

Curriculum vitae

Dr. D.R.C. Venkata Subbaiah, Ph.D.

Assistant Scientist

Department of Oncological Sciences
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Education:

Ph.D., Organic Chemistry, Sri Venkateswara University, Tirupati, India, September 2003 – August 2007.

Master of Philosophy, Organic Chemistry, Sri Venkateswara University, Tirupati, India February 2002 – September 2003.

Master of Science, Organic Chemistry, Sri Venkateswara University, Tirupati, India October 1999 – May 2001.

Bachelor of Education, Physical Sciences & English, Sri Krishnadevaraya University, India August 1998 – October 1999.

Bachelor of Science, Chemistry, Physics & Geology, Sri Venkateswara University, India August 1994 – April 1997.

Research Experience:

Assistant Scientist, April 2013 – Present.

Department of Oncological Sciences & Structural and Chemical Biology, Mount Sinai School of Medicine, New York, USA

Principal Investigator: *Dr. E. Premkumar Reddy*

- Involved in the design and development of multi-step organic small molecule synthesis, enantioselective synthesis, immunoconjugation, amino acid conjugation to small organic molecules and structure activity analysis of novel sulfones. Also involved in design and development of the inhibitors for serine, threonine and tyrosine kinases. Determination of the biological activity and study the mechanisms of tumor cell killing by novel organic compounds.

Post Doctoral Fellow, March 2010 – March 2013.

Department of Oncological Sciences & Structural and Chemical Biology, Mount Sinai School of Medicine, New York, USA

Principal Investigator: *Dr. E. Premkumar Reddy*

- Synthesized milligram to multigram quantities of substituted heterocyclic molecules - unsaturated sulfones, sulfonamides, (*Z*)-2-arylidene-2*H*-benzo[*b*][1,4]thiazin-3(*4H*)-one and (*Z*)-7-arylidene-2-(arylamino)-5*H*-pyrimido[4,5-*b*][1,4]thiazin-6(*7H*)-one anti-cancer agents. - via multi-step synthesis. This was a part of lead identification and optimization efforts for developing novel anti-cancer agents. This contribution improves the focus on discovering and developing targeted, small molecule product candidates for the treatment of cancer. **One of the major findings in this field is the compound; Rigosertib® which is in Phase III clinical trials for Myelodysplastic Syndromes (MDS), Pancreatic Cancer, Head & Neck cancers and other hematological diseases and solid tumors. Involved in the process development and scale up of Rigosertib as a part of the team.** Also two molecules from benzthiazinone series are in pre clinical stage for various types of cancer treatment.

Post Doctoral Fellow, April 2008 – February 2010.

Fel's Institute for Cancer Research, Temple University, Philadelphia, USA

Principal Investigator: *Dr. E. Premkumar Reddy*

- Involved in the design and development of anti cancer agents pyridopyrimidinones, which inhibit with CDK-4 and ARK-5 kinases. This was a part of lead identification and optimization efforts against Receptor Tyrosine Kinases for developing novel anti-cancer agents. Initial screening identified two potent molecules and these molecules are in preclinical stage for cancer treatment. Apart from this, also involved in the development of a new series of sulfonamide and carboxamide compounds for anti-cancer therapy, which interfere with tubulin binding. One of the lead compounds from this series is undergoing preclinical program for cancer treatment.

Research Mentor, March 2010 – Present

Mount Sinai School of Medicine, New York, USA

- Trained two undergraduate students in the area of synthesis and structure elucidation of small molecule cancer therapeutics; α,β -unsaturated sulfones and benzthiazin-3-one chemo types.

Research Associate, September 2007 –February 2008.

Department of Organic Chemistry, Indian Institute of Science, Bangalore, India

Principal Investigator: *Prof. A. Srikrishna*

- Synthesized biologically active marine sesquiterpenes 2-(Formylamino) trachyopsane (anticancer) and *ent*-2-(Isocyano)trachyopsane (antifouling), enantioselectively employing a biomimetic rearrangement of a neopupukeanane into a trachyopsane as the key step starting from (*R*)-carvone. This is the first time in the scientific history that we prepared these natural products and also prepared the molecules in shortest synthetic route with an overall excellent yield.

