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Dr. Marina Sokolsky-Papkov is a Research Associate Professor in the Division of Pharmacoengineering and Molecular Pharmaceutics, and the Center for Nanotechnology in Drug Delivery at UNC Eshelman School of Pharmacy. She utilized her expertise in nanoparticles design, synthesis and characterization to establish research focused on several aspects of drug delivery and diagnostics: 1) delivery of small molecules in polymeric micelles for treatment of pediatric brain tumors (medulloblastoma), 2) diagnostics and treatment of residual disease and metastatic spread following tumor resection in melanoma and osteosarcoma and 3) interaction of inorganic nanoparticles with materials and cells for development of remotely actuated cancer therapies.

ACADEMIC EXPERIENCE

11/2020 – present. Director, Nanomedicines Characterization Core Facility, Center for Nanotechnology in Drug Delivery, UNC Eshelman School of Pharmacy, UNC-Chapel Hill.

10/2019 – present. Research Associate Professor, Center for Nanotechnology in Drug Delivery, Division of Pharmacoengineering and Molecular Pharmaceutics, UNC Eshelman School of Pharmacy, UNC-Chapel Hill.

01/2014 – present. Director, Translational Nanoformulation Research Laboratory, Center for Nanotechnology in Drug Delivery, UNC Eshelman School of Pharmacy, UNC-Chapel Hill.

08/2012 – 10/2019. Research Assistant Professor, Center for Nanotechnology in Drug Delivery, Division of Pharmacoengineering and Molecular Pharmaceutics, UNC Eshelman School of Pharmacy, UNC-Chapel Hill.

EDUCATION

2009 – 2010 Postdoctoral Research Associate, Center for Drug Delivery and Nanomedicine, School of Pharmacy, University of Nebraska Medical Center, Omaha, NE. Advisor: Alexander (Sasha) Kabanov.

2003 – 2009 Ph.D, Department of Medicinal Chemistry, School of Pharmacy, Hebrew University

of Jerusalem, Israel. Advisor: Avi J. Domb.

1998 – 2002 B.Sc., Quality Control in Biomedical Processes, Dept. of Food Engineering and Biotechnology, Technion, Israeli Institute of Technology, Haifa, Israel.

TEACHING

2016 – present, Guest Lecturer, MOPH 862 - Advanced Pharmaceutics (polymers and nanoparticles characterization).

2015 – Invited speaker, Carolina Nanoformulation Workshop: "Theranostic Inorganic Nanoparticles".

2006 – 2009 Teaching Assistant, Bioorganic and Organic Chemistry Lab, School of Pharmacy, Hebrew University of Jerusalem, Israel.

LEADERSHIP AND OTHER PROFESSIONAL ACTIVITIES

2020 – present. Nanomedicine Characterization Core Facility, Center for Nanotechnology in Drug Delivery, Eshelman School of Pharmacy, UNC-CH.

2016 – present. Director, Carolina Nanoformulation Workshop (https://pharmacy.unc.edu/cnw), jointly hosted by the Center for Nanotechnology in Drug Delivery and the Carolina Institute for Nanomedicine, UNC-CH.

2015 –2016 Scientific advisor, Carolina Nanoformulation Workshop, Leading curriculum development for laboratory hands-on training sessions.

2014 – 2019. Seminar coordinator, Center for Nanotechnology in Drug Delivery Distinguished Speaker Seminar Series (4 seminars/year).

2013 – present. Scientific Advisor, Nanomedicine Characterization Core Facility, Center for Nanotechnology in Drug Delivery, Eshelman School of Pharmacy, UNC-CH.

LIST OF PUBLICATIONS

1. Seo Y, Ghazanfari L, Master A, Vishwasrao HM, Wan X, Sokolsky-Papkov M, Kabanov AV. Poly (2-oxazoline)-magnetite NanoFerrogels: Magnetic field responsive theranostic platform for cancer drug delivery and imaging, 2021,Nanomedicine: Nanotechnology, Biology and Medicine 39, 102459. ***Co-Corresponding author**

2. Veleta KA, Cleveland AH, Babcock BR, He YW, Hwang D, Sokolsky-Papkov M, Gershon TG. Antiapoptotic Bcl-2 family proteins BCL-xL and MCL-1 integrate neural progenitor survival and proliferation during postnatal cerebellar neurogenesis, Cell Death & Differentiation, 2021, 28 (5), 1579-1592.

3. Hwang D, Vinod N, Skoczen SL, Ramsey JD, Snapp KS, Montgomery SA, Wang M, Lim C, Frank JE, Sokolsky-Papkov M, Li Z, Yuan H, Stern ST, Kabanov AV, Bioequivalence

assessment of high-capacity polymeric micelle nanoformulation of paclitaxel and Abraxane® in rodent and non-human primate models using a stable isotope tracer assay, 2021, Biomaterials 278, 121140.

4. Lim C, Ramsey JD, Hwang DK, Teixeira SCM, Poon CD, Strauss JD, Rosen EP, Sokolsky-Papkov M, Kabanov AV. Drug-dependent morphological transitions in spherical and worm-like polymeric micelles define stability and pharmacological performance of micellar drugs, 2020, Small, 2103552.

