


KIRORI MAL COLLEGE

FACULTY PROFILE PROFORMA

First Name	Anita	Middle Name	Kamra	Last Name	Verma	Photograph
Title & Designation	Professor					
Address	Nanobiotech Lab Department of Zoology Kirori Mal College, University of Delhi, Delhi-110007					
Phone Number: Office	+911127667861					
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Web-Page	https://publons.com/researcher/3517030/anita-verma linkedin.com/in/anita-kamra-verma-2240371ab https://orcid.org/0000-0001-6341-5930 https://www.researchgate.net/profile/Anita-Verma-8					
Educational Qualifications:						
Degree	Institution				Year	
PDF	National Institute of Immunology				1994-1997	
Ph D	Magadh University				1988	
PG	University of Delhi				1982	
UG	University of Delhi				1980	
Career Profile:						
Dept of Zoology,	Kirori Mal College	Professor			May, 2018- Contd,	
Dept of Zoology,	Kirori Mal College	Associate Professor			July 2003- April2018	
Dept of Zoology,	A.N College, Patna	Reader			Jun 1998-Jun 2003	
Dept of Zoology,	A.N College, Patna	Lecturer			Jun 1990-Jun 1998	
Administrative Assignments:						
Corporate life contribution at University/Department Level:						
<ul style="list-style-type: none"> • Member, Departmental Research Committee (DRC), Zoology, Delhi University: (2020-22) • Fellow, Delhi School of Public Health, Institution of Eminence, University of Delhi (2022-2024) • Member, Departmental Research Committee (DRC), Zoology, Delhi University: (2018-20) • Member, Committee of Courses for UG and PG, Zoology: (2016-22) • Member, Curriculum Committee for FYUP, CBCS and LOCF. (2014, 2016, 2019) • Designed the curriculum M.Tech (Nanoscience and Nanotechnology) classes for 3rd Sem (Paper 304: Introduction to Biology) and 5th Sem (Paper 502: Advanced Nano Biotechnology including nanomedicine and nanodiagnostics) were also taught at Nanobiotech Lab, Kirori Mal College from 2011-2017 						
College/Department Level: Member						
<ul style="list-style-type: none"> • Coordinator DBT-STAR College Scheme 2019-2022 • Nodal Officer DBT-Science Setu at KMC, DU, 2014-2021 • Teacher-in-charge: 2009-2011, 2016-2018 						

- Convener: Eco-Club, 2016-2018
- Convener: Research & Innovation projects, 2014-2016
- Convener: Research Development Committee, 2015-2017
- Convener: Vision 2025 Research and Innovation, 2015-2017
- Member, IQAC 2015-2018
- Member, Discipline committee for Anti-Ragging, 2015-2017
- Member, Squad Proctor Committee, 2016
- Sports committee Chess 2014-2016
- Member, SPIC MACAY, 2010-2012
- Staff Advisor for Zoology Society, 2010, 2013, 2016, 2019
- Convenor, Life Sciences, 2018
- Chairperson, Expert Advisory Committee for Nanotechnology Dictionary, 2012 -2019
- Coordinator/Convener: DST-INSPIRE; 2013, 2015

Co-ordinator, Faculty Development Programs/Workshops:

- FDP on Environmental Audit (2021)
- Innovation in Scientific Research Methods (2020)
- Advanced Spectroscopy ~75 Faculty (2018)
- Biochemistry of Metabolic Processes ~ 30 Faculty (2015)
- Immunology ~ 30 College Faculty (2013)
- Resource Person at CPDHE, Refresher Course in "Trends in Physiology" (2001)

Selection Boards

- Expert, Biotechnology Manual for Class XI & XII at NCERT (2020)
- Member of the selection committee for the prestigious Khorana Scholar program which has been partnered by Department of Biotechnology (DBT), Govt. of India, Indo-U.S. Science and Technology Forum (IUSSTF) and WINStep Forward for the past 4 years.
- Team Leader of the Indian Delegates for an International Program on "Reservation and Exploration of Herbal Medicine Resources for Asian Countries" funded by Ministry of Commerce, People's Republic of China, from August 19, 2015 to September 8, 2015.

Areas of Interest / Specialization:

Nanobiotechnology, Cancer biology, Nanomedicine, Nanotoxicology, Rheumatoid arthritis- Immunology

Research in the lab includes '**Developing Nano-Therapeutics and Nano-medicines**', making in-vivo models for quantifying nanoparticulate drug delivery for cancer, Rheumatoid arthritis and Diabetes, developing rationale designs, based on whole body and cellular pharmacokinetics-pharmacodynamic profile of drugs. We are actively involved in developing a novel concept to exploit the colloidal self-assembly complexations for possible applications as pesticide carrier vehicles, and to use novel Strategies involving Nanomaterials/Nanocomposites and Biosorption for Removal of toxic metals from water. Our lab has a CPCSEA registered Animal Holding facility. We use in vivo models for noninvasive or minimally invasive intravital microscopy techniques that provide insight into the microscopic kinetics of drug/gene delivery. An advanced Animal Cell culture lab where students can get hands-on experience in Faculty Details proforma for DU Web-site www.du.ac.in Page 2 doing experiments cancer cells and in setting up the '**Dorsal Skin-fold Window Chamber**' on mice (syngenic and nude) for **non-invasive fluorescence microscopic studies**.

Subjects Taught:	
Physiology, Immunology, Biotechnology, Biochemistry, Nanobiotechnology - M.Tech Nanoscience & Nanotechnology	
Research Guidance:	
<ol style="list-style-type: none"> 1. Supervision of Doctoral Thesis: Awarded - 14 2. Supervision of M. Phil Dissertations: Awarded - 01. 3. Supervision of PhD students: In progress – 08. 4. Supervision of Summer Interns: Post Graduate (Six Months): M.Tech - 28 M.Sc. – 15 Undergraduate (Two Months): B.Sc. – 80 	
PhD AWARDED	Present Position
1. Raies Ahmad (2001)	Professor, Dept of Biotechnology, University of Srinagar,
2. Kumar Sachin (2008)	Associate Professor,
3. Abhishek Chanchal (2010)	Entrepreneur
4. Ramendra Pati Pandey (2013)	Assistant Professor, SRM University
5. Md Najmul Islam (2013)	Guest Faculty, Jamia Milia Islamia
6. Bahadur Singh Gurjar (2016)	Senior Scientific Office, Genes2Me Pvt Ltd.
7. Ankita Leekha (2017)	PDF, Department of Chemical & Biomolecular Engineering, Cullen College of Eng., University of Houston, Houston
8. Vijay Kumar (2017)	MedTrain Marie Sklodowska Curie Postdoctoral Fellow, Percuros BV, Leiden & Department of Radiology, Leiden University Medical TNI Group, Department of Radiology, Leiden University Medical Centre, Albinusdreef 2, 2333 ZA
9. Sweta Pandey (2018)	Industry in Pune
10. Imran Moin (2019)	RA in Nanobiotech Lab, K.M. College, University of Delhi
11. Aakriti Tyagi (2019)	Teaching in private University
12. Disha Mittal (2021)	Biotechno Labs; Ansal chambers 2 Bhikaji Cama place Delhi
Publications Profile:	
a. Research Paper	
<ol style="list-style-type: none"> 1. Mittal D, Singh A, Kohli K, Verma AK. Engineering biosafe Cisplatin loaded Nanostructured Lipid Carrier: Optimization, Synthesis, Pharmacokinetics and Biodistribution. Journal of Microencapsulation. 2022 Nov 3:1-44. doi.org/10.1080/02652048.2022.2131919 2. Arora, L., Patra, D., Roy, S., Nanda, S., Singh, N., Verma, A. K., & Pal, D (2022). Hypoxia-induced miR-210-3p expression in lung adenocarcinoma potentiates tumor development by regulating CCL2-mediated monocyte infiltration. Molecular Oncology. DOI: 10.1002/1878 0261.13260 3. Pal, D., Arora, L., Dasgupta, S., Singh, N., & Verma, A. K. (2022) Development of a multicellular 3D tumor model to study cellular heterogeneity and plasticity in NSCLC tumor microenvironment. <i>Frontiers in Oncology</i>, 2744. 4. Ali Sartaj, Annu, Meraj Alam, Largee Biswas, Md S Yar, S.R. Mir, Anita K. Verma, S. Baboota & J. Ali (2022) Combinatorial delivery of Ribociclib and green tea extract mediated nanostructured lipid carrier for oral delivery for the treatment of breast cancer synchronizing in silico, <i>in vitro</i>, and <i>in vivo</i> studies; Journal of Drug Targeting: 1-22. 	

