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Program in Chemical Biology, Mortimer B. Zuckerman Research Center,
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Education

<u>PhD in Pharmaceutical Sciences</u>	2016
Guru Nanak Dev University, Amritsar, PB, India	
<u>Master of Pharmacy</u>	2011
ISF College of Pharmacy (Punjab Technical University), Moga, PB, India	
<u>Bachelor of Pharmacy</u>	2009
ISF College of Pharmacy (Punjab Technical University), Moga, PB, India	

Research Experience**Postdoctoral Researcher**

Senior Research Scientist	2022- Present
Research Associate	2021- 2022
Research Fellow	2017-2021

Program in Chemical Biology, Mortimer B. Zuckerman Research Center,
Memorial Sloan Kettering Cancer Center, New York, NY, USA

Supervisor: Dr. Gabriela Chiosis

Establish structure activity relationship for small molecule inhibitors of epichaperomes.

Develop radiolabeled epichaperome-based chemical probes for PET imaging and autoradiography.

Develop fluorochrome-conjugated or clickable epichaperome probes for flow cytometry, confocal microscopy and IVIS Imaging.

Develop biotin and affigel conjugated epichaperome probes for affinity purification.

Formulation development, in vivo efficacy, metabolomics, biodistribution and pharmacokinetic analysis for epichaperome inhibitors.

Graduate Research Assistant **2011 - 2016**

Department of Pharmaceutical Sciences,
Guru Nanak Dev University, Amritsar, PB, India

Supervisor: Dr. Preet Mohinder Singh Bedi

Design and synthesize an extensive library of heterocyclic molecules with anti-tubulin and xanthine oxidase inhibitory activity that can be useful in cancer and gout, respectively.

Establish structure-activity relationship within azacarboline and naphthopyran class of compounds as tubulin and xanthine oxidase inhibitors.

Design and synthesize hybrid compounds using molecular hybridization approach (based on the combination of pharmacophoric moieties of different bioactive substances) with improved affinity and efficacy against cancer.

Perform molecular modelling studies to rationalize binding pattern of synthesized molecules within the enzyme's active sites and enzyme kinetics to further reveal their mechanism to act as enzyme inhibitors.

