

# CURRICULUM VITAE

## PERSONAL DETAILS

Name Dr. Raju Cheerlavantha Ph.D  
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## EDUCATION

**2012 – 2015** Ph.D, School of Chemistry, University of New South Wales, Australia.  
**Thesis:** Stereoselective synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids, and to study the Conformational behavior of these novel molecules.  
**2003 – 2005** M.Sc (Chemistry), Kakatiya University, Warangal, India.  
**2000 – 2003** B.Sc (Chemistry), Kakatiya University, Warangal, India.

## RESEARCH EXPERIENCE

**2021 – Now** Senior Postdoctoral Associate at The Singapore-MIT Alliance for Research and Technology (SMART)-Singapore.  
**2018 – 2021** Research Fellow at Nanyang Technological University-Singapore.  
**2016 – 2018** Scientist in Dr. Reddy's Institute of Life Sciences, India.  
**2009 – 2012** Research Scientist-I, AMRI (Singapore).  
**2007 – 2009** Research Associative, Lupin Ltd, Pune (India).

## PROFESSIONAL EXPERIENCE ND SKILLS

- As a highly successful, results driven PhD graduate; I have published 8 research manuscripts, obtained 7 patents for various research topics. Over ten years of experience in the scientific field has equipped me with a unique myriad of creative & analytical talents that allow me to develop innovative solutions to complex problems across the entire spectrum of organic synthesis.
- During my industrial and academic training, I gathered an excellent theoretical knowledge and outstanding practical skills in various aspects of chemistry. Excellent demonstrated organizational skills, time management and ability to work to priorities.
- Expert in designing the synthetic route towards organic small molecules, peptides, and polymers, troubleshooting the synthetic and technical problems associated with the chemical synthesis, development of new chemical reactions including multi-step synthesis from micro to multi gram scale.
- Process development of APIs and its intermediates of cost effective, IP free process, regulatory complies, hazardous chemicals, plant feasible process.

- Design and conduct experiments to determine underlying reaction mechanisms, cause and effect, failure modes, guard band studies and optimization using DOE methodologies.
- Lead the technology transfer phase of new products or processes as they move from R&D into manufacturing in preparation for commercial launch.
- Proposed, evaluated and developed 'Technically Feasible' alternate, innovative routes, reaction mechanism, impurities, patent infringement / patentability.
- Expert in various analytical techniques (NMR, IR, LC/MS, GC, GPC, XPS and HPLC) and purification.
- Experienced in leading research projects and guiding junior chemists.
- HPLC instrument trouble shooting, method development was trained and certified by SHIMADZU (Asia Pacific) Pte. Ltd, Singapore.
- Proficient in using Sci-Finder and Reaxys.

### SCHOLARSHIPS AND AWARDS

1. The Best Poster Prize, 15<sup>th</sup> Tetrahedron Symposium, Challenges in Bioorganic & Organic Chemistry, London, UK 2014.
2. Postgraduate Research Student Travel Award (AUD \$3622.18), University of New South Wales, Sydney, Australia 2014.
3. School of chemistry Postgraduate Award, University of New South Wales Sydney, Australia (AUD\$1000.00)
4. 1<sup>st</sup> Poster Prize, Royal Australian Chemical Institute (RACI) Natural Products Symposium, Sydney 2013.
5. UNSW Australia Fellowship (TFS) 2012.

### PUBLICATIONS

1. Yang, Wu; **Cheerlavancha. Raju** *et.al.* Mixed-charge pseudo-zwitterionic copolymer brush as broad spectrum antibiofilm coating. (*Biomaterials*. 273, 2021, 120794).
2. Dicky, Pranantyo; **Cheerlavancha. Raju** *et.al* Non-toxic antimicrobial cationic peptide nano constructs with bacteria-displaceable polymeric counter anions *Nano Lett.* 2021, 21, 2, 899–906.
3. Zhan, Kaixi; **Cheerlavancha. Raju** *et.al* Cationic glycosylated block co-beta-peptide acts on cell wall of Gram-positive bacteria as anti-biofilm agents *ACS Appl. Bio Mater.* 2021
4. Kaixi, Zhang; Yu Du; Zhangyong Si; Yang Liu; Michelle E. Turvey; **Cheerlavancha, R** *et.al* Enantiomeric glycosylated cationic block co-betapeptides eradicate *Staphylococcus aureus* biofilms and antibiotic-tolerant persisters. *Nat. Commun.* 2019, 10, 4792.
5. **Cheerlavancha, R.** *et.al.* Homologated amino acids with three vicinal fluorines positioned along the backbone: development of a stereoselective synthesis. *Beilstein J. Org. Chem.* 2017 13, 2316–2325. (Full Research Paper)
6. Ravi, N; **Cheerlavancha. R.**; Sattaiah.N; Narayana, M: Synthesis and characterization of organo sulphur heterocyclic derivatives and their anti-fungal activity *World Journal of Pharmacy and Pharmaceutical Sciences.* 2016, 5, 941.