5. Shrivastava N, Parikh A, Dewangan RP, Biswas L, **Verma AK**, Mittal S, Ali J, Garg S, Baboota S. (2022) Solid Self-Nano Emulsifying Nanopatform Loaded with Tamoxifen and Resveratrol for Treatment of Breast Cancer. *Pharmaceutics*; 14, 1486.
6. Largee Biswas, Karishma Niveria & **Anita K Verma** (2022) Paradoxical role of reactive oxygen species in bone remodelling: implications in osteoporosis and possible nanotherapeutic interventions; *Exploration of Medicine*; Vol 3 (1) 393–413; Open exploration; DOI: <https://doi.org/10.37349/emed.2022.00102>
7. Kumar, R., Yadav, N., Jain, H., Deswal, N., Upadhyay, R.K., Leekha, A., **Verma, A.K.**, Kareem, A., Chikati, R. and Kumar, L.S., (2022) Microwave-Assisted Synthesis of 4-Aryl-1, 4-dihydropyridines as Potent Anticancer Agent and Their *in-silico* Studies. *Chemistry Select*, 7(19), p.e202104129
8. K. Niveria, M. Yadav, K. Dangi, **A. K. Verma** (2022) Overcoming challenges to enable targeting of metastatic breast cancer tumour microenvironment with nano-therapeutics: Current status and future perspectives; *OpenNano*, Vol 8, 100083, ISSN 2352-9520, <https://doi.org/10.1016/j.onano.2022.100083>.
9. Kumari, Namrata; Daram, Nagarjuna; Alam, Md. S.; Verma, Anita K. (2022) Rationalizing the Use of Polyphenol Nano-formulations in the Therapy of Neurodegenerative Diseases. *CNS & Neurological Disorders - Drug Targets (Formerly Current Drug Targets - CNS & Neurological Disorders)*, Vol 21, (10) 966-976 (11) doi.org/10.2174/1871527321666220512153854
10. Shukla, V. and **Kamra Verma, A.**, 2022. Downmodulation of lysophosphatidic acid by Berberine loaded folate-conjugated glycol chitosan nanoparticles (BFGCN) to mitigate Rheumatoid arthritis (RA) & Cardio-vascular disease (CVD): Current knowledge and future perspectives. *Indian Journal of Biochemistry and Biophysics (IJBB)*, 59(4), pp.440-449.
11. Priyanka Singh, Monika Yadav, Karishma Niveria & **Anita Kamra Verma** (2022) Nano-immuno-therapeutics: targeting approach as strategic regulation at tumor microenvironment for cancer treatment; *Exploration of Medicine*; 3 (1); 22-422
12. Yagnik Setia V, Dangi K, Biswas L, Singh P, **Kamra Verma A.** (2022) Nano-therapeutic efficacy of green synthesized gold nanoparticles (gAuNPs) and its antibacterial efficacy. *Indian Journal of Biochemistry and Biophysics (IJBB)*. 2022 Nov 4;59(4):455-60.
13. V Acharya V, **Kamra Verma A.** Chemical denaturants induced folding unfolding pathway of the recombinant zebrafish dihydrofolate reductase. *Indian Journal of Biochemistry and Biophysics (IJBB)*. 2022 Apr 3;59(2):148-56.
14. Ali Sartaj, Annu, Largee Biswas, **Anita K. Verma**, P. K. Sahoo, S. Baboota & J. Ali (2022) Ribociclib Nanostructured Lipid Carrier Aimed for Breast Cancer: Formulation Optimization, Attenuating *In Vitro* Specification, and *In Vivo* Scrutinization; *BioMed Research International* Volume 2022, Article ID 6009309, 24 pages <https://doi.org/10.1155/2022/6009309>
15. Kapinder Kumar, Kriti Bhardwaj, **Anita Kamra Verma** (2022) Nanosensors: Next Generation Nanotechnology for Sustainable Agriculture; *Heliyon* SSRN 3983087; Elsevier.
16. Saxena, M., Mittal, D., Boudh, R., Kumar, K., **Verma, A.K.**, Saxena, R (2021) Drug adsorption and anti-microbial activity of functionalized multiwalled carbon nanotubes. *Advances in Nano Research*, 11 (6), 667-678.
17. Gupta, P, Verma, A.K., Chaudhuri Chattopadhyay P (2021) Investigating the Chaperoning Effect of Nanoparticles in Chemically Denatured zDHFR: an *in vitro* Study; *Asian Journal of Chemistry*; 33(8) 1929-34
18. D Mittal, L Biswas, AK Verma (2021) Redox resetting of cisplatin-resistant ovarian cancer cells by cisplatin-encapsulated nanostructured lipid carriers; *Nanomedicine*, 16(12), 979-995. <https://doi.org/10.2217/nnm-2020-0400>
19. Moditma, Priyanka Singh, Raksha Sharma, Anita K Verma & S Annapoorni (2021) FeCo nanoparticles as antibacterial agents with improved response in magnetic field: an insight into the associated toxicity mechanism; *Nanotechnology* 32 (33) 5101-5012.
20. P. Gupta, **Verma, A.K.** & Chaudhuri Chattopadhyay P (2021) Investigating the Chaperoning Effect of Nanoparticles in Chemically Denatured zDHFR: An *in vitro* Study; *Asian journal of Chemistry*, 33(8) 1929-1934.
21. Lamichhane N, Sharma S, Parul, **Anita K Verma**, Roy I and Tapas Sen (2021) Iron Oxide-Based Magneto-Optical Nanocomposites for *in vivo* Biomedical Applications; *Biomedicines* 2021, 9(3), 288; <https://doi.org/10.3390/biomedicines9030288>
22. M Yadav, K Niveria, T Sen, I Roy & **A K Verma** (2021) Targeting nonapoptotic pathways with functionalized

- nanoparticles for cancer therapy: current and future perspectives; Nanomedicine, 16(12);
23. Moin, I, Biswas, L. Md Zafaryab, Namrata, Leekha, A, Mittal, D, **A.K. Verma (2021)** *In vitro* Toxicogenomics of Etoposide Loaded Gelatin Nanoparticles and Its *in-vivo* Therapeutic Potential: Pharmacokinetics, Biodistribution and Tumor Regression in Ehrlich Ascites Carcinoma (EAC) Mice Model; Frontiers in Nanotechnology; 11, (3); <https://doi.org/10.3389/fnano.2021.624083>
 24. N. Ranjan, R. Singh, I.P.S. Ahuja, R. Kumar, D. Singh, **Anita K. Verma**, D. Mittal (2021) 3D printed scaffolds for tissue engineering applications: Mechanical, morphological, thermal, in-vitro and in-vivo investigations; CIRP Journal of Manufacturing Science and Technology, Vol 32, Jan 2021, Pg 205-216
 25. K Dangi, Kapinder, **AK Verma (2021)** Efficient & eco-friendly smart nano-pesticides: Emerging prospects for agriculture; Materials Today: Proceedings, 2021
 26. R. Kathpalia & **A. K. Verma (2021)** Bioinspired nanoparticles for Artificial photosynthesis; doi:10.1016/J.MATPR.2021.03.214
 27. Kapinder, Kriti Bhardwaj, **Anita Kamra Verma (2021)** Corona Outbreak: Is it Nature's wake-up Call?; Int J Appl Biol Pharm 2021; 12 (1): 301-321.
 28. R. Kumar, N. Yadav, A. Leekha, R. Bawa, P. Gahlyan, M. Bhandari, R. Arora, **Anita K. Verma**, R. Kakkar (2021) Novel 1-Triazolylpyranopyrazoles as Highly Potent Anticancer Agents Obtained via MW-Assisted Synthesis; Vol 6, (4), Jan 2021, Pages 589-594
 29. R. Setia & **Anita K Verma (2021)** Review of Coveralls, Gowns, and their Use as Part of Personal Protective Equipment (PPE KIT) for Effective Protection of Healthcare Workers in India in COVID-19; Integrative Journal of Medical Sciences, Vol 8, Pg 1-10
 30. S. Pandey, N. Rai, A. Mahtab, D. Mittal, F.J. Ahmad, N. Sandal, Y R Neupane, **Anita K Verma**, S. Talegaonkar (2021) Hyaluronate-functionalized hydroxyapatite nanoparticles laden with methotrexate and teriflunomide for the treatment of rheumatoid arthritis; International Journal of Biological Macromolecules; Vol 171, Feb 2021, Pg 502-513
 31. P. Gupta, R. Verma, **Anita K. Verma**, Pratima C. Chattopadhyay (2020) A versatile tool in controlling aggregation and Ag nanoparticles assisted in vitro folding of thermally denatured zDHFR; Biochemistry and Biophysics Reports, Vol 24, Dec 2020, 100856
 32. **Anita Kamra Verma (2020)** Nano-theragnostic Approach to Mitigate Covid-19; J Nanomed Nanotechnol, Vol 11(5), 545-550.
 33. R.P. Pandey, S. Kumar, S. Ahmad, A. Vibhuti, V.S. Raj, **Anita K. Verma**, P Sharma, E. Leal (2020) Use Chou's 5-steps rule to evaluate protective efficacy induced by antigenic proteins of Mycobacterium tuberculosis encapsulated in chitosan nanoparticles (2020); Life Sciences; 117961
 34. Vijay Kumar, Ankita Leekha, Ankur Kaul Anil Kumar Mishra & **Anita Kamra Verma (2020)** Role of folate-conjugated glycol-chitosan nanoparticles in modulating the activated macrophages to ameliorate inflammatory arthritis: *in vitro* and *in vivo* activities; *Drug Deliv. and Transl. Res.* **10**, 1057–1075 (2020). <https://doi.org/10.1007/s13346-020-00765-w>
 35. L. Siddiqui, J. Bag, D. Mittal, Seetha, A. Leekha, Mishra H, Mishra M, P K. Mishra **A. K. Verma**, A. Ekielskie, Iqbal Z & S Talegaonkar (2020) Assessing the potential of lignin nanoparticles as drug carrier: Synthesis, cytotoxicity and genotoxicity studies; International Journal of Biological Macromolecules, Vol 152, 786-802.
 36. N. Ranjan, Rupinder Singh, I. P. S. Ahuja, R. Kumar, J. P. Singh, A. Leekha, **Anita K. Verma (2020)** On 3D printed scaffolds for orthopedic tissue engineering applications; SN Applied Sciences; 2:192.
 37. Leekha, V. Kumar, I. Moin, B.S. Gurjar, **Anita Kamra Verma* (2019)** Modulation of Oxidative Stress by Doxorubicin Loaded Chitosan Nanoparticles, Journal of Cancer Research and Practice, 6, (2), 76-84.
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 39. A. Mahtab, M. Rizwanullah, S. Pandey, A. Leekha, S.A. Rabbani, **AK Verma**, Mohd Aqil, S. Talegaonkar (2019) Quality by design driven development and optimization of teriflunomide loaded nanoliposomes for treatment of rheumatoid arthritis: An *in vitro* and *in vivo* assessments; Journal of Drug Delivery Science and Technology, Vol 51, 383-396.
 40. Sharma, S, Mittal, D, **Verma, A.K.**, & Roy, I. (2019). Copper-Gallic Acid Nanoscale Metal–Organic Framework