Senior Research Fellow, April 2006 – August 2007.

Council of Scientific and Industrial Research (CSIR), Govt. of India, INDIA

Principal Investigator: *Dr. V. Padmavathi*

- Designed and developed sulfone linked small molecules with nitrogen, oxygen, sulfur, selenium and phosphorus for anti-inflammatory and anti-cancer activities. Preliminary results showed that some of the compounds in these series proved as potential anti-cancer and anti-inflammatory molecules.

Doctoral Student, February 2002 – August 2007.

Department of Chemistry, Sri Venkateswara University, Tirupati, India

Principal Investigator: *Dr. V. Padmavathi*

- Synthesized milligram to multigram quantities of heterocyclic compounds – pyrazoles, isoxazoles, pyrimidines, thiopyrimidines, pyrroles, pyrazolines, isoxazolines, selenadiazoles, thiadiazoles, phosphadiazoles, oxazolines and thiazolines as antimicrobial, anti-oxidant, anti-inflammatory and anti-cancer agents. Introduced various fundamental transformations for the development of above-mentioned chemical libraries.
- This work was presented in three podium presentations in regional meetings.

Part-time Teaching Assistant, February 2003 – March 2007.

Department of Organic Chemistry, D.R.W. College, Gudur, India

- Worked as an organic chemistry teaching assistant and taught several organic chemistry topics including natural products and carbohydrate chemistry to final and first year Masters Students.

Research Achievements:

- Involved in the synthesis and process development of Rigosertib, which completed Phase III clinical trails in about 1000 patients for various types of cancers: myelodysplastic syndromes (MDS), pancreatic cancer, head & neck cancer and other hematological diseases and solid tumors.
- Three of the potent molecules developed by me as a part of our research group are undergoing pre clinical trials for various types of cancer treatment.
- Two biologically active marine natural products were synthesized for the first time in scientific history in shortest synthetic route with an overall excellent yield using biomimetic approach.
- Seven of the research publications were highlighted in ChemInform (Wiley - VCH Science Publishers, Germany), which selectively highlights the most significant and innovative work from more than 100 high impact journals.

Awards:

- **Senior Research Fellow** awarded by **Council of Scientific and Industrial Research (CSIR)**, Govt. of India, New Delhi, 2006 – 2007.
(<http://www.csir.res.in/home.asp>)

- **2nd Rank in Sri Venkateswara University Entrance Test for Master of Science, Chemistry-1999.** (Participated more than 2500 students for the entrance examination and attained 2nd rank.)

Memberships in Professional:

- Oriental Journal of Chemistry – Editorial Board Member
(<http://www.orientjchem.org/editorial-board/>)
Duties: Provide input on editorial needs and review manuscripts, as requested.
Participate in the evaluation of the quality and effectiveness of the journal.
Helps in identifying the suitable reviewer.
- American Academic and Scholarly Research Center (AASRC) – Advisory Board Member (http://aasrc.org/?page_id=38)
Duties: Contribute to policy and strategy in collaboration with the editorial executive.
- Strategic Research Society (SRS) – Advisory Board Member (http://srs.sriweb.org/?page_id=653)
Duties: Provide the tools for researchers to conduct their research projects through funding opportunities provided by personal and organizational donors
- Member – American Chemical Society: 2011 – Present
(<http://www.acs.org/content/acs/en.html>)
Duties: Attend the national meetings and present the research work in the meetings.
- Member – New York Academy of Sciences: 2013 – Present
(<http://www.nyas.org/>)
Duties: Attend the national meetings and present the research work in the meetings.
- Member – Indian Council of Chemists (2003 – 2005).
(<http://chemicc.com/>)
Duties: Attend the national meetings and present the research work in the meetings.