5. Lopukhov AV, Yang Z, Haney MJ, Bronich TK, Sokolsky-Papkov M, Batrakova EV, Klyachko NL, Kabanov AV. Mannosylated Cationic Copolymers for Gene Delivery to Macrophages, Macromolecular bioscience, 2021, 21(4), 2000371

6. Hwang D, Dismuke T, Tikunov A, Rosen EP, Kagel JR, Ramsey JD, Lim C, Zamboni W, Kabanov AV, Gershon TR, Sokolsky-Papkov M. Poly(2-oxazoline) nanoparticle delivery enhances the therapeutic potential of vismodegib for medulloblastoma by improving CNS pharmacokinetics and reducing systemic toxicity. Nanomedicine: Nanotechnology, Biology and Medicine, 2020, 32, 102345.

7. Veleta AV, Cleveland HC, Babcock BR, He YH, Hwang D, Sokolsky-Papkov M, Gershon TR. Antiapoptotic Bcl-2 family proteins BCL-xL and MCL-1 integrate neural progenitor survival and proliferation during postnatal cerebellar neurogenesis. Cell Death & Differentiation, 2020/12/8, 1-14.

8. Vinod, N.; Hwang, D.; Azam, S. H.; Van Swearingen, A. E. D.; Wayne, E.; Fussell, S. C.; Sokolsky-Papkov, M.; Pecot, C. V.; Kabanov, A. V. High Capacity poly(2-oxazoline) formulation of TLR 7/8 agonist extends survival in a chemo-insensitive, metastatic model of Lung Adenocarcinoma. 2020. Science advances 6 (25), eaba5542.

9. Vlasova KY, Vishwasrao HM, Abakumov M, Golovin DY, Gribanovsky SL, Zhigachev AO, Poloznikov AA, Majouga AG, Golovin YI, Sokolsky-Papkov M, Klyachko NL, Kabanov AV, Enzyme release from polyion complex by extremely low frequency magnetic field, 2020, Scientific reports, 10(1), 1-9.

10. Shats I, Liu J, Williams JG, Deterding LJ, Lim C, Lee E, Sokolsky-Papkov M, Kabanov AV, Locasale JW and Li X, Bacteria boost host NAD metabolism by engaging the deamidated biosynthesis pathway. Cell Metabolism, **accepted**.

11. Ocasio J, Babcock B, Malawsky D, Weir SJ, Loo L, Simon JM, Zylka MJ, Hwang D, Dismuke T, Sokolsky M, Rosen EP, Vibhakar R, Zhang J, Saulnier O, Vladoiu M, El-Hamamy I, Stein LD, Taylor MD, Smith KS, Northcott PA, Colaneri A, Wilhelmsen K, Gershon TR, scRNA-seq in medulloblastoma shows cellular heterogeneity and lineage expansion support resistance to SHH inhibitor therapy, Nature Communications. 2019 Dec 20; 10 (1):1-17.

12. Sokolsky-Papkov M, Kabanov AV. Synthesis of Well-Defined Gold Nanoparticles Using Pluronic: The Role of Radicals and Surfactants in Nanoparticles Formation. Polymers. 2019, 11(10) 1553.

13. Vlasova KY, Piroyan A, Le-Deygen IM, Vishwasrao HM, Ramsey JD, Klyachko NL, Golovin YI, Rudakovskaya PG, Kireev II, Kabanov AV, Sokolsky-Papkov M*. Magnetic liposome

design for drug release systems responsive to super-low frequency alternating current magnetic field (AC MF). Journal of colloid and interface science. 2019, 552, 689-700. ***Co-Corresponding author**

14. Hwang D, Ramsey JD, Makita N, Sachse C, Jordan R, Sokolsky-Papkov M, Kabanov AV. Novel poly (2-oxazoline) block copolymer with aromatic heterocyclic side chains as a drug delivery platform. Journal of Controlled Release. 2019, 307, 261-271.

15. Alves VA, Hwang D, Muratov EN, Sokolsky-Papkov M, Varlamova E, Vinod N, Lim C, Andrade CH, Tropsha A, and Kabanov AV. Cheminformatics driven discovery of polymeric micelle formulations for poorly soluble drugs**.** Cheminformatics-driven discovery of polymeric micelle formulations for poorly soluble drugs. Science Advances. 2019, 5(6) eaav9784.

16. Kobayashi K, Hwang D, Bheda-Malge A, Whitehurst CB, Kabanov AV, Kondo S, Aga M, Yoshizaki T, Pagano JS, Sokolsky Papkov M*, Shakelford J, Inhibition of UCH-L1 Deubiquitinating Activity with Two Forms of LDN-57444 Has Anti-Invasive Effects in Metastatic Carcinoma Cells. International Journal of Molecular Sciences. 2019, 20(15), 3733. ***Co-Corresponding author**

17. Wan X, Beaudoin JJ, Vinod N, Min Y, Makita N, Bludau H, Jordan R, Wang A, Sokolsky M*, Kabanov AV. Co-delivery of paclitaxel and cisplatin in poly(2-oxazoline) polymeric micelles: Implications for drug loading, release, pharmacokinetics and outcome of ovarian and breast cancer treatments, **Biomaterials**. 2019;192, 1-14. ***Co-Corresponding author**