- for Combined Drug Delivery and Photodynamic Therapy. ACS Applied Bio Materials, 2(5), 2092-2101.
41. L. M. Negi, S. Talegaonkar, M. Jaggi, **Anita K Verma (2019)** Hyaluronated imatinib liposomes with hybrid approach to target CD44 and P-gp overexpressing MDR cancer: an *in-vitro*, *in-vivo* and mechanistic investigation; Journal of drug targeting, J Drug Target. 27(2):183-192
 42. S Pandey, V Kumar, A Leekha, N Rai, FJ Ahmad, **AK Verma**, Mohd Akil & S. Talegaonkar (2019) Co-Delivery of Teriflunomide and Methotrexate from Hydroxyapatite Nanoparticles for the Treatment of Rheumatoid Arthritis: *In-Vitro* Characterization Pharmacodynamic & Biochemical Investigations: Pharmaceutical research 35 (11),
 43. I Moin, L Biswas, D Mittal, A Leekha, N Kumari, **Anita K Verma (2018)** Crosstalk of ER Stress, Mitochondrial Membrane Potential and ROS Determines Cell Death Mechanisms Induced by Etoposide Loaded Gelatin Nanoparticles in MCF-7 Breast Cancer Cells; Journal of Nanomedicine and Nanotechnology, 9(4).
 44. S Pandey, V Kumar, A Leekha, N Rai, FJ Ahmad, **Anita K Verma**, S. Talegaonkar (2018) Co-Delivery of Teriflunomide and Methotrexate from Hydroxyapatite Nanoparticles for the Treatment of Rheumatoid Arthritis: *In Vitro* Characterization, Pharmacodynamic and Biochemical Investigations; Pharmaceutical Research 35: (11), 201-215.
 45. L. M. Negi, S. Talegaonkar, M. Jaggi, **Anita K Verma (2018)** Hyaluronated imatinib liposomes with hybrid approach to target CD44 and P-gp overexpressing MDR cancer: an *in-vitro*, *in-vivo* and mechanistic investigation; Journal of drug targeting, 1-10
 46. **Anita K. Verma***, A. Leekha, V. Kumar, I. Moin and S. Kumar (2018) Biodistribution and In-vivo Efficacy of Doxorubicin Loaded Chitosan Nanoparticles in Ehrlich Ascites Carcinoma (EAC) Bearing Balb/c Mice; J Nanomed Nanotechnol 510, 9 (4), 1-6
 47. J Singh, R Singh, H Singh, **Anita K Verma (2018)** Investigations for mechanical properties and biocompatibility of SS-316L implant prepared as rapid investment casting for batch production Sādhanā 43 (5), 76
 48. B.S. Gurjar, T M Sriharsha, A. Bhasym, S Prabhu, M Puraswani, P Khandelwal, H. Saini, S. Saini, **Anita Kamra Verma**, P. Chatterjee, P. Guchhait, V. Bal, A. George, Satyajit Rath, A. Sahu, A. Sharma, P. Hari, A. Sinha, A. Bagga (2018) Characterization of genetic predisposition and autoantibody profile in atypical haemolytic-uraemic syndrome; Immunology; 154, 663–672
 49. Daljinder Singh, R. Singh, K.S. Boparai, I. Farina, **Anita K. Verma (2018)** *In-vitro* studies of SS 316 L biomedical implants prepared by FDM, vapor smoothing and investment casting; Composites Part B: Engineering, Volume 132, Pg 107-114.
 50. D. Vohora, A. Kalam, A. Leekha, S. Talegaonkar, **Anita K. Verma (2018)** Combined Raloxifene and Letrozole for Breast Cancer Patients; Archives of medical research; Vol 48, Issue 6, Pg 561-565.
 51. Kapinder, Disha Mittal, **Anita K. Verma (2017)** Exploiting the Potential of Nanotechnological Applications in Rural Areas to Effectively Eliminate Pollutants from Water Bodies, Vol 11, IJNT; Issue 8, Pg 943-950
 52. V Kumar, A Leekha, A Tyagi, A Kaul, AK Mishra, **AK Verma (2017)** Preparation and evaluation of biopolymeric nanoparticles as drug delivery system in effective treatment of rheumatoid arthritis; Pharmaceutical research 34 (3), 654-667
 53. Sreenu Bhanoth, A. Kshirsagar, P.K Khanna, A. Tyagi, A Leekha, V. Kumar, **Anita K. Verma (2017)** Synthesis, characterization and bio-evaluation of core-shell QDs with ZnSe, CdS and CdSe combinations; Adv. Mater. Lett. 2016, 7(12), 100-150.
 54. S Bhanoth, A Tyagi, **AK Verma**, PK Khanna (2017): Cytotoxicity studies of II-VI semiconductor quantum dots on various cancer cell lines; Advanced Materials Letters 2017, 8(4), 368-376
 55. **AK Verma**, A Leekha (2016) Elucidation of Glutathione-S-transferase Activity Induced by Pectin-Cisplatin Nano-conjugates for Optimization of New Therapeutic Strategies; J Nanomed &

Nanotechnology, 7 (4) 391

56. A Leekha, BS Gurjar, A Tyagi, MA Rizvi, **AK Verma (2016)** Vitamin C in synergism with cisplatin induces cell death in cervical cancer cells through altered redox cycling and p53 upregulation; Journal of cancer research and clinical oncology 142 (12), 2503-2514
57. Chaudhary, R., K. Roy, Rupinder K. Kanwar, Rakesh N. Veedu, K. Subramanian, C. Hei A Cheung, **Anita K Verma** and Jagat R. Kanwar; (2016) E-cadherin aptamer conjugated delivery of doxorubicin for targeted inhibition of prostate cancer cells; Australian Journal of Chemistry, 69 (10), 1108-1116.
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59. JP Singh, PM Pandey, **AK Verma (2016)** Fabrication of three dimensional open porous regular structure of PA-2200 for enhanced strength of scaffold using selective laser sintering; Rapid Prototyping Journal, 22 (4). (IF 2.03)
60. S. Bhanoth, A. Kshirsagar, P.K. Khanna, A. Tyagi, A. Leekha, V. Kumar & **Anita K. Verma (2016)** Synthesis, Characterization and Bio-evaluation of Core-Shell QDs with ZnSe, CdS and CdSe Combinations; Adv. Mater. Lett. 7.
61. A Tyagi, K Rawat, **Anita K Verma**, HB Bohidar (2016) Mechanistic evaluation of the size dependent anti-microbial activity of water soluble QDs; Analytical Methods
62. S. Bhanoth, A. S. Kshirsagar, P. K. Khanna, A. Tyagi, **Anita K Verma (2016)** Biotoxicity of CdS/CdSe Core-Shell Nano-Structures; Advances in Nanoparticles 5 (5), 1-8
63. A Dey, A Dasgupta, V Kumar, A Tyagi, **AK Verma (2015)** Evaluation of the antibacterial efficacy of polyvinylpyrrolidone (PVP) and tri-sodium citrate (TSC) silver nanoparticles; International Nano Letters, 1-8
64. L. Sheikh, R Vohra, **A K Verma**, S Nayar (2015) Biomimetically Synthesized Aqueous ferrofluids Having Antibacterial and Anticancer Properties, Materials Sciences and Applications 6 (03), 24
65. S Puram, K Rawat, A Tyagi, **Anita K Verma**, HB Bohidar (2015) Physical, antimicrobial and cytotoxic characterisation of LaF₃: Eu³⁺ ion doped nanocrystals; International Journal of Nanoparticles 8 (2), 184-200
66. S Agarwal, A Leekha, A Tyagi, V Kumar, I Moin, **AK Verma (2015)** Versatility of Chitosan: A Short Review Journal of Pharma Research 43, 125-134
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69. L.M. Negi, S. Talegaonkar, M. Jaggi, **Anita K. Verma**, R. Verma, S. Dobhal, V. Kumar (2014): Surface engineered nano structured lipid carriers for targeting MDR tumor: Part I. Synthesis, characterization and in-vitro investigation. Colloids and surfaces B: Biointerfaces. 10/2014; DOI: 10.1016/j.colsurfb.2014.09.062 [Impact Factor: 4.28].
70. L.M. Negi, S. Talegaonkar, M. Jaggi, **Anita K. Verma**, R. Verma, S. Dobhal, V. Kumar (2014): Surface engineered nanostructured lipid carriers for targeting MDR tumor: Part II. In vivo biodistribution, pharmacodynamic and hematological toxicity studies. Colloids and surfaces B: Biointerfaces 10/2014; DOI: 10.1016/j.colsurfb.2014.09.061 [Impact Factor: 4.28].
71. K. Rawat, S. Agarwal, A. Tyagi, **Anita K. Verma**, H B Bohidar (2014) Aspect Ratio Dependent

- Cytotoxicity and Antimicrobial Properties of Nanoclay, Applied Biochemistry and Biotechnology 06/2014; DOI:10.1007/s12010-014-0983-2.[ISSN: 0273-2289]I.F 2.02
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- on nanoparticles and the prospect of conjugation with arsenic trioxide. *Anti-cancer drugs* 2012;23(5):471-82 [IF : 2.23]
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b. Books

