

CURRICULUM VITAE

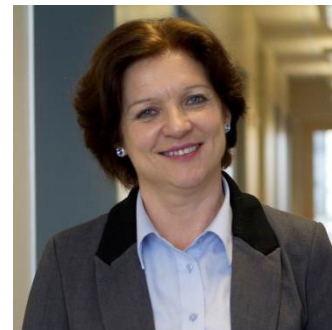
A. PERSONAL:

NAME IN FULL:

Elena V. Batrakova

CAMPUS ADDRESS:

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B. EDUCATION AND DEGREES:

August 1978 to July 1983

Student, Faculty of Chemistry, MV Lomonosov Moscow State University (MSU), Moscow, Russia

Obtained M.Sc. in chemistry with distinction

November 1983 to May 1987

Ph.D. student, Department of Polymers, MV Lomonosov MSU, Moscow, Russia

Obtained Ph.D. in chemistry of polymers, advisor: D.Sc. Viktor Kabanov

C. PROFESSIONAL EXPERIENCE:

July 2013 to present

Member of UNC Center for Nanotechnology in Drug Delivery, Chapel Hill, NC

July 2012 to present

Associate Professor, UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, NC

July 2010 to June 2012

Research Associate Professor (promoted through P&T process), Department of Pharmaceutical Sciences, College of Pharmacy (COP), University of Nebraska Medical Center (UNMC), Omaha, NE

July 2007 to June 2012

Director, CNS Drug Delivery Program, Center for Drug Delivery and Nanomedicine (CDDN), UNMC, Omaha, NE

July 2003 to June 2010

Research Assistant Professor, Department of Pharmaceutical Sciences, COP, UNMC, Omaha, NE

September 1995 to July 2003

Research Associate, Department of Pharmaceutical Sciences, COP, UNMC, Omaha, NE

September 1994 to August 1995

Senior Research Fellow at the Laboratory of Drug Delivery, Department of Polymers, MV Lomonosov MSU, Moscow, Russia

May 1994 to August 1995

Director of Research (half time), Moscow Institute of Biotechnology, Moscow, Russia

December 1987 to April 1994

Research Fellow and Senior Research Fellow at All-Russian Research Center of Molecular Diagnostics and Therapy, Moscow, Russia

November 1983 to May 1987

Post-Graduate Researcher and Ph.D. Student at the Laboratory of Polymerization Processes, Department of Polymers, MV Lomonosov MSU, Moscow, Russia

D. HONORS:

2009

UNMC New Investigator Award

2010

Oldfield/Reagan Alzheimer's Research Award

2010	Top cited article in 2008-2010 Award in Journal of Controlled Release
2011	UNMC Innovation, Development and Engagement Award (IDEA)
2012/2013	UNC Academic Excellence Award in Research
2014	Editorial Board, Nanomedicine: Nanotechnology, Biology and Medicine (Elsevier)
2014	Highly cited of total 10 scientists at UNC 2014
2014	A Thomson Reuters Highly Cited Researcher
2014-2017	Editorial Board, Journal of Drug Delivery
2014	Top 1% highly cited researcher in Pharmaceuticals and Toxicology; http://highlycited.com/
2013/2014	UNC Academic Excellence Award in Research
2014	Research Innovation Award, UNMC
2015	The most downloaded article in Journal of Controlled Release corresponding author
2015	Scientific Advisory Board for the neurosensory and Neuroregenerative Research Foundation
2015	Editorial board, International Journal of Pharmaceutical Sciences Research
2015	Editorial board, Journal of Bioanalytical Techniques
2016	Editorial board, Mathews Journal of Cancer Science
2016	Editorial board, Journal of Clinical Pharmacology (JCP)
2016	Award for outstanding contributions to the PharmD Program UNC, Chapel Hill, NC
2016	UNC Academic Excellence Award in Research
2016	Leader for Scientific Advisory Board for the Neurosensory and Neuroregenerative Research Foundation (NNRF)
2016	Author of the Top Ten WNAN Article accessed in 2016
2017	Editorial Board, Alzheimer's and Parkinsonism: Research Therapy
2017	Editorial Board, International Journal of Neurodegenerative Disorders
2017	Author of the Top 25% most cited PlosOne articles
2019	Editorial Board, Cells
2020	Editorial Board, Pharmaceutics

E. BIBLIOGRAPHY:

Original Articles with 17,802 unique citations with h-index 63, and i10-index 90

(https://scholar.google.com/citations?user=Lw0ypA8AAAAAJ&hl=en&citSig=AMstHGTYmnHcDbNZ21GY87HNQSkS_PLx10)