18. Wan X, Min Y, Bludau H, Jordan R, Wang A, Sokolsky-Papkov M*, Kabanov AV. Drug combination synergy in worm-like polymeric micelles improves treatment outcome for small cell and non-small cell lung cancer. **ACS Nano.** 2018; 12(3), 2426-2439. ***Co-Corresponding author**

19. Efremova MV, Barulin AV, Veselov MM, Gribanovsky SL, Zaitseva EA, Sokolsky-Papkov M, Majouga AG, Golovin YI, Kabanov AV, Klyachko NL. In situ observation of chymotrypsin catalytic activity change actuated by non-heating low-frequency magnetic field. **ACS Nano.** 2018; 12(4), 3190-3199**.**

20. Dorman DC, Foster ML, Olesnevich B, Bolon B, Castel A, Sokolsky-Papkov M, Mariani CL Toxicity associated with ingestion of a polyacrylic acid hydrogel dog pad. Journal of Veterinary Diagnostic Investigation. 2018; 30(5), 708-714.

21. Golovin YI, Klyachko NL, Majouga AG, Sokolsky M, Kabanov AV, Theranostic multimodal potential of magnetic nanoparticles actuated by non-heating low frequency magnetic field in the new-generation nanomedicine. 2018; Journal of Nanoparticle Research 19 (2), 63.

22. Golovin YI, Gribanovsky SL, Golovin DY, Zhigachev AO, Klyachko NL, Majouga AJ, Sokolsky M, Kabanov AV. The dynamics of magnetic nanoparticles exposed to non-heating alternating magnetic field in biochemical applications: theoretical study. Journal of Nanoparticle Research 2018; 19 (2), 59.

23. Lang PY, Nanjangud GJ, Sokolsky-Papkov M, Shaw C, Hwang D, Parker JS, Kabanov AV, Gershon TR. ATR maintains chromosomal integrity during postnatal cerebellar

neurogenesis and is required for medulloblastoma formation. Development, 2016, 143(21), 4038-4052.

24. Master AM, Williams PN, Pothayee N, Pothayee N, Zhang R, Vishwasrao HM, Golovin YI, Riffle JS, Sokolsky-Papkov M*, Kabanov AV*. Remote actuation of magnetic nanoparticles for cancer cell selective treatment through Cytoskeletal Disruption. Scientific Reports, 2016, 6, 33560. ***Co-Corresponding author**.

25. Vishwasrao HM, Master AM, Seo YG, Liu XM, Pothayee N, Zhou Z, Yuan D, Boska MD, Bronich TK, Davis RM, Riffle JS, Sokolsky-Papkov M*, Kabanov AV*. Luteinizing Hormone Releasing Hormone-Targeted Cisplatin-Loaded Magnetite Nanoclusters for Simultaneous MR Imaging and Chemotherapy of Ovarian Cancer. Chemistry of Materials, 2016, 28(30), 2034-3040. ***Co-Corresponding author**.

26. He Z, Wan X, Schulz A, Bludau H, Dobrovolskaia MA, Stern ST, Montgomery SA, Yuan H, Li Z, Alakhova D, Sokolsky-Papkov M, Darr DB, Perou CM, Jordan R, Luxenhofer R, Kabanov AV. A high capacity polymeric micelle of paclitaxel: Implication of high dose drug therapy to safety and in vivo anti-cancer activity. Biomaterials. 2016, 101, 296-309.

27. Kim MS, Haney MJ, Zhao Y, Mahajan V, Deygen I, Klyachko NL, Inskoe E, Piroyan A, Sokolsky-Papkov M, Okolie O, Hingtgen SD, Kabanov AV, Batrakova EV. Development of exosome-encapsulated paclitaxel to overcome MDR in cancer cells. Nanomedicine: Nanotechnology, Biology, and Medicine, 2015, 12 (3), 655-66.

28. Seo Y, Schulz A, Han Y, He Z, Bludaud H, Wan X, Tong J, Bronich T, Sokolsky-Papkov M, Luxenhofer R, Jordan R, Kabanov AV. Poly(2-oxazoline) block copolymer based formulations of taxanes: effect of copolymer and drug structure, concentration, and environmental factors, To be submitted to Polymers for Advanced Technologies, 2015, 26(7), 837-850.

29. Golovin YuI, Klyachko NL, Gribanovskii SL, Golovin DYu, Samodurov AA, Majouga AG, Sokolsky-Papkov M, Kabanov AV. Nanomechanical control of properties of biological membranes achieved by rodlike magnetic nanoparticles in a superlow-frequency magnetic field. Technical Physics Letters, 2015, 41(5), 455-457.

30. Golovin YI, Gribanovsky SL, Golovin DY, Klyachko NL, Majouga AG, Master AM, Sokolsky-Papkov M, Kabanov AV. Towards nanomedicines of the future: Remote magneto-mechanical actuation of nanomedicines by alternating magnetic fields. Journal of Controlled Release, 2015, 219, 43-60.

31. Haney MJ, Klyachko NL, Zhao Y, Gupta R, Plotnikova EG, He Z, Patel T, Piroyan A, Sokolsky-Papkov M, Kabanov AV, Batrakova EV. Exosomes as drug delivery vehicles for Parkinson's disease therapy. Journal of Controlled Release, 2015, 207, 18-30.