35 research papers; 24 review articles; 1 book; 3 book chapters

Research Papers

- 1) Sharma, S.; Kalidindi, T.; Joshi, S.; Digwal, C. S.; Panchal, P.; Bumazi, E.; Lee, S. G.; Pillarsetty, N.; Chiosis, G. Synthesis of ¹²⁴I-labeled epichaperome probes and assessment in visualizing pathologic protein-protein interaction networks in tumor bearing mice. *STAR Protocols* **2022**, 3, 101318.
- 2) Singh, J. V.; Thakur, S.; Kumar, N.; Singh, H.; Mithu, V. S.; Singh, H.; Bhagat, K.; Gulati, H.; Sharma, A.; Singh, H.; Sharma, S.; Bedi, P. M. S. Donepezil inspired multi-targeting indanone derivatives as effective anti-Alzheimer's agents. *ACS Chem Neurosci* **2022**, 13, 733–750.
- 3) Joshi, S.; Gomes, E. D.; Wang, T.; Corben, A.; Taldone, T.; Gandu, S.; Chao Xu, C.; **Sharma, S.**; Buddaseth, S.; Yan, P.; Chan, L. Y. L.; Gokce, A.; Rajasekhar, V. K.; Shrestha, L.; Panchal, P.; Almodovar, J.; Digwal, C.; Rodina, A.; Pillarsetty, N.; Miclea, V.; Peter, R. I.; S. D.; Tang, L.; Mattar, M.; de Stanchina, E.; Yu, K. H.; Lowery, M.; Grbovic-Huezo, O.; O'Reilly, E. M.; Janjigian, Y.; Healey, J. H.; Jarnagin, W. R.; Allen, P. J.; Sander, C.; Erdjument-Bromage, H.; Neubert, T. A.; Leach, S. D.; Chiosis, G. Pharmacologically controlling protein-protein interactions through epichaperomes for therapeutic vulnerability in cancer. *Commun Biol* **2021**, 4, 1333.
- 4) Bolaender, A. #; Zatorska, D. #; He, H. #; Joshi, S. #; **Sharma, S. #**; Digwal, C. S. #; Patel, H. J.; Sun, W.; Imber, B. S.; Ochiana, S. O.; Patel, M. R.; Shrestha, L.; Shah, S. K.; Wang, S.; Karimov, R.; Tao, H.; Patel, P. D.; Martin, A. R.; Yan, P.; Panchal, P.; Almodovar, J.; Corben, A.; Rimner, A.; Ginsberg, S. D.; Lyashchenko, S.; Burnazi, E.; Ku, A.; Kalidindi, T.; Lee, S. G.; Grkovski, M.; Beattie, B. J.; Zanzonico, P.; Lewis, J. S.; Larson, S.; Rodina, A.; Pillarsetty, N.; Tabar, V.; Dunphy, M. P.; Taldone, T.; Shimizu, F.; Chiosis, G. Chemical tools for epichaperome-mediated interactome dysfunctions of the central nervous system. *Nat Commun* **2021**, 12, 4669.
- 5) Sugita, M.; Wilkes, D. C.; Bareja, R.; Eng, K. W.; Nataraj, S.; Jimenez-Flores, R. A.; Yan, L.; De Leon, J. P.; Croyle, J. A.; Kaner, J.; Merugu, S.; **Sharma, S.**; MacDonald, T. Y.; Noorzad, Z.; Panchal, P.; Pancirer, D.; Cheng, S.; Xiang, J. Z.; Olson, L.; Besien, K. V.; Rickman, D. S.; Mathew, S.; Tam, W.; Rubin, M. A.; Beltran, H.; Sboner, A.; Hassane, D. C.; Chiosis, G.; Elemento, O.; Roboz, G. J.; Mosquera, J. M.; Guzman, M. L. Targeting the Epichaperome As an Effective Precision Medicine Approach in a Novel PML-SYK Fusion Acute Myeloid Leukemia. *NPJ Precis Oncol* **2021**, 5, 44.
- 6) Singh, A.; **Sharma, S.**; Arora, S.; Attri, S.; Kaur, P.; Gulati, H. K.; Bhagat, K.; Kumar, N.; Singh, H.; Singh, J. V.; Bedi, P. M. S. New coumarin-benzotriazole based hybrid molecules as inhibitors of acetylcholinesterase and amyloid aggregation. *Bioorg Med Chem Lett* **2020**, 30, 127477.