1. Haney M.J., Zhao Y., Wayne E.C., Klyachko N.L., and Batrakova E.V. (2021) IL2-transfected Macrophages Activate T cells and Produce Strong Antineoplastic Effect in a Murine Model of Pulmonary Metastases. *Cancers*. Under review.
2. Klyachko N.L., Haney M.J., Batrakova E.V., and Kabanov A.V. (2021) Cationized-modified Exosomes for Gene Delivery. *Nanomedicine*. Under review.
3. Zhao Y., Haney M.J., Fallon J.K., Rodriguez M., Arzt C.J., Smith P.C., El-Hage N., and Batrakova E.V. (2021) Using Extracellular vesicles Released by GDNF-transfected macrophages for Therapy of Parkinson's Disease, *Cells*. Under review. **Senior/Corresponding author.**
4. Haney M.J., Yuan H., Shipley S.T., Wu Z., Zhao Y., Pate K., Frank J.E., Massoud N., Stewart P.W., Perlmutter J.S., and Batrakova E.V. (2021) Biodistribution of Biomimetic Drug Carriers, Mononuclear Cells and Extracellular Vesicles, in Nonhuman Primates. *Adv Biol.* Dec 22; e2101293, doi: 10.1002/adbi.202101293. NIHMS1767336, **Senior/Corresponding author.**
5. Freire C., Pho H., Ramsey J., Streeter S., Kojima R., Berger S., Fleury-Curado T., Sokolsky M., Batrakova E., Kabanov A., Polotsky V. (2021) 003 Treatment of Sleep Disordered Breathing with Leptin Loaded Exosomes, *Sleep* 44 (Supplement_2), A1-A2.
6. Hayes S., Liu Q., Selvakumar S., M.J. Haney M.J., Batrakova E.V., Allman B.A., Walton P., Kiser P. and Whitehead S.N. (2021) Brain targeting and toxicological assessment of the extracellular vesicle-packaged antioxidant Catalase-SKL following intranasal administration in mice. *Neurotox Res.* Jul 1. doi:

- 10.1007/s12640-021-00390-6. Online ahead of print. PMID: 34196954.
7. Haney M.J., Zhao Y., Fallon John, Wang Y., Li S.M., Erie D., Smith C. P., and Batrakova E.V. (2021) Extracellular Vesicles as Drug Delivery System for Treatment of Neurodegenerative Disorders: Optimization the Cell Source. *Advanced*. Dec 1; 12: doi.org/10.1002/anbr.202100064. **Senior/Corresponding author.** NIHMSID: 1720535.
 8. Rodriguez M., Soler Y., Muthu Karuppan M.K., Zhao Y., Batrakova E.V., El-Hage N. (2021) Targeting Beclin1 as an Adjunctive Therapy against HIV Using Mannosylated Polyethylenimine Nanoparticles. *Pharmaceutics*. Feb 6;13(2):223. doi: 10.3390/pharmaceutics13020223. PMID: 33561939.
 9. Lopukhov A.V., Yang Z., Haney M.J., Bronich T.K., Sokolsky-Papkov M., Batrakova E.V., Klyachko, N.L., and Kabanov A.V. (2021) Mannosylated Cationic Copolymers for Gene Delivery to Macrophages. *Macromol Biosci*. Apr;21(4):e2000371. doi: 10.1002/mabi.202000371. Epub 2021 Feb 22. 2021. PMID: 33615675.
 10. Klyachko N.L., Arzt C.J., Li S.M., Gololobova O.A., and Batrakova E.V. (2020) Extracellular vesicle-based Therapeutics: Pre-clinical and Clinical Investigations. *Pharmaceutics*. Dec 1;12(12):E1171. doi: 10.3390/pharmaceutics12121171. *Pharmaceutics*. 2020. PMID: 33271883. **Senior/Corresponding author.**
 11. Cartaya A., Batrakova E., Bahnson E.M. (2020) Immune Cell mediated Delivery of Cinnamic Aldehyde for Therapeutic Vascular Applications. *Free Radical Biology and Medicine*, 159, S88.
 12. Pinto D.O., DeMarino C., Vo T.T., Pleet M.L., Barclay R.A., Cowen M., Hooten N.N., Evans M.K., Heredia A., Batrakova E.V., Iordanskiy S., Kashanchi F. (2020) Low-Level Ionizing Radiation Induces Selective Killing of HIV-1-Infected Cells with Reversal of Cytokine Induction Using mTOR Inhibitors. *Viruses*. Aug 13;12(8):885. doi: 10.3390/v12080885. PMID: 32823598
 13. Kumar S., El-Hage N., and Batrakova E.V. (2020) Extracellular Vesicles in HIV, Drug abuse, and Drug delivery. *J Neuroimmune Pharmacol*. Jul 22. doi: 10.1007/s11481-020-09946-3. PMID: 32696265
 14. Haney M.J., Zhao Y., J. Fay, H. Duhyeong, M. Wang, H. Wang, Z. Li, Y.Z. Lee, Muthu Karuppan M.K., El-Hage N., and Batrakova E.V. (2020) Genetically modified macrophages accomplish targeted gene delivery to the inflamed brain in transgenic Parkin Q311X(A) mice: importance of administration routes. *Sci Rep*. 2020 Jul 16;10(1):11818. doi: 10.1038/s41598-020-68874-7. PMID: 32678262. **Senior/Corresponding author.**
 15. Haney M.J., Zhao Y., Jin Y.S., and Batrakova E.V. (2020) Extracellular Vesicles as Drug Carriers for Enzyme Replacement Therapy to Treat Batten Disease: Optimization of Drug Administration Routes. *Cells*. May 20;9(5):E1273. doi:10.3390/cells9051273. PMID: 32443895. **Senior/Corresponding author**
 16. Zhao Y., Alakhova D.Y., Zhao X., Band V., Batrakova E.V., and Kabanov A.V. (2019) Eradication of Cancer Stem Cells in Triple Negative Breast Cancer Using Doxorubicin/Pluronic Polymeric Micelles. *Nanomedicine*. Nov 20;24:102124. doi: 10.1016/j.nano.2019.102124. PMID:31756533
 17. Haney M.J., Zhao Y., Jin Y.S., Li S.M., Bago J.R., Klyachko N.L., Kabanov A.V., and Batrakova E.V. (2019) Macrophage-derived Extracellular Vesicles as Drug Delivery Vehicles for Triple Negative Breast Cancer (TNBC) Therapy. *J Neuroimmune Pharmacol*. Nov 13. doi: 10.1007/s11481-019-09884-9. PMID: 31722094. **Senior/Corresponding author.**
 18. Wayne E.C., Li Y., Long C., Haney M.J., Batrakova E.V., Leisner T.M., Parise L.V., and Kabanov A.V. (2019) Targeted Delivery of siRNA lipoplexes to Cancer Cells Using Macrophage Transient Horizontal gene Transfer *Adv Sci (Weinh)*. Sep 4;6 (21):1900582. doi: 10.1002/advs.201900582. eCollection 2019. Nov 6. PMID: 31728272.
 19. Zhao Y., Haney M.J., Jin Y.S., Uvarov O., Vinod N., Lee Y.Z., Fine J.P., Kabanov A.V., and Batrakova E.V. (2019) GDNF-expressing macrophages restore motor functions in Transgenic Parkin Q311X Mice at a severe late-stage of Parkinson's disease, and produce long-term neuroprotective effects at an early-stage of Parkinson's disease in transgenic Parkin Q311X(A) mice. *Journal of Controlled Release*. Oct 30. pii: S0168-3659(19)30590-5. doi: 10.1016/j.jconrel.2019.10.027. PMID: 31678095. NIHMS1544554. **Senior/Corresponding author**
 20. Haney M.J., Klyachko N.L., Harrison E.B. Zhao Y., Kabanov A.V., and Batrakova E.V. (2019) TPP1 Delivery to Lysosomes with Extracellular Vesicles and their Enhanced Brain Distribution in the Animal Model of Batten Disease. *Adv Health Mater*. Apr 18:e1801271. doi: 10.1002/adhm.201801271. [Epub ahead of print] PMID: 0997751. NIHMS1026691, **Senior/Corresponding author**

