EGCG targets using a cell-permeable and Click-able bioorthogonal probe" *International Journal of Biological Macromolecules* (2023, 237, 123991)

Patents

1. 2-Amino benzophenone derivatives for targeted ferroptosis induction in cancer therapy. Dharmaraja Allimuthu, Sai Kumari Vechalapu, Shweta Khanna, Sona Tiwari, Dharmendra K Yadav, India, 202311063839, **17/112023**

Manuscripts under preparation

1. **Sai Kumari Vechalapu**, Santhosh Duraisamy, Rakesh Kumar, Sathya Senthil, Deepa Anjar, Dharmaraja Allimuthu, Apparao Draksharapu, Suresh Kumar "Small molecule-mediated accumulation of lipid globules drives lysophagy through mitochondrial dysfunction to prevent liver cancer cell proliferation"
2. **Sai Kumari Vechalapu**, Sikha Gupta, Dharmaraja Allimuthu, Apparao Draksharapu "Copper accumulation by an ionophore induces protein phase condensation and inhibits the progression of osteosarcoma cells"

Honours and Achievements

- **ACS best poster presentation award** in the category of Medicinal Chemistry and Chemical Biology at Recent Advances in Inorganic Molecules to Materials-2023, Indian Institute of Technology, Kanpur
- **Outstanding performance** with highest CGPA (2017-2019) in M.Sc. Biotechnology from Indian Institute of Technology, Indore, Madhya Pradesh, India
- Qualified DBT-JRF, 2019 in category II (equivalent to NET/GATE)
- Awardee of **Merit Cum Mean scholarship (MCM)** in master's from Indian Institute of Technology Indore (IITI) in 2018, 2019
- Qualified JAM (Joint Admission test for M.Sc. and Integrated PhD.) in 2017 with AIR 215 in the category of Biotechnology and AIR 822 in the category of Biological Sciences
- **Outstanding performance** with highest CGPA (2014-2017) in B.Sc. Biotechnology from Spaces Degree College, Andhra University, Andhra Pradesh, India
- Secured **2nd prize** in State level inter college Chemistry quiz competition in B.Sc. held at Kakinada in December 2014
- Secured **1st prize** in Group Dance competition at college level in B.Sc. in December 2014

Participation/ Organisation of conference

- Research Scholars Day, April 2024, Department of Chemistry, Indian Institute of Technology Kanpur, Uttar Pradesh - **Part of Organising committee**
- Genomics Analysis and Technology Conference, March 2023, inStem Bangalore, Karnataka - **Research poster presentation**
- Research Scholars Day-2023, Department of Chemistry, Indian Institute of Technology Kanpur, Uttar Pradesh - **Research poster presentation**

- 1st In-house symposium on Advances in Biosciences and Bioengineering, Indian Institute of Technology, Indore, February 2019 - **Research poster presentation**
- Industry Academia Conclave 2018 (IAC), Indian Institute of Technology, Indore, November 2018 - **Research poster presentation**
- International Symposium on Emerging areas in Biosciences and Biomedical Technologies, Indian Institute of Technology, Indore, January 2018 - **Part of Organising committee**

Teaching experience

- **Teaching Assistant:** Biosystems (CHM481A), Theory course taught to 2nd Year M.Sc. students (Aug 2021 – Dec 2022)
- **Teaching Assistant:** General, Organic and Inorganic Chemistry (CHM113), Theory course taught to 1st Year B.Tech. students (Aug 2022 – Dec 2023)
- **Tutor:** Chemistry Lab Course (CHM113), Research practical course taught to 1st Year B.Tech. students (Aug 2023 – Dec 2024)

Referees

- Dr.Dharmaraja Allimuthu, Assistant professor, Indian Institute of Technology Kanpur (IITK), India, E-mail ID: atdharma@iitk.ac.in, Contact number: +91 9025480858
- Dr. Apparao Draksharapu, Assistant professor, Indian Institute of Technology Kanpur (IITK), India, E-mail ID: appud@iitk.ac.in, Contact number: +91 6305675417
- Dr. Sushabhan Sadhukhan, Assistant professor, Indian Institute of Technology Palakkad (IIT PKD), India, E-mail ID: sushabhan@iitpkd.ac.in, Contact number: +91 7980575036

Personal information

Date of birth : 16th September 1995
 Guardians' name : Pothula Sanyasi Naidu
 Hobbies : Reading books and Cooking
 Permanent address : M.Alamanda village, Devarapalli mandal, Anakapalli,
 Andhra Pradesh, India, Pin code -531030

Declaration

I hereby declare that the information provided above is true to the best of my knowledge.

Sai Kumari Vechalapu

Place: Kanpur

