

Curriculum Vitae (Updated May 29, 2015)

JAYANTH PANYAM

CONTACT INFORMATION

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EDUCATION

2003 **Ph.D.** (Pharmaceutical Sci.), University of Nebraska Medical Center, Nebraska
1999 **M.Pharm.** (Pharmaceutics), Banaras Hindu University, Banaras, India
1997 **B.Pharm.** (Pharmacy), The T.N. Dr. MGR Medical University, India

FORMAL POSITIONS

2015 – Professor with tenure, University of Minnesota, Minneapolis, MN
2010 – 2015 Associate Professor with tenure, University of Minnesota, Minneapolis, MN
2007 – Member, Masonic Cancer Center, Minneapolis, MN
2007 – 2010 Assistant Professor, University of Minnesota, Minneapolis, MN
2005 – 2007 Member, Karmanos Cancer Institute, Detroit, MI
2003 – 2007 Assistant Professor, Wayne State University, Detroit, MI
1996 – 1997 Lecturer, SRM college of Pharmacy, Chennai, India

HONORS AND AWARDS

1996 Best Outgoing Student of the Year 1996, SRM College of Pharmacy
1997 IDMA - Dr. G.P. Nair Award awarded by Indian Drug Manufacturer's Association's (IDMA)
1997 Prof. E. Venugopal Endowment Gold Medal awarded by The T.N. Dr. M.G.R. Medical University
1997 Shri Nageshwar Rao Pantulu Prize awarded by The T.N. Dr. M.G.R. Medical University
1997 First Prize in B. Pharm awarded by Pharmacy Council, Tamilnadu
1997 Junior Research Fellowship, University Grants Commission, India
1999 Gold Medal in M.Pharm. awarded by Banaras Hindu University
2000 Graduate Research Fellowship, University of Nebraska Medical Center, Omaha, NE
2001 Predoctoral Fellowship (2001-2003), American Heart Association
2001 Widaman Fellowship Supplement (2001-2003)
2002 Travel Grant to present a paper the 5th International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Jan 2002, Cardiff, UK.
2002 First Place, Oral Presentation (UNMC), 34th Annual Pharmaceutics Graduate Student Research Meeting, Omaha, NE, June 13th – June 15th, 2002
2003 Predoctoral Fellowship (2003-2004), American Heart Association
2004 Thomas Jefferson Ingenuity Award for Creativity and Ingenuity in Doctoral Research, University of Nebraska Medical Center, Omaha, NE
2006 Who's Who in Medicine and Healthcare, 2006-2007
2007 Wilson Scholar, Ralph C. Wilson Foundation
2013 Member, Editorial Advisory Board, Journal of Pharmaceutical Sciences