1. Protein Kinase inhibitors.
2. Microbiome in Inflammatory Lung Diseases
3. Macrophage Targeted Delivery Systems: Basic Concepts and Therapeutic Applications
4. Handbook of Oxidative Stress in Cancer: Mechanistic Aspects
5. Targeting Cellular Signalling Pathways in Lung Diseases
6. Nanoparticle Therapeutics
7. Smart Drug Delivery
8. Advances and Avenues in the Development of Novel Carriers for Bioactives and Biological Agents
9. Promise of Nanotechnology in Rural development: Achievements and Challenges
10. Animal Cell Biotechnology

c. Chapter in books

1. Nanotechnology-based targeted delivery systems for protein kinase inhibitors in Cancer therapy. Academic Press. Mittal, D., Niveria, K., & Verma, A. K. (2022), In *Protein Kinase Inhibitors* (pp. 747-779).
2. “Microbiota Targeted *via* Nanotechnology for Lung Cancer Therapy: Challenges and Future Perspectives” (2022) Monika Yadav & Anita K.Verma Pg 359-377 in *Microbiome in Inflammatory Lung Diseases* (Hardcover ISBN978-981-16-8956-7; eBook ISBN978-981-16-8957-4
3. Chapter “Macrophage Targeting by Nanocarriers for Therapy of Autoimmune Diseases” (2022) Biswas L, Yadav M, Singh P, Talegaonkar S, Verma AK. *Macrophage Targeted Delivery Systems: Basic Concepts and Therapeutic Applications*. Pg 317-337. Hardcover ISBN: 978-3-030-84163-8; eBook ISBN978-3-030-84164-5
4. Chapter “Understanding ROS Induced DNA Damage for Therapeutics” in “Handbook of Oxidative Stress in Cancer: Mechanistic Aspects”, (2021) SpringerLink; Pg 1-23; (ISBN:978-981-15-4501-6)

5. Chapter "Underpinning the Cellular and Molecular Mechanisms with Nanotheranostics for Lung Cancer" in Targeting Cellular Signalling Pathways in Lung Diseases, Springer Nature. (2021) (ISBN: 978-981-33-6826-2)
6. Chapter "Pharmacokinetics and *in vivo* evaluation of nanoparticles" in book entitled "Nanoparticle Therapeutics"; Elsevier. (2021) (ISBN: 9780128207574)
7. Chapter "Smart drug-delivery systems in the treatment of rheumatoid arthritis: current, future perspectives" in book entitled "Smart Drug Delivery"; IntechOpen (2021) (ISBN: 978-1-83969-539-1)
8. Chapter "Rheumatoid Arthritis: Basic Pathophysiology and role of chitosan nanoparticles in therapy, in book entitled "Advances and Avenues in the Development of Novel Carriers for Bioactives and Biological Agents"; Elsevier, Pg 1-22. (2020) (ISBN:978-0-12-819666-3)
9. Biotechnology for Sustainable Development, Chapter on Promise of Nanotechnology in Rural development: Achievements and Challenges, McGraw Hill Custom Publishing, Pg 225-238.
10. A text Book of Biotechnology, Chapter on Animal Cell Biotechnology. John Wiley Publication. Pg.855-915

Conference / Workshops/Training Organized:

1. Conference on "**Recent Advances in Nano Medical Sciences (RANMS 2022)**" - **Institute of Nano Medical Sciences (INMS)** (June 22-23, **2022**). Talk on "siRNA-Au-Chitosan nanoparticles in knockdown SOST gene for osteoporosis therapy".
2. Certificate course on **hybrid mode Nanobiotechnology (NBT)** for Students under DBT Star College Scheme in Kirori Mal College: October, 2022
3. Organised Workshop on **Nanomedicine: Biomolecules for Human Health (NBHH-2021)** Small Molecules, Big Opportunities!! For Undergraduate Students under DBT Star College Scheme in Kirori Mal College (05 Oct 2021)
4. Organised webinar on "**World Environment Day**" on **5th June 2021** in collaboration with Department of Botany and Zoology, Kirori Mal College under DBT Star Scheme.
5. Organised Workshop on "**Butterfly Week Celebration Event**" on date 3rd -7th Sep 2021 in Kirori Mal College.
6. Organised conference on "**International Immunology Day**" in Department of Zoology under the aegis of DBT Star College Scheme on date 29th April 2021.
7. Organised Annual International Conference on "**Microbial World: Recent Developments Health, Agriculture and Environmental Sciences**" on date 3rd - 5th February 2021.
8. workshop on hands on training in "Aquarium Fish keeping and Feed Formulation" on date 30th Jan 2020 in Kirori Mal College
9. Workshop on "Spectroscopic Application In Biology & Environmental Sciences" 15th November 2018, (ICABERHW-2018) at Department Of Zoology, DDU Gorakhpur University, Gorakhpur UP, 273009 in collaboration with Department Of Zoology, Kirori Mal College, University of Delhi, Delhi-110007
10. Workshop on "Advanced Spectroscopy & Dynamic Light Scattering", 9th October 2018, Department Of Zoology, Kirori Mal College, University of Delhi, Delhi-110007

Creation of ICT Mediated Teaching Learning Pedagogy and Content:

1. **Immunological method-I**
(<https://www.youtube.com/watch?v=byikcK542EE>)
2. **Immunological tolerance**
(<https://www.youtube.com/watch?v=YuGomQIJ-9M>)
3. **Tumor Immunology**
(<https://www.youtube.com/watch?v=-bXcy5f1hPs>)
4. **Major Histocompatibility and Complex**
(<https://www.youtube.com/watch?v=yRH-RMz54wY&t=19s>)
5. **Immunodeficiency**
(<https://www.youtube.com/watch?v=NYi1h57Am00&t=3s>)
6. **Regulation of Immune responses**
(<https://www.youtube.com/watch?v=4KyRAUpJfkQ&t=450s>)
7. **Transplantation and Rejection**
(<https://www.youtube.com/watch?v=6avFCsTTEXA>)
8. **Immunological Methods – II**
(<https://www.youtube.com/watch?v=e9qYIjI9Evw&t=2s>)
9. **Evolution of Immunity**
(<https://www.youtube.com/watch?v=x0pLRtHIAU0&t=108s>)
10. **Regulation of Immune Response and Cytokines**
https://epgp.inflibnet.ac.in/view_f.php?category=1308
11. **Cell Adhesion molecules and Chemokines**
https://epgp.inflibnet.ac.in/view_f.php?category=1308
12. **Leukocyte activation and Migration**
https://epgp.inflibnet.ac.in/view_f.php?category=1308

Conference/Workshops/Training attended as Faculty Member:

1. Conference on “Recent Advances in Nano Medical Sciences (RANMS 2022)” - Institute of Nano Medical Sciences (INMS) (June 22-23, 2022). Talk on “siRNA-Au-Chitosan nanoparticles in knockdown SOST gene for osteoporosis therapy”.
2. Evaluation of Paclitaxel loaded Amine-Functionalized Mesoporous Silica Nanoparticles against Metastatic Breast Cancer, Karishma Niveria & **Anita k Verma*** RANMS, 2022
3. Targeting macrophages polarization by Berberine loaded glycol chitosan nanoparticles in RAW 264.7 cells. Vikas Shukla & **Anita k Verma*** RANMS 2022
4. Mangiferin encapsulated ChMNPs for magneto-Nano-therapeutics management of RA. Priyanka Singh & **Anita k Verma*** RANMS 2022
5. “Efficacy of stealth carboplatin loaded lipid-polymer hybrid nanoparticles against non-small cell lung cancer cells” Monika Yadav & **Anita k Verma*** RANMS 2022
6. “Synthesis Of Amine Functionalized Mesoporous Silica Nanoparticles for Co-Delivery of Paclitaxel and Sirna Against Metastatic Breast Cancer” Karishma Niveria & **Anita k Verma*** RMBPD, 2022
7. “Exploring the Combinatorial efficacy of Carboplatin and Gambogic acid (GA) on carboplatin-resistant triple-negative breast cancer (TNBC)” Kapil Dangi & **Anita k Verma*** RMBPD, 2022
8. “Potential of Resveratrol loaded NLC (ResNLC) induced Bone healing in VCD-induced osteoporotic mice model” Largee Biswas & **Anita k Verma*** NBHH, 2021.
9. “Cytotoxicity and biocompatibility assessment of berberine encapsulated folate conjugated glycol-chitosan nanoparticles: *in-vivo*, *ex-vivo* and *in-vivo* approach”. Vikas Shukla & **Anita k Verma*** NBHH, 2021
10. “Targeted mesoporous silica Nanoparticles for co-delivery of Paclitaxel and Nucleic acid against Metastatic breast cancer” Karishma & **Anita k Verma*** NBHH, 2021

