



Dr. Virendra Gajbhiye

Scientist E

Agharkar Research Institute, Pune

Email: virendragajbhiye@aripune.org, cme_virendra@yahoo.co.in

Research Area

- Nanomedicine, Targeted drug and siRNA delivery, Biomedical application of dendrimers, Biomaterials unimolecular micelles and imaging, Multifunctional polymeric nanoparticles, Nanoparticles in tissue engineering.
- Development of multifunctional nanocarriers (dendrimers/ polymeric nanoparticles/ unimolecular micelles) for targeted drug/siRNA delivery to various types of cancer.
- Targeted drug delivery to various diseases and disorders of brain e.g. brain tumor, Alzheimer's disease, parkinsonism etc.
- Multifunctional inorganic nanoparticles for the co-delivery of diagnostic agents and drug for diagnosis as well as targeted cancer therapy.
- Co-delivery of drug and siRNA using dendrimers/ polymeric nanoparticles/ unimolecular micelles.
- Use of biomaterials/nanoparticles in tissue engineering

Education & Scientific Career

- Postdoctoral Research Fellow- Dept. of Biomedical Eng., OHSU, Portland, OR, USA (2013),
- Postdoctoral Research Associate- Wisconsin Institute for Discovery, Dept. of Biomedical Eng., University of Wisconsin, Madison, WI, USA (2012-13),
- Assistant Professor- Sagar, Ins. of Pharm. Sci., Sagar (MP) India (2011-12),
- Lecturer in Pharmaceutics- Bansal College of Pharmacy, Bhopal (MP) India (2007-08).
- M.Pharm., and Ph.D. from Dr. Harisingh Gour University, Sagar (MP) India

Awards

- INSPIRE Faculty Award- 2013 in Biomedical Sciences from DST, Govt. of India,
- Nominated candidate for Commonwealth Scholarship (UK)- 2008 by MHRD, Govt. of India.
- National Overseas Scholarship- 2008 from MHRD, Govt. of India,

- International Travel Award/Grant from DST (New Delhi) , DBT (New Delhi), CSIR (New Delhi), INSA (CCSTDS, Chennai),
 - University Grant Commission (UGC) Senior Research Fellowship (SRF),
 - Council of Scientific and Industrial Research (CSIR) Senior Research Fellowship (SRF) (not availed),
 - Junior Research Fellowship (JRF) for Master degree from All India Council of Technical Education (AICTE, New Delhi)
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Publications:

1. P Tambe, P Kumar, YA Karpe, KM Paknikar, V Gajbhiye. Triptorelin tethered multifunctional PAMAM-Histidine-PEG nanoconstructs enable specific targeting and efficient gene silencing in LHRH overexpressing cancer cells. *ACS Appl Mater Interfaces*, 9, 35562-35573, 2017.
2. S Srinivasan, KM Paknikar, V Gajbhiye, D Bodas. Magneto-conducting core/Shell nanoparticles for biomedical applications. *ChemNanoMat*, (In press) 2017.
3. KR Gajbhiye, V Gajbhiye, IA Siddiqui, S Pilla, V Soni. Ascorbic acid tethered polymeric nanoparticles enable efficient brain delivery of galantamine: An in vitro-in vivo study. *Scientific Rep* 7, 11086, 2017.
4. P Kumar, P Tambe, KM Paknikar, V Gajbhiye. Folate/N-acetyl glucosamine conjugated mesoporous silica nanoparticles for targeting breast cancer cells: A comparative study. *Colloids Surf B Biointerfaces*, 156, 203-212, 2017.
5. P Kesharwani, MCIM Amin, N Giri, A Jain, V Gajbhiye. Dendrimers in Targeting and Delivery of Drugs. *Nanotechnology-based approaches for targeting and delivery of drugs and genes*, 363, 2017.
6. M Nag, V Gajbhiye, P Kesharwani, NK Jain. Transferrin functionalized chitosan-PEG nanoparticles for targeted delivery of paclitaxel to cancer cells. *Colloids Surf B Biointerfaces*, 148, 363-370, 2016.
7. HK Patel, V Gajbhiye, P Kesharwani, NK Jain. Ligand anchored poly (propyleneimine) dendrimers for brain targeting: Comparative in vitro and in vivo assessment. *J Colloid Interface Sci.*, 482, 142-150, 2016.
8. J Kayat, NK Mehra, V Gajbhiye, NK Jain. Drug targeting to arthritic region via folic acid appended surface-engineered multi-walled carbon nanotubes. *J Drug Target*, 24, 318-327, 2016.
9. P Tambe, P Kumar, V Gajbhiye, K M Paknikar. SiRNA Mediated Gene Silencing: Hurdles, Strategies and Applications. *Pharm Nanotech* 3, 322-333, 2015.
10. A Tiwari, P Kesharwani, V Gajbhiye, NK Jain. Synthesis and characterization of dendro-PLGA nanoconjugate for protein stabilization. *Colloids Surf B Biointerfaces*, 134, 279-286, 2015.
11. KR Gajbhiye, V Gajbhiye, V Soni. Targeted Brain Delivery of Bioactive Molecules Using Nanocarriers. *J Bioequiv Availab*, 7, 112-122, 2015.