32. Majouga A, Sokolsky-Papkov M, Kuznetsov A, Lebedev D, Efremova M, Beloglazkina E, Rudakovskaya P, Veselov M, Zyk N, Golovin Y, Klyachko N, Kabanov AV. Enzyme-functionalized gold-coated magnetite nanoparticles as novel hybrid nanomaterials: Synthesis, purification and control of enzyme function by low-frequency magnetic field. Colloids and Surfaces B: Biointerfaces, 2015, 125, 104-109.

33. Abakumov M, Nukolova N, Sokolsky-Papkov M, Shein S, Sandalova T, Vishwasrao H, Grinenko N, Gubsky I, Abakumov A, Kabanov AV, Chekhonin VP. VEGF-targeted magnetic nanoparticles for MRI visualization of brain tumor. Nanomedicine: Nanotechnology, Biology, and Medicine, 2015, 11(4), 825-33.

34. Golovanevski L, Ickowicz D, Sokolsky-Papkov M, Domb AJ, Weiniger CF. In vivo study of an extended release bupivacaine formulation following site-directed nerve injection. Journal of Bioactive and Compatible Polymers. 2014, 30(1), 114-125.

35. Singh D, McMillan JM, Liu XM, Vishwasrao HM, Kabanov AV, Sokolsky-Papkov M, Gendelman H. Formulation design facilitates magnetic nanoparticle delivery to diseased cells and tissues. Nanomedicine (Lond), 2014, 9(3), 469-485.

36. Singh D, McMillan JM, Kabanov AV, Sokolsky-Papkov M**,** Gendelman H. Bench to Bedside Translation of Magnetic Nanoparticles. Nanomedicine (London), 2014, 9(4), 501-516.

37. Golovin YI, Klyachko NL, Golovin DY, Efremova MV, Samodurov AA, Sokolsky-Papkov M, Kabanov AV. New approach to control of enzymatic reactions in magnetic nanosuspencions through low frequency AC magnetic field. Letters to Journal of Technical Chemistry, 2013, 5, 24-32.

38. Klyachko NL*, Sokolsky-Papkov M*, Pothayee N, Efremova MV, Gulin DA, Pothayee N, Kuznetsov AA, Majouga AG, Riffle JS, Golovin YI, Kabanov AV, Change of enzyme reaction rate in magnetic nanosuspensions by non-heating super low frequency magnetic field, Angewandte Chemie International Edition. 2012, 51(48),12016-12019. ***equal contribution.**

39. Abakumov MA, Grinenko NF, Baklaushev VP, Sandalova TO, Nukolova NV, Semenova AV, Sokolsky-Papkov M, Vishwasrao HM, Kabanov AV, Chekhonin VP. Tumor-specific contrast agent based on ferric oxide superparamagnetic nanoparticles for visualization of gliomas by magnetic resonance tomography. Bulletin of Experimental Biology and Medicine. 2012, 153(1), 89-93.

40. Haney MJ, Suresh P, Zhao YL, Kanmogne GD, Kadiu I, Sokolsky-Papkov M, Klyachko N, Mosley RL, Kabanov AV, Gendelman HE, Batrakova EV. Blood-borne macrophage-neutral cell interactions hitchhike on endosome networks for cell based nanozyme brain delivery. Nanomedicine, 2012, 7(6), 815-833.

41. Sokolsky-Papkov M, Golovanevski L, Domb AJ, Weiniger CF. Long acting Poly (DL:Lactic acid- castor oil) 3:7 –bupivacaine formulation: effect of hydrophobic additives. Pharmaceutical Research, 2011, 28(12), 3265-3273.

42. Abakumov MA, Goldt AE, Sokolsky-Papkov M, Zorkina YA, Baklaushev VP, Goodilin EA, Kabanov AV, Chekhonin VP. Magnetic resonance imaging of endothelial cells with vectorized iron oxide nanoparticles. Bulletin of Experimental Biology and Medicine, 2011, 151(6), 726-730.

43. Sokolsky-Papkov M, Langer R, Domb AJ. Synthesis of aliphatic polyesters by polycondensation using inorganic acid as catalyst. Polymers for Advanced Technologies, 2011, 22(5), 502-511.

44. Weiniger CF, Golovanevski M, Sokolsky-Papkov M, Domb AJ. Review of prolonged local anesthetic action, Expert opinion on drug delivery, 2010, 22(5), 502-511.

45. Sokolsky-Papkov M, Golovanevski L, Domb AJ, Weiniger CF. Poly (DL:Lactic acid-castor oil) 3:7 –bupivacaine formulation: reducing burst effect prolongs efficacy in vivo, Journal of Pharmaceutical Sciences, 2010, 99(6), 2732-2738.

46. Sokolsky-Papkov M**,** Shikanov A, Ezra A, Vaisman B, Domb AJ., Faty acid-based biodegradable polymers: synthesis and applications. Polymer degradation and performance, ACS Symposium Series, Vol. 1004, chapter 6, 2009, 60-69.

47. Sokolsky-Papkov M, Golovanevski M, Weiniger CF, Domb AJ. Prolonged local anesthetic action through slow release from Poly(DL:lactic acid co castor oil), Pharmaceutica Research. 2009, 26(1), 32-9.