11. "Biopolymer coated magnetic nanoparticles as potential nano-DDS for treatment of Rheumatoid arthritis". Priyanka Singh & **Anita k Verma*** NBHH, 2021
12. "Self-assembled stealth lipid-polymer hybrid nanoparticles for lung cancer therapy: optimization, characterization and biocompatibility" Monika Yadav & **Anita k Verma*** NBHH, 2021.
13. Use of Nanoparticles in Biomedical Research (2021) Valedictory talk in Workshop series on "**Molecular Biology Tools**" for Undergraduate Students under DBT Star College Scheme: February 27-April 17, 2021.
14. Therapeutic potential of oral resveratrol chitosan drug delivery system in VCD induced osteoporotic mice model by activation of SIRT1 (2020); Invited talk on 2nd International Symposium on "Functional Nanomaterials in Industrial and Clinical Applications: Academy – Industry- Clinician Meet" 14-16th July 2020
15. Nanotechnology Solutions to Covid-19 (2020) Invited Speaker **Anita K. Verma***; Department of Biochemistry, Institute of Home Economics on 1st May 2020.
16. "Enhanced Drug Adsorption and Anti-microbial Activity of Functionalized Multiwalled carbon nanotubes", A Virtual, 2nd International Symposium on Functional Nanomaterials in Industrial and Clinical Applications: Academy- Industry- Clinician Meet, 14th - 16th July, 2020, University of Central Lancashire, UK, **Lecture**, Megha Saxena, Disha Mittal, Richa, Kapinder, **Anita K Verma** and Reena Saxena
17. "Antibacterial properties of highly magnetic monodispersed FeCo Nanoparticles, Moditma, **Priyanka Singh**, Raksha Sharma, **A. K. Verma** and S. Annapoorni in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet from 14th to 16th July 2020.
18. "Lysophosphatidic acid (LPA) as a potential biomarker to envisage cardiovascular disease (CVD) in *Rheumatoid arthritis* patients" Vikas Shukla & Anita K Verma in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet from 14th to 16th July 2020.
19. "Stealth lipid polymer hybrid nanoparticles encapsulated with paclitaxel for effective brain delivery"; Monika Yadav & Anita K Verma in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet from 14th to 16th July 2020.
20. "Redox-activated targeted mesoporous silica nanoparticles (MSN)-based nano-delivery platform for co-delivery of doxorubicin (NH₂MSN-DOX-CpG/FA) against Lung cancer"; Karishma & Anita K Verma in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet from 14th to 16th July 2020.
21. "Mangiferin mediated Nano-therapeutic efficacy for chronic wound treatment through magnetic or photodynamic effect"; Priyanka Singh & Anita K Verma in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet on 14th July 2020
22. "Cisplatin encapsulated Nanostructured-Lipid Carriers (CisNLC) induced sensitization of Cis-resistant ovarian cancer cells & elucidating the interlink between reactive oxygen species, glutathione and ATP7B: an *in vitro* study" D. Mittal, L Biswas, Anita K. Verma in 2nd International Symposium (via virtual Platform): Functional Nanomaterials for Industrial applications, Academy-Industry-Clinicians Meet on 14th July 2020.
23. Harnessing inflammatory arthritis by pH-responsive glycol chitosan nanoparticles: in vitro and in vivo activities [2019] **Anita K. Verma***; Invited speaker at Global Bio India, NANOBIOTECK- 2019, 4th Annual Conference of ISNM 21st-23rd November 2019, Aerocity, New Delhi,
24. Crosstalk of ER stress, Mitochondrial Membrane potential and ROS determines cell death mechanisms induced by Etoposide loaded Gelatin nanoparticles in MCF-7 breast cancer cells [2019] **Anita K. Verma***, Invited speaker at the National Conference on Nano/Bio- Technology 2019, 19th -21st December 2019, Convention Center, JNU, New Delhi-110067
25. "Overcoming drug resistance in ovarian cancer *via* modulating drug-efflux and mitochondrial targeting by Cisplatin loaded Nanostructured Lipid Carriers" [2019] Disha Mittal, L. Biswas. **Anita K. Verma*** National Conference on Nano/Bio-Technology (19-21, Dec 2019)
26. Reactive oxygen species-mediated mitochondrial pathway is involved in core shell quantum dots induced apoptosis

- in hepatocellular carcinoma cells [2019] A.Tyagi, Monika & **Anita K. Verma** at National Conference on Nano/Bio- Technology 2019, 19th -21st December 2019, Convention Center, JNU, New Delhi-110067
27. Characterization, Antibacterial and Antioxidant activities of Bio-inspired and chemically synthesized gold nanoparticles [2019] Kapil Dangi, P Singh, V. Shukla & **Anita K. Verma** at National Conference on Nano/Bio-Technology 2019, 19th -21st December 2019, Convention Center, JNU, New Delhi-110067
 28. Novel one-pot but two-step synthesis of modified biofunctionalized gold nanoparticles as siRNA carrier [2019] V. Shukla[#], Karishma[#], Z. Yab, L. Biswas, **Anita K. Verma**; Global Bio-India Submit-2019, Nanobioteck-2019 and Nanoforagri-2019 with association of Department of Biotechnology, Govt. of India at Aerocity, New Delhi (21st-23rd November 2019)
 29. Invited Talk on “Nanobiotechnology:Drug Delivery to cancer tissue” at Department of Biochemistry, Institute of Home Economics on 13th Sep 2019.
 30. “Formulation and Evaluation of Nanostructured Lipid Carriers (NLC) for Cisplatin delivery against Ovarian Cancer” [2019] Disha Mittal, Anita K. Verma; 1st International Conference on Integrative Chemistry, Biology & Translational Medicine (ICBTM) (25th-26thFeb 2019), conference Hall, Univ of Delhi.
 31. Antimicrobial and biocompatibility potential of gold-chitosan nanocomposites[2019] **V. Shukla**, Priyanka Singh, Disha Mittal **Anita K.Verma**, 1st International Conference on Integrative Chemistry, Biology & Translational Medicine (ICBTM) (25th-26thFeb 2019), conference Hall, Univ of Delhi.
 32. CD44 Targeted Hydroxyapatite based Nano delivery system for effective management of Rheumatoid arthritis [2018] Sweta Pandey, F.J.Ahmed, **Anita K.Verma**, S. Talegoankar; 18th World Congress on Basic & Clinical Pharmacology, 1st-6th July 2018, Kyoto, Japan
 33. Biocompatible etoposide encapsulated Gelatin Nanocarriers: Preparation, Cellular uptake and Cytotoxicity[2018] Imran Moin, L. Biswas, D. Mittal , A. Leekha & **Anita K. Verma***International Conference on Nano-biotechnology, Jamia Milia Islamia, Delhi (5th-6th Feb., 2018)
 34. Evaluating the nanotheranostic potential of pH- responsive folate glycol-chitosan nanoparticles in ameliorating inflammatory arthritis: in vitro and in vivo activities [2018] Anita Kamra Verma, V. Kumar, L. Biswas, D. Mittal, A. Leekha and Z. Yab; Nanobioteck 2018; AIIMS, New Delhi.
 35. **Anita K Verma*** Invited as Discussant to attend NANOBIOTECK – 2017 in partner with Indian Society of Nanomedicine (ISNM) on 6th – 8th December 2017 at Trivandrum
 36. **Anita K.Verma*** Invited as Discussant at the International Conference on Nanobiotechnology for Agriculture: From Research to Innovation (NANOFORAGRI-2017) in partner with TERI-Deakin NanoBiotechnology Center (TDNBC) on 20th – 21st November 2017
 37. Lead determination using functionalized MWCNTs and determination in industrial and river water samples using hyphenated Flow Injection-Flame Atomic Absorption Spectrometry (FI-FAAS) and antimicrobial activity of functionalized MWCNTs [2016] S.Bajaj, V.Jain, A.Chowdhury, A.Kakkar, Asis, A. Gupta, Kapinder, **Anita K. Verma**, Reena Saxena; **National Conference on “Combating Industrial Pollution for Sustainable Environment-A fusion of industrial and scientific efforts”** Sep 22-23, 2016, Department of Chemistry, Gargi college, University of Delhi.
 38. Evaluation of Antimicrobial activity of silver nanoparticles derived from the bark and leaf extract of *Syzygium cumini* [2016] Disha Mittal & **Anita K.Verma**, International Conference on Biomedical technologies and Supportive technologies (BEST 2016) , B.I.E.T, Jhansi, Uttar Pradesh
 39. Interplay of Immune Responses Induced By Biopolymeric Nanoparticles [2016], **Anita Kamra Verma**; **2nd International Conference on “Recent Advances in Nanoscience & Nanotechnology”** ICRANN-2016, 19th-20th Dec 2016, Special Centre for Nanosciences, JNU, New Delhi
 40. National conference on Recent Advances in Biomedical Science:Diagnosis & Research BIOMEDCON 2016; 16th Dec 2016 at Gandhi Peace Foundation.
 41. Mechanistic aspects, pharmacokinetics & Pharmacodynamics of quantum dots and nanoparticles[2015]. **Anita K. Verma**, Recent Biochemical Approaches in Therapeutics: RBAT-II (2015) 9th-11th Dec 2015.
 42. Application of Nanobiotechnology in Clinical Diagnostics, **Anita Kamra Verma** [2015] Recent Trends in Nano-bio Interface, 18th Dec 2015, Special centre for nanosciences, JNU, New Delhi.
 43. Biototoxicity and Mechanistic studies of Surface Modified CdSe Quantum Dots, [2015]**Anita K. Verma**, National

