

UGIR HOSSAIN SK, PhD

Scientist

Drug delivery and Drug discovery laboratory

Clinical and Translational Research
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About Me

Ugir was born in Burdwan on 1st January 1977. He obtained his M.Sc. degree in Organic Chemistry from Jadavpur University in 2001. He received his Ph.D. in 2007 from Chittaranjan National Cancer Institute-Jadavpur University, Kolkata in 2007. He did postdoctoral research from National Brain Research Centre-Gurgaon, Pennsylvania State University-USA, Wayne State University-USA, and Osaka Prefecture University-Japan for around more than five years.

After return to India, he joined at CSIR-Institute of Himalayan Bioresource Technology, Himachal Pradesh with his Fast Track Young Scientist Research grant as Principal Investigator. Later he appointed as a Scientist Fellow in the same Institute during (2015-2018). In August 2018, he joined the Department of Clinical and Translational Research, Chittaranjan National Cancer Institute, Kolkata as Scientist (Senior Scientific Officer-II). His research focuses on the nano-drug delivery formulation of multidisciplinary approaches (based on synthetic organic chemistry and polymer chemistry) of the clinically relevant anticancer drugs and their preclinical application for patient health benefits.



Research Focus

Dr. Ugir's lab is conducting highly interdisciplinary research focused on pre-clinical development of dendrimer-drug conjugates against different cancer, which covers medicinal chemistry, nanotechnology-based drug delivery, biological and animal studies. Dr. Ugir's current research interests include dendrimer-based targeted delivery of cancer therapeutic drugs, in order to minimize toxicity and enhance the efficiency of treatment and imaging; synthesis of nanoconjugate, characterization and testing; preclinical in vitro and in vivo evaluation of anticancer therapeutics; sustained release characteristic of the drugs from nanodevices in physiological condition and determine pharmacokinetics. The recent goal is to develop single nanodevices of combination drugs therapy to increase efficacy against cancer disease measurements and improvement.

Position

Ph.D. positions: Highly motivated students with CSIR/UGC-JRF or INSPIRE fellowship are encouraged to apply directly to Ugir (uhocju@gmail.com) with a letter of interest along with CV.

Postdoc positions: Interested and qualified Ph.D. holders may contact for postdoctoral position to Ugir (uhocju@gmail.com) with their CV and research interest. For postdoctoral fellowships application in SERB-NPDF, CSIR-RA, ICMR-RA, and DBT-RA will be supported.

Publications

Google Scholar citation

| <u>Citation indices</u> | All | Since 2014 |
|-------------------------|-----|------------|
| <u>Citations</u> | 764 | 454 |
| <u>h-index</u> | 18 | 14 |
| <u>i10-index</u> | 27 | 24 |