21. Buglak N., Batrakova E.V., Mota R. and Bahnson E. (2018) Insights on Localized and Systemic Delivery of Redox-Based Therapeutics. *Oxidative Medicine and Cellular Longevity*, vol. 2018, Article ID 2468457, 23 pages, 2018. doi:10.1155/2018/2468457. PMID: 29636836.
22. Kim M.S., Haney M.J., Zhao Y., Yuan D., Klyachko N.L., Kabanov A.V., and Batrakova E.V. (2018) Engineering Exosomes for Targeted Paclitaxel Delivery to Pulmonary Metastases: *in vitro* and *in vivo* Evaluations. *Nanomedicine*. 2018 Jan;14(1):195-204. doi: 10.1016/j.nano.2017.09.011. Epub 2017 Oct 2. PMID: 28982587. **Senior/Corresponding author.**
23. Yuan D, Zhao Y, Banks WA, Bullock KM, Haney M, Batrakova E, Kabanov AV. (2017) Macrophage exosomes as natural nanocarriers for protein delivery to inflamed brain. *Biomaterials*. 2017 Oct;142:1-12. doi: 10.1016/j.biomaterials.2017.07.011. Epub 2017 Jul 10. PMID: 28715655.
24. Batrakova E.V. (2017) Using Immune Cells for Transport of Therapeutics to Brain Tumors. *Matthews Journal of Cancer Science*. March; 2(1), 008. **Senior/Corresponding author.**
25. Klyachko N.L., Polak R., Haney M.J., Zhao Y., Gomes Neto R.J., Hill M.C., Kabanov A.V., Cohen R.E., Rubner M.F., Batrakova E.V. (2017) Macrophages with cellular backpacks for targeted drug delivery to the brain. *Biomaterials*. 2017 Jun 17;140:79-87. **Senior/Corresponding author. The top 25% of all research outputs ever tracked by Altmetric.** PMID: 28633046. NIHMS905456.
26. Rodriguez M., Lapierre J., Ojha C., Dever S., Kaushik A., Batrakova E.V., Kashanchi F., Nair M., and El-Hage N. (2017) Intranasal drug delivery of small interfering RNA targeting Beclin1 encapsulated with polyethylenimine (PEI) in mouse brain to achieve HIV attenuation, *Scientific Reports*. May 12;7(1):1862. doi: 10.1038/s41598-017-01819-9. PMID:28500326.
27. Batrakova E.V. and Kim M.S. (2016) Development and Regulation of Exosome-based Therapy Products, *Wiley Interdiscip Rev Nanomed Nanobiotechnol*. (2016) Sep;8(5):744-57. doi: 10.1002/wnan.1395. Epub 2016 Feb 17. [Epub ahead of print]. **Senior/Corresponding author. The top Ten WNAN Article accessed in 2016.** PMID: 26888041
28. Kim M.S., Haney M.J., Zhao Y., Gupta R., Mahajan V., Inskoe E., Piroyan A., Sokolsky M., Okolie O., Hingtgen S.D., Kabanov A.V., and Batrakova E.V. (2016) Development of Exosome-encapsulated Paclitaxel to Overcome MDR in Cancer cells, *Nanomedicine*, Apr;12(3):655-64. doi: 10.1016/j.nano.2015.10.012. Epub 2015 Nov 14, **Senior/Corresponding author.** PMID: 26586551.
29. Haney M.H., Klyachko N.L., Zhao Y., Gupta R., He Z., Patel T., Piroyan A., Sokolsky M., Kabanov A.V., Batrakova E.V. (2015) Exosomes as Drug Delivery Vehicles for Parkinson's Disease Therapy, *J. Controlled Release*, 2015 Mar 31; 207:18-30. doi: 10.1016/j.jconrel.2015.03.033. [Epub ahead of print] PMID: 25836593; **Senior/Corresponding author. The most downloaded article in JCR in last 90 days.**
30. Roy U., Hong Ding H., Kanthikeel S.P., Raymond A., Atluri V., Yndart A., Kaftanovskaya E.M., Batrakova E.V., Nair M. (2015) Preparation, Characterization and Efficacy of Anti-HIV Nanodrug Targeting to Microfold cell (M cell) of the Gut-associated lymphoid Tissue (GALT), *Int J Nanomedicine*. 18;10:5819-35. doi: 10.2147/IJN.S68348. PMID: 26425084.
31. Batrakova E.V. and Kim M.S. (2015) Using naturally-equipped nanocarriers, exosomes, for drug delivery, *J. Control Release*, pii: S0168-3659(15)30042-0. doi: 10.1016/j.jconrel.2015.07.030. [Epub ahead of print]. PMID:26241750; NIHMS #713725. **Senior/Corresponding author.**
32. Roy U., Barber P., Tse-Dinh Y.C., Batrakova E.V., Mondal D., and Nair M. (2015) Role of MRP Transporters in Regulating Antimicrobial Drug Inefficacy and Oxidative Stress-induced Pathogenesis during HIV-1 and TB Infections, *Front Microbiol*. Sep 17;6:948. doi: 10.3389/fmicb.2015.00948. PMID:26441882, [PubMed] PMID: PMC4585023.
33. Zhao Y., Haney M.J., Gupta R., Bohnsack J.R., He Z., Kabanov A.V., Batrakova E.V. (2014) GDNF-transfected Macrophages Produce Potent Neuroprotective Effects in Parkinson's Disease Mouse Model, *PLoS One*. Sep 17;9(9):PMID: 25229627. **Senior/Corresponding author. Several TV and radio stations, as well as scientific magazines (The Herald Sun, Medical news Life Sciences and Triangle Business Journal) reported these findings.**
34. Klyachko N., Zaitseva E., Efremenko E., Kost O., Manickam D., Nukolova N., Majouga A., Bronich T., Batrakova E., Chehonin V., Sokolsky-Papkov M., Kabanov A. (2014) New bionanosystems for medical applications. The development of" NanoZYME" Technology in Moscow State University. Moscow