Conference on chalcogens[NC3], DIAT Pune

44. Pharmacokinetics & Pharmacodynamics of Quantum Dots, nanoparticles and nanoconjugates: Mechanistic aspects. **Anita K. Verma**, Invited speaker, ICRANN 2014, held on 15-16th Dec 2014 at JNU, New Delhi
45. Effect of mass and aspect heterogeneity of chitosan nanoparticles on bacteriocidal activity, A. Agarwal, A. Tyagi, A. Leekha, V. Kumar, and **Anita K. Verma**. **1st International Conference on emerging trends of Nanotechnology in drug discovery, Dept of Biochemistry, South Campus, Univ. of Delhi, 26th-27th May 2014.**
46. To evaluate the *in-vitro* neoplastic potential of chitosan nanoparticles and release kinetics of biopolymeric nanoparticles against cervical cancer. S. Agarwal, S. Fatima and **Anita K Verma**, **20th ISCBC International Conference on Chemistry and medicinal plants in translational medicine for healthcare, Dept of Chemistry, Univ of Delhi, 1st 4th March 2014**
47. Biototoxicity of Nanomaterials and Immunomodulation. **Anita K. Verma**, **Nanotechnology Conference: Safety measures and concerns, CFEES, DRDO 20th-23rd Nov 2013**
48. Paradoxical effects of Oxidative stress and immune regulation in tuberculosis. **Anita K Verma**, International Nanomedicine Conference, Sydney, Australia. 1st-3rd July 2013.
49. Protective Efficacy induced by Antigenic Proteins of *Mycobacterium tuberculosis* encapsulated in biopolymeric nanoparticles in Balb/c mice Infected with *M. tb*. **Ramendra Pati Pandey & Anita Kamra Verma**, **European Congress of Immunology**, Glasgow, Scotland, 6-8th Sep 2012.
50. Nanotechnology - An emerging bastion for Women in Science - Anita Kamra Verma Resource Person in the two day national conference on "Women in Science" on March 14- 15, 2012.
51. 1st International Conference on Functional Materials for Defence (ICFMD- 2012) (ICFMD-2012)
52. *Polymer drug conjugate therapeutics – the new Paradigm* , **Anita Kamra Verma** Invited talk at the **Multi Mega Event of 24th Annual National Conference of Indian Society of Atherosclerosis Research and International CME on Atherosclerosis**, 24th-25th Sep 2011, ISARCON 2011, JIPMER, Puducherry (India)
53. **Anita Kamra Verma** Chaired the session on **Biomarkers and Drug Development**, 2nd World Congress on Biomarkers-2011, 12-14th Sep 2011, Baltimore, USA
54. Invited Speaker on "**Biopolymer nanotherapeutics: : Enabling oncology drug development by nanoconjugates & nanoparticles,**" **Anita K. Verma**, 2nd World Congress on Biomarkers-2011, 12-14th Sep 2011, Baltimore, USA
55. Invited speaker in the Center for Regenerative Medicine, University of Tübingen, Germany, **Nanomedicines: Smart Liposomal & Biopolymeric Nanoparticles/ Nanoconjugates for Drug Delivery**, **Anita K. Verma**, on 21st June 2011, Germany
56. **Immuno-potentiating role of encapsulated proteins of infectious diseases in biopolymeric nanoparticles as a potential delivery system**, **Anita K. Verma**, R. P. Pandey, A. Chanchal, P. Sharma, **International Symposium on The Safe Use of Nanomaterials & Workshop on Nanomaterial Safety: Status, Procedures, Policy and Ethical Concerns** from February 1-3, 2011, IITR, Lucknow.
57. Resource Person in the National Workshop on "**Recent Advances in Bioelectrical Impedance For Body Composition & its Clinical Applications**" (RABICA-2011), 26- 27 March 2011, held at D. Y. Patil University, Kolhapur, India
58. Development of chitosan nanocarriers for the intraepithelial delivery of Antigenic Secretory Proteins of *Mycobacterium tuberculosis* through mucosal surfaces, **Anita K Verma**, **Invited Speaker** at International Symposium on TB Diagnostics: Innovating to Make an Impact; 16th-17th Dec, 2010, International Centre for Genetic Engineering & Biotechnology ICGEB Campus, New Delhi, INDIA.
59. **Invited Speaker** in the "International Conference on Nanotechnology and Medical Sciences: New Interfaces" **Anita K. Verma**, 21-23 Oct. 2010, D. Y. Patil University, Kolhapur, India.
60. **Encapsulation of therapeutic proteins of Mycobacterium tuberculosis in Biopolymeric Nanoparticles for possible aerosol delivery system**, **Anita K. Verma**, R P. Pandey, A Chanchal, I Siddiqui, P Sharma . **14TH International Congress of Immunology**, Aug 22-27, 2010, Kansai, Japan,
61. Pharmacokinetics & *in-vivo* biodistribution of 99mTc hydrophilic paclitaxel loaded biopolymeric nanoparticles [2010] **Anita K. Verma***, A. Chanchal & A. K. Misra; 37th Annual Meeting & Exposition of the Controlled Release Society (CRS), July 10 – 14, 2010, Portland, OR, USA.
62. **Nanomedicines: Smart Liposomal & Biopolymeric Nanoparticles for Drug Delivery to cancer tissue**. **Anita K. Verma** **Invited Speaker** in "**INDO-US Workshop on Nanotechnology: Applications and Implications**" during

10-12 November, 2009 at IICT, Hyderabad, India

63. Poster presented in **"INDO-US Workshop on Nanotechnology: Applications and Implications"** during 10-12 November, 2009 at IICT, Hyderabad.
64. Polymer conjugates: Pharmacokinetics & in-vivo biodistribution of hydrophilic Nano-conjugates, Liposomes & biopolymeric nanoparticles. **Anita K. Verma** Invited talk in the **International Symposium on Nanostructured Materials: Structure, Properties and Applications (ISNM-2009)**, October 28-29, 2009, Kanya Maha Vidyalaya, Jalandhar.
65. Release Kinetics, and Cellular uptake of hydrophilic polymeric nanospheres prepared by radical crosslinking copolymerization, **Anita K. Verma**. Invited talk in the **International Symposium on Nanostructured Materials: Structure, Properties and Applications (ISNM-2009)**, October 28-29, 2009, Kanya Maha Vidyalaya, Jalandhar.
66. Pharmacokinetics & in-vivo biodistribution of hydrophilic Nano-conjugates, **Anita K. Verma**, Invited lecture in the **"International Conference on Nanoscience & Nanotechnology"** October 15 -16, 2009, AIT, Gurgaon, India
67. Nano-therapeutics: in-vivo biodistribution of ^{99m}Tc Labelled- Surface coated Paclitaxel Loaded hydrophilic Biopolymeric Nanoparticles for the treatment of Hepatic cancer. **Anita K. Verma**. **International Conference on Radiation Biology & Translational Research in Radiation Biology**, 2008, 10-12 Nov, Jaipur, India.
68. Nanomedicine in cancer therapeutics: Pharmacokinetics & in-vivo biodistribution of hydrophilic Drug Loaded Biopolymeric Nanoparticles vs Nano-conjugates. **Anita K. Verma**. **International Conference on Biomedical Engineering & Nanotechnology ICBENT-2008**, October 21-23, 2008, Kolhapur, India.
69. Paclitaxel loaded Stimuli-Responsive biopolymeric Nanogel-particles: Preparation, Drug-Release Behaviors, in-vitro Cellular Interaction and biodistribution in tumor bearing mice model. **Anita K. Verma**, A. Chanchal, Ajay Kumar & H.B. Bohidar. **Indo-Australian Conference on Medical Biotechnology** 2008, 11-12 Feb, 2008, National Institute of Immunology, New Delhi, India.
70. Nano-pharmaceuticals: Pharmacokinetics and in vivo Biodistribution of Hydrophilic Paclitaxel Loaded Biopolymeric Nanoparticles, **Anita K. Verma**, **Invited Lecture International Conference on Nanomaterial Toxicology [ICONOTOX 2008]** 5th –6th Feb ITRC, Lucknow.
71. Nanobiotechnology in India, **Anita K. Verma**. Expert Group Meeting on Nanotechnology, Sustainability and Developing Economics in the 21st Century, UNIDO Headquarters, Vienna International Centre, Austria, 10-12 December 2007
72. Polymer Therapeutics: Surface coated gelatin nanospheres for treatment of hepatic Cancer. **Anita K. Verma**, A. Chanchal, Ajay Vashisht & H.B. Bohidar. **Invited Lecture** in the 5TH Annual Conference of "BIOTECHNOLOGY SOCIETY OF INDIA" **"Biotech 2007"** Nov 2007, Lucknow
73. Long Circulating Drug Polymer nano-conjugates of Cisplatin- Pharmacokinetics, Release kinetics and Cellular uptake. **Anita K. Verma**, A. Chanchal, K. Sachin & H.B. Bohidar. **Oral Presentation ESF-EMBO Symposium: Probing Interactions Between Nanoparticles/Biomaterials and Biological Systems: Alternative Approaches to Bio- and Nano-toxicity**. Spain Nov. 2007.
74. Polymeric Nanosystems for Cancer Therapeutics – Liposomes, nanoparticles and nanoconjugates. **Anita K. Verma**, **Invited Talk in International Conference on Nanomedicine**, Bhubaneswar, India.
75. "Novel Nanotherapy: Bioresponsive Polyelectrolyte Complexes Based on Polysaccharide" **Anita K. Verma** & K. Sachin. Oral Presentation at International Conference on Nanomedicine 2007, at Bhubaneswar
76. Dissolution kinetics of Intramolecular aggregates & Self folded gelatin coacervates entrapping Cycloheximide (CHX), at various pH values. A. Chanchal, H.B. Bohidar, **Anita K. Verma**, Oral presentation at International Conference of Nanotechnology, ICNT'06, San Francisco, USA- 30th Oct-Nov2, 2006
77. Influence of physico-chemical variation on the release profile of self-folding pectin cisplatin nano-conjugates. K. Sachin, H. B. Bohidar, **Anita K. Verma**. Poster presented at Indo-US Symposium on Nanotechnology & Advanced drug delivery. Oct 5-6, 2006, NIPER, Chandigarh.
78. Release kinetics and cellular uptake of hydrophilic drug polymer nano-conjugate to enhance blood circulating levels of Cisplatin. **Anita K. Verma**, K. Sachin, A. Chanchal, H. B. Bohidar. Oral presentation at International Nanobioscience Conference, Aug, 6-8, Pune 2006.
79. Characterization and Stability Studies on Gelatin Nanoparticles. Poster at Nanoinitiative by DST in March, 2005. K. Sachin, A. Saxena, H. B. Bohidar, **A. K. Verma** at Pune.