Reviewer for Journals:

- Bioorganic and Medicinal Chemistry
- Journal of Medicinal Chemistry
- Organic & Biomolecular Chemistry
- Medicinal Chemistry Communications Journal
- Tetrahedron
- Tetrahedron Letters
- Current Medicinal Chemistry
- Molecules
- International Journal of Organic Chemistry
- Letters in Organic Chemistry
- Archiv der Pharmazie
- Organic Communications

- Journal of Pharmacy and Pharmacology

Community Service:

- Volunteer, National Service Scheme 1995-1997, India.
- Volunteer, Janmabhoomi Program, January 1–8, 1997, India.
- Volunteer, Pulse Polio Program, 7th December 1996 & 18th January 1997, India.

Publications:

1. M.V. Ramana Reddy*, Balireddy Akula, Stephen C Cosenza, Saikrishna Athuluridivakar, Muralidhar R Mallireddigari, Venkat R. Pallela, Vinay K. Billa, **D.R.C. Venkata Subbaiah**, E. Vijaya Bharathi, Rodrigo Vasquez-Del Carpio Amol Padgaonkar, Stacey J Baker and E. Premkumar Reddy*, Discovery of 8-Cyclopentyl-2-[4-(4-methyl-piperazin-1-yl)-phenylamino]-7-oxo-7,8-dihydro-pyrido[2,3-d]pyrimidine-6-carbonitrile (7x) as a Potent Inhibitor of the Cyclin-Dependent Kinase 4 (CDK4) and AMPK-related Kinase 5 (ARK5), *J. Med. Chem.*, (Just accepted for publication).
2. M.V. Ramana Reddy*, Muralidhar R Mallireddigari, Venkat Pallela, Stephen C Cosenza, Vinay Billa, Balaiah Akula, **D.R.C. Venkata Subbaiah**, E. Vijaya Bharathi, Amol Padgaonkar, Hua Lv, James M. Gallo and E. Premkumar Reddy*, Design, Synthesis and Biological Evaluation of (*E*) N-Aryl-2-arylethene-sulfonamide Analogues as Potent and Orally Bioavailable Microtubule-targeted Anticancer Agents, *J. Med. Chem.*, **2013**, 56, 5562-5586.
3. Venkat R. Pallela, Muralidhar R. Mallireddigari, Stephen C. Cosenza, Balaiah Akula, **D. R. C. Venkata Subbaiah**, E. Premkumar Reddy* and M. V. Ramana Reddy*, Hydrothiolation of benzyl mercaptan to arylacetylene: Application to the synthesis of (*E*) and (*Z*)-isomers of ON 01910.Na(Rigosertib®), a phase III clinical stage anti-cancer agent, *Org. Biomol. Chem.* **2013**, 11, 1964–1977. (Cited 1 time).
4. M. V. Ramana Reddy*, Balaiah Akula, Stephen C. Cosenza, Clement M. Lee, Muralidhar R. Mallireddigari, Venkat R. Pallela, **D. R. C. Venkata Subbaiah**, Andrew Udofa, and E. Premkumar Reddy*, (*Z*)-1-Aryl-3-arylamino-2-propen-1-ones, Highly Active Stimulators of Tubulin Polymerization: Synthesis, Structure–Activity Relationship (SAR), Tubulin Polymerization, and Cell Growth Inhibition Studies, *J. Med Chem*, **2012**, 55, 5174–5187. (Cited 5 times).
5. A. Srikrishna*, G. Ravi, **D. R. C. Venkata Subbaiah**, Enantioselective first Total Syntheses of 2-(Formylamino)trachyopsane and *ent*-2-(Isocyano)trachyopsane via Biomimetic Approach, *Synlett.* **2009**, 32-34. (Cited 10 times).
 *** This article is highlighted in [ChemInform, Volume 40, Issue 19, page: no, May 12, 2009. DOI: 10.1002/chin.200919176](#)
6. V. Padmavathi*, K. Mahesh, **D. R. C. Venkata Subbaiah**, D. Deepti, G. Sudhakar Reddy, Synthesis of a new class of sulfur linked bis(heterocycles), *Arkivoc*, **2009**, x, 195–208. (Cited 3 times).