- University Chemistry Bulletin, 55 (3), 139.
35. Haney M.J., Zhao Y., Harrison E.B., Mahajan V., Ahmed S., He Z., Suresh P., Hingtgen S.D., Klyachko N.L., Mosley R.L., Gendelman H.E., Kabanov A.V., Batrakova E.V. (2013) Specific Transfection of Inflamed Brain by Macrophages: A New Therapeutic Strategy for Neurodegenerative Diseases, PLoS ONE Apr 19;8(4):e61852. doi:10.1371/ journal.pone.0061852. PMID: 23620794 [PubMed - in process]; **Senior/Corresponding author. The article summarizing this work was published in MIT Technology Review magazine. The top 25% most cited PloS One articles.**
 36. Batrakova E.V., and Kabanov A.V. (2013) Cell-Mediated Drug Delivery to the brain. J. Drug Del. Sci. Tech., 23 (5) 419-433. **Senior/Corresponding author.**
 37. Klyachko N.L., Haney M.H., Zhao Y., Manickam D.S., Mahajan V., Suresh P., Shawn D. Hingtgen Mosley R.L., Gendelman H.E., Kabanov A.V., Batrakova E.V. (2013) Macrophages Offer a Paradigm Switch for CNS Nanozyme Delivery, Nanomedicine (Lond). 2013 Nov 18. [Epub ahead of print]; PMID: 24237263; NIHMS542061, **Senior/Corresponding author.**
 38. Haney M.J., Suresh P., Zhao Y., Kanmogne G.D., Kadiu I., Sokolsky-Papkov M., Klyachko N.L., Mosley R.L., Kabanov A.V., Gendelman H.E., Batrakova E.V. (2012) Blood-Borne Macrophage-Neural Cell Hitchhike Endosome Networks for Cell-Based Nanozyme Brain Delivery. Nanomedicine (Lond), 7:815-33. PMID: 22236307. **Senior/Corresponding author.**
 39. Manickam, D.S., Brynskikh, A.M. Kopanic, J.L., Sorgen, P.L., Klyachko, N.L., Bronich, T.K., Batrakova, E.V., Kabanov, A.V. (2012) Well-defined Cross-Linked Antioxidant Nanozymes for Treatment of Ischemic Brain Injury, J. Controlled Release, Sep 28;162(3):636-45. PMID: 22902590 [PubMed - indexed for MEDLIN].
 40. Rosenbaugh, E.G., Manickam D.S., Batrakova E.V., Kabanov A.V., Zimmerman M.C. (2012) Neuronal uptake and subcellular localization of functional nanoformulated copper/zinc superoxide dismutase (SOD nano), FASEB Journal, 26, April.
 41. Zhang G., Kiyota T., Batrakova E.V., and Gendelman H.E. (2012) Inhibitory Effect of Nanozymes on Amyloid Beta Aggregation and Oxidative Stress: A New Therapeutic Implication for Alzheimer's Disease. Journal of Neuroimmune Pharmacology, 7, S61.
 42. Zhao Y., Haney M., Klyachko N.L., Manickam D.S., Li S., Booth S.L., Zimmerman M.C., Mosley R.L., Kabanov A.V., Gendelman H.E., Batrakova E.V. (2011) Polyelectrolyte complex optimization for macrophage delivery of redox enzyme nanoparticles. Nanomedicine, (Lond). Jan; 6(1):25-42, PMID: 21182416; NIHMSID #262189. **Senior/Corresponding author.**
 43. Rosenbaugh E.G., Manickam D.S., Batrakova E.V., Kabanov A.V., Zimmerman M.C. (2011) Neuronal Uptake of Nanoformulated Copper/Zinc Superoxide Dismutase (SOD1) Via Clathrin-Mediated Endocytosis, The FASEB Journal 25 (1), 651.
 44. Batrakova E.V., Gendelman H.E., and Kabanov A.V. (2011) Cell-Mediated Drug Delivery. Expert Opinion on Drug Delivery, 8(4): 1-19; Apr;8(4):415-33. [Epub ahead of print] PMID: 21348773; NIHMSID #269688. **Senior/Corresponding author.**
 45. Haney M.J., Zhao Y., Li S., Higginbotham S.M., Booth S.L., Han H-Y., Vetro J.A., Mosley R.L., Kabanov A.V., Gendelman H.E., Batrakova E.V. (2011) Cell-mediated transfer of catalase nanoparticles from macrophages to brain endothelial, glial and neuronal cells, Nanomedicine (Lond). Mar 31. [Epub ahead of print]. PMID: 21449849. **Senior/Corresponding author.**
 46. Klyachko N.L., Manickam D.S., Brynskikh A.M., S.V. Uglanova, Li S., Higginbotham S.M., Bronich T.K., Batrakova E.V., and Kabanov A.V. (2011) Cross-Linked Antioxidant Nanozymes for Improved Delivery to CNS, Nanomedicine. Jul 29. [Epub ahead of print] PMID: 21703990
 47. Banks W.A., Gertler A., Solomon G., Niv-Spector L., Yacobovitz M., Yi X., Batrakova E.V., Vinogradov S.V., Kabanov A.V. (2011) Principles of Strategic Drug Delivery to the Brain (SDDDB): Development of Orexigenic and Anorectic Analogs of Leptin, Physiol Behav. Jun 6. [Epub ahead of print] PMID: 21669216.
 48. Nowacek A., Zhang G., McMillan J., Kiyota T., Batrakova E.V., and Gendelman H.E. (2011) Nanomedicine and Neurodegenerative Disorders, Nanomedicine in Health and Disease, 377.
 49. Batrakova E.V. (2011) Overcoming multidrug resistance using silica nanoparticles PEG-b-PLA polymeric micelles loaded with doxorubicin. Nanomedicine (Lond), Nov; 6 (9):1492-3. PMID: 22187740. **Senior/Corresponding author.**