7. Yap, Q.J.D; **Cheerlavancha, R.**; Lowe, R; Wang, S; Hunter, L.; Investigation of *cis*- and *trans*-4-fluoroprolines as enantioselective catalysts in a variety of organic transformations” *Aust. J. Chem* **2015**, 68, (1), 44-49. (**Full Research Paper**)
8. **Cheerlavancha, R.**; Lawer, A.; Cagnes, M.; Bhadbhade, M.; Hunter, L.; Sequential deoxyfluorination approach for the synthesis of protected-trifluoro-amino acids,” *Org. Lett.* **2013**, 15, 5562.

## PATENTS

1. Oruganti, Srinivas; Chintada, Krishnarao; Kandagatla, Bhaskar; **Cheerlavancha, Raju.** *et. al* Process for Preparation of Siponimod, Its intermediates And Salts Thereof (**Dr. Reddy's Laboratories Limited**) Patent Number: IN201741034238 A 2019-03-29.
2. Oruganti, Srinivas; Chintada, Krishnarao; Kandagatla, Bhaskar; **Cheerlavancha, Raju.** *et. al* Process for Preparation of Siponimod, Its Salts and Solid-State Forms Thereof (**Dr. Reddy's Laboratories Limited**) Patent Number: WO2019064184 A1 2019-04-04.
3. Srinivas, Oruganti; Saikat, Sen; Bhaskar, Kandagatla; **Cheerlavancha, Raju.**; Magesh, Sampath; Martin, Fox; Vilas, Hareshwar Dahanukar. Alternate Processes for The Preparation of Pyrrolidine Derivatives. (**Dr. Reddy's Laboratories Limited**) Patent Number: WO/2019/064184 Publication Date: 04.04.2019 International Filing Date: 26.09.2018.
4. Oruganti, Srinivas; Kandagatla, Bhaskar; Sen, Saikat; **Cheerlavancha, Raju**; Sampath, Magesh; Fox, Martin; Dahanukar, Vilas Hareshwar; Inalternate. Alternate Processes for The Preparation of Pyrrolidine Derivatives as Upadacitinib Precursors. (**Dr. Reddy's Laboratories Limited**) Patent Number: WO/2019/016745; International Application No.: PCT/IB2018/055368 Publication Date: 24.01.2019 International Filing Date: 219.07.2018.
5. Bhaskar, Kandagatla; Srinivas, Oruganti; **Cheerlavancha, Raju** Improved Process for The Preparation of Fevipiprant (**Dr. Reddy's Laboratories Limited**) Patent Number: 201741017103; IPC: C07D 471/04 Publication Date: 23.11.2018 International Filing Date: 16.05.2017.
6. Amol Ashok Pawar.; Peddireddy Subba Redd.; Chakka Ramesh.; Bhaskar Kandagatla.; Srinivas Oruganti.; **Cheerlavancha, Raju.** Solid Forms of Fevipiprant (**Dr. Reddy's Laboratories Limited**) Publication Number: 201741017098 Publication Date: 23.11.2018 Application Date: 16.05.2017.
7. SudarshanKumar, A.; Banerjee, R.; Kamboj, R.K.; Loriya, R.; Mathi, S.; Joshi, M.; Suthar, B.; **Cheerlavancha, R.**; Gote, G.; Bagul, R.; Wethal, R.; “Novel protein tyrosine phosphatase 1-B inhibitors” (**Lupin Ltd**) Patent Number: WO 2009/109998 A1; International Application No: PCT/IN2009/000136 Publication Date: 11.09.2009 Application Date: 02.03.2009.

## POSTER PRESENTATIONS

1. Synthesis of homologated amino acid derivatives containing three vicinal fluorine atoms placed stereospecifically along the backbone. **10<sup>th</sup>** International Symposium on Bio-Organic Chemistry, with sponsorship of IUPAC, IISER Pune, India **2015**
2. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids. UNSW Medicinal Chemistry Symposium, Sydney **2014**
3. Molecular Origami” One-minute Thesis competition at UNSW Australia **2014**

4. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids. UNSW RACI Organic One Day Symposium **2014**
5. Synthesis of homologated amino acid derivatives containing three vicinal fluorine atoms placed stereospecifically along the backbone. **15<sup>th</sup>** Tetrahedron Symposium, Challenges in Bio-organic & Organic Chemistry, London, UK **2014**
6. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids. **20<sup>th</sup>** International Conference on Organic Synthesis (ICOS-20), Budapest, Hungary **2014**
7. Pohlianin C, an anti-malarial cyclic peptide. RACI Natural Products Symposium, Sydney **2013**
8. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids. UNSW Medicinal Chemistry Symposium, Sydney **2013**
9. Pohlianin C, an anti-malarial cyclic peptide. RACI Natural Products Symposium, Sydney **2012**
10. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids and anti-malarial applications. RACI Organic Symposium **2012**

### **ORAL PRESENTATIONS**

1. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids, School of chemistry seminar, University of New South Wales, Nov **2012**. (*Research talk*)
2. Synthesis of homologated amino acid derivatives containing three vicinal fluorine atoms placed stereo specifically along the backbone” School of chemistry seminar, University of New South Wales, Sep **2013**. (*Research talk*)
3. Synthesis of  $\alpha,\beta,\gamma$ -trifluoro- $\delta$ -amino acids, School of chemistry seminar, University of New South Wales, Jul **2014**. (*Research talk*)
4. “Molecular Origami” One-minute Thesis Competition at UNSW Australia **2014** (*One minute research competition talk*)