12. V Gajbhiye, L Escalante, G Chen, ALaperle, Q Zheng, B Steyer, S Gong, K Saha. Drug-loaded nanoparticles induce gene expression in human pluripotent stem cell derivatives. *Nanoscale* 6, 521-531, 2014.
13. V Gajbhiye, S Gong. Lectin functionalized nanocarriers for gene delivery. *Biotech Advances* 31, 552-562, 2013.
14. A Chaurasia, P Sahu, V Gajbhiye. Improved anticancerous activity of Indian aloe loaded chitosan microspheres. *Int J Pharm Biol Arch*, 2, 4, 2013.
15. V Gajbhiye, N Ganesh, J Barve, NK Jain. Synthesis, characterization and targeting potential of zidovudine loaded sialic acid conjugated-mannosylated poly (propyleneimine) dendrimers. *Euro J Pharm Sci* 48, 668-679, 2013.
16. SK Patel, V Gajbhiye, NK Jain. Synthesis, characterization and brain targeting potential of paclitaxel loaded thiamine-PPI nanoconjugates. *J Drug Target* 20, 841-849, 2012.
17. P Kesharwani, V Gajbhiye, NK Jain. A review of nanocarriers for the delivery of small interfering RNA. *Biomaterials* 33, 7138-7150, 2012.
18. P Sahu, A Bhatt, V Gajbhiye. Enhanced hepatoprotective activity of piperine loaded chitosan microspheres. *Int J Drug Dev Res*, 32, 1, 2012.
19. V Gajbhiye, NK Jain. The treatment of glioblastoma xenografts by surfactant conjugated dendritic nanoconjugates. *Biomaterials* 32, 6213-6225, 2011.
20. P Kesharwani, V Gajbhiye, R K Tekade, N K Jain. Evaluation of dendrimer safety and efficacy through cell line studies. *Curr Drug Targets* 12, 1478-1497, 2011.
21. P Kesharwani, RK Tekade, V Gajbhiye, K Jain, NK Jain. Cancer targeting potential of some ligand-anchored poly (propylene imine) dendrimers: a comparison. *Nanomedicine: NBM* 7, 295-304, 2011.
22. V Gajbhiye, N K Jain. Novel carriers for controlled site specific delivery of anti-inflammatory agents. *Antiinflamm Antiallergy Agents Med Chem*, 10, 13, 166-179, 2011.
23. BD Kurmi, V Gajbhiye, J Kayat, NK Jain. Lactoferrin-conjugated dendritic nanoconstructs for lung targeting of methotrexate. *J Pharm Sci* 100, 2311-2320, 2011.
24. J Kayat, V Gajbhiye, RK Tekade, NK Jain. Pulmonary toxicity of carbon nanotubes: a systematic report. *Nanomedicine: NBM*, 7, 1, 40-49, 2011.
25. BD Kurmi, J Kayat, V Gajbhiye, RK Tekade, NK Jain. Micro-and nanocarrier-mediated lung targeting. *Exp Opin Drug Delivery* 7, 781-794, 2010.
26. AK Tiwari, V Gajbhiye, R Sharma, NK Jain. Carrier mediated protein and peptide stabilization. *Drug Delivery* 17, 605-616, 2010.
27. J Agnihotri, V Gajbhiye, N Jain. Engineered cellular carrier nanoerythrocytes as potential targeting vectors for anti-malarial drug. *Asian J Pharm.* 116, 2-4, 2010.
28. A Sharma, S Bhatia, MD Kharya, V Gajbhiye, N Ganesh, AG Namdeo, KR Mahadik. Anti-inflammatory and analgesic activity of different fractions of *Boswellia serrata*. *Int J Phytomed*, 2, 2010.