48. Prakash J, Sokolsky-Papkov M, Kumar N, Domb AJ, Polymer Reviews, 2008, 48(1), 187-206.

49. Sokolsky-Papkov M, Domb AJ. Stereoisomeric effect on in vitro drug release from injectable poly(lactic acid co castor oil) polyesters. Polymers for Advanced Technologies, 2008, 19(6), 671-679.

50. Sokolsky-Papkov M, AJ Agashi K, Olaye A, Shakesheff K, Domb AJ**.** Polymer carriers for drug delivery in tissue engineering, Advanced Drug Delivery Reviews, **2007,** 59(4-5), 187-206**.**

51. Sokolsky-Papkov M, Domb AJ, Golenser J. Impact of aldehyde content on amphotericin B dextran imine conjugate toxicity, Biomacromolecules, 2006, 7(5), 1529-35.

SELECT ORAL PRESENTATIONS

1. Hwang D, Dismuke T, Rosen EP, Kagel JR, Lim C, Zamboni W, Kabanov AV, Gershon TR, Sokolsky-Papkov M. Hyperloaded Poly(2-oxazoline) Micelles as Personalized Drug Carriers for Brain Tumors. ASC Annual Meeting, 2019, San Diego, USA. **Invited Speaker**.

2. Williams PN, Seo Y, Ghazanfari L, Riffle JS, Sokolsky-Papkov M, Kabanov AV Remote Actuation of Magnetic Nanoparticles For Cancer Cell Selective Treatment Using Super Low Frequency AC Magnetic Field. ICAS 2018, Krakow, Poland. August 2018. **Invited Speaker**.

3. Piroyan A, Vishwarsao HM, Vlasova K, Klyachko NL, Golovin YI, Kabanov AV, Sokolsky-Papkov M. “Magnetic nanoparticles mediated remote actuation - is more always better?”. Magnetic nanomaterials in biomedicine: synthesis, properties, and applications. 2017, Zvenigorod, Russia.

4. Sokolsky-Papkov M**,** Vishwasrao H.M, Abakumov M.A, and Kabanov A.V. Mechano-Chemical Actuation of Magnetic Nanoparticle – a step towards controlled delivery systems. 10th International Symposium on Frontiers in Biomedical Polymers, 2013, Vancouver, Canada.

5. Sokolsky-Papkov M**,** Vishwasrao H.M, Abakumov M.A, and Kabanov A.V. Utilization of polymer based drug delivery systems for synthesis and stabilization of metal nano particles: Development of theranostic drug delivery systems. 1st Russian Symposium of Surfactants, from Colloidal Systems to Nanochemistry, 2011, Kazan, Russia.

6. Sokolsky-Papkov M, Langer R, Domb AJ, "Polyesters derived from fatty acids and their applications", 10th PAT Symposium in Honor of Professor Menachem Levin 90th Birthday 2009, Jerusalem, Israel.

7. Sokolsky-Papkov M, Golovanevski L, Domb AJ and Weiniger CF., "Injectable long acting local anesthetics", 9th International Symposium on Frontiers in Biomedical Polymers, 2009, Mishima, Japan.

8. Sokolsky-Papkov M, Domb AJ. "Poly(lactic acid-castor oil) polyesters for controlled delivery of anticancer agents", 8th International Symposium on Frontiers in Biomedical Polymers 2007 Symposium, Gent, Belgium.

SELECT PEER-REVIEWED ABSTRACTS AND PROCEEDINGS

1. Lim C, Dismuke T, Gershon T, Sokolsky-Papkov M, Polyanionic polyoxazoline micelles significantly improve tumor delivery and treatment efficacy in GEMM model of medulloblastoma. Controlled Release Society annual meeting, 2021, Oral presentation.

2. Hwang D, Lim C, Yazdimamaghani M, Sokolsky-Papkov M, Kabanov AV, High dose paclitaxel polymeric micelle therapy enhances immunogenic cell death in murine breast cancer and synergizes with macrophage depleting agents for cancer immunotherapy, Controlled Release Society annual meeting, 2021, Oral presentation.

3. Park C, Thang M, Hwang D, Lim C, Dismuke T, Sokolsky M, Vibhakar R, Donson A, Gershon T, Immunotherapy with resiquimod repolarizes tumor-associated myeloid cells and improves event free survival in a transgenic mouse model of sonic-hedgehog (SHH) medulloblastoma, Neuro-Oncology 23, 27-28.

4. Freire C, Pho H, Ramsey J, Streeter S, Kojima R, Berger S, Fleury-Curado T, Sokolsky M, Batrakova E, Kabanov A, Polotsky V, Treatment of Sleep Disordered Breathing with Leptin Loaded Exosomes, 2021, Sleep 44 (Supplement_2), A1-A2

5. Park C, Del Mar C, Thang M, Dismuke T, Hwang D, Lim C, Mirlekar D, Donson A, Vibhakar R, Sokolsky M, Pylayeva-Gupta Y Gershon T. Immunomodulation with resiquimod repolarizes the immune microenviroment to inhibit medulloblastoma progression. Neuro-Oncology 23 (Supplement_6), vi103-vi103

6. Maiocchi S, Cartaya A, Buglak N, Ramsey J, Sokolsky M, Bahnson EM. Selective Delivery of Nrf2 Activators for the Treatment of Atherosclerosis. Free Radical Biology and Medicine 159, S92-SS92.