- 7) Yan, P.; Patel, H. J.; **Sharma, S.**; Corben, A.; Wang, T.; Panchal, P.; Yang, C.; Sun, W.; Araujo, T. L.; Rodina, A.; Joshi, S.; Robzyk, K.; Gandu, S.; White, J. R.; de Stanchina, E.; Modi, S.; Janjigian, Y. Y.; Hill, E. G.; Liu, B.; Erdjument-Bromage, H.; Neubert, T. A.; Que, N. L. S.; Li, Z.; Gewirth, D. T.; Taldone, T.; Chiosis, G. Molecular Stressors Engender Protein Connectivity Dysfunction through Aberrant N-Glycosylation of a Chaperone. *Cell Rep* **2020**, 31, 107840.
- 8) Pechalrieu, D.; Assemat, F.; Halby, L.; Marcellin, M.; Yan, P.; Chaoui, K.; **Sharma, S.**; Chiosis, G.; Burlet-Schiltz, O.; Arimondo, P. B.; Lopez, M. Bisubstrate-Type Chemical Probes Identify GRP94 as a Potential Target of Cytosine-Containing Adenosine Analogs. *ACS Chem Biol* **2020**, 15, 952-961.
- 9) Kaur, G.; Singh, J. V.; Gupta, M. K.; Bhagat, K.; Gulati, H. K.; Singh, A.; Bedi, P. M. S.; Singh, H.; **Sharma, S.***. Thiazole-5 carboxylic acid derivatives as potent xanthine oxidase inhibitors: design, synthesis, in vitro evaluation, and molecular modeling studies. *Med Chem Res* **2020**, 29, 83-93.
- 10) Bhagat, K.; Singh, A.; Dhiman, S.; Singh, J. V.; Kaur, R.; Kaur, G.; Gulati, H. K.; Singh, P.; Kumar, R.; Salwan, R.; Bhagat, K.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Microwave-assisted synthesis of 11-substituted-3,3-dimethyl-2,3,4,5,10,11-hexahydrodibenzo[b,e][1,4]diazepin-1-one derivatives catalysed by silica supported fluoro-boric acid as potent antioxidant and anxiolytic agents. *Med Chem Res* **2019**, 28, 2200-2217.
- 11) Singh, A.; Singh, J. V.; Rana, A.; Bhagat, K.; Gulati, H. K.; Kumar, R.; Salwan, R.; Bhagat, K.; Kaur, G.; Singh, N.; Kumar, R.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Monocarbonyl curcumin based molecular hybrids as potent antibacterial agents. *ACS Omega* **2019**, 4, 11673-11684.
- 12) Huck, J. D.; Que, N. L. S.; **Sharma, S.**; Taldone, T.; Chiosis, G.; Gewirth, D. T. Structures of Hsp90α and Hsp90β bound to a purine-scaffold inhibitor reveal an exploitable residue for drug selectivity. *Proteins* **2019**, 87, 869-877.
- 13) Bhagat, K.; Bhagat, J.; Gupta, M. K.; Singh, J. V.; Gulati, H. K.; Singh, A.; Kaur, K.; Kaur, G.; Sharma, S.; Rana, A.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Design, Synthesis, Antimicrobial Evaluation, and Molecular Modeling Studies of Novel Indolinedione-Coumarin Molecular Hybrids. *ACS Omega* **2019**, 4, 8720-8730.
- 14) Singh, J. V.; Kaur, G.; Gupta, M. K.; Singh, A.; Nepali, K.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Benzoflavone derivatives as potent antihyperuricemic agents. *Med Chem Comm* **2019**, 10, 128-147.
- 15) Joshi, G.; Wani, A. A.; **Sharma, S.**; Bhutani, P.; Bharatam, P. V.; Paul, A. T.; Kumar, R. Unanticipated Cleavage

