

CURRICULUM VITAE

Sushobhan Mukhopadhyay, Ph.D.

Assistant Scientist

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Professional Experience

Assistant Scientist: *July 2022-Present*
Department of Medicinal Chemistry, University of Florida, Gainesville, Florida.

Postdoctoral Associate: *Dec 2020-June 2022*
Department of Medicinal Chemistry, University of Florida, Gainesville, Florida.

Education

Ph.D. (Medicinal Chemistry): from CSIR-Central Drug Research Institute- Lucknow, India in 2020.

Master of Science (Organic Chemistry) degree from “University of Kalyani, Kalyani, West Bengal, India” in 2011.

Bachelor of Science (Chemistry) degree from “Krishnath College, Berhampore, West Bengal, India” in 2009.

Skills and Expertise

- Synthetic organic chemistry: successful handling of milligram to multigram scale reactions
- Experienced in handling air, light, hazardous, and moisture sensitive compounds, and performing reactions under an inert atmosphere and their proper purification.
- Spectroscopic data characterization and interpretation skills [IR, 1-D and 2-D NMR (COSY, HMQC, HMBC etc.), MS]
- Modern analytical techniques such as NMR (*Bruker*), Mass-spectroscopy, FT-IR
- Microwave synthesizer (*Anton Paar, Monowave-400*)
- Analytical and preparative High-Performance Liquid Chromatography (HPLC) -*Agilent Technologies*
- Experience in lab safety and management
- Basic understanding of Theoretical and Computational Chemistry

Publications

Research Article

1. Smith, K. E.; Rogers, J. M.; Sharma, A.; McCurdy, C. R.; Weiss, S. T.; Dunn, K. E.; Feldman, J. D.; Kuntz, M. A.; **Mukhopadhyay, S.**; Kanumuri, S. R. R.; Taylor, R. C.; Epstein, D. H. Responses to a “Typical” Morning Dose of Kratom in People Who Use Kratom Regularly: A Direct-Observation Study. *J. Addict. Med.* 2024 Jan 4. doi: [10.1097/ADM.0000000000001259](https://doi.org/10.1097/ADM.0000000000001259)
2. Melchert, P. W.; Zhang, Q.; **Mukhopadhyay, S.**; Kanumuri, S. R. R.; McCurdy, C. R.; Markowitz, J. S. An *in vitro* evaluation of kratom (*Mitragyna speciosa*) on the catalytic activity of carboxylesterase 1 (CES1). *Chem.-Biol. Interact.* 2023, 384, 110715.
3. Laforest, L. C.; Kuntz, M. A.; Kanumuri, S. R. R.; **Mukhopadhyay, S.**; Sharma, A.; O'Connor, S. E.; McCurdy, C. R.; Nadakuduti, S. S. Metabolite and Molecular Characterization of *Mitragyna speciosa* Identifies Developmental and Genotypic Effects on Monoterpene Indole and Oxindole Alkaloid Composition. *J. Nat. Prod.* 2023, 86, 1042–1052.