7. Hwang D, Dismule T, Rosen E, Kagel J, Lim C, Zamboni W, Kabanov AV, Gershon TR, Sokolsky-Papkov M. SCIDOT-03. . Hyperloaded Poly(2-oxazoline) Micelles as Personalized Drug Carriers for Brain Tumors. Annual Society of Neuro-Oncology meeting, Phoenix, USA. Published in Neuro-Oncology 21 (Supplement_6), vi272-vi273

8. Maiocchi S, Ramsey JD, Cartaya A, Sokolsky M, Bahnson E. Targeted Immune Cell-mediated Delivery of Redox Interventions for the Treatment of Atherosclerosis: 264. 26th Annual Conference of the Society for Redox Biology and Medicine. 2019, Las Vegas, USA. (Published at Free Radical Biology and Medicine 145)

9. Hwang D, Zhao Y, Lim C, Kapita C, Vinod N, Kabanov AV, Gershon TG and Sokolsky-

Papkov M. Sonic-hedgehog pathway inhibitor loaded poly(2-oxazoline) micelle with high capacity enhances lifespan on medulloblastoma animal model. NanoDDS 2018, Portland, USA. **Best Poster award**.

10. Hwang D, Zhao Y, Lim C, Kapita C, Vinod N, Kabanov AV, Gershon TR and Sokolsky-Papkov M. Sonic-hedgehog pathway inhibitor loaded poly(2-oxazoline) micelle with high capacity enhances lifespan on medulloblastoma animal model. Annual ISPNO meeting. 2018 Denver, USA.

11. Philise N. Williams, Youngee Seo, Lida Ghazanfari, Judy S. Riffle, Marina Sokolsky-Papkov, Alexander V. Kabanov, Remote Actuation of Magnetic Nanoparticles For Cancer Cell Selective Treatment Using Super Low Frequency AC Magnetic Field. 2017. US - Japan Symposium on Drug Delivery Systems, Hawaii, USA.

12. Seo Y, Vishwasrao HM, Master A, Wan X, Sokolsky-Papkov M, Kabanov AV. Paclitaxel delivery via stimuli-responsive poly(2-oxazoline)s-based NanoFerrogels for cancer theranostic system, 2016, NanoDDS, Baltimore, USA.

13. Hwang D, Gao J, Lang P, Kabanov AV, Gershon T, Sokolsky-Papkov M**,** Atr inhibitor and sonic hedgehog inhibitor combination therapy for the treatment of medulloblastoma: physicochemical evaluation and synergistic cytotoxic effects. 2016, NanoDDS, Baltimore, USA.

14. Hwang D, Sokolsky-Papkov M, Kabanov AV. High Capacity Polymeric Micelle Therapeutics: Enhanced solubility and stability of potential anticancer therapeutics. 2016, NCI PIs Meeting, Bethesda, USA.

15. Seo Y, Vishwasrao HM, Master A, Sokolsky-Papkov M, Kabanov AV. Poly(2-oxazoline) based magnetic fields-responsive hybrid nanoclusters for taxane delivery. 2015 Cancer Nanotechnology Gordon Conference.

16. Williams PN, Master AM, Pothayee N, Pothayee N, Zhang R, Vishwasrao HM, Riffle JS, Marina Sokolsky-Papkov M*, Kabanov AV*, Remote Actuation of Magnetic Nanoparticles For Cancer Cell Selective Treatment Using Super Low Frequency AC Magnetic Field. 2015. Cancer Nanotechnology Gordon Conference.

17. Seo Y, Vishwasrao HM, Master A, Sokolsky-Papkov M, Kabanov AV. Poly(2-oxazoline) based magnetic fields-responsive hybrid nanoclusters for taxane delivery, 2015, NanoDDS, Seattle, USA.

18. He Z, Wan X, Schultz A, Bludau H, Alakhova D, Sokolsky-Papkov M, Jordan R, Luxenhofer R, Ojima I, Kabanov AV. Engineering Poly(2-oxazoline) micelles to deliver new generation Taxiod SB-T-1214 against resistant metastatic breast cancer. 2014, NanoDDS, Chapel Hill, USA.

19. Seo Y, Vishwasrao H, Sokolsky-Papkov M, Kabanov AV. Magneric field responsive Poly(2-oxazoline)-based nanoferrogels. 2014, NanoDDS, Chapel Hill, USA.

20. Sokolsky-Papkov M, Piroyan A, Kabanov AV. Remotely actuated magnetic lyposomes for cancer therapy. 2014, NanoDDS, Chapel Hill, USA.

21. Vishwarsao HM, Kuznetzov I, Sokolsky-Papkov M, Devis TM, Kabanov AV. Pluronic

stabilized T2-weighted potential theranostic agents prepared by flash nanoprecipitation of magnetite nanoparticles. 2014, NanoDDS, Chapel Hill, USA.

22. He Z, Wan X, Schultz A, Bludau H, Dobrovolskaia M, Patri AK, Sokolsky-Papkov M, Jordan R, Luxenhofer R, Kabanov AV. A simple and non-smart micellar formulation of paclitaxel with superior safety and efficacy in vivo. 2014, NanoDDS, Chapel Hill, USA.

