

CURRICULUM VITAE

Dr. Rajkumar Subramani

(Brain Pool Fellow)

Assistant Professor,

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Academic Records

- **Research Fellow**, Massachusetts General Hospital and Harvard Medical School, USA
Nov 2022-Feb 2024

Research Area: “Development radiopharmaceuticals for cancer diagnosis and therapy”

- **Brain Pool-Korea Research Fellowship**, Kyungpook National University, South Korea.
Nov 2019-Sep 2022

Research Area: “Development of ADC through click reaction & radiopharmaceuticals for cancer diagnosis and therapy”

- **Postdoctoral Researcher**, ShanghaiTech University, China. Feb 2017-Oct 2019

Research Area: “Asymmetric Enamide Functionalization and Dynamic Kinetic Resolution Reaction”

- **Ph.D.**, in chemistry, VIT University, Tamil Nadu, India. July 2011- Dec 2016

Title of the Thesis: *Ru(II)-Catalyzed- β -Carboline and Phthalazinones/Pyridazinones Directed C-H, C-H/N-H, C-H/O-H Activation and Functionalization-Isolation of Cycloruthenated Complexes and Its Application Towards Anticancer Study.*

- **Master’s Degree** in Chemistry, University of Madras, India. July 2007- May 2009
- **Bachelor’s Degree** in Chemistry, University of Madras, India. July 2004- May 2007

Awards and Fellowships

- **Gold Medalist, 2007 Bachelor’s Degree** in Chemistry at Government Arts College, Nandanam, Chennai, University of Madras, India.
- Awarded Senior Research Fellowship (SRF) from Council of Scientific and Industrial Research (CSIR) October-2015.

Research Experience

- **Research Fellow**, Massachusetts General Hospital and Harvard Medical School, USA
Nov 2022-till date
- **Korea Research Fellowship** (Postdoctoral Researcher), Kyungpook National University, South Korea.
Nov 2019-Sep 2022
- **Postdoctoral Researcher**, School of Physical Science and Technology, ShanghaiTech University, China.
Feb 2017- Oct-2019
- **CSIR-Senior Research Fellow**
VIT University, Vellore, India. Oct 2015- Dec 2016

Topic-*Ru(II)-Catalyzed, β -Carboline Alkaloid Directed C-H Functionalization and Isolation of Its Cycloruthenated Intermediates.*

- **Project Assistant (DST SERB).** **Nov 2012-Sep2015**
VIT University, Vellore, India.

Topic- Transition Metal Complexes Bearing Pyridyl-Amine and Pyridyl-Porphyrin Ligands-Synthesis, Characterization, and Its Application Towards Catalytic Oxidation of Alkenes to Epoxides and Alcohols

- **Research Associate** **Jan 2011-Nov 2012**
VIT University, Vellore, India.

- Worked **Syngene International Limited, Bangalore, India Trainee Scientist – Synthetic Chemistry.** **Apr 2010- Sep 2011**

Synthesized several organic heterocycles which requires multistep synthetic approach
Handled moisture sensitive reagents.

Research Interest

- Development of Radiopharmaceuticals for Cancer Diagnosis and Therapy
- Asymmetric Catalysis.
- Metal Catalyzed or Metal-Free C-H Activation and Functionalization.
- Synthetic Organometallic Chemistry

Scientific Skills & Technical Exposure

- **Instrument handled:** NMR (Bruker – 400 & 500 MHz), HRMS (Agilent Technologies 6230), HPLC (Agilent 1260), GC-MS, UV-Vis, IR, Fluorescence Spectroscopy, Glove Box, Circular dichroism (CD) and Size-Exclusion Chromatography (SEC).
- **Purification methods:** Flash column chromatography, Column chromatography, Recrystallisation and Distillation.
- Conducted reaction from microgram to multi gram scale.
- Experience in handling air and moisture sensitive reagent.
- Familiar with modern literature search methods, namely Reaxys, Sci-finder and other similar search engines
- **Computer skills:** Awareness on commonly used general software like MS Office, Origin, Marvin Sketch, Chem draw, Bruker Topspin 3.1 and MestReNova