7. V. Padmavathi*, K. Mahesh, **D. R. C. Venkata Subbaiah**, A. Padmaja, A new class of sulfone-linked bis 1,2,3-selenadiazoles, 1,2,3-thiadiazoles and 2H-diazaphospholes, *Heteroatom Chem.*, **2008**, 19, 261–265. (Cited 3 times).
*** This article is highlighted in [ChemInform, Volume 39, Issue 31, page: no, July 29, 2008. DOI: 10.1002/chin.200831039.](#)
8. V. Padmavathi*, K. Sudheer, **D. R. C. Venkata Subbaiah**, K. Mahesh, Synthesis of a new class of spiro-heterocycles, *J. Heterocycl. Chem.* **2008**, 45, 513–519. (Cited 2 times).
*** This article is highlighted in [ChemInform, Volume 39, Issue 31, page: no, July 29, 2008. DOI: 10.1002/chin.200831163.](#)
9. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, K. Mahesh, T. Radhalakshmi, Synthesis and bioassay of amino-pyrazolone, amino-isoxazolone and amino-pyrimidinone derivatives, *Chem. Pharm. Bull.*, **2007**, 55, 1704–1709. (Cited 11 times).
*** This article is highlighted in [Cheminform, Volume 39, Issue 20, page: no, May 13, 2008. DOI: 10.1002/chin.200820150.](#)
10. V. Padmavathi*, B. Jagan Mohan Reddy, **D. R. C. Venkata Subbaiah**, A. Padmaja, Michael adducts – Synthons for a new class of 1,4-dispirocyclohexane derivatives, *Indian J. Chem.*, **2006**, 45B, 808–812. (Cited 8 times).
11. S. Fang*, V. Padmavathi, Y. Koteswara Rao, **D. R. C. Venkata Subbaiah**, P. Thriveni, M. Geetangili, A. Padmaja, Y.M. Tzeng, Biological evaluation of sulfone derivatives as anti-inflammatory and tumor cells growth inhibitory agents, *International Immunopharmacology*, **2006**, 6, 1699–1705. (Cited 17 times).
12. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, B. Jagan Mohan Reddy, Double Michael addition reactions to tetrakis sulfonyl activated olefins, *J. Heterocyclic Chem.* **2005**, 42, 255–258. (Cited 4 times).
*** This article is highlighted in [ChemInform, Volume 36, Issue 32, page: no, August 9, 2005. DOI: 10.1002/chin.200532138.](#)
13. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, A. Balaiah, B. Chandra Obula Reddy, A. Padmaja, Michael addition of active methylene compounds to α,β -unsaturated sulfones, *Indian J. Chem.* **2005**, 44B, 2569–2574. (Cited 12 times).
14. V. Padmavathi*, S. M. Basha, **D. R. C. Venkata Subbaiah**, T. V. Ramana Reddy, A. Padmaja, Gem-disubstituted 4-oxocyclohexanes: Source for spiro Heterocycles, *J. Heterocyclic Chem.* **2005**, 42, 797–802. (Cited 4 times).
*** This article is highlighted in [ChemInform, Volume 36, Issue 47, page: no, November 22, 2005. DOI: 10.1002/chin.200547037.](#)
15. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, M. Rajagopala Sarma, A. Balaiah, Michael adducts-Source for pyrazolidinediones, isoxazolidinediones, pyrimidinetriones and thioxopyrimidininediones. *Heteroatom Chem.* **2004**, 15, 477–481. (Cited 3 times).

16. V. Padmavathi*, B. Jagan Mohan Reddy, **D. R. C. Venkata Subbaiah**, Bischalcones – Synthons for a new class of bis heterocycles, *New J. Chem.*, **2004**, 28, 1479–1483. (Cited 11 times).

*** This article is highlighted in **ChemInform**, [Volume 36, Issue 21](#), page: no, May 24, 2005. DOI: [10.1002/chin.200521115](https://doi.org/10.1002/chin.200521115).

17. V. Padmavathi*, B. Chandra Obula Reddy, **D. R. C. Venkata Subbaiah**, A. Padmaja, Sulfonylacetic acids – Source for substituted 2-oxazolines. *Indian J. Chem.* **2004**, 43B, 2456–2458. (Cited 6 times).