- of 2-Nitrophenyl-Substituted N-Formyl Pyrazolines under Bechamp Conditions: Unveiling the Synthesis of 2-Aryl Quinolines and Their Mechanistic Exploration via DFT Studies. *ACS Omega* **2018**, 3, 18783–18790.
- 16) Singh, H.; Singh, H.; Singh, A.; Gupta, M. K.; **Sharma, S.***; Bedi, P. M. S. Microwave Assisted SiO₂-H₂SO₄ Catalyzed Synthesis of 3,4,6,7-Tetrahydro-3,3,6,6-Tetra Methyl-9,10-Diphenylacridine-1,8-Dione derivatives as cholesterol esterase Inhibitors. *Ind J Pharm Sci* **2017**, 79, 801–812.
- 17) Shrestha, L.; Patel, H. J.; Kang, Y.; **Sharma, S.***; Chiosis, G.; Taldone, T. Copper Mediated Coupling of 2-(Piperazine)-pyrimidine Iodides with Aryl Thiols using Cu (I) Thiophene-2-carboxylate. *Tetrahedron Lett* **2017**, 58, 4525–4531.
- 18) Singh, H.; Singh, J. V.; Gupta, M. K.; Saxena, A. K.; **Sharma, S.***; Nepali, K.; Bedi, P. M. S. Triazole tethered isatin-coumarin based molecular hybrids as novel antitubulin agents: Design, synthesis, biological investigation and docking studies. *Bioorg Med Chem Lett* **2017**, 27, 3974–3979.
- 19) Singh, H.; Singh, J. V.; Gupta, M. K.; Singh, P.; **Sharma, S.***; Nepali, K.; Bedi, P. M. S. Benzoflavones as cholesterol esterase inhibitors: Synthesis, biological evaluation and docking studies. *Bioorg Med Chem Lett* **2017**, 27, 850-854.
- 20) Kaur, M.; Kaur, A.; Mankotia, S.; Singh, H.; Singh, A.; Singh, J. V.; Gupta, M. K.; **Sharma, S.***; Nepali, K.; Bedi, P. M. S. Synthesis, screening and docking of fused pyrano[3,2-d]pyrimidine derivatives as xanthine oxidase inhibitor. *Eur J Med Chem* **2017**, 131, 14-28.
- 21) Singh, H.; Singh, J. V.; Gupta, M. K.; Singh, P.; **Sharma, S.***; Nepali, K.; Bedi, P. M. S. Benzoflavones as cholesterol esterase inhibitors: Synthesis, biological evaluation and docking studies. *Bioorg Med Chem Lett* **2017**, 27, 850-854.
- 22) **Sharma, S.***; Gupta, M. K.; Saxena, A. K.; Bedi, P. M. S. Thiazolidinone Constraint Combretastatin Analogs as Novel Antitubulin Agents: Design, Synthesis, Biological Evaluation and Docking Studies. *Anticancer Agents Med Chem* **2017**, 17, 230-240.
- 23) Singh, H.; Kumar, M.; Nepali, K.; Gupta, M. K.; Saxena, A. K.; **Sharma, S.***; Bedi, P. M. S. Triazole tethered C₅-curcuminoid-coumarin based molecular hybrids as novel antitubulin agents: Design, synthesis, biological investigation and docking studies. *Eur J Med Chem* **2016**, 116, 102-115.
- 24) **Sharma, S.***; Gupta, M. K.; Saxena, A. K.; Bedi, P. M. S. Triazole linked mono carbonyl curcumin- isatin bifunctional hybrids as novel anti tubulin agents: Design, synthesis, biological evaluation and molecular modeling studies. *Bioorg Med Chem* **2015**, 23, 7165-7180.
- 25) Kaur, C.; Dhiman, S.; Singh, H.; Kaur, M.; Bhagat, S.; Gupta, M. K.; **Sharma, S.***; Bedi, P. M. S. Synthesis, screening and docking studies of benzochromone derivatives as xanthine oxidase inhibitors. *J Chem Pharm Res* **2015**, 7, 127-136.
- 26) Singh, J. V.; **Sharma, S.***; Rahar, S. Synthesis and spermicidal activity of substituted (E)-3-(aryl/heteroaryl)-1-phenylprop-2-en-1-ones. *Der Pharma Chem* **2015**, 7, 93-103.
- 27) Kaur, R.; Naaz, F.; **Sharma, S.***; Mehndiratta, S.; Gupta, M. K.; Bedi, P. M. S.; Nepali, K. Screening of a library of 4-Aryl/Heteroaryl-4H-fused pyrans for xanthine oxidase inhibition: Synthesis, biological evaluation and docking studies. *Med Chem Res* **2015**, 24, 3334–3349.
- 28) **Sharma, S.***; Kaur, C.; Budhiraja, A.; Nepali, K.; Gupta, M. K.; Saxena, A. K.; Bedi, P. M. S. Chalcone based azacarboline analogues as novel antitubulin agents: Design, synthesis, biological evaluation and molecular modeling studies. *Eur J Med Chem* **2014**, 85, 648-660.
- 29) **Sharma, S.***; Sharma, K.; Ojha, R.; Kumar, D.; Singh, G.; Nepali, K.; Bedi, P. M. S. Microwave assisted synthesis of naphthopyrans catalysed by silica supported fluoroboric acid as a new class of non-purine xanthine oxidase inhibitors. *Bioorg Med Chem Lett* **2014**, 24, 495–500.
- 30) Singh, H.; **Sharma, S.***; Ojha, R.; Gupta, M. K.; Nepali, K.; Bedi, P. M. S. Synthesis and evaluation of naphthoflavones as a new class of non-purine xanthine oxidase inhibitors. *Bioorg Med Chem Lett* **2014**, 24, 4192–4197.
- 31) Viridi, H. S.; **Sharma, S.***; Mehndiratta, S.; Bedi, P. M. S.; Nepali, K. Design, synthesis and evaluation of 2,4-diarylpyrano[3,2-c]chromen-5(4H)-one as a new class of non-purine xanthine oxidase inhibitors. *J Enzyme Inhib Med Chem* **2014**, 30, 1-7.
- 32) Sharma, M.; **Sharma, S.***; Budhiraja, A.; Saxena, A. K.; Nepali, K.; Bedi, P. M. S. Synthesis and cytotoxicity studies of 3,5-diaryl N-acetyl pyrazoline-isatin hybrids. *Med Chem Res* **2014**, 23, 4337- 4344.
- 33) **Sharma, S.***; Thakur, V.; Ojha, R.; Budhiraja, A.; Nepali, K.; Bedi, P. M. S. Aza Analogs of Flavones as Potential Antimicrobial Agents. *Lett Drug Des Discov* **2013**, 10, 327-334.
- 34) Singh, J.; **Sharma, S.***; Saxena, A. K.; Nepali, K.; Bedi, P. M. S. Synthesis of 1,2,3-triazole tethered bifunctional hybrids by click chemistry and their cytotoxic studies. *Med Chem Res* **2013**, 22, 3160- 3169.
- 35) Dhiman, R.; **Sharma, S.***; Singh, G.; Nepali, K.; Bedi, P. M. S. Design and Synthesis of Aza-Flavones as a New Class of Xanthine Oxidase Inhibitors. *Arch Pharm Chem Life Sci* **2013**, 346, 7–16.