2013 Elected to the inaugural cohort of the Academic Research Fellows Program

2015 Professor of the Semester, Pharm.D. Class of 2018

PUBLICATIONS

1. Panyam, J., Kumar, V., and Mishra, B. (1999) Recent trends in drug delivery systems: Lymphatic drug targeting and transportation. *Acta Pharm Turc*, 41(3): 131-139.
2. Mishra, B., Panyam, J., and Sharma, A.V. (1999) Mechanisms of drug release control from multiple W/O/W emulsions containing diclofenac sodium. *Acta Pharm Turc*, 41(2): 42-45.
3. Mishra, B., Panyam, J., and Sharma, A.V. (1999) In vitro release of diclofenac sodium from multiple emulsions: Effect of location of drug and pH of the aqueous phase. *Acta Pharm Turc*, 41(2): 58-61.
4. Panyam, J., Lof, J., O'Leary, E., and Labhasetwar, V. (2002) Efficiency of Dispatch[®] and Infiltrator[®] cardiac infusion catheters in arterial localization of nanoparticles in a porcine coronary model of restenosis. *J Drug Targeting*, 10(6): 515-523.
5. Panyam, J., Zhou, W.Z., Prabha, S., Sahoo, S. and Labhasetwar, V. (2002) Rapid endo-lysosomal escape of poly (D,L-lactide-co-glycolide) nanoparticles: implications for drug and gene delivery. *FASEB J*, 16(10): 1217-1226.
6. Sahoo, S. K., Panyam, J., Prabha, S. and Labhasetwar V. (2002) Residual polyvinyl alcohol associated with poly (DL-lactide-co-glycolide) nanoparticles affects their physical and cellular uptake properties. *J Control Release*, 82(10): 105-114.
7. Prabha, S., Zhou, W. Z., Panyam, J. and Labhasetwar, V. (2002) Particle size dependency of nanoparticle mediated gene transfection: Effect of particle size. *Int J Pharm*, 244 (1-2): 105-115.
8. Panyam, J., Dali, M., Sahoo, S.K., Ma, W., Chakravarthi, S.S., Amidon, G.L., Levy, R.J. and Labhasetwar, V. (2003) Polymer degradation and in vitro release of a model protein from poly(dl-lactide-co-glycolide) nano- and microparticles. *J Control Release*, 92(1-2): 173-187.
9. Panyam, J., Sahoo, S.K., Prabha, S. and Labhasetwar, V. (2003) Fluorescence and electron microscopy probes for poly(D,L-lactide-co-glycolide) nanoparticles. *Int J Pharm*, 262(1-2): 1-11.
10. Panyam, J. and Labhasetwar, V. (2003) Biodegradable nanoparticles for drug and gene delivery to cells and tissue. *Adv Drug Deliv Rev*, 55(3): 329-347.
11. Panyam, J. and Labhasetwar, V. (2003) Dynamics of endocytosis and exocytosis of poly (DL-lactide-co-glycolide) nanoparticles in vascular smooth muscle cells. *Pharm Res*, 20(2): 110-118.
12. Mishra, B., Panyam, J. and Sankar C. (2003) Development of chitosan-alginate microcapsules for colon-specific delivery of metronidazole. *Indian Drugs* 40 (12): 695-700.
13. Panyam, J. and Labhasetwar, V. (2004) Targeting Intracellular Targets. *Current Drug Del*, 1(3): 235-247.
14. Panyam, J. Williams, D., Dash, A., Leslie-Pelecky, D. and Labhasetwar, V., (2004) Solid-state drug-polymer solubility: a determinant for the encapsulation of hydrophobic drugs in PLGA/PLA nanoparticles. *J Pharm Sci*, 93(7): 1804-1814.
15. Panyam, J. and Labhasetwar, V. (2004) Sustained cytoplasmic delivery of drugs with intracellular receptors using biodegradable nanoparticles. *Mol Pharm*, 1(1): 77-84.
16. Mandaogade, P.M., Satturwar, P.M., Mundhada, D.R., Panyam, J., Fulzele, S.V., Gogte, B.B., Labhasetwar, V., Dorle, A.K. (2004) Synthesis and evaluation of rosin derivatives for pharmaceutical coating. *Int J Pharm*, 270(1-2): 27-36.
17. Mishra, B., Panyam, J. and Sankar C. (2004) Development of guar gum-alginate based microcapsules of metronidazole for delivery to colon. *Acta Pharm Turc*, 46:121-130.