1. A R Patra, S. S Roy, A Basu, A Bhuniya, A Bhattacharjee, S Hajra, **U. H. Sk**, R Baral, S Bhattacharyaa. Design and synthesis of coumarin-based organoselenium as a new hit for myeloprotection and synergistic therapeutic efficacy in adjuvant therapy. **Nature Scientific reports** (Published 2018)
2. V Patial, S Sharma and **U.H.Sk**. Dendrimer conjugated estramustine nano crystalline 'DenDot': An effective inhibitor of DMBA-TPA induced papilloma formation in mouse. **Eur J Pharm Sci.**, 09, 316-323, **2017**.
3. D N. Karelia, **U.H.Sk**, P Singh, A. S. P Gowda, M K. Pandey, S R Ramiseti, S Amin, A K Sharma, Discovery of a Dual Topoisomerase-IIa and Akt Pathway Inhibitor NISC-6 as Potential Melanoma Therapeutic. **European Journal of Medicinal Chemistry**. **2017**, 135:282-295.
4. **U. H. Sk***, Nanosize dendrimers: potential use as carrier and antimicrobials, **ANTIMICROBIAL NANOARCHITECTONICS** (ELSEVIER, UK). Editor: Alexandru Mihai Grumezescu Book Chapter; Invited. 2017, Chapter 12, 323-355.
5. Kojima C, **U. H.Sk**, Fukushima D, Irie K, Akazawa N, Umeda M, Niidome T. Effect of Main Chain Conformation to Thermosensitivity in Elastin-Like Peptide-Grafted Polylysine. **RSC Advanced**. **2015**, 5, 104900-104906
6. **U. H. Sk***, V. Patial, S. Sharma. Low toxic synthetic dendrimer conjugated podophyllotoxin nanodevice with potent antitumor activity against DMBA/TPA induced mouse skin carcinogenesis model. **Toxicology Research**. **2015**, 4, 1204-1213.
7. **U. H. Sk**, C. Kojima. Dendrimers for theranostic applications. **BioMolecular Concepts**. **2015**, 6(3):205-17
8. D. Fukushima, **U.H. Sk**, Y. Sakamoto, I. Nakase, C Kojima Dual Stimuli-Sensitive Dendrimer: Photothermogenic Gold Nanoparticle-Loaded Thermo-Responsive Elastin-Mimetic Dendrimers. **Colloids and Surfaces B: Biointerfaces**. **2015**, 132,155–160.
9. **U. H. Sk**, C. Kojima. Dendrimers for Drug Delivery of Anticancer Drugs. **Frontiers in Clinical Drug Research- Anti Cancer Agents**, Bentham Science Publishers, Invited Article, Vol. 2, P3-25, **2015**.
10. **U. H.Sk***, D. Dixit, E. Sen. Comparative study of microtubule inhibitors- Estramustine and natural Podophyllotoxin conjugated PAMAM dendrimer on glioma cell proliferation. **Eur J Med Chem**. 68, 47-57, **2013**.
11. **U. H. Sk**, S. P. Kambhampati, M. K. Mishra, W. G. Lesniak, F. Zhang, R. M. Kannan. Enhancing the Efficacy of Ara-C through Conjugation with PAMAM Dendrimer and Linear PEG: A Comparative Study. **Biomacromolecules**. 14, 3, 801-810, **2013**.
12. J.K.Das, S.Sarkar, **U. H. Sk**, P. Chakraborty, R. K. Das, S. Bhattacharya. Diphenylmethyl selenocyanate attenuates malachite green induced oxidative injury through antioxidation and inhibition of DNA damage in mice. **Indian J Med Res**. 137, 1163-1173, **2013**.
13. Y. Cheng, **U. H. Sk**, Y. Zhang, X. Ren, L. Zhang, K. J. Huber-Keener, Y.-W. Sun, S. Amin, A. K. Sharma, J.-M. Yang. Rational incorporation of selenium into temozolomide elicits superior antitumor activity with promotion of both apoptotic and autophagic cell death, **PLoS One**, 7, 4, e35104, **2012**.
14. **U. H. Sk**, A.S. P. Gowda, J. K. Yun, T. E. Spratt, S. Amin, A. K. Sharma, Development of novel naphthalimide derivatives and their evaluation as potential melanoma therapeutics, **Eur J Med Chem.**, 46, 8, 3331-3338, **2011**.
15. J. A. Hengst, X. J. Wang, **U. H. Sk**, A. K. Sharma, S. Amin, J. K. Yun. Discovery and Evaluation of a Sphingosine Kinase 1 Specific Small molecule Inhibitor, **Bioorg Med Chem Lett**. 20, 24, 7498- 7502, **2010**.
16. S. S. Roy, P. Ghosh, **U. H. Sk**, P. Chakraborty, J. Biswas, A. Bhattacharjee, S. Bhattacharya Naphthalimide based novel organo selenocyanates: Finding less toxic forms of selenium that would retain protective efficacy, **Bioorg Med Chem Lett**. 20, 23, 6951-6955, **2010**.
17. P. Chakraborty, S. S. Roy, **U. H. Sk**, S. Bhattacharya. Amelioration of cisplatin induced nephrotoxicity in mice by oral administration of diphenylmethyl selenocyanate, **Free Radic Res.**, 45, 2, 177-187, **2011**.
18. P.S. Palakar, M. G. Borland, S. Naruhn, C. H. Ferry, C. Lee, **U. H. Sk**, A. K. Sharma, S. Amin, I. A. Murray, C. R. Anderson, G. H. Perdew, F. J. Gonzalez, R. Muller, J. M. Peters, PPAR β / δ -dependent and independent functions of the PPAR β / δ agonist GSK3787. **Mol Pharmacol.**, 78, 419-430, **2010**.
19. K. Sharma, **U. H. Sk**, P. He, J. Peters, S. Amin, Synthesis of isosteric selenium analog of the PPAR β / δ - agonist GW501516 and comparison of biological activity, **Bioorg Med Chem Lett.**, 20, 14, 4050-4052, **2010**.
20. K. Sharma, **U. H. Sk**, M. A. Gimbor, J. A. Hengst, X. Wang, J. Yun, S. Amin, Synthesis and bioactivity of sphingosine kinase inhibitors and their novel aspirinyl conjugated, **Eur J Med Chem.**, 45, 9, 4149-4156, **2010**.
21. **U. H. Sk**, A. K Sharma, S. Ghosh, S. Bhattacharya, Prevention of cadmium induced oxidative and hepatic damage in mice by a series of spiro [6-methoxytetralin-1, 3'-pyrrolidine] based organo selenocyanates: Effect of chain length, **Eur J Med Chem.**, 45, 8, 3265-3273, **2010**.
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23. P. Charabarty, **U. H. Sk**, S. Bhattacharya, Chemoprotection and enhancement of cancer chemotherapeutic efficacy of cyclophosphamide in mice bearing Ehrlich ascites carcinoma by diphenylmethyl selenocyanate. **Cancer Chemother Pharmacol**. 64, 5, 971-980, **2009**.
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Education

Ph.D. 2007) Jadavpur University, Kolkata, West Bengal
 M.Sc. 2001 (Chemistry, Organic Chemistry, Jadavpur University,
 B. Sc. Chemistry (Hons) 1999, University of Burdwan, INDIA

Awards and Honours

1. TAKEDA Science Foundation International Fellowship, JAPAN (2012)
2. DST- Fast Track Young Scientist (2012-2016, Grant value: Rs. 28 lakhs)
3. Postdoctoral research associate (Wayne State University, USA, 2011).
4. Postdoctoral research fellowship (Pennsylvania State University, USA 2007-2010)
5. DBT-Postdoctoral research fellowship (National Brain Research Centre, INDIA, 2007)
6. Qualified in GATE (97.01 percentile 2002)
7. Qualified in CSIR NET-JRF (INDIA, 2002)
8. 2015-present Editorial Board Member, Nature Scientific Reports (Nature Publication Group)

Collaborator:

1. Dr. Partha Pratim Manna, Associated Professor, Banaras Hindu University, UP
2. Dr. Ellora Sen, Associate Professor, National Brain Research Centre, Gurgaon,
3. Dr. Rakesh Tiwari, Assistant Professor, Chapman University, USA