Review Articles

- 1) Ginsberg, S. D.; Joshi, S.; **Sharma, S.**; Guzman, G.; Wang, T.; Arancio, O.; Chiosis, G. The penalty of stress – epichaperomes negatively reshaping the brain in neurodegenerative disorders. *J Neurochem* **2021**, doi: 10.1111/jnc.15525.
- 2) Ginsberg, S. D.; Neubert, T. A.; **Sharma, S.**; Digwal, C. S.; Yan, P.; Timbus, C.; Wang, T.; Chiosis, G. Disease-specific interactome alterations via epichaperomics: the case for Alzheimer's disease. *FEBS J* **2021**, doi: 10.1111/febs.16031.
- 3) Sharma, S.; Singh, A.; **Sharma, S.**; Sharma, R.; Singh, J.; Kinarivala, N.; Nepali, K.; Liou, J. P. Tailored Quinolines Demonstrates Flexibility to Exert Antitumor Effects through Varied Mechanisms - A Medicinal Perspective. *Anticancer Agents Med Chem* **2021**, 21, 288-315.
- 4) Bhagat, K.; Singh, J. V.; Pagare, P. P.; Kumar, N.; Sharma, A.; Kaur, G.; Kinarivala, N.; Gandu, S.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Rational approaches for the design of various GABA modulators and their clinical progression. *Molecular Diversity* **2021**, 25, 551-601.
- 5) Singh, J. V.; Bedi, P. M. S.; Singh, H.; **Sharma, S.***. Xanthine oxidase inhibitors: patent landscape and clinical development (2015-2020). *Expert Opin Ther Pat* **2020**, 30, 769-780.
- 6) Taldone, T.; Wang, T.; Rodina, A.; Pillarsetty, N. V. K.; Digwal, C. S.; **Sharma, S.**; Yan, P.; Joshi, S.; Pagare, P. P.; Bolaender, A.; Roboz, G. J.; Guzman, M. L.; Chiosis, G. A Chemical Biology Approach to the Chaperome in Cancer-HSP90 and Beyond. *Cold Spring Harb Perspect Biol* **2020**, 12, a034116.
- 7) Singh, H.; Singh, J. V.; Bhagat, K.; Gulati, H. K.; Sanduja, M.; Kumar, N.; Kinarivala, N.; **Sharma, S.***. Rational Approaches, Design Strategies, Structure Activity Relationship and Mechanistic Insights for Therapeutic Coumarin Hybrids. *Bioorg Med Chem* **2019**, 27, 3477-3510.
- 8) Singh, H.; Kinarivala, N.; **Sharma, S.***. Multi-targeting Anticancer Agents: Rational Approaches, Synthetic Routes and Structure Activity Relationship. *Anticancer Agents Med Chem* **2019**, 19, 842-874.
- 9) Joshi, S.; Wang, T.; Araujo, T. L. S.; **Sharma, S.**; Brodsky, J. L.; Chiosis, G. Adapting to stress – chaperome networks in cancer. *Nat Rev Cancer* **2018**, 18, 562-575.
- 10) Singh, H.; Singh, J. V.; Kaur, N.; Sanduja, M.; Singh, G.; Bedi, P. M. S.; **Sharma, S.***. Rational approaches, design strategies, structure activity relationship and mechanistic insights for esterase inhibitors. *Mini Rev Med Chem* **2018**, 18, 837-894.
- 11) Ojha, R.; Singh, J.; Ojha, A.; Singh, H.; **Sharma, S.***; Nepali, K. Xanthine Oxidase Inhibitors for the treatment of Hyperuricemia and gout: An updated patent review. *Expert Opin Ther Pat* **2017**, 27, 311-345.
- 12) Singh, A.; Kaur, N.; Singh, G.; Sharma, P.; Bedi, P.; **Sharma, S.***; Nepali, K. Topoisomerase I and II Inhibitors: A Patent Review. *Recent Pat Anticancer Drug Discov* **2016**, 11, 401-423.
- 13) **Sharma, S.**; Ojha, R.; Singh, H.; Nepali, K. Design Strategies, Structure Activity Relationship and Mechanistic Insights for Purines as Kinase Inhibitors. *Eur J Med Chem* **2016**, 112, 298-346.
- 14) Singh, A.; Kaur, N.; **Sharma, S.***; Bedi, P. M. S. Recent progress in biologically active xanthenes: A comprehensive review. *J Chem Pharm Res* **2016**, 8, 75-131.
- 15) **Sharma, S.**; Mehndiratta, S.; Yadav, S.; Bedi, P. M. S.; Nepali, K. Purine Analogues as Kinase Inhibitors: A Review. *Recent Pat Anticancer Drug Discov* **2015**, 10, 308-341.
- 16) Kaur, M.; **Sharma, S.***; Bedi, P. M. S. Silica supported Brønsted acids as catalyst in organic transformations: A comprehensive review. *Chinese J Catal* **2015**, 36, 520-549.
- 17) Singh, H.; Singh, H.; **Sharma, S.***; Bedi, P. M. S. Chemotherapeutic potential of acridine analogs: An ample review. *Heterocycles* **2015**, 91, 2043-2085.
- 18) Kaur, R.; Kaur, P.; **Sharma, S.**; Singh, G.; Mehndiratta, S.; Nepali, K. Anti-Cancer Pyrimidines in Diverse Scaffolds: A Review of Patent Literature. *Recent Pat Anticancer Drug Discov* **2015**, 10, 23- 71.
- 19) Nepali, K.; **Sharma, S.**; Sharma, M.; Bedi, P. M. S.; Dhar, K. L. Rational approaches, design strategies, structure activity relationship and mechanistic insights for anticancer hybrids. *Eur J Med Chem* **2014**, 77, 422-487.
- 20) Nepali, K.; **Sharma, S.**; Kumar, D.; Budhiraja, A.; Dhar, K. L. Anticancer Hybrids- A Patent Survey. *Recent Pat Anticancer Drug Discov* **2014**, 9, 303-339.
- 21) Nepali, K.; Ojha, R.; **Sharma, S.**; Bedi, P. M. S.; Dhar, K. L. Tubulin Inhibitors: A Patent Survey', *Recent Pat Anticancer Drug Discov* **2014**, 9, 176-220.
- 22) Nepali, K.; **Sharma, S.**; Ojha, R.; Dhar, K. L. Vasicine and structurally related quinazolines. *Med Chem Res* **2013**, 22, 1-15.
- 23) Sapro, S.; Bhalla, Y.; **Sharma, S.**; Singh, G.; Nepal, K.; Budhiraja, A.; Dhar, K. L. Colchicine and its various physicochemical and biological aspects. *Med Chem Res* **2012**, 22, 531-554.
- 24) Kumar, R.; Darpan. **Sharma, S.**; Singh, R. Xanthine oxidase inhibitors: a patent survey. *Expert Opin Ther Pat*

