

Manish Kumar Bommaka

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Google scholar Profile

<u>Citation indices</u>	All	Since 2016
Citations	109	109
h-index	5	5
No. Publications	5	5

<https://scholar.google.com/citations?user=6Gsj--AAAAAJ&hl=en&oi=ao>

**Industry Experience:**

- Past Job profile** : **Lecturer in Pharmaceutical Chemistry** (Dec 2012-Aug 2014)
Netaji Institute of Pharmaceutical sciences, Warangal, India.
- : **Crystalline Research Pvt. Ltd** (June-2021-July-2022)
- Present Job profile** : **Asst Professor in Gokaraju Rangaraju college of Pharmacy**(Aug-2022-Till date)

Education qualification

Ph.D. – University of Hyderabad	School of Chmeistry, University of Hyderabad, Telangana-500046 Hyderabad, India
M.Pharm – Pharmaceutical Chemistry -63%	Gokaraju Rangaraju college of Pharmacy Osmania University, Telangana- 500090 Hyderabad. India
B.Pharmacy -67%	Pallavan Pharmacy college, Dr. M G R Medical University Kanchipuram,-631502 Tamilnadu. India

Research Experience

Expertize in synthesis and design of new supramolecular solids such as polymorphs, cocrystals, Eutectics, coamorphous, molecular salts and alloys which differentiate and enhances physical and chemical properties, like melting point, density, particle size, stability, tableting, dissolution rates, Supramolecular design, synthesis and characterization of active pharmaceutical ingredients (API) with the help of various spectroscopic, Thermal and X-ray diffraction techniques. Invitro Permeability and Invivo bioavailability studies.

Carrying out reactions in nitrogen environment, and reactions in temperature range of -25°C to 250°C.

Purification of compounds by column chromatography and preparative TLC.
Structural analysis of compounds with IR, NMR and mass spectroscopy.
Cell lines maintenance and checking the cytotoxic effect of anticancer drug through Bio-Assays.

Analytical Skills

Experience in analysis and characterization of polymorphs and pseudopolymorphs using Thermal Gravimetry (TG), Differential Scanning Calorimetry instrumentation (DSC) methods, Powder XRD and Hot Stage Microscopy, High performance liquid chromatography (HPLC) and Field Emission Scanning Electron Microscopy (FESEM). Hands-on experience with SMART APEX CCD and Oxford CCD X-ray diffractometer, structure solution and refinement. Experienced in analysis and characterization of molecules using techniques like IR, NMR (^1H and ^{13}C), HPLC, ELISA Reader.

Computational Skills

Familiar with various software required for carrying out the work undertaken. Cambridge Structural Database (CSD) search for database analysis, SHELX-TL, WinGX, Platon for crystal structure solution, Mercury & X-Seed for viewing and graphics, Powder cell for establishing various polymorphic phases and least square refinement. Origin, Graph pad Prism, Sigma plot.

Projects

Ph.D. thesis: Enhancing solubility and permeability of Active Pharmaceutical Ingredients in their Salts, Co-crystals, and Polymorphs.

Preparation of Co-crystals, Salts, Polymorphs and characterization by using SC-XRD, PXRD, DSC, IR and performing solubility and permeability of those Forms

Master's thesis: Design and synthesis of anti-neoplastic HSP90 inhibitors (Nov 2011 - Oct 2012)

Designed novel HSP90 inhibition agents using Schrodinger and SYBYL molecular docking software.

Synthesized the compounds and characterized them using IR, NMR and Mass spectroscopy. The agents are expected to show lesser side effects such as hepatotoxicity, nephrotoxicity, and alopecia.

Bachelor's thesis: Comparative study of Sudershana Churna (Jan - Sept 2006)

Prepared Sudershana Churna from raw materials in lab.

Compared to commercially available Impocs and Dabur Churnas, it showed better phyto-chemical results

It also gave positive anti-pyretic tests in mice.

Mammalian cell culture

- Culture of mammalian cell lines: A549, U937, HeLa, Panc-1, Miapaca-2, PC-3. IC50 calculations MTT assay, Almar Blue Assay, Permeability studies.

Research Publications

1. Molecular docking study, synthesis and biological evaluation of Mannich bases as Hsp90 inhibitors. Gupta, S. D., **Bommaka, M. K.**, Mazaira, G. I., Galigniana, M. D., Subrahmanyam, C. V. S., Gowrishankar, N. L., Raghavendra, N. M. *International journal of biological macromolecules*, **2015**, *80*, 253-259.
2. Eco-sustainable synthesis and biological evaluation of 2-phenyl 1, 3-benzodioxole derivatives as anticancer, DNA binding and antibacterial agents. Gupta, S. D., Rao, G. B., **Bommaka, M. K.**, Raghavendra, N. M., Aleti, S. *Arab. J. Chem.* **2016**, *9*, S1875-S1883.
3. Curcumin-artemisinin coamorphous solid: Xenograft model preclinical study. Mannava, M. K., Suresh, K., **Bommaka, M. K.**, Bhavani Konga, D., Nangia, A. *Pharmaceutics* **2018**, *10*, 7.
4. Entacapone: improving aqueous solubility, diffusion permeability, and cocrystal stability with theophylline. **Bommaka, M. K.**, Mannava, M. C., Suresh, K., Gunnam, A., Nangia, A. *Cryst. Growth Des.* **2018**, *18*, 6061-6069.
5. Inhibiting protein-protein interactions of Hsp90 as a novel approach for targeting cancer. Gupta, S. D., **Bommaka, M. K.**, Banerjee, A. *Eur. J. Med. Chem.* **2019**, *178*, 48-63.
6. Entacapone Polymorphs: Crystal Structures, Dissolution, Permeability, and Stability. **Bommaka, M. K.**, Chaitanya Mannava, M. K., Rai, S. K., Suresh, K., Nangia, A. K. *Cryst. Growth Des.* **2021**, *21*, 5573-5585.
7. Fluorobenzoic acid cofomers to improve the solubility and permeability of the BCS class IV drug naftopidil. Mannava, M. C., **Bommaka, M. K.**, Dandela, R., Solomon, K. A., & Nangia, A. K. *Chemical Communications*, **2022**, *58*(37), 5582-5585.
8. Improvement of Physicochemical Properties of Pimozide through Co-crystalization with Dicarboxylic Acids
Manish Kumar Bommaka,^a Abhijit Garai, ^aSunil K. Rai, ^bR Dandela and Ashwini K. Nangia*^{a,b} (Manuscript under preparation).
9. Synthesis and crystal structure investigation for pharmaceutical salts of Ribociclib
Bommaka, M. K., Bandi, S., Garai, A., Rana, M., and Ashwini K. Nangia. (Manuscript under preparation).
10. Salts and Cocrystal and its hydrate forms of Ribociclib: Solubility and diffusion variation. Mannava, M. C., Garai, A., **Bommaka, M. K.**, Solomon, A. K., Ashwini K. Nangia. *CrystEngComm*. **2022**.

Personal Profile

Name : Manish Kumar Bommaka
Father's Name : Laxmaiah Bommaka
Date of Birth : 7th Nov, 1986
Sex : Male
Languages Known : English, Hindi, Telugu and Tamil
Permanent Address : H. No. 116, Sai Vaibhav Socety, Indresham Village, Patancheru, Telangana State, India, Pin Code: 502319.
Nationality : Indian
Marital Status : Married

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

Manish kumar Bommaka