

Surbhi Prakash

E mail: surbhiprakash@gmail.com

Phone: +91-9911429745

EDUCATION

IIT Mumbai

Post-Doc (Feb 2020-2021)

INMAS and Delhi University

Ph.D. Chemistry (March 2018)

INMAS and Department of Chemistry, Delhi University, Delhi. (2011-2012 as DRDO JRF and 2012-2017 as UGC fellow)

Department of Chemistry, Delhi University

Master of Science (M.Sc. Chemistry) with an aggregate percentage of 65%. (2008-2010)

Central Institute of Education, Delhi University

Bachelor of Education (B.Ed. Biology and Chemistry) with an aggregate percentage of 69.5%. (2007-2008)

Daulat Ram College, Delhi University

Bachelor of Science (B.Sc. Life Sciences) with an aggregate percentage of 67.63%. (2004-2007)

Vidya Bharati School, Delhi

Senior secondary with aggregate percentage of 71.2% (CBSE, 2004)

Dr. S.R.S. Mission School, Delhi

Higher secondary with aggregate percentage of 82.4% (CBSE, 2002)

RESEARCH EXPERIENCE

Post-Doctoral Research

“Synthesis and computational analysis of energetic compounds for rocket fuel preparation”

Research Highlights

Work included design, synthesis and evaluation of more sustainable energetic compounds as part of rocket fuel which are less hazardous but equally efficient as the present ones, as per NASA standards.

Supervisors

Prof. Arindrajit Chowdhury

Prof. Neeraj Kumbhakarna

Prof. Irishi I. Namboothiri

Ph.D. Thesis Title

“Design and Synthesis of C-Functionalized Macrocyclic System to Conjugate Biomolecules for Multifunctional Imaging”

Thesis Highlights

Doctoral research investigated the design, synthesis and preclinical evaluation of novel macrocyclic compounds for different biomedical purposes, such as PET imaging, anti-HIV application and bio-threat detection.

Supervisors

Dr. Anil Kumar Mishra

Prof. Shrikant Kukreti

Dr. Puja Panwar Hazari

SKILLS AND EXPERTISE

- ❖ Chemical synthesis of various compounds using different strategies.
- ❖ Purification of crude compounds using column chromatography and HPLC.
- ❖ Preclinical evaluation of compounds for the desired properties *in vitro* as well as *in vivo*.
- ❖ Radiolabeling of compounds/drugs with radioisotopes ^{99m}Tc and ^{68}Ga and assessment of their radiochemical purity using TLC, radio-TLC and radio-HPLC.
- ❖ *In vivo* scintigraphic studies using PET and SPECT modalities for tumor imaging as part of diagnostic oncology.
- ❖ Biodistribution studies and blood kinetics of experimental animal models.
- ❖ Cell based assays: plasma binding, serum stability, cell/receptor binding assays.
- ❖ Computer proficiency: Graphpad Prism, Origin, MS-office, Excel.
- ❖ Work ethics knowledge of an ISO certified lab.
- ❖ Working in a diverse group with chemistry, life sciences and radiology specialities, mentoring trainees for their projects and presenting work in conferences and seminars.

GRANTS AND ACHIEVEMENTS

- ❖ Qualified course on Intellectual Property Rights (IPR) and Pharmaceutical R & D conducted by FICCI in October 2019.
- ❖ Qualified Radiation Safety Officer (RSO) level-I exam conducted through BARC and AERB (2013).
- ❖ Awarded Senior research fellowship from CSIR-UGC (2014-2017).
- ❖ Awarded Junior Research Fellowship from CSIR-UGC. Rank- 95 (2012-2014).
- ❖ Awarded Junior Research Fellowship from INMAS, DRDO (2011-2012).
- ❖ Awarded Post Graduate Fellowship from Govt. of India through “Jean and Ashit” Education scholarship scheme in 2009-2010.

RESEARCH PUBLICATIONS

- Biotinidase Resistant ^{68}Ga -Radioligand Based on Biotin/Avidin Interaction for Pretargeting: Synthesis and Preclinical Evaluation; **Surbhi Prakash**, Puja Panwar Hazari, Virendra Kumar Meena, Harleen Khurana, Shrikant Kukreti and Anil Kumar Mishra; **Bioconjugate Chem.** **2016**, 27, 2780-2790. **Impact Factor: 4.774**
- Radiolabeling and Preclinical Evaluation of a New S-Alkylated Cysteine Derivative Conjugated to C-Substituted Macrocyclic for Positron Emission Tomography; **Surbhi Prakash**, Puja Panwar Hazari,* Virendra Kumar Meena, and Anil Kumar Mishra, **ACS Omega** **2018**, 3, 6, 6497–6505. **Impact Factor: 3.512**
- [^{99m}Tc]Tc-DTPA-Bis(cholineethylamine) as an Oncologic Tracer for the Detection of Choline Transporter (ChT) and Choline Kinase (ChK) Expression in Cancer; Ambika Parmar Jaswal , Puja Panwar Hazari , **Surbhi Prakash**,... and Anil Kumar Mishra, **ACS Omega** **2022**, 7, 15, 12509-12523. **Impact Factor: 3.512**
- Synthesis, preclinical evaluation and molecular modelling of macrocyclic appended 1-(2-methoxyphenyl) -piperazine for 5-HT neuroreceptor imaging; Puja Panwar Hazari, **Surbhi Prakash**, Virendra Kumar Meena, Niraj Singh, Krishna Chuttani, Nidhi Chadha, Pooja Singh, Shrikant Kukreti and Anil Kumar Mishra; **RSC Adv.** **2016**, 6, 7288-7301. **Impact Factor: 3.36**