2011, 21, 1071-108.

Books

- 1) Singh, A.; Singh, H.; **Sharma, S.** Medicinal Attributes of Curcumin and Its Analogs: A Comprehensive Review. LAP Lambert Academic Publishing, 2016.

Book Chapters

- 1) Merugu, S.; **Sharma, S.**; Kaner, J.; Digwal, C.; Sugita, M.; Joshi, S.; Taldone, T.; Guzman, M. L.; Chiosis, G. Chemical Probes and Methods for Single-Cell Detection and Quantification of Epichaperomes in Hematologic Malignancies. *Meth Enzymol* **2020**, 639, 289-311.
- 2) Ojha, R.; **Sharma, S.**; Nepali, K. Anticancer Agents Targeting Tubulin. In: Rahman A, Zaman K, eds. Patents eBook Series "Topics in Anti-Cancer Research". Bentham eBooks: Bentham Science Publishers Ltd. **2015**, 156-266.
- 3) Mehndiratta, S.; **Sharma, S.**; Kumar, S.; Nepali, K. Molecular Hybrids with Anticancer Activity. In: Rahman A, Zaman K, eds. Patents eBook Series "Topics in Anti-Cancer Research". Bentham eBooks: Bentham Science Publishers Ltd. **2015**, 3-73.

Patents

- PCT International Patent Application No. PCT/US21/39230, Chiosis G. et al., Inhibition of N-Glycosylated Grp94
- Indian Patent Application No. 2318/DEL/2012. Nepali K, Sharma S, Kaur C. 4-Aryl/heteroaryl-(1,3)-diazepino[4,5-b]indole-2(10H)-one and diazepino[4,5-b]indol-2(10H)-imine compounds and process for preparation thereof

Poster Presentations

1. Presented a poster at Neurodegeneration and Proteostasis organized by The New York Academy of Sciences at The Cure, NY in 2022.
2. Presented a poster at 2022 TPCB Open House Poster Session (virtual event) organized by Memorial Sloan Kettering Cancer Center, NY in 2022.
3. Presented a poster at Alzheimer's Disease Therapeutics: Alternatives to Amyloid 2021 (virtual event) organized by The New York Academy of Sciences in 2021.
4. Presented a poster at 2020 TPCB Interview and Recruiting Open House Poster Session, Memorial Sloan Kettering Cancer Center, NY in 2020.
5. Presented a poster at MSK 2019 Postdoctoral Research Symposium, Rockefeller Research Labs, NY in 2019.
6. Presented a poster at Pharmacology Retreat, Crystal Springs Resort, Hamburg, NJ in 2019.
7. Presented a poster at CHM Retreat, Mohonk Mountain House, New Paltz, NY in 2019.
8. Presented a poster at TPCB Open House and Recruitment Poster Session, Zuckerman Research Center Lobby, Memorial Sloan Kettering Cancer Center, NY in 2019.
9. Presented a poster at The Anderson Cancer Symposium, Rockefeller University, NY in 2018.
10. Presented a poster at MSK 2018 Postdoctoral Research Symposium, Memorial Sloan Kettering Cancer Center, NY in 2018.
11. Presented a poster at 14th Tri-institutional Chemical Biology Symposium, Rockefeller University, NY in 2018.
12. Presented a poster at Pharmacology Retreat, Crystal Springs Resort, NJ in 2018.
13. Presented a poster at MSK 2017 postdoctoral research symposium, MSKCC, New York City, NY in 2017.
14. Presented a poster at Weill Cornell Medicine Pharmacology Retreat, Skytop Lodge, Skytop, PA in 2017.
15. Presented a poster at 1st Indo-Korean Conference organized by APP Punjab State Branch at GHG Khalsa College of Pharmacy, Gurusar Sadhar, PB in 2015.
16. Presented a poster at 51 National Pharmacy Week National Seminar on Pharmacist in Public Health held at Advanced Institute of Pharmacy in 2012.
17. Presented a poster at 47th Annual Conference of IHPA held at ISF College of Pharmacy, Moga in 2010.