Publications

1. Optimizing and determining the click chemistry mediated Cu-64 radiolabeling and physiochemical characteristics of trastuzumab conjugates. Bhise A, Park H, **Rajkumar S**, Lee K, Cho SH, Lim JE, Kim JY, Lee KC, Yoon YR, Yoo J.
Biochem Biophys Res Commun. **2022**, 638, 28
2. Bora Nam, Woonghee Lee, Swarbhanu Sarkar, Jae-Hong Kim, Abhinav Bhise, Hyun Park, Jung Young Kim, Phuong Tu Huynh, **Subramani Rajkumar**, Kiwoong Lee, Yeong Su Ha, Seong Hwan Cho, Jeong Eun Lim, Kyung Won Kim, Kyo Chul Lee, Kyoungsoo Suk & Jeongsoo Yoo. In vivo detection of hydrogen sulfide in the brain of live mouse: application in neuroinflammation models.
Eur. J. Nucl. Med. Mol. Imaging. **2022**, 49, 4073-4087

3. Preclinical Evaluation of hnRNPA2B1 Antibody in Human Triple-Negative Breast Cancer MDA-MB-231 Cells via PET Imaging. Abhinav Bhise, Hyun Park, Woonghee Lee, Swarbhanu Sarkar, Yeong Su Ha, **Subramani Rajkumar**, Bora Nam, Jeong Eun Lim, Phuong Tu Huynh, Kiwoong Lee, Ji-Yoon Son, Jung Young Kim, Kyo Chul Lee, and Jeongsoo Yoo.
Pharmaceuticals **2022**, *14*(1), 1677
4. Successful Application of CuAAC Click Reaction in Constructing ⁶⁴Cu-Labeled Antibody Conjugates for Immuno-PET Imaging. Woonghee Lee, Swarbhanu Sarkar, Rammyani Pal, Jung Young Kim, Hyun Park, Phuong Tu Huynh, Abhinav Bhise, Kondapa Naidu Bobba, Kwang Il Kim, Yeong Su Ha, Nisarg Soni, Wanook Kim, Kiwoong Lee, Jung-Min Jung, **Subramani Rajkumar**, Kyo Chul Lee, and Jeongsoo Yoo.
ACS Appl. Bio Mater. **2021**, *4*, 2544–2557
5. A short PEG linker alters the in vivo pharmacokinetics of trastuzumab to yield high-contrast immuno-PET images. Woonghee Lee, Kondapa Naidu Bobba, Jung Young Kim, Hyun Park, Abhinav Bhise, Wanook Kim, Kiwoong Lee, **Subramani Rajkumar**, Bora Nam, Kyo Chul Lee, Sang Hyuk Lee, Sanghwan Ko, Hye Jin Lee, Sang Taek Jung and Jeongsoo Yoo.
J. Mater. Chem. B, **2021**, *9*, 2993-2997
6. Kinetic Resolution of 2-N-Acylamido Tertiary Allylic Alcohols: Asymmetric Synthesis of Oxazolines. Yongkai Pan, Qianwen Jiang, **Subramani Rajkumar**, Chaofan Zhu, Jinglei Xie, Shaoze Yu, Yunrong Chen, Yu-Peng He, Xiaoyu Yang.
Adv. Synth. Catal. **2021**, *363*, 200-207
7. Chiral Phosphoric Acid Catalyzed Kinetic Resolution of 2-Amido Benzyl Alcohols: Asymmetric Synthesis of 4H-3,1-Benzoxazines. **Subramani Rajkumar**, Mengyao Tang and Xiaoyu Yang.
Angew. Chem. Int. Ed. **2020**, *59*, 2333–2337
8. Chiral Phosphoric Acid-Catalyzed Stereodivergent Synthesis of Trisubstituted Allenes and Computational Mechanistic Studies. Jiawen Wang, Sujuan Zheng, **Subramani Rajkumar**, Jinglei Xie, Na Yu, Qian Peng and Xiaoyu Yang.
Nat. Commun. **2020**, *11*, 5527
9. Kinetic Resolution of Tertiary 2- Alkoxy-carboxamido-Allylic Alcohols by Chiral Phosphoric Acid Catalyzed Intramolecular Transesterification. **Subramani Rajkumar**, Shunlong He and Xiaoyu Yang.
Angew. Chem. Int. Ed. **2019**, *58*, 10315–10319
10. Asymmetric Synthesis of β -Indolyl Cyclopentanones and Cyclopentylamides with an All-Carbon Quaternary Stereocenter via Chiral Phosphoric Acid Catalyzed Friedel–Crafts Alkylation Reactions. Wei Liu, **Subramani Rajkumar**, Weihu Wu, Ziyu Huang and Xiaoyu Yang.
Org. Lett. **2019**, *21*, 3563–3567