Oral Presentations:

1. **D. R. C. Venkata Subbaiah**, E. Premkumar Reddy* and M. V. Ramana Reddy*, ON 108110 & ON 108600: Novel Small Molecule Kinase Inhibitors, Sixth Annual Research Retreat, Department of Structural and Chemical Biology, Edith Macy Conference Center, New York, NY, USA, October 10 & 11, 2013.
2. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, Michael adducts - Source for different heterocycles, Second Junior NOST symposium, International College for Girls, Jaipur, India, October 11–14, 2006.
3. V. Padmavathi*, B. Chandra Obula Reddy, **D. R. C. Venkata Subbaiah**, Synthesis of 2-oxazolines and 2-thiazolines using lanthanide amino alkoxides, One-day symposium on Developments in Chemistry, Pondicherry University, Pondicherry, India, March 17, 2006.
4. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, B. Jagan Mohan Reddy, A. Padmaja, Double Michael addition reactions to tetrakis sulfonyl activated olefins, National Symposium on “Recent Trends in Heterocyclic Chemistry (NSRTHC)”, Jamal Mohammed College, Tiruchirapalli, India, September 24–25, 2004.

Poster Presentations:

1. **D. R. C. Venkata Subbaiah**, Balireddy Akula, Muralidhar R Mallireddigari, Stephen C Cosenza, Venkat R Pallela, Vijaya Bharathi, E. Premkumar Reddy*, M. V. Ramana Reddy*. (Z)-7-arylidene-2-(arylamino)-5H-pyrimido[4,5-b][1,4]thiazin-6(7H)-ones as specific inhibitors of PI3K α and δ , 247th ACS National Meeting & Exposition, Dallas, Texas, USA, to be held on March 16–20, 2014.
2. Balireddy Akula, Venkat R Pallela, Saikrishna Atuluridivakar, Muralidhar R Mallireddygar, Stephen C Cosenza, **D.R.C. Venkata Subbaiah**, Vijaya Bharathi, E. Premkumar Reddy*, M. V. Ramana Reddy*. Biotinylation of small molecules for target identification, 247th ACS National Meeting & Exposition, Dallas, Texas, USA, to be held on March 16–20, 2014.
3. Sool Yeon Cho, Benjamin S. Hoffman, Amol Padgaonkar, Stephen C. Cosenza, Venkat Palella, Muralidhar R. Mallireddigari, **D. R. C. Venkata Subbaiah**, Revathi Patti, M. V. Ramana Reddy*, E. Premkumar Reddy*, John Roboz*. Mass Spectrometric Binding

Study on Novel Anticancer Agents as Tubulin Depolymerizer. 61st American Society for Mass Spectrometry (ASMS), Minneapolis, USA, June 9–13, 2013.