80. PVP nanocarriers for a hydrophilic drug Richa Tyagi, **Anita Kamra Verma** and S. Mozumdar. Poster in Asean Biotechnology 2004
81. Physical characterization and encapsulation of a prodrug of a β -Lactum drug for a possible oral delivery system R. Tyagi, **Anita K. Verma**, S. Mojumdar Presented a poster in ICONOSAT 2003, Dec 2003, at Kolkata.
82. Diffusion of macromolecules in gel and living tissue matrix measured by FCS. S. A. Tatarkova, **Anita K. Verma**, D.A. Berk. International Conference on Advanced Laser Technologies. Oral presentation at Cranfield University, UK in Sep 2003.
83. A Low Toxic Drug Formulation of 5-FU Derivative in crosslinked polymeric micelles. **Anita K. Verma**, S. Soni, S. Mazumdar and A.N. Maitra. Paper Presented at Second International Conference on Tumor targeted Drug Delivery systems, held at NIH, Bethesda, Maryland, USA in September 2002
84. Bioimaging & Optical methods for pharmacokinetic studies. David A. Berk, Sveta Tatarkova, **Anita Kamra Verma**, Chris Lloyd, Harmesh Aojula. Bioimaging Initiative Grantholders' Workshop 11-13 July, 2000, at Keele University, UK.
85. Immunotherapeutic Effects of a Glucosylxanthone compound isolated from *Mangifera indica* against Mastocytoma Tumour implant in mice. Anita Kamra, D.N.K. Sarma, Suman Dhawan, Shakti N. Upadhyay. Presented at the INDO-FRENCH SYMPOSIUM on Immunomodulation in December, 1995 NII, New Delhi.

Invited Lectures/Resource Persons:

1. Conference on “Recent Advances in Nano Medical Sciences (RANMS 2022)” - Institute of Nano Medical Sciences (INMS) (June 22-23, 2022). **Invited Talk** on “siRNA-Au-Chitosan nanoparticles in knockdown SOST gene for osteoporosis therapy”.
2. Therapeutic potential of oral resveratrol chitosan drug delivery system in VCD induced osteoporotic mice model by activation of SIRT1 (2020); **Invited talk** on 2nd International Symposium on “Functional Nanomaterials in Industrial and Clinical Applications: Academy – Industry- Clinician Meet” 14-16th July 2020
3. Nanotechnology Solutions to Covid-19 (2020) **Invited Speaker Anita K. Verma***; Department of Biochemistry, Institute of Home Economics on 1st May 2020.
4. “Enhanced Drug Adsorption and Anti-microbial Activity of Functionalized Multiwalled carbon nanotubes”, A Virtual, 2nd International Symposium on Functional Nanomaterials in Industrial and Clinical Applications: Academy- Industry- Clinician Meet, 14th - 16th July, 2020, University of Central Lancashire, UK, **Lecture**, Megha Saxena, Disha Mittal, Richa, Kapinder, **Anita K Verma** and Reena Saxena
5. Harnessing inflammatory arthritis by pH-responsive glycol chitosan nanoparticles: in vitro and in vivo activities [2019] **Anita K. Verma***; **Invited speaker** at Global Bio India, NANOBIOTECK- 2019, 4th Annual Conference of ISNM 21st-23rd November 2019, Aerocity, New Delhi,
6. Crosstalk of ER stress, Mitochondrial Membrane potential and ROS determines cell death mechanisms induced by Etoposide loaded Gelatin nanoparticles in MCF-7 breast cancer cells [2019] **Anita K. Verma***, **Invited speaker** at the National Conference on Nano/Bio- Technology 2019, 19th -21st December 2019, Convention Center, JNU, New Delhi-110067
7. 1st International Conference in “Integrative Chemistry, Biology and Translational Medicine”, 25-26 February 2019, Conference Hall, University of Delhi, Delhi-110007
8. BIOMEDCON 2018 National Conference On “Recent Advances In Biomedical Science: Diagnosis & Research” and 4th Annual Scholars’ Science meet of SBMLS 28th December 2018, Department Of Zoology, Kirori Mal College, University of Delhi, Delhi-110007
9. 6th World Conference on Nanomedical Sciences “Multidisciplinary strategies: special reference to Chemistry – Biology Interface” Annual Conference of the International Society for Nanomedical Science (ISNSCON-2018), 9-14 December 2018, Vigyan Bhawan, New Delhi.
10. Conference on “Advances in Biological & Environmental Science for Human Welfare” (ICABERHW-2018) 16-18 November, Department Of Zoology, DDU Gorakhpur University, Gorakhpur UP, 273009
11. Role of Nanotechnology in Advances in Biology and Environmental Research. **Invited speaker** in International Conference on Advances in Biology and Environment Research in Human welfare (ICABERHW-2018).

12. Nanobiotechnology: the next revolution, invited talk in Nano-world conference 2018
13. Interplay of Immune Responses Induced by Biopolymeric Nanoparticles, invited speaker in 2nd International Conference on "Recent Advances in Nanoscience & Nanotechnology" ICRANN-2016, JNU.
14. National conference on Recent Advances in Biomedical Science: Diagnosis & Research BIOMEDCON 2016 in "Recent Advances in Biomedical Science: Diagnosis & Research" at Gandhi Peace Foundation.
15. Biotoxicity and Mechanistic studies of Surface Modified CdSe Quantum Dots, invited speaker in ICRANN, 2014 at JNU.
16. Nanobiotechnology and nano revolution, invited speaker at 1st International Conference on Functional Materials for Defence (ICFMD- 2012).
17. Polymer drug conjugate therapeutics – the new Paradigm, invited speaker in 24th Annual National Conference of Indian Society of artherosclerosis Research & International CME on Atherosclerosis at International Conference International Conference, JIPMER, Puducherry
18. Biomarkers and Drug Development, chaired session in Biomarkers and Drug Development, 2nd World Congress on Biomarkers-2011 at international conference, Baltimore, USA.
19. Immuno-potentiating role of encapsulated proteins of infectious diseases in biopolymeric nanoparticles as a potential delivery system-2011, invited speaker in International Symposium on The Safe Use of Nanomaterials & Workshop on Nanomaterial Safety: Status, Procedures, Policy and Ethical Concerns at international conference IITR, Lucknow.
20. International Conference on Nanotechnology and Medical Sciences: New Interfaces, invited speaker in International Conference on Nanotechnology and Medical Sciences: New Interfaces at International conference D. Y. Patil University, Kolhapur-2010
21. Pharmacokinetics & in-vivo biodistribution of 99mTc hydrophilic paclitaxel loaded biopolymeric nanoparticles, invited speaker in 37th Annual Meeting & Exposition of the Controlled Release Society (CRS), Portland, OR, USA-2010
22. Nanomedicines: Smart Liposomal & Biopolymeric Nanoparticles for Drug Delivery to cancer tissue, invited speaker, in INDO-US Workshop on Nanotechnology: Applications and Implications at International workshop, IICT, Hyderabad-2009
23. Release Kinetics, and Cellular uptake of hydrophilic polymeric nanospheres prepared by radical crosslinking copolymerization, invited speaker in International Symposium on Nano-structured Materials: Structure, Properties & Applications (ISNM-2009) at international symposium, Kanya Maha Vidyalaya, Jalandhar (2009).
24. Pharmacokinetics & in-vivo biodistribution of hydrophilic Nano-conjugates, invited speaker at International Conference on Nanoscience & Nanotechnology, AIT, Gurgaon-2009.
25. Nano-pharmaceuticals: Pharmacokinetics and in vivo Biodistribution of Hydrophilic Paclitaxel Loaded Biopolymeric Nanoparticles, invited speaker in International Conference on Nanomaterial Toxicology [ICONOTOX 2008] at International Conference, ITRC, Lucknow.

Research Projects (Major Grants/Research Collaboration):

Current Grants:

- i) **2022-2025** "Immunological validation and protective efficacy of multiepitope vaccine constructs designed from Mycobacterium tuberculosis dormancy associated proteins Rv2627c and Rv2628 in mouse model of tuberculosis." DST-SERB Power Grant.
 - ii) **2020-2023** Folate decorated pH responsive combinatorial nanocarriers mediated co-delivery of dual drugs and siRNAs for reversal of multidrug resistance and synergistic breast cancer therapy: Development and Characterization DST Serb
 - iii) **2019-2022** Funded by DBT, Govt. of India "DBT Star Status - Scheme" [Program Coordinator]
- Completed Projects**
- i) "Multifunctional Nanoparticles for Cancer Therapy" funded by UGC-UKIERI (2017-2020).
 - ii) "Small molecule functionalized biopolymeric nanoparticles encapsulating SiRNA for targeted delivery to

osteoblasts for managing bone disorders” funded by DBT, Tenure- 2017-2020, Budget-97.86 lakhs.