4. Ortiz, Y. T.; Bilbrey, J. A.; Felix, J. S.; Kienegger, E. A.; Mottinelli, M.; **Mukhopadhyay, S.**; McCurdy, C. R.; McMahon, L. R.; Wilkerson, J. L. Cannabidiol and Mitragynine Exhibit Differential Interactive Effects in the Attenuation of Paclitaxel-Induced Mechanical Allodynia, Acute Antinociception, and Schedule-Controlled Responding in Mice. *Pharmacol. Rep.* 2023, 75, 937–950.
5. **Mukhopadhyay, S.**; Barak D. S.; Ramalingam, K.; Goyal, N.; Batra, S. Antileishmanial assessment of isoxazole derivatives against *L. donovani*. *RSC Med. Chem.*, 2020, 11, 1053–1062.
6. Barak, D. S.; **Mukhopadhyay, S.**; Dahatonde, D. J.; Batra, S. NaNO₂/I₂ as an Alternative Reagent for the Synthesis of 1,2,3-Benzotriazin-4(3*H*)-ones from 2-Aminobenzamides. *Tetrahedron Lett.* 2019, 60, 248–251.
7. **Mukhopadhyay, S.**; Barak, D. S.; Batra, S. TBHP as Methyl Source under Metal-Free Aerobic Conditions to Synthesize Quinazolin-4(3*H*)-ones and Quinazolines by Oxidative Amination of C(sp³)–H Bond. *Eur. J. Org. Chem.* 2018, 2784–2794.
8. **Mukhopadhyay, S.**; Batra, S. Direct Transformation of Arylamines to Aryl Halides via Sodium Nitrite and *N*-Halosuccinimide. *Chem. Eur. J.* 2018, 24, 14622–14626.
9. **Mukhopadhyay, S.**; Barak, D. S.; Avasthi, I.; Batra, S. Efficient Transformation of Alkyl 3-nitro-5-(aryl/alkyl) isoxazole-4-carboxylates into 3-amino- and 3-hydrazinyl-5-aryl/alkyl-isoxazole-4-carboxylates in Aqueous Solution. *Adv. Synth. Catal.* 2017, 359, 4050–4056.
10. **Mukhopadhyay, S.**; Dighe, S. U.; Kolle, S.; Shukla, P. K.; Batra, S. NaNO₂/I₂-Mediated Regioselective Synthesis of Nitrosoimidazoheterocycles from Acetophenones by a Domino Process. *Eur. J. Org. Chem.* 2016, 3836–3844.
11. Dighe, S. U.[#]; **Mukhopadhyay, S.**[#] (*Co-first author*); Priyanka, K.; Batra, S. Metal-free Oxidative Nitration of α -Carbon of Carbonyls leads to One-Pot Synthesis of Thiohydroxamic acids from Acetophenones. *Org Lett*, 2016, 18, 4190–4193.

12. Dighe, S. U.[#]; **Mukhopadhyay, S.[#] (Co-first author)**; Kolle, S.; Kanojiya, S.; Batra, S. Synthesis of 3,4,5-Trisubstituted Isoxazoles from Morita–Baylis–Hillman Acetates by an NaNO₂/I₂-Mediated Domino Reaction. *Angew. Chem. Int. Ed.* 2015, 54, 10926–10930.
13. Rai, R. K.; Mahata, A.; **Mukhopadhyay, S.**; Gupta, S.; Li, P. -Z.; Nguyen, K. T.; Zhao, Y.; Pathak, B.; Singh, S. K. Room-Temperature Chemoselective Reduction of Nitro Groups Using Non-noble Metal Nanocatalysts in Water. *Inorg. Chem.*, 2014, 53, 2904–2909.

Review Articles

1. **Mukhopadhyay, S.**; Sharma, A.; Wilkerson, J.; Gupta, S.; McMahon, L.; McCurdy, C. R. Receptor Selectivity and Therapeutic Potential of Kratom in Substance use Disorders. *Curr. Addict. Rep.* 2023, 10, 304–316.
2. **Mukhopadhyay, S.**; Batra, S. Applications of Sodium Nitrite in Organic Synthesis. *Eur. J. Org. Chem.* 2019, 6424–6451.

Published Abstracts

1. Seo, J.; Kim, W. C.; **Mukhopadhyay, S.**; Pearson, T.; Sharma, A.; Freaney, M.; Liow, J.-S.; Hampson, A.; McCurdy, C. R.; Kim, S. W.; Volkow, N. Radiosynthesis and preclinical evaluation of [¹¹C] mitragynine isotopomers in rodents, *Nucl. Med. Biol.*, 126–127, 2023, 108576.
2. Gonzalez, J. D. Z.; Ragsdale, A. K.; **Mukhopadhyay, S.**; McCurdy, C. R.; McMahon, L. R.; Wilkerson, J. L. Mitragynine Pretreatment Prevents Morphine-Induced Respiratory Depression, *J. Pharmacol. Exp. Ther.* 385 (S3) 264: June 2023, doi: 10.1124/jpet.122.261220
3. Ortiz, Y.; **Mukhopadhyay, S.**; McCurdy, C. R.; McMahon L. R.; Wilkerson, J. L. Characterization of a Mouse Model of Neuropathic Pain Induced by Calcaneus Implantation of NCTC 2472 Mouse Sarcoma Cells, *J. Pharmacol. Exp. Ther.* 385 (S3) 233: June 2023, doi: 10.1124/jpet.122.243040