18. Chavanpatil, M., Khdair, A., and Panyam, J.* (2006) Nanoparticles for cellular drug delivery: mechanisms and factors influencing delivery. *J Nanosci Nanotech*, 6: 2651-63.
19. Chavanpatil, M., Patil, Y., and Panyam, J.* (2006) Susceptibility of nanoparticle-encapsulated paclitaxel to P-glycoprotein-mediated drug efflux. *Int J Pharm*, 320: 150-156.
20. Chavanpatil, M., Khdair, A., Patil, Y., and Panyam, J.* (2007) Surfactant-Polymer Nanoparticles: A Novel Platform for Sustained and Enhanced Cellular Delivery of Water-soluble Molecules. *Pharm Res*, 24: 803-10.
21. Chavanpatil, M., Handa, H., Mao, G. and Panyam, J. (2007) Incorporation of Phospholipids Enhances Cellular Uptake and Retention of Surfactant-Polymer Nanoparticles. *J Biomed Nanotech*, 3:291-296.
22. Chavanpatil, M., Khdair, A., Y., Patil, Y., Handa, H., Mao, G., and Panyam, J.* (2007) Polymer-Surfactant Nanoparticles for Sustained Release of Water-Soluble Drugs. *J Pharm Sci*, 96:3379-3389.
23. Chavanpatil, M., Khdair, A., Gerard, B., Bachmeier, C., Shekar, M., Miller, D.W., and Panyam, J.* (2007) Surfactant-Polymer Nanoparticles Overcome P-glycoprotein-Mediated Drug Efflux. *Mol Pharm*, 4:730-738.
24. Shahani, K., Jonnalagadda, K., Handa, H., Mao, G. and Panyam, J.* (2007) Phospholipid Nanoparticles: Process Optimization Using Factorial Design and Atomic Force Microscopy. *J Biomed Nanotech*, 3:394-400.
25. Wu, L., Bharatwaj, B., Panyam, J., Da Rocha, S. (2007) Core-shell Particles for the Dispersion of Small Polar Solutes and Biomolecules in Hydrofluoroalkane Propellants. *Pharm Res*, 25:289-301.
26. Khdair, A., Gerard, B., Handa, H., Mao, G., Shekar, M.P.V., and Panyam, J.* (2008) Aerosol OT-alginate nanoparticles enhance the effectiveness of anticancer photodynamic therapy. *Mol Pharm*, 5: 795-807.
27. Sudakar, C., Dixit, A., Regmi, R., Naik, R., Lawes, G., Naik, V. M., Vaishnava, P. P., Toti U., and Panyam, J. (2008) Fe₃O₄ incorporated AOT-Alginate nanoparticles for drug delivery. *IEEE Trans Magnetics*, 44: 2800-2803.
28. Patil, Y. and Panyam, J.* (2009) Polymeric Nanoparticles for siRNA Delivery and Gene Silencing. *Int J Pharm*, 367(1-2):195-203.
29. Khdair, A. Handa, H., Mao, G., and Panyam, J.* (2009) Nanoparticle-mediated combination photodynamic therapy and chemotherapy overcomes tumor drug resistance in vitro. *Eur J Pharm Biopharm*, 71(2):214-222.
30. Patil, Y., Toti, U., Khdair, A., Ma, L., and Panyam, J.* (2009) Facile Single-Step Multifunctionalization of Nanoparticles for Targeted Drug Delivery. *Biomaterials*, 30(5):859-66.
31. Patil, Y., Sadhuka, T., and Panyam, J.* (2009) Nanoparticle-mediated simultaneous and targeted delivery of paclitaxel and tariquidar overcomes tumor drug resistance. *J Controlled Release*, 136(1):21-9.
32. Grill, A.E., Johnston, N.W, Sadhukha, T., and Panyam, J. * (2009) A review of select recent patents on novel nanocarriers. *Recent Pat Drug Deliv Formul*, 3(2): 137-142.
33. Khdair, A., Chen, D., Dou, P., Shekar, M.P.V., and Panyam, J.* (2010) Nanoparticle-mediated combination photodynamic therapy and chemotherapy overcomes tumor drug resistance in vivo. *J Controlled Release*, 141(2): 137-144.
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35. Shahani, K., Swaminathan, S., Freeman, D., Blum, A., Ma, L., and Panyam, J.* (2010) Injectable sustained release microparticles of curcumin: A novel concept for chemoprevention. *Cancer Res*, 70(11):4443-52.

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37. Swaminathan, S., Olin, M.R., Forster, C.L., Santa Cruz, K.S., Panyam, J.*, and Ohlfest, J.R.* (2010) Identification of a novel monoclonal antibody recognizing CD133. *J Immunol Methods*, 361(1-2):110-5.
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42. Schaeffers, M.M., Breshears, L.M., Anderson, M.J., Lin, Y-C., Grill, A.E., Panyam, J., Southern, P.J., Schlievert, P.M., and Peterson, M.L. (2012) Toxic Shock Syndrome (TSS) Toxin-1 Induces NF- κ B in Vaginal Epithelial Cells and Curcumin Prevents TSS in Rabbits. *PlosOne*, 7(3):e32813.
43. Rogers, E., Guru, B.R., Whittum-Hudson, J.A., Panyam, J.* (2012) Folic acid-Functionalized Nanoparticles to Enhance Oral Delivery of Encapsulated Drug. *Mol Pharmaceutics*, 9(7):2103–2110.
44. Arora, S., Singh, S., Piazza, G.A., Contreas, C.M., Panyam, J., Singh, A.P. (2012) Honokiol: a novel natural agent for cancer prevention and therapy. *Curr Mol Med*, 12(10):1244-52.
45. Ohlfest, J.R., Panyam, J., Swaminathan, S.K., Oh, S., Waldron, N., Toma, S., and Vallera, D.A. (2013) Targeting CD133+ breast carcinoma Cells by systemic administration of a novel deimmunized immunotoxin showing selective in vitro and in vivo cell anti-tumor activity. *Drug Del Translational Res*, 3(2): 143-151.
46. Swaminathan, S., Vallera, D., Ohlfest, J., Panyam, J.* (2013) Identification and characterization of a novel scFv recognizing human and mouse CD133. *Drug Del Translational Res*, 3(2): 195-204.
47. Sadhukha, T., Niu, L., Panyam, J.* (2013) Effective Elimination of Cancer Stem Cells by Magnetic Hyperthermia. *Mol Pharmaceutics*, 10(4):1432-41
48. Sadhukha, T., Swaminathan, S., Panyam, J.* (2013) Inhalable Magnetic Nanoparticle Mediated Targeted Magnetic Hyperthermia for Lung Cancer Therapy. *Biomaterials*, 34(21); 5163-71.
49. Swaminathan, S., Niu, L., Roger, E., Ohlfest, J., Panyam, J.* (2013) CD133-Targeted Paclitaxel Delivery Inhibits Local Tumor Recurrence in a Mouse Model of Breast Cancer. *J Controlled Release*, 171(3): 280-7.
50. Kirtane, A., Kalscheuer, S., Panyam, J.* (2013) Exploiting Nanotechnology to Overcome Tumor Drug Resistance: Challenges and Opportunities. *Adv Drug Del Rev*. 65(13-14): 1731-47.
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52. Kirtane AR, Panyam J. (2013) Polymer nanoparticles: Weighing up gene delivery. *Nature Nanotechnol*. 8(11): 805-6 (Invited editorial).