50. Batrakova E.V. (2011) Reversal of multidrug resistance by PEG-b-PLA polymeric micelles loaded with paclitaxel. *Nanomedicine (Lond)*, Nov; 6 (9):1493-4. 22187741. **Senior/Corresponding author.**
51. McMillan J., Batrakova E., Gendelman H.E. (2011) Cell delivery of therapeutic nanoparticles. *Prog Mol Biol Transl Sci.* 104:563-601. [Epub ahead of print] PMID: 22093229.
52. Batrakova E.V. (2011) Sensitizing of gemcitabine-resistant human leukemia cells by stearyl gemcitabine nanoparticles. *Nanomedicine (Lond)*, Nov; 6 (9):1491-2. 22077460. **Senior/Corresponding author.**
53. Zhao Y., Haney M.J., Mahajan V., Reiner B.C., Dunaevsky A., Mosley R.L., Kabanov A.V., Gendelman H.E., Batrakova E.V. (2011) Active Targeted Macrophage-mediated Delivery of catalase to Affected Brain Regions in Models of Parkinson's Disease. *J Nanomed Nanotechnol.* 2011 Sep 10; S4. pii: 003. PMID: 22288024. NIHMSID # 333947, **Senior/Corresponding author.**
54. Rosenbaugh E., Roat J., Gao L., Yang R.-F., Manickam D.S., Yin J.-X., Schultz H.D., Bronich T.K., Batrakova E.V., Kabanov A.V., Zucker I.H., Zimmerman M.C. (2010) Nanoformulated superoxide dismutase 1 (SOD1): Implications for angiotensin II (AngII) and brain-related cardiovascular diseases. *The FASEB Journal*, 24 (1) 402.
55. Luxenhofer R., Schulz A., Li S., Bronich T.K., Batrakova E.V., Jordan R., Kabanov A.V. (2010) Doubly-Amphiphilic Polymers as High-Capacity Delivery Systems for Hydrophobic Drugs. *Biomaterials.* Jun;31(18):4972-9. Mar 26. [Epub ahead of print], PMID: 20346493.
56. Rosenbaugh E., Roat J., Gao L., Yang R.-F., Manickam D.S., Yin J.-X., Schultz H.D., Bronich T.K., Batrakova E.V., Kabanov A.V., Zucker I.H., Zimmerman M.C. (2010) The Attenuation of Central Angiotensin II-dependent Pressor Response and intra-neuronal Signaling by Intracarotid Injection of Nanoformulated Copper/zinc Superoxide Dismutase. *Biomaterials.* Apr 6. [Epub ahead of print], PMID: 2037816.
57. Uglanova S.V., Popov M.V., Kurova V.S., Batrakova E.V., Manickam D., Kabanov A.V., and Klyachko N.L. (2010) Stabilization of enzymes-antioxidants by complex and conjugate formation with block copolymers: Prospects for CNS treatment. *Moscow University Chemistry Bulletin* 65 (3), 190-196.
58. Rosenbaugh E.G., Manickam D.S., Batrakova E.V., Kabanov A.V., Zimmerman M.C. (2010) Nanoformulated Copper/Zinc Superoxide Dismutase Increases Neuronal Uptake Via Active Endocytosis, *Free Radical Biology and Medicine*, 49, S195-S196.
59. Batrakova E.V., Li S., Brynskikh A.M., Sharma A.K., Li Y., Boska M., Mosley R.L., Alakhov V.Yu., Gendelman H.E., and Kabanov A.V. (2010) Effects of Pluronic and Doxorubicin on Drug Uptake, Cellular Metabolism, Apoptosis and Tumor Inhibition in Animal Models of MDR Cancers *J Control Release.* Jan 11. [Epub ahead of print], PMID: 20074598, NIHMSID # 181167.
60. Price T.O., Farr S.A., Yi X., Vinogradov S.V., Batrakova E.V., Banks W.A., Kabanov A.V. (2010) Transport Across the Blood-Brain Barrier of Pluronic Leptin. *J Pharmacol Exp Ther.* Apr; 333(1):253-63. Jan 6. [Epub ahead of print], PMID: 20053933.
61. Brynskikh A.M., Li S., Zhao Y., Mosley R.L., Boska M.B., Klyachko N.L., Kabanov A.V., Gendelman H.E., and Batrakova E.V. (2010) A Macrophage-based Delivery System of Antioxidant Enzymes for Parkinson's Disease: Therapeutic Effect in vivo. *Nanomedicine.* Apr; 5(3):379-96, PMID: 20394532, NIHMSID #201534. **Senior/Corresponding author.**
62. Alakhova DYu., Rapoport N.Y., Batrakova E.V., Timoshin A.A., Li S., Alakhov V.Yu., and Kabanov A.V. (2010) Differential Metabolic Responses to Pluronic in MDR and non-MDR Cells: A Novel Pathway for Chemosensitization of Drug Resistant Cancers, *J Control Release.* Feb 25;142(1):89-100. Epub 2009 Oct 6. PMID: 19815037, NIHMSID # 156599.
63. Rosenbaugh E.G., Roat J., Yang R.F., Yin J.X., Schultz H.D., Gao L., Zucker I.H., Bronich T.K., Batrakova E.V., Kabanov A.V., and Zimmerman M.C. (2009) Nanotechnology-Driven Delivery of Active Copper/Zinc Superoxide Dismutase to Neurons Inhibits Angiotensin II-induced Increase in Superoxide. *Free Radical Biology and Medicine*, 47, S66.
64. Batrakova E.V., Brynskikh A., Zhao Y., Li S., Mosley R.L., Kabanov A.V., Gendelman H. (2009) . CNS Delivery of Therapeutic proteins in Living Cells. *European Journal of Pharm. Sciences*, 31 (1), 90.
65. Roat J., Gao L., Rosenbaugh E., Yang R.F., Yin J.X., Schultz H.D., Batrakova E.V., Kabanov A.V., Zucker I.H., and Zimmerman M.C. (2009) Nanoformulated Copper/Zinc Superoxide Dismutase (CuZnSOD) Attenuates Angiotensin II Signaling in Neurons and in Intact Animals. *Hypertension*, 54 (4)