23. Piroyan A, Vishwasrao HM, Kabanov AV, Sokolsky-Papkov M. Remotely actuated magnetic lyposomes for cancer therapy. 2013, Polymers in Biology and Medicine, Santa Rosa, USA.

24. Piroyan A, Vishwasrao HM, Kabanov AV, Sokolsky-Papkov M. Remotely actuated magnetic lyposomes for cancer therapy. 2013, NanoDDS, San Diego, USA.

25. Sokolsky-Papkov M, Klyachko N.L, Efremova M.V, Gulin D.A, Pothayee N, Kuznetzov A.A, Majouga A.G, D.Y,. Riffle J.S, Golovin Y.I and Kabanov A.V. Change of the enzyme reaction rate in magnetic nanosuspensions by non-heating magnetic field. 2012, NanoDDS, Atlantic City, USA.

26. Sokolsky-Papkov M**,** Vishwasrao HM, Bronich TK, Kabanov AV. Utilization of polymer based delivery systems for synthesis and stabilization of metal nanoparticles- development of theranostic drug delivery systems**.** 9th International Symposium on Frontiers in Biomedical Polymers, 2011, Madeira, Portugal.

27. Sokolsky-Papkov M, Williams PN, Klyachko NL, Pothayee N, Vishwasrao HM, Alakhova DY, Riffle JS, Bronich TK, Kabanov AV. Poly(acrylic acid)-PEG coated magnetic nanoparticles as potentially AC activated drug delivery system. 2011, NanoDDS, Salt Lake City, USA.

28. Sokolsky-Papkov M, Klyachko NL, Pothayee N, Williams PN. Davis RM, Golovin YI, Riffle JS, Kabanov AV. Evaluation of magnetite nanoparticles as potential field actuated mechanochemical switches. NanoDDS, 2010, Omaha, USA.

29. Sokolsky-Papkov M**,** Bronitch TK, Kabanov AV. Synthesis and characterization of gold nanoparticles for heat ablation therapy. Gordon Research Conference on Drug Carriers In Medicine & Biology, 2010, Waterville Valley Resort, USA.

30. Sokolsky-Papkov M**,** Bronitch TK, Kabanov AV. Synthesis and characterization of gold nanoparticles for heat ablation therapy. Polymer Therapeutics, 2010, Valencia, Spain.

31. Sokolsky-Papkov M, Domb AJ. POLY 346-Synthesis and degradation of biodegradable plastics, Abstracts of papers of the American Chemical Society, 234, 346-POLY, 2007.

PATENTS

1. Batrakova EV, Kabanov AV, Sokolsky M, Haney MJ, Yuan D, Kim MS, Biological agent exosome compositions and uses thereof. US Patent App. 16/089,833

2. Kabanov AV, Sokolsky M, Williams PN. “Magnetic Nanoparticle-Polymer Complexes and uses thereof” US Patent App. 16/089,830

3. Kabanov AV, Tropsha A., Sokolsky-Papkov M, Muratov E. “Selective solubilization of

drugs or drug candidates in Polyoxazoline micelles", Patent disclosure.

4. Kabanov AV, Gershon TR, Lang P, Sokolsky-Papkov M, "Intravenous delivery of poly(oxazoline) micelles loaded with ATR inhibitors", Patent disclosure.

5. Kabanov AV, Wang A, Min, Y, Wang X, Sokolsky-Papkov M. "Intravenous delivery of poly(oxazoline) micelles loaded with cisplatin prodrugs, Paclitaxel/cisplatin prodrugs, etoposide/cisplatin prodrugs", Patent disclosure.

6. Kabanov AV, Sokolsky-Papkov M, Riffle JS. "Magnetic Nanoparticle-Polymer Complexes and Uses Thereof", PCT Application Number PCT/US2017/025250

7. Kabanov AV, Sokolsky-Papkov M, Golovin YI and Klyachko NL. "Method of control of biochemical reactions", Russian Patent Application 2012155425

8. Domb AJ, Polacheck I, Sokolsky M, Golenser J. "Conjugates of therapeutically active compounds", US Patent App. 11/992,298, 2006, Patent WO2007034495A.

SERVICE

1. Member, LSTRC study section, NIH.

2. Reviewer: ACS Nano, Theranostics, European Journal of Pharmaceutics and Biopharmaceutics, and more.

3. Member of the abstract review group and poster judge for the 17th International Nanomedicine and Drug Delivery Symposium, NanoDDS 2018, Portland, WA.

4. Member of the abstract review group and poster judge for the 13th International Nanomedicine and Drug Delivery Symposium, NanoDDS 2014, Chapel Hill, NC.

5. Session Chair, "Polymers in Medicine and Biology", 2013, Santa Rosa, CA.

6. Member of the abstract review group for the 8th International Nanomedicine and Drug Delivery Symposium, NanoDDS 2010, Omaha, NE.

GRANTS AND CONTRACTS (as PI, MPI or Co-PI only)

1. Nanoformulated small molecule immunotherapy for SHH medulloblastoma. NIH/NINDS R01, 1RO1NS125073, $1,250,000, Sokolsky-Papkov (PI), 1/1/2022-12/31/2026.