53. Panyam, J. (2013) Cancer stem cells. *Drug Del Translational Res*, 3(2): 111-112 (Invited editorial).
54. Wohl, A.R., Kalscheuer, S., Lee, H.S., Han, J., McCormick, A., Macosko, C.W., Panyam, J., and Hoye, T.R. (2014) A Silicate Ester Prodrug Strategy for Improving the Therapeutic Index of Paclitaxel. *J Med Chem*, 57(6):2368-79.
55. Arora, S., Swaminathan, S., Kirtane, A.R., Panyam, J., and Singh, A. (2014) Synthesis, characterization and evaluation of Poly (D, L-lactide-co-glycolide)-based nanoformulation of miRNA-150: potential implications for pancreatic cancer therapy. *Int J Nanomed*, 18(9):2933-42.
56. Grill, A., Panyam, J*. (2014) Co-delivery of natural metabolic inhibitors in a self-microemulsifying drug delivery system for improved oral bioavailability of curcumin. *Drug Del Translational Res*, 4(4):344-352.
57. Sadhukha, T., Swaminathan, S., Panyam, J*. (2014) Enhancing Therapeutic Efficacy through Designed Aggregation of Nanoparticles, *Biomaterials*, 35(27):7860-9.
58. Usacheva, M., Swaminathan, S., Kirtane, a., Panyam, J*. (2014) Encapsulation of methylene blue in nanoparticles enhances PDT efficacy under hypoxia. *Mol Pharmaceutics*, 11(9):3186-95.
59. Song, J.*, Kirtane, A.R.*, Upadhyaya, P.*, Qian, X., Balbo, S., Panyam, J., Kassie F. (2014) Intranasal delivery of liposomal indole-3-carbinol: A promising strategy for lung cancer chemoprevention. *Int J Pharmaceutics*, 9:2933-42.
60. Kirtane, A., Siegel, A.R., Panyam, J. (2014) A pharmacokinetic model for quantifying the effect of vascular physiology on the choice of drug carrier: A framework for personalized nanomedicine. *J Pharm Sci, In Press*.

Pending

61. Kirtane, A.R., Lis, L., Georg, G., Gurvich, V., Panyam, J. (2015) Reformulating tylocrebrine in EGFR targeted polymeric nanoparticles improves its therapeutic index. *In revision*
62. Grill, A., Koniar, B., Panyam, J*. (2015) Systemic inflammation with PLGA microparticles. *In preparation*.
63. Kirtane, A., Siegel, A.R., Panyam, J. (2014) Assessing the benefits of drug delivery by nanocarriers: a partico/pharmacokinetic framework. *In preparation*.
64. Kirtane, A.R., Narayan, P., Panyam, J. (2015) Encapsulation in AOT-alginate nanoparticles improves the oral bioavailability of doxorubicin. *In preparation*
65. Kirtane, A., Toti, U.S., Hali, M., McPharlin, C., Wykes, S.M., Whittum-Hudson, J.A., Panyam, J*. (2015) Nanoparticle-mediated targeted delivery of antibiotics to intracellular Chlamydial infections. *In preparation*.

* corresponding author

BOOK CHAPTERS

1. Panyam, J., and Patil, Y. Distribution - Movement of Drugs through the Body. In: *Preclinical Development Handbook: ADME and Biopharmaceutical Properties*, Gad, S.C. (Ed). Wiley International, 2008.
2. Mohammad, M., Grill, A., Panyam, J. and Khair, A. Cancer Therapeutics and Tumor Drug Resistance. In: *Targeted Drug Delivery in Cancer Therapeutics*, Firer, M. (Ed). Research Signpost, 2010.
3. Rogers, E., Grill, A., and Panyam, J. Surface plasmon resonance analysis of nanoparticles for targeted drug delivery. In: *Biosensors for Cancer Diagnostics*, Rasooly, A. and Herold, K. E. (Eds.). CRC Press, 2011

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