- E44.
66. Kabanov V.A., Banks W.A., Batrakova E.V., Zimmerman M.C., Zucker I.H. (2009) Nanomedicines for Polypeptide Delivery to CNS. *Journal of Neuroimmune Pharmacology*, S13-S14.
 67. Yi X., Batrakova E., Banks W., Vinogradov S., Kabanov A. (2008) Protein Conjugation with Amphiphilic Block Copolymers for Enhanced Cellular Delivery, *Bioconjugate Chem.* 19, 1071-1077. PMID: 18447367
 68. Batrakova E.V., Kabanov A.V. (2008) Pluronic Block Copolymers: Evolution of Drug Delivery Concept from Inert Nanocarriers to Biological Response Modifiers, *J. Controlled Release*. Sep 10;130(2):98-106. PMID: 18534704 **Senior/Corresponding author. Top Cited Article 2008-2010 in Journal of Controlled Release.**
 69. Sharma A.K., Zhang L., Li S., Kelly D.L., Alakhov V.Yu., Batrakova E.V., and Kabanov A.V. (2008) Prevention of MDR development in leukemia cells by micelle-forming polymeric surfactant, *J. Controlled Release*. Jul 30. 131: 220-227. PMID: 18722489
 70. Sahay G., Batrakova E.V., and Kabanov A.V. (2008) Different internalization pathways of polymeric micelles and unimers and their effects on vesicular transport, *Bioconjugate Chemistry*, Oct;19(10):2023-2029. PMID: 18729494.
 71. Zhang X., Batrakova E.V., Li S., Yang Z., Li Y., Zhang L., and Kabanov A.V. (2008) Effect of Pluronic P85 on Amino Acid Transporters in the Blood Brain Barrier, *Journal of Neuroimmune Pharmacology*, Mar;4(1):35-46. PMID: 18677571.
 72. Kabanov A.V. and Batrakova E.V. (2008) Polymer nanomaterials, *Neuroimmune Pharmacology*, 691-707.
 73. Spitzenberger T., Heilman D., Diekmann C., Batrakova E., Kabanov A, Gendelman H., Elmquist W., Persidsky Y. (2007) Novel delivery system enhances efficacy of antiretroviral therapy in animal model for HIV-1 encephalitis (HIVE). *JBCFM*, 27, 1033-42. PMID: 17063148
 74. Batrakova E.V., Kabanov A.V. (2007) Polymers for CNS drug delivery. *Pharm. Tech. Europe*. 19, 23-31.
 75. Batrakova E.V., Li S., Reynolds A., Thomas M., Bronich T.K., Kabanov A.V., and Gendelman H.E. (2007) A macrophage-nanozyme delivery system for Parkinson's Disease, *Bioconjugate Chem.* 18, 1498-1506. PMID: 17760417
 76. Batrakova E.V., Kelly D.L., Li S., Yili Li, Yang Z., Xiao L., Alakhova D.Y., Sherman S., Alakhov V.Yu., and Kabanov A.V. (2006) Alteration of genomic responses to doxorubicin and prevention of MDR in breast cancer cells by a polymer excipient Pluronic P85. *Mol. Pharm.* 3, 113-123. PMID: 16579640
 77. Kabanov A.V., Batrakova E.V., Sherman S., Alakhov V.Y. (2006) Polymer genomics, *Adv. Polym. Sci.* 193, 1-26.
 78. Zhang X., Batrakova E.V., Li S., Yang Z., and Kabanov A.V. (2006) Fourth International Nanomedicine and Drug Delivery Symposium. 24, 18S, 154.
 79. Batrakova E.V., Li S., Li Y., Yang Z., Kelly D.L., Alakhov V.Y., and Kabanov A.V. (2006) Amphiphilic block copolymers alter genetic responses to a drug. *Polym. Prepr.*
 80. Kabanov A.V., Batrakova E.V., Sriadibhatla S., Yang Z, Kelly D.L., and Alakov V.Yu. (2005) Polymer genomics: shifting the gene and drug delivery paradigms. *J. Contr. Release*, 101, 259-271. PMID: 15588910
 81. Minko T., Batrakova E.V., Li S., Li Y., Pakunlu R.I., Alakhov V.Yu., and Kabanov A.V. (2005) Pluronic block copolymers alter apoptotic signal transduction of doxorubicin in drug-resistant cancer cells. *J. Contr. Release*, 105, 269-278. PMID: 15939500
 82. Vinogradov S.V., Zeman A.D., Batrakova E.V., and Kabanov A.V. (2005) Polyplex Nanogel formulations for drug delivery of cytotoxic nucleoside analogs, *J. Contr. Release*, 107, 143-157. PMID: 16039001
 83. Batrakova E.V., Vinogradov S.V., Robinson S.M., Niehoff M.L., Banks W.A., and Kabanov A.V. (2005) Polypeptide point modification with fatty acids and Pluronic block copolymers for enhanced brain delivery. *Bioconjugate Chem.* 16, 793-802. PMID: 16029020
 84. Vinogradov S.V., Batrakova E.V., Kabanov A.V. (2004) Nanogels for oligonucleotide delivery to the brain. *Bioconjugate Chem.* 15, 50-60. PMID: 14733583
 85. Kabanov A.V., Batrakova E.V. (2004) New technologies for drug delivery across the blood brain barrier. *Current Pharm. Design*, 10, 1355-1363. PMID: 15134486
 86. Batrakova E.V., Zhang Y., Li S., Li Y., Vinogradov S.V., Persidsky Y., Alakhov V.Yu., Miller D.W., and Kabanov A.V. (2004) Effects of Pluronic P85 on GLUT1 and MCT1 transporters in the blood brain

