Curriculum vitae

Nilu V. Gone

Doctoral Research Fellow

Department of Organic Chemistry,

CSIR-National Chemical Laboratory (CSIR-NCL), Pune, India.

Email: nilugone2021@gmail.com, nv.gone@ncl.res.in

Mobile: +917057240782

ORCID ID: 0009-0000-5256-6258

Research group website: https://gjsanjayan.wixsite.com/csir-ncl

Education

Aug 2019-present:	Doctoral Research Fellow (Ph.D.) Department of Organic Chemistry, CSIR-National Chemical Laboratory (CSIR-NCL), Pune, Maharashtra 411008, India Thesis title: "Small Bioactive Peptide Conjugates as Potent Therapeutic Agents" Thesis Advisor: Dr. G. J. Sanjayan, Chief Scientist & Professor, CSIR-NCL, Pune
Feb 2019-July 2019:	Project Associate-II Department of Organic Chemistry, CSIR-National Chemical Laboratory (CSIR-NCL), Pune, India Project Title: "Innovative Processes and Technologies for Indian Pharmaceutical and Agrochemical Sector Industries (HCP0011-A)" Project Supervisor: Dr. Utpal Das, Principal Scientist, CSIR-NCL, Pune
July 2016- June 2018:	Master of Science in Organic Chemistry (M.Sc.) Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU) - Nagpur, India
July 2013- June 2016:	Bachelor of Science in Chemistry (B.Sc.) Santaji Mahvidyalaya College, RTMNU University - Nagpur, India

Awards and Certificates

- Completed the WCAIR Medicinal Chemistry 101, organized by University of Dundee, Scotland
- Best poster presentation in National science day which held in February 2023 at CSIR-National Chemical Laboratory, Pune entitled as "Histidine α-Nitrile Dipeptides as Potent Inhibitors of SARS-CoV-2 Main Protease (Mpro)" (2023)
- Awarded Senior Research Fellowship (SRF) sponsored by CSIR, India (2021)
- Awarded Junior Research Fellowship (JRF) sponsored by CSIR, India (2019)
- Qualified "Graduate Aptitude Test in Engineering" held on February 2019, India (2019)

Skills and expertise

- **Synthetic Organic Chemistry:**
  - ✓ Strong background in multi-step organic synthesis and solution phase peptide synthesis
  - ✓ Experienced designing, synthesis and characterization of diverse classes of molecules, including heterocycles, amino acids-conjugates, peptides and self-assembling systems
  - ✓ Excellent experience in peptide synthesis (solution phase) and their structural investigation by using NMR spectroscopy (1D and 2D), circular dichroism (CD) and Single-Crystal X-ray studies
  - ✓ Small bioactive peptide conjugates, medicinal, nucleobase-amino acid chemistry and supramolecular chemistry
  - ✓ Well-versed in handling dry reactions, air-sensitive reagents, hydrogenation and solvent distillation
  - ✓ Characterization and identification of organic molecules using spectroscopy techniques like NMR, IR, LCMS, HRMS, MALDI-TOF, HPLC and single-crystal XRD
- **Online databases**: Knowledge of SwissADME, sci-finder, Google Scholar and Web of Science for literature survey
- **Chemistry tools:** ChemDraw, ACD-labs, Mnova and TopSpin for NMR analysis, Proficient in MS Word, PowerPoint Presentation (PPT) and Excel sheet

- **Scientific writing:** Manuscript writing, project proposals/reports
- **Others:**
  - ✓ Good laboratory practices to ensure workplace safety
  - ✓ Trained postgraduate student
  - ✓ Good communication, management and interpersonal skills