2. Project title: "Evaluating novel peptides as transfection agents"
Funding source: Uimmune, LC (PI: Sokolsky-Papkov)
Total funding: $48,819.
Period of contract: 4/01/2021- 5/31/2022

3. Project title: "Treating medulloblastoma with nano-formulated SHH and CDK4/6 inhibitors"
Funding source: St. Baldrick's Fdn (**PI: Sokolsky-Papkov**)
Total funding: $99,951
Period of contract: 7/01/2018- 6/30/2019

4. Project Title: "Theranostic Targeted-magnetic Nano Particulate-carboplatin (t-MNC-carboplatin) for Treatment of Osteosarcoma".
Funding Source: 2017 PVM Internal Competitive Research Funds Program, Purdue University.
Total Funding: $50,000 (PI: M. Risselada**, Co-PI: M. Sokolsky-Papkov**).
Period of Contract: 4/01/2017 – 3/31/2019.

5. Project Title: "Magneto-Mechanical Cancer Nanotherapeutics"
Funding Source: Eshelman Institute for Innovation.
Total Funding Awarded: $200,000 (PI: A. Kabanov, **Co-PI: M. Sokolsky-Papkov**)
Period of Contract: 6/01/2016 – 5/31/2018.

6. Project Title: "Identification of pharmaceutical composition suitable for oral administration of enzymes".
Funding Source: Biomarine Inc,
Total Funding Awarded $37,667 (**PI: M. Sokolsky-Papkov**)
Period of Contract: 4/01/2017 – 12/30/2017.

7. Project Title: "Theranostic Implantable Dual Sustained Release (IDSR) chemotherapeutic formulation of carboplatin with cell specific targeting for treatment of residual tumors and nodal metastatic spread in melanoma"
Funding Source: NC Tracks
Total Funding Awarded $50,000 (**MPIs: M. Sokolsky-Papkov**, M. Risselada)
Period of Contract: 10/01/2016 – 10/31/2017.

8. Project Title: "Selectin-mediated Delivery of Nano-SOD to Brain Vasculature Again Radiation Induced Brain Injury"
Funding Source: C-CCNE Pilot project program,
Total Funding Awarded $50,000 (PI: Y. Hong, **Co-PI: M. Sokolsky-Papkov**)
Period of Contract: 10/01/2016 – 09/30/2017.

9. Project Title: "Preclinical development of Atr inhibitor VE-822, delivered systemically in nanoparticles, for medulloblastoma therapy"
Funding Source: Alex's Lemonade Stand Foundation,

Total Funding Awarded $200,000 (PI: T. Gershon, **Co-PI: M. Sokolsky-Papkov**)
Period of Contract: 7/01/2015 – 06/30/2017.

10. Project Title: "Identification of pharmaceutical composition suitable for oral administration of enzymes"
Funding Source: Biomarine Inc,
Total Funding Awarded $40,801 (**PI: M. Sokolsky-Papkov**)
Period of Contract: 7/01/2016 – 12/30/2016.

11. Project Title: "Surface modified PLGA-PEG particles"
Funding Source: NexImmune Inc,
Total Funding Awarded $38,439 (**PI: M. Sokolsky-Papkov**)
Period of Contract: 4/01/2015 – 09/30/2015.

12. Project Title: "Surface modified PLGA-PEG particles"
Funding Source: NexImmune Inc,
Total Funding Awarded $24,850 (**PI: M. Sokolsky-Papkov**)
Period of Contract: 06/01/2014 – 11/30/2014.

13. Project Title: "Remotely Actuated Doxorubicin Liposomes for Cancer Therapy"
Funding Source: C-CCNE Pilot project program,
Total Funding Awarded $50,000 (**PI: M. Sokolsky-Papkov**)
Period of Contract: 10/01/2012 – 09/30/2013.

GRANTS AND CONTRACTS (as Co-I)

1. Towards translation of Nanoformulated Paclitaxel-Platinum Combination. NIH/NCI R01 CA264488, 08/01/21 – 06/31/25, $2,452,236, A. Kabanov (PI).
2. Bcl-xL-regulated apoptosis in cerebellar development and medulloblastoma treatment, NIH/NIGMS, R01NS102627-01A1, 6/01/2018 – 4/30/2023, $231,766, Gershon (PI).
3. Targeted Magneto-Mechanic Nanotherapeutics for Cancer, NIH NCI, 1R21CA220148, 08/01/17-07/31/20, $352,401 A.V. Kabanov (PI)
4. Innovative Research in Cancer Nanotechnology (IRCN): Targeted Core Shell Nanogels for Triple Negative Breast Cancer, NIH/NCI, U01CA198910-01, 8/14/15-7/31/2020, $2,877,710, A. Kabanov (PI) T. Bronich & R. Liu (CPIs)
5. Carolina Center for Cancer Nanotechnology Excellence (C-CCNE): Nano Approaches to Modulate Host Cell Response for Cancer Therapy; Project 4: High Capacity Polymeric Micelle Therapeutics for Lung Cancer, NIH NCI, 1U54CA198999-01, 09/15/15-07/31/20**,** $11,309,680 (total CCNE) {$2,261,936 Project 4}, L. Huang (PI) J. Tepper (CPI), A. Kabanov (PI, Project 4).