- iii) To assess the Adsorption Efficiency and Anti-microbial potential of activated Multi-walled Carbon nanotubes for removal of Lead from water samples. Collaborators: Anita Kamra Verma, Reena Saxena, DU. Funded by DU. 2015-16 (5.5 lakhs) [COMPLETED]
- iv) Assessment of humoral immune response against Ebola virus glycol-protein peptide using Balb/c mice as model. Anita Kamra Verma, Ph.D, 2015-16, Funded by DIPAS, DRDO. (9.9 lakhs) [COMPLETED]
- v) Pharmacological evaluations of Sea-buck thorn leaf extract for potential adjuvant activity Anita Kamra Verma, Ph.D, 2014-2015, Funded by DIPAS, DRDO. (9.8 lakhs) [COMPLETED]
- vi) Biopolymeric Nanoparticulate delivery for Rheumatoid Arthritis. Anita Kamra Verma, Ph.D, 2012-15, Funded by UGC. (11.78 lakhs) [COMPLETED]
- vii) Developing Immuno-therapeutic approaches for treatment of Type I diabetes along with replenishing insulin producing stem cells in Balb-c and NOD mice. Funded by DBT (2012-15) (42 lakhs) [COMPLETED]
Collaborators: Rajni Rani, Ph.D., NII & Anita Kamra Verma, Ph.D., DU.
- viii) Novel Strategies involving Nanomaterials/Nanocomposites and Biosorption for Removal of toxic metals from water. Anita K. Verma, S. Mohanty, Raksha Sharma, DU, Funded by DU. 2011-12. (10 lakhs)
- ix) To assess the mutagenic potential of some of commonly encountered environmental pollutants and therapeutic agents. Funded by DU. Anita K Verma, M. A Lal, R. Kathpalia DU, (10 lakh)
- x) Biopolymeric Stimuli sensitive Nanoparticulate Targeted Drug Delivery for Cancer Therapeutics. Anita Kamra Verma, DU. Funded by ICMR (30lakhs) 2010-13. [COMPLETED]
- xi) Detection of Polymeric nano-particulate drug delivery system for anti-cancer drug by Quantitative Fluorescence Microscopy. Anita Kamra Verma, DU. Funded by DBT. (~80 lakhs) 2008-2013 [COMPLETED]
- xii) Design of Novel polymer based non-viral vector for gene delivery, Anita Kamra Verma, DU, Funded by UGC. [COMPLETED] 2007-2010
- xiii) Encapsulation of Potentially Immunotherapeutic /Immunoprophylactic peptides in novel biocompatible nanosized Carriers for targeted delivery in IDDM- Funded by DBT. Collaborators: Rajni Rani, Ph.D., NII, H.B. Bohidar, Ph.D., JNU, Anita Kamra Verma, Ph.D., DU.(Approx 80 lakhs) 2005-2008 [COMPLETED]

Awards and Distinctions:

Patents

- (1) Upadhyay S.N, Vishwakarma R.A, Ghosal S, Shukla S, Bose C and **Kamra, A** (1999) Process of isolation and synthesis of 1-(3,4-methylenedioxy-phenyl)-1E-tetradecene and its analogues and a method for activation of effector mechanisms of the immune system against tumours/and or infections using formulations containing these compounds (**US Patent allowed on application # 08/865,152**).
- (2) Ram A. Vishwakarma, Shabri Ghosal, Supriya Shukla, S.N. Upadhyay, Chhanda Bose, **Anita Kamra**, & Suman Dhawan: Process for the isolation of an immunomodulatory compound NII-30, capable of activating the immune system, Chemical synthesis of the said product and its use in prevention/treatment of cancer. (**Patent No.: 172Del'97. Dated: 22 Jan '97**).

Awards

- 2022** Awarded **Fellow in Institute of Eminence** June 01, 2022
- 2021** "**Teacher Excellence Award for Research and Teaching**", by University of Delhi, Delhi.
- 2019** "**Distinguished Collaborator award**", by Department of Pharmaceutics, University of Lancashire, UCLa Princeton, UK in July 2019
- 2018** **Bharat Ratna Dr. A. P. J. Abdul Kalam Memorial Grace India "Best Teacher Awards 2018"** for contributions to research by Grace India Educational Charitable Trust, New Delhi, in the award ceremony at Hans Raj College, Delhi, India.
- 2018** **Bharat Ratna Dr APJ Abdul Kalam “Lifetime Achievement Award”** in BIOMEDCON-2018
- 2016** **SBMLS Fellow Award** for the outstanding contribution in **Nanotechnology** in BIOMEDCON 2016

- 2016** Best paper award in '**Rapid Prototyping Journal**' in 2016
- 2015** Group Leader of the Indian Delegates for the "International Program on "Reservation and Exploration of Herbal Medicine Resources for Asian Countries" funded by Ministry of Commerce, People's Republic of China, from August 19, 2015, to September 8, 2015.
- 2009** Awarded Charles Darwin Gold Medal in International Conference on Recent Trends in Life Sciences by The International Society for Ecological Communications in 2009.
- 2006** Awarded for most referenced paper at MIT in Cambridge, USA.
- 1985-88** JRF & SRF From ICAR agency

Development of e-learning delivery process/material

Name of the Module it was developed	Subject	Organization for which	From	to	Time Period
1. Careers in Nanotechnology	Nanotechnology	Employment News	2015-04-04	2015-04-10	
2. Careers in Biotechnology	Biotechnology	Employment News	2015-02-21	2015-02-25	
3. Consortium of Educational communication CEC EDUSAT	Immunology	UGC	2016-02-04	2016-08-29	
4. e-pathshala	Immunology	UGC	2015-03-09	2017-03-08	

Association with Professional Bodies:

Peer review of research grant proposals:

Department of Biotechnology, Task force member on NanoBiotechnology/ Nanoparticle mediated Drug / Biomolecule delivery,

Project Approval Committee of Department of Biodiversity & Biotechnology, Govt of Madhya Pradesh.

Peer Reviewer of Scientific Journals

- International Journal of Pharmaceutics
- International Research Journal of Biotechnology
- Nanoscience and Nanotechnology in Biology and Medicine
- Journal of Biomaterials and Nanobiotechnology,
- Pharmaceutical Research
- Bioscience Reports
- Nanomedicine
- International Journal of Nanomedicine
- AAPS PharmSciTech
- Nanotechnology
- BMC Complementary and Alternative Medicine
- Current Drug Delivery

Editorial Board member of the following journals:

- International Journal of Biotechnology & Biochemistry (IJBB)
- International Journal of Environmental Research and Development (IJERD)
- Current Drug Targets
- Cancer Drug resistance
- JoVE Methods Collection
- American Journal of Immunology

Memberships

- Controlled Release Society Mentor
- Zoology Society of India,

- Biotechnology Society of India,
- Member-International Association of Nanotechnology, Inc. [Membership ID: AM66990908, 2006
- Indian Nano Science Society
- Indian Immunological Society

Other Activities:

Fellowship/Financial assistance:

1. Nominated Head of the Indian Delegates for An International Program on “Reservation and Exploration of Herbal Medicine Resources for Asian Countries” funded by Ministry of Commerce, People’s Republic of China, from August 19, 2015 to September 8, 2015.

Infrastructure Set-Up

1. **ANIMAL HOUSE (CPCSEA Registered license no. 1666/GO/Re/S/12/CPCSEA):**

For *in-vivo* validation for translational research

2. **Set-up well Equipped Laboratories: For *in-vitro* validation**

- i) **Animal Tissue Culture Lab,**
- ii) **Microbial Testing lab,**
- iii) **Nanotechnology Characterization Lab**

12. Fellowship/Financial assistance/Travel Grant:

1. Nominated Head of the Indian Delegates for An International Program on “Reservation and Exploration of Herbal Medicine Resources for Asian Countries” funded by **Ministry of Commerce, People’s Republic of China**, from August 19, 2015 to September 8, 2015.
2. **Awarded International Travel Grant from UGC** to be an Invited Speaker “Paradoxical effects of Oxidative stress and immune regulation in tuberculosis.” **Anita K Verma**, at the International Nanomedicine Conference, Sydney, Australia. 1st-3rd July 2013.
3. Awarded **International Travel Grant (University of Delhi)** as an Invited speaker “**Biopolymer nanotherapeutics: Enabling oncology drug development by nanoconjugates & nanoparticles,**” **Anita K. Verma**, 2nd World Congress on Biomarkers-2011, 12-14th Sep 2011, Baltimore, USA
4. **Awarded International Travel Grant from UGC** to speak on “Pharmacokinetics & *in-vivo* biodistribution of ^{99m}Tc hydrophilic paclitaxel loaded biopolymeric nanoparticles” at the 37th Annual Meeting & Exposition of the Controlled Release Society (CRS), July 10 – 14, 2010, Portland, OR, USA.
5. **Awarded International travel grant from University of Delhi** to give Oral presentation on “Dissolution kinetics of Intramolecular aggregates & Self folded gelatin coacervates entrapping Cycloheximide (CHX), at various pH values” at the International Conference of Nanotechnology, ICNT’06, San Francisco, USA- 30th Oct-Nov2, 2006
6. Awarded International Travel Grant from CSIR to present paper on “Low Toxic Drug Formulation of 5-FU Derivative in crosslinked polymeric micelles.” **Anita K. Verma**, at Second International Conference on Tumor targeted Drug Delivery systems, held at NIH, Bethesda, Maryland, USA in September 2002

13. Future Vision:

Since, Nanobiotechnology, in its very ethos, is interdisciplinary, with my interest and expertise in Physiology, Immunology and Drug Delivery, I was able to contribute although not as significantly as I lose out on institutional collaborations working from a college and have, therefore to put extraordinary efforts for nurturing collaborations at personal levels. The roadmap includes capacity building in terms of trained personnel, interdisciplinary teaching and research, and academia-industrial partnerships. By 2030, nanotechnology in India is expected to mature significantly,

hence research should be application based, thereby generating good employment opportunities. Nanotechnology, with its potential to innovate and change society as an estimated R&D investment of nearly \$100 billion/year globally is expected to offer significant contributions to human health-medical tools and treatments, more efficient energy production, better access to clean water, novel filtration methods, better pollution reduction and prevention.

Despite bioengineering complex nanoparticles (NPs), and promising preclinical data regarding use of targeted nanomedicines has been achieved, the **clinical outcomes are still modest**. The efforts devoted to developing the “**perfect NPs**” with a wide range of specific ligands in their surface during preclinical development have not given commensurate results. Many methods of functionalization are published, but most of them **lack reproducibility**. Due to the process variation, there is a **lack of scalability** that prevents large-scale manufacturing. Hence, it is important to develop **highly reproducible** single step methods to functionalize NP surfaces. Further complication is presented by the biological conditions of the tumour. Even though the presence of the EPR effect, for certain NPs to reach and enter the Tumor Microenvironment (TME) may be a considerable challenge. We have developed stringent pre-clinical research protocols, as they are quintessential for optimizing the nanomaterial for formulation, functionalization and estimating the quantity and modality of delivery to accelerate nanomedicine translation.

Prof. Anita Kamra Verma

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