29. PS Jadon, V Gajbhiye, RS Jadon, KR Gajbhiye, N Ganesh. Enhanced oral bioavailability of griseofulvin via niosomes. *AAPS PharmSciTech* 10, 1186, 2009.
30. RK Tekade, T Dutta, N Jain, V Gajbhiye, NK Jain. Simultaneous spectrophotometric estimation of methotrexate and all-trans retinoic acid in mixture. *Asian J Chem* 21, 5145, 2009.
31. V Gajbhiye, VK Palanirajan, RK Tekade, NK Jain. Dendrimers as therapeutic agents: a systematic review. *J Pharm Pharmacol* 61, 989-1003, 2009.
32. RK Tekade, T Dutta, V Gajbhiye, NK Jain. Exploring dendrimer towards dual drug delivery: pH responsive simultaneous drug-release kinetics. *J Microencap* 26, 287-296, 2009.
33. RN Prajapati, RK Tekade, U Gupta, V Gajbhiye, NK Jain. Dendrimer-mediated solubilization, formulation development and in vitro- in vivo assessment of piroxicam. *Mole Pharm* 6, 940-950, 2009.
34. V Gajbhiye, PV Kumar, RK Tekade, NK Jain. PEGylated PPI dendritic architectures for sustained delivery of H2 receptor antagonist. *Euro J Med Chem* 44, 1155-1166, 2009.
35. A Jain, S Nayak, B Ghosh, RS Jadon, V Gajbhiye. Enhanced Skin Permeation of Glimepiride by β -Cyclodextrin and Iontophoresis. *Res J Pharm Tech* 2, 3, 552-555, 2009.
36. A Sharma, S Chhikara, S Ghodekar, S Bhatia, M Kharya, V Gajbhiye, A Mann, AG Namdeo, KR Mahadik. Phytochemical and pharmacological investigations on *Boswellia serrata*. *Pharmacognosy Reviews* 3, 5, 206, 2009.
37. V Gajbhiye, PV Kumar, A Sharma, NK Jain. Novel PEGylated PPI dendritic nanostructures for sustained delivery of anti-inflammatory agent. *Curr Nanosci*, 4, 3, 267-277, 2008.
38. V Gajbhiye, PV Kumar, A Sharma, A Agarwal, A Asthana, NK Jain. Dendrimeric nanoarchitectures mediated transdermal and oral delivery of bioactives. *Indian J. Pharm. Sci*, 70, 431, 2008.
39. A Agarwal, S Saraf, A Asthana, U Gupta, V Gajbhiye, NK Jain. Ligand based dendritic systems for tumor targeting. *Int J Pharm* 350, 3-13, 2008.
40. V Gajbhiye, K Rai, RS Jadon, A Jain, A Nayak. Elastic Liposomes Mediated Transdermal Delivery of Aceclofenac. *The Pharmacist* 3, 9, 2008.
41. A Sharma, AS Mann, V Gajbhiye, MD Kharya Phytochemical profile of *Boswellia serrata*: an overview. *Pharmacogn Rev*, 1, 137, 2007.
42. V Gajbhiye, P Vijayaraj Kumar, R Kumar Tekade, NK Jain. Pharmaceutical and biomedical potential of PEGylated dendrimers. *Curr. Pharm. Des*, 13, 415-429, 2007.