Conference/Workshops Attended

International

- 1) NEURODEGENERATION AND PROTEOSTASIS organized by The New York Academy of Sciences at The Cure, NY in 2022.
- 2) ALZHEIMER'S DISEASE THERAPEUTICS: ALTERNATIVES TO AMYLOID 2021 (virtual event) organized by The New York Academy of Sciences in 2021.
- 3) 2020 TPCB INTERVIEW AND RECRUITING OPEN HOUSE, Zuckerman Research Center Lobby, Memorial Sloan Kettering Cancer Center, NY in 2020.
- 4) MSK 2019 POSTDOCTORAL RESEARCH SYMPOSIUM organized by MEMORIAL SLOAN KETTERING CANCER CENTER held at Rockefeller Research Labs, New York City, NY in 2019.

- 5) PHARMACOLOGY RETREAT organized by WEILL CORNELL MEDICINE GRADUATE SCHOOL OF MEDICAL SCIENCES and MEMORIAL SLOAN KETTERING CANCER CENTER held at Crystal Springs Resort, Hamburg, NJ in 2019.
- 6) THE 2019 CENTER FOR HEMATOLOGIC MALIGNANCIES SCIENTIFIC RETREAT organized by CENTER FOR HEMATOLOGIC MALIGNANCIES held at Mohonk Mountain House, New Paltz, NY in 2019.
- 7) TPCB OPEN HOUSE AND RECRUITMENT POSTER SESSION held at MEMORIAL SLOAN KETTERING CANCER CENTER, NY in 2019.
- 8) THE ANDERSON CANCER SYMPOSIUM held at ROCKEFELLER UNIVERSITY, NY in 2018.
- 9) MSK 2018 POSTDOCTORAL RESEARCH SYMPOSIUM held at MEMORIAL SLOAN KETTERING CANCER CENTER, NY in 2018.
- 10) 14th TRI-INSTITUTIONAL CHEMICAL BIOLOGY SYMPOSIUM held at ROCKEFELLER UNIVERSITY, NY in 2018.
- 11) PHARMACOLOGY RETREAT organized by WEILL CORNELL MEDICINE GRADUATE SCHOOL OF MEDICAL SCIENCES and MEMORIAL SLOAN KETTERING CANCER CENTER held at CRYSTAL SPRINGS RESORT, NJ in 2018.
- 12) MSK 2017 POSTDOCTORAL RESEARCH SYMPOSIUM held at MEMORIAL SLOAN KETTERING CANCER CENTER, NY in 2017.
- 13) WEILL CORNELL MEDICINE PHARMACOLOGY RETREAT organized by WEILL CORNELL MEDICINE GRADUATE SCHOOL OF MEDICAL SCIENCES held at SKYTOP LODGE, PA in 2017.
- 14) 31ST ANNUAL RESMED: RESIDENTIAL SCHOOL ON MEDICINAL CHEMISTRY AND BIOLOGY IN DRUG DISCOVERY organized by TRI-INSTITUTIONAL THERAPEUTICS DISCOVERY INSTITUTE held at ALEXANDRIA CENTER, NY in 2017.
- 15) 1ST INDO-KOREAN CONFERENCE on CURRENT PROGRESS AND FUTURE PERSPECTIVES IN PHARMACEUTICAL TECHNOLOGY organized by APP PUNJAB STATE BRANCH held at GHG KHALSA COLLEGE OF PHARMACY, PB in 2015.
- 16) PTU Sponsored INDO-BULGARIA INTERNATIONAL CONFERENCE on RECENT ADVANCES IN HERBAL TECHNOLOGY held at ISF COLLEGE OF PHARMACY, PB in 2013.
- 17) DST Sponsored INDO-TAIWAN WORKSHIP held at ISF COLLEGE OF PHARMACY, PB in 2011.

National

- 1) ISTE-PTU Sponsored FACULTY DEVELOPMENT PROGRAMME held at SBS COLLEGE OF PHARMACY, PB in 2014.
- 2) WORKSHOP ON ADVANCES IN STRUCTURE BASED DRUG DESIGN held at ISF COLLEGE OF PHARMACY, PB in 2013.
- 3) 51ST NATIONAL PHARMACY WEEK NATIONAL SEMINAR ON PHARMACIST IN PUBLIC HEALTH held at ADVANCED INSTITUTE OF PHARMACY in 2012.
- 4) APTI Sponsored 16TH ANNUAL NATIONAL CONVENTION held at ISF COLLEGE OF PHARMACY, PB IN 2011.
- 5) AICTE Sponsored NATIONAL SEMINAR on RATIONAL USE AND CLINICAL TRIAL OF DRUGS held at ISF COLLEGE OF PHARMACY, PB in 2011.
- 6) 47th ANNUAL CONFERENCE of IHPA held at ISF COLLEGE OF PHARMACY, PB in 2010.
- 7) SILVER JUBILEE CONFERENCE OF INDIAN PHARMACY GRADUATES ASSOCIATION held at ISF COLLEGE OF PHARMACY, PB in 2009.
- 8) 12th ANNUAL NATIONAL ISP CONVENTION held at ISF COLLEGE OF PHARMACY, PB in 2008.