11. Regioselective and Enantioselective Synthesis of β -indolyl Cyclopentenamides Through Chiral Anion Catalysis. **Subramani Rajkumar**, Jiawen Wang, Sujuan Zheng, Donglei Wang, Xueqian Ye, Xuejiao Li, Qian Peng and Xiaoyu Yang.
Angew. Chem. Int. Ed. **2018**, *57*, 13489–13494
12. Asymmetric Transformations of α -Hydroxy Enamides Catalyzed by Chiral Brønsted Acids. **Subramani Rajkumar**, Jiawen Wang and Xiaoyu Yang
Synlett **2019**, *30*, 869-874
13. Expedient Synthesis of New Cinnoline Diones by Ru-Catalyzed Regioselective Unexpected Deoxygenation-Oxidative Annulation of Propargyl Alcohols with Phthalazinones and Pyridazinones. **Subramani Rajkumar**, S.A. Savarimuthu, R. Senthilkumaran, C. M. Nagaraja, and T. Gandhi.
Chem. Commun., **2016**, *52*, 2509-2512
14. Ru(II)-Catalyzed β -Carboline Directed C-H Arylation and Isolation of Its Cycloruthenated Intermediates. **Subramani Rajkumar**, S. Karthik and T. Gandhi.
J. Org. Chem., **2015**, *80*, 5532–5545
15. Synthesis and Reactivity Studies of Dicationic Dihydrogen Complexes Bearing Sulfur-Donor Ligands: A Combined Experimental and Computational Study. Gandhi, T., **Subramani Rajkumar**, V. Prathyusha and U. Deva Priyakumar
Eur. J. Inorg. Chem., **2013**, *2013*, 1434

Scientific Conference /Workshop Participated

- Poster Presentation in **24th International Symposium on Radiopharmaceutical Sciences**, May- 2022, Nantes Congress Center, Nantes, Pays De La Loire, France.
- Poster Presentation in **11th National Organic Chemistry conference, August-2019**, held at ShanghaiTech University.
- Poster Presentation in **17th CRSI National Symposium in Chemistry**, Feb- 2015, CSIR-NCL, Pune, India
- Participated in **9th CRSI-RSC Symposium**, Feb- 2015, CSIR-NCL, Pune, India.
- Poster Presentation in **National Symposium on Recent Advances in Chemistry**, Mar-2013, Pondicherry University, Puducherry, India.
- Poster Presentation in International Conference on **Emerging Trends in Chemical Sciences**, Dec-2013, VIT University, Tamil Nadu, India.

- Poster Presented on “Synthesis and Reactivity Studies of New Dicationic Dihydrogen Complexes Bearing Sulfur-Donor Ligands” **Modern Trends in Inorganic Chemistry-XIV** (2011) Hyderabad, India


Personal Details

Full Name : Subramani Rajkumar
Date of Birth : 8th April 1987
Gender : Male
Nationality : Indian
Language Known : Tamil, English
Marital Status : Married
Permanent Address – No- 152 Bajanai Koil Street, Meleri Village & Post
Nemili(T. K), Ranipet District, Tamil Nadu, INDIA
PIN: 632502

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge and additional information may be provided based on further necessary processing stages.

Date: 27-04-2024


Dr. Rajkumar Subramani