4. Venkat R Pallela, Muralidhar R Mallireddigari, Balaiah Akula, **D. R. C. Venkata Subbaiah**, E. Premkumar Reddy*, M. V. Ramana Reddy*. Novel 2-benzylidene benzothiazolidinones as potent and selective inhibitors of Protein kinase CK2 and PIM kinases. 14th Tetrahedron Symposium, Vienna, Austria, June 25–28, 2013.
5. **D. R. C. Venkata Subbaiah**, Venkat R Pallela, Amol Padgaonkar, Olga Rechkoblit, Revathi Patti, Vinkaykumar Billa, Muralidhar R Mallireddigari, Balaiah Akula, Stephen C Cosenza, Aneel Agarwal, E. Premkumar Reddy*, M. V. Ramana Reddy*. ON 108110 A Novel kinase inhibitor: Description of the synthesis, kinase profiling and Co-crystal structure, 245th ACS National Meeting & Exposition, New Orleans, Louisiana, USA, April 7–13, 2013.
6. Venkat R Pallela, Amol Padgaonkar, Olga Rechkoblit, **D.R.C. Venkata Subbaiah**, Stephen C Cosenza, Aneel Agarwal, E. Premkumar Reddy*, M. V. Ramana Reddy*. Design, synthesis, biological evaluation and co-crystal study of novel small molecule inhibitors of protein kinase CK2, 2-benzylidene-4*H*-benzo[1,4]thiazin-3-one compounds, 245th ACS National Meeting & Exposition, New Orleans, Louisiana, USA, April 7–13, 2013.
7. Amol Padgaonkar, Olga Rechkoblit, Stephen Cosenza, Venkat R. Pallela, **Venkata Subbaiah D.R.C.**, M.V. Ramana Reddy, Aneel Aggarwal, E. Premkumar Reddy*, Discovery and biological characterization of ON108600, a small molecule inhibitor of protein kinase CK2, AACR Annual Meeting 2013, Washington, DC, USA, April 6–10, 2013.
8. **D. R. C. Venkata Subbaiah**, Venkat R Pallela, Stephen C Cosenza, Gayathri Panda, Muralidhar M Mallireddigari, E. Premkumar Reddy*, M. V. Ramana Reddy*. Design, synthesis and biological study of novel epidermal growth factor receptor kinase (EGFRK) inhibitors, 243rd ACS National Meeting & Exposition, San Diego, California, USA, March 25–29, 2012.
9. Sushmita Sen, **Venkata S Dandu R C**, Muralidhar R Mallireddigari, Baliah Akula, E. Premkumar Reddy*, M. V. Ramana Reddy*. N-Aryl-N-(arylsulfonyl)benzamides: Potent mitotic cell cycle inhibitors, 239th ACS National Meeting & Exposition, San Francisco, California, USA, March 21–25, 2010.
10. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, G. Sudhakar Reddy, A. Padmaja, Synthesis and bioassay of five and six membered heterocycles, 11th ISCB conference (ISCB–2007), International conference on Advances in Drug Discovery Research, Welcome Hotel Rama International, Chikalhana, Aurangabad, Maharashtra, India, February 24–26, 2007.
11. V. Padmavathi*, K. Mahesh, **D. R. C. Venkata Subbaiah**, A. V. Nagendra Mohan, Phenacylsulfonylacetic acid methyl ester – Synthon for 1,2,3-selena/thiadiazoles and 2*H*-diazaphospholes, National Conference in Chemistry, Central College, Bangalore, India, September 27–29, 2006.

12. V. Padmavathi*, P. Thriveni, **D. R. C. Venkata Subbaiah**, K. Mahesh, G. Sudhakar Reddy, Phenacylsulfonylacetic esters - Source for thiadiazoles, triazoles and oxadiazoles, National Conference on Current Research Trends & Developments in Heterocyclic Chemistry - 2006, P.G. College of Sciences, Saifabad, Osmania University, Hyderabad, India, March 17–19, 2006.
13. N. Subba Reddy, B. Jagan Mohan Reddy, **D. R. C. Venkata Subbaiah**, A.V. Nagendra Mohan, V. Padmavathi*, Michael adducts-Synthons for a new class of 1,4-dispirocyclohexane derivatives, National Seminar on Role of Chemistry in drug development strategies, S.V. Arts College for Men, TTD, Tirupati, India, August 13–14, 2005.
14. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, A.Padmaja, Michael Adducts-Synthons for Pyrazolidinediones, Isoxazolidinediones, Pyrimidinetriones and Thioxopyrimidinediones, 23rd Indian Council of Chemists, Kishinchand Challaram College, Mumbai, India, October 29–31, 2004.
15. V. Padmavathi*, B. Chandra Obula Reddy, **D. R. C. Venkata Subbaiah**, K. Venugopal Reddy, M. Rajagopala Sarma, Sulfonylacetic acids – Source for substituted 2-oxazolines, National seminar on “Role of Chemistry in the Emerging Areas of Applied Sciences” (RCEAS–2004), Sri Venkateswara University, Tirupati, India, March 15–17, 2004.
16. V. Padmavathi*, **D. R. C. Venkata Subbaiah**, K. Venugopal Reddy, B. Chandra Obula Reddy, A. Padmaja, Michael addition of active methylene compounds to α , β -unsaturated sulfones, 22nd Indian Council of Chemists, Indian Institute of Technology, Roorkee, India, October 17–19, 2003.
17. Participated in National Conference on Current Trends in the Chemistry of Heterocyclic Compounds (NCCTCH), Sri Venkateswara University, Tirupati, India, March 13–14, 2000.