4. Hiranita, T.; Gonzalez, J. D. Z.; Patel, R. C.; Mazpule-Carrigan, C. C.; Rocha, J. M.; Jimenez, L. R. G.; Ho, N. P.; Patel, A.; Obeng, S.; Leon, F.; Mottinelli, M.; **Mukhopadhyay, S.**; McCurdy, C. R.; McMahon, L. R. Effects of Mitragynine and its Active Metabolites on the Reinforcing Effects of Remifentanyl and Cocaine in Rats Self-Administering Remifentanyl. *The FASEB Journal* 2022; 36(S1): 1

Conferences/ Seminars/ Workshops

- Poster presented in “**ACS Fall 2023, ACS Meetings & Expositions**”, San Francisco, California, 13-17th August 2023.
- Attended “**UF-Scripps Chemical Biology and 5th UF Drug Discovery Symposium**”, Scripps Florida, Jupiter, Florida, 20-21st April 2023.
- Poster presented in “**21st International Conference on Organic Synthesis**” (ICOS-21), Department of chemistry, IIT Bombay, 11-16th December 2016.
- Attended 6th International Conference on “**Current trends in Drug discovery and Research**” (CTDDR), CSIR-CDRI, Lucknow, 25-28th February 2016.
- “**National Seminar on Chemistry for Better World on The International Year of Chemistry**” sponsored by University Grand Commission on March 29, 2011, at Department of Chemistry, University of Kalyani, Kalyani, West Bengal, India.
- “**National Seminar on Current Trends in Chemistry–V (NSCTC–V)**” sponsored by University Grand Commission on February 25, 2011, at Department of Chemistry, University of Kalyani, Kalyani, West Bengal, India.
- National Level Workshop on “**The Origin of Modern Chemistry**” August-2010, at Scottish Church College, Kolkata, West Bengal, Sponsored by DST.
- Three-Day Lecture Workshop On “**Concept in Chemistry-II**” February-2008, at Department of Chemistry, K.N College, Berhampore, West Bengal. By: IAS -Bangalore, INSA -Delhi, NASI -Allahabad.

Mentoring/Project co-supervision

Undergraduate students during PhD: (2 students)

- Kumari Priyanka- NIPER, Raebareli student (March 2015-March 2016) *Title of the project:* Synthesis of 3,4,5-trisubstituted isoxazoles from Morita-Baylis-Hillman acetates by NaNO_2/I_2 -mediated domino reaction and their derivatization.
- Ayushi Gubarele- Indian National Science Academy fellow- (May-July 2015) *Title of the project:* Synthesis and characterization of MBH (Morita Baylis Hillman) adduct and acetate and its further utilization.

Undergraduate students, Trainees and Volunteers in University of Florida: (7 students)

- Edgardo Duran, Dawson Jackson, Andrew Siegel, Nicholas Guadagnoli, Gianfranco Romaelle, Brian J. Chiang, Cole L. Travers.

Visiting Research Scholar in University of Florida:

- Narumon Sengnon (Chiew)

Awards and Honors

- **Early Career Achievement Award** **02/2019**
in Chemical Sciences by CSIR-CDRI.
- **Best Publication Award** for publication in *Angew. Chem. Int. Ed.* **2015**
- **Senior Research Fellowship** **2016-2018**
by Council of Scientific and Industrial Research (CSIR), Government of India.
- **Junior Research Fellowship** **2014-2015**
by Council of Scientific and Industrial Research (CSIR), Government of India.
- Qualified National Eligibility Test (CSIR NET Examination). **2013**
- Qualified Graduate Aptitude Test (GATE Examination). **2012**

Peer Reviewer of Journal

RSC Advances; Frontiers in Chemistry; Reactions; Catalysts; Materials; Scientia Pharmaceutica; Molecule; International Journal of Molecular Science; Sustainability

Editorial Board Member

Frontier in Chemistry (Review Editor) since 10/2022

Current Issues in Molecular Biology (Guest Editor) since 06/2023

Membership of professional organizations

- Member of Royal Society of Chemistry (723993)
- Member of American Chemical Society (33164364)
- Life member of Indian Chemical Society (LM 8562)
- Life member of Chemical Research Society of India (LM 3447)
- Life member of Society of Chemists and Biologists (LF 1168/2022)