Research expertise

- Design and synthesize novel amino acid-based small drug scaffolds as therapeutic agents
- Discovery of SARS-CoV-2 inhibitors with a novel histidine α-nitrile motif: Rational design, synthesis, *in-vitro*, and *in-silico* studies
- Structural-based design and synthesis of in-house developed histidinal dipeptide to potentiate the antimalarial activity
- Repurposed ciprofloxacin derivatives as potent autophagic-type anticancer agents
- Design and synthesis of ciprofloxacin - triple G-C-T base-coded self-assembling nucleobase conjugates as potent antibacterial and anticancer agents

Research publications and patents

1. **Nilu V. Gone**, Mohammed Ghalib Enayathullah, Jessie Thomas, Parth Rathee, Rajeev Prabhakar, Kiran Kumar Bokara, Gangadhar J. Sanjayan, "Discovery of SARS-CoV-2 Inhibitors Featuring Novel Histidine α-Nitrile Motif" *Chem. Biodiversity.*, **2023**, e202300957 (DOI: https://doi.org/10.1002/cbdv.202300957)
2. **Nilu V. Gone,** Tanisha Sharma, Rakesh Joshi, Manas Santra, Gangadhar J. Sanjayan, "Repurposed Ciprofloxacin Derivatives as Potent Autophagic-type Anticancer Agents". (*Under revision in Bioorganic & Medicinal Chemistry Letters, 2024)*
3. Shaziya Khanam, **Nilu V. Gone,** P. P. Rashid and Gangadhar J. Sanjayan, "Design and synthesis of G-C coded nucleobase amino acid and its facile incorporation into short peptides" *Manuscript under preparation (***2024**).
4. Dharmendra Singh, **Nilu V. Gone**, Kiran Bandi, Gangadhar J. Sanjayan, "Triple G-C-T base-coded self-assembling water-soluble nucleobase monomers with excellent scope

for biomaterial and protein bio-conjugation applications" *Manuscript under submission*, **2024**.

Patents

1. **Nilu V. Gone,** Kiran Bokar, G. J. Sanjayan, "SARS-COV-2 Inhibitors and Method of Preparation Thereof" 0051NF2024/IN, **2021**. (*Patent Filed*)
2. **Nilu V. Gone** and G. J. Sanjayan, "Ciprofloxacin-Based Autophagic-Type Anticancer Agents" 0139NF2024/IN, **2023**. (*Patent Filed*)

Conferences and Presentations

1. Delivered the oral presentation on "Ciprofloxacin-Niclosamide Hybrids as Novel Autophagic-type Anticancer Agents" in "5th NCL-RF Annual Student Conference 2023", organized by NCL Research Foundation & CSIR-NCL, Pune.
2. Delivered the poster presentation on "Histidine α-Nitrile Dipeptides as Potent Inhibitors of SARS-CoV-2 Main Protease (Mpro)" in "The National science day 2023", organized by NCL Research Foundation & CSIR-NCL, Pune.
3. Delivered the poster presentation on "Ciprofloxacin-Niclosamide Hybrids as Novel Class of Potent Anticancer Agents" in "Frontiers at the Chemistry-Allied Science Interface (FCASI-2023) Conference", Jaipur, India.

Personal information

- Date of Birth: Jan 30th, 1996
- Gender: Female
- Nationality: Indian
- Languages: English, Marathi, Hindi
- Marital Status: Unmarried

References

1. Dr. G. J. Sanjayan

Chief Scientist & AcSIR Professor of Chemistry, Division of Organic Chemistry

CSIR-National Chemical Laboratory, Pune 411008, INDIA, Tel: +91-20-25902082

E-mail: gj.sanjayan@ncl.res.in, gj.sanjayan@gmail.com

Web: https://gjsanjayan.wixsite.com/csir-ncl

2. Dr. Utpal Das

Organic Chemistry Division, CSIR-National Chemical Laboratory

Dr. Homi Bhabha Road, Pashan, Pune 411008, INDIA, Tel: +91 20 2590 2303

E-mail: u.das@ncl.res.in Web: http://academic.ncl.res.in/u.das

Declaration

I hereby declare that the details stated above are true and correct to the best of my knowledge.