- [Ga]/[Re] Complexed [CDTMP] Trans-1,2-Cyclohexyldinitrilotetraphosphonic Acid as a theranostic agent for skeletal metastases; Ambika P. Jaswal, Virendra K. Meena, **Surbhi Prakash**, Ankita Pandey, Baljinder Singh, Anil K. Mishra, Puja P. Hazari: **Front. Med.** **2017**, 4, 72. **Impact Factor: 5.09**
- LAT1 Targeted Delivery of Methionine Based Imaging Probe Derived from M(III) Metal Ions for Early Diagnosis of Proliferating Tumours using Molecular Imaging Modalities; P. P. Hazari, **S. Prakash**, V. K. Meena, A. Jaswal, H. Khurana, S. K. Mishra, B S Hemanth Kumar, L. Singh, Anil K Mishra; **Current Cancer Drug Targets** **2014**, 14, 817-831. **Impact Factor: 3.07**
- Preclinical Evaluation of a Potential GSH Ester Based PET/SPECT Imaging Probe DT(GSHMe) to Detect Gamma Glutamyl Transferase Over Expressing Tumors; Harleen Khurana, Virendra Kumar Meena, **Surbhi Prakash**, Krishna Chuttani, Nidhi Chadha, Ambika Jaswal, Devinder Kumar Dhawan, Anil Kumar Mishra, Puja Panwar Hazari; **PLOS ONE** **2015**, DOI:10.1371/journal.pone.0134281 July 29, 2015. **Impact Factor: 3.24**
- A homodimeric bivalent radioligand derived from 1-(2-methoxyphenyl)piperazine with high affinity for in vivo 5-HT1A receptor imaging; N. Singh, P. P. Hazari, **S. Prakash**, K. Chuttani, H. Khurana, H. Chandra and A. K. Mishra; **Med. Chem. Commun.**; **2012**, 3, 814-823. **Impact Factor: 2.807**

CONFERENCE PRESENTATIONS (Abstract Publications)

- ❖ Radiolabelling and Biological Evaluation of a new L-MET derivative conjugated to C substituted dioxodiacetate macrocycle for Tumor Imaging Using PET; Surbhi Prakash, Puja Panwar Hazari, Anil K Mishra; **Journal of Nuclear Medicine**, vol 56, supplement-3, pp 257-258; **SNMMI May 2015**.
- ❖ ⁶⁸Gallium Labeled 6-(D)-Biotinamido Pendant Tetraazacyclotridecane Derivative: A Potential PET Agent for Infection Imaging; S. Prakash, P. P. Hazari, V. K. Meena, A. Mishra; P239; **EANM Oct 2014**.
- ❖ Design and synthesis of C-functionalized ATRIDAT to conjugate biomolecules for pre-targeted imaging: ⁶⁸Ga-ATRIDAT-BIOTIN; S. Prakash, Puja Panwar Hazari, Ambika Parmar, Harleen Khurana, Surabhi Kirti Mishra, Virendra Kumar Meena, Anil Kumar Mishra; vol 28, RP -27; **IJNM Dec 2013**.
- ❖ A Novel Bifunctional Macrocyclic Chelator for Improved Labeling of Biovectors with Gallium-68; S. Prakash, Puja P. Hazari, Harleen Kaur, Viren K. Meena, Anil K Mishra;; Volume 12 , Supplement 1; **World journal of Nuclear Medicine Feb 2013**.
- ❖ A versatile synthetic approach to develop a Biotin based PET Imaging agent Via Cu(I) Catalyzed Click Chemistry:⁶⁸Ga-labeled DO3A-EA-Bis(Tz-Biotin); S. Prakash, P. P. Hazari, V. K. Meena, A. Mishra; Issue 39 (2), pp S524; **EANM 2012**.
- ❖ S. Prakash, P. P.Hazari, N. Singh, H. K. Sadana, V. K. Meena and A. K. Mishra; **Symposium on New Developments in NMR and Conference of the National Magnetic Resonance Society**; Feb 2012; P91

REFERENCES

Anil Kumar Mishra

Director

DCRS, INMAS, DRDO

New Delhi-110054

011-23905117

akmishra63@gmail.com

Puja Panwar Hazari

Sci'E', DCRS

INMAS, DRDO

New Delhi-110054

011-23905244

puja.hazari@gmail.com

Arindrajit Chowdhury

Professor, Dept. of Mech. Engg.

IIT Mumbai

Mumbai-400076

022-25767504

arindra@iitb.ac.in