Teaching and Mentoring Experience**Assistant Professor (Contractual)****2013 - 2015**

Department of Pharmaceutical Sciences,
Guru Nanak Dev University, Amritsar, PB, India

Advisor to 1 graduate student, 7 undergraduate students in Bedi Lab at Guru Nanak Dev University

Harbinder Singh, Harminder Singh, Sandeep Bhagat, Charanjeet Kaur, Manpreet Kaur, Arshdeep Singh, Suruchi Dhiman and Mandeep Kumar

Mentor to 2 visiting students in Chiosis Lab at Memorial Sloan Kettering Cancer Center

Eugene Toth and Elijah Lowe

Honors and Awards

- ❖ Best poster prize in poster competition at Postdoctoral Research Symposium held at Rockefeller Research Labs, New York in 2019.
- ❖ 3rd prize in poster presentation at 14th Tri-institutional Chemical Biology Symposium held at Rockefeller University, New York in 2018.
- ❖ Awarded post graduate scholarship from All India Council of Technical Education during Master of Pharmacy for qualifying Graduate Aptitude Test of Engineering
- ❖ Distinction in Master of Pharmacy
- ❖ 1st prize in poster presentation at 1st Indo-Korean Conference organized by APP Punjab State Branch at GHG Khalsa College of Pharmacy, Gurusar Sadhar, Ludhiana, Punjab in 2015
- ❖ Guest of Honor at Shaheed Bhagat Singh College of Pharmacy, Patti, Punjab, India

Other Activities

- ❖ Recipient of BrightFocus Foundation Research grant on Alzheimer's Disease (BrightFocus Grant Number A2022020F) entitled, "**DEVELOPMENT OF EPICHAPEROME IMAGING PROBES FOR ALZHEIMER'S DISEASE**", in the amount of \$200000 for the period 7/1/2022 - 6/30/2024.
- ❖ Reviewer for European Journal of Medicinal Chemistry, BMC Pharmacology & Toxicology, Journal of Molecular Liquids, Current Medicinal Chemistry, Biomedicine and Pharmacotherapy, MedChemComm, Research on Chemical Intermediates, ChemistrySelect, Phytotherapy Research, Natural Product Research, Journal of Heterocyclic Chemistry, Archiv der Pharmazie, Journal of Nanostructure in Chemistry, Bioinformation, ACS Omega, African Journal of Pure and Applied Chemistry, Biochemical Sciences, Bioorganic and Medicinal Chemistry, Bioorganic Chemistry, Biochemistry & Physiology, International Immunopharmacology, Food Chemistry, Toxicology In Vitro, Journal of International Medical Research, Chemical Papers, Journal of Molecular Structure, Natural Product Communications, Synthetic Communications, Journal of Chemistry, Food Research International, Computational and Structural Biotechnology Journal, Frontiers in Cardiovascular Medicine, Tetrahedron, Aquaculture, Molecular and Cellular Probes, Monatshefte für Chemie - Chemical Monthly, SN Comprehensive Clinical Medicine, Nutrients, Frontiers in Pharmacology, Frontiers in Oncology, Journal of Personalized Medicine, Food Frontiers, Biomedicines, PLOS One, Chemico-Biological Interactions, Journal of Medicinal Chemistry.
- ❖ Editorial board member for journal BMC Pharmacology & Toxicology
- ❖ Guest Associate Editor for Cellular Biochemistry (Frontiers in Cell and Developmental Biology and Frontiers in Molecular Biosciences)
- ❖ Editorial Board Member for Cells
- ❖ Review Editor for Pharmacology of Anti-Cancer Drugs (Frontiers in Pharmacology and Frontiers in Oncology)
- ❖ Editorial Board Member for Advances in Pharmaceutical Sciences
- ❖ Editorial Board Member for Annals of Applied Sciences
- ❖ Pursued One-month training at Adley Formulations, Baddi, HP in 2009.
- ❖ Membership: New York Academy of Sciences

Languages

- ❖ English (professional proficiency)
- ❖ Hindi (native)
- ❖ Punjabi (native)

References

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Program in Chemical Biology and Department of Medicine
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