- barrier. *Pharm. Res.*, 21, 1993-2000.
87. Kabanov A.V., Batrakova E.V., and Alakhov V.Yu. (2004) Pluronic Block Copolymers as Novel Therapeutics in Drug Delivery. *J. Contrl. Rel.*, 130-153
 88. Batrakova E.V., Li S., Li Y., Alakhov V.Yu., and Kabanov A.V. (2004) Effect of Pluronic P85 on ATPase activity of drug efflux transporters., *Pharm. Res.*, 21, 2226-2233. PMID: 15648254
 89. Kabanov A.V., Batrakova E.V., Sriadibhatla S., Yang Z, Kelly D.L., and Alakov V.Yu. (2004) Polymer genomics: shifting the drug delivery paradigm. *Polym. Prepr.* 45, 442-443.
 90. Batrakova E.V., Li S., Li Y., Alakhov V.Yu., Elmquist W.F., and Kabanov A.V. (2004) Distribution kinetics of Pluronic P85, a micelle-forming block copolymer. *J. Contr. Release*, 100, 389-397. PMID: 15567504
 91. Vinogradov S.V., Batrakova E.V., Li S., Kabanov A.V. (2004) Mixed polymer micelles of amphiphilic and cationic copolymers for delivery of antisense oligonucleotides. *J. Drug Target.*12, 517-526. PMID: 15621677
 92. Yu Q., Batrakova E.V., Lori Jerome L., Kris Banerjee K., Shu Li S., Yuli Li Y., Viviane Page V., Alexander Kabanov A.V., Brian Leyland-Jones B. (2004) Reversal of multidrug resistance by Pluronic block copolymers correlates with inhibition of drug efflux transporters and depletion of intracellular ATP and GSH levels. *Cancer Res.*, 64 (7 Supplement), 492-492.
 93. Batrakova E.V., Li S., Alakhov V.Yu., Miller D.W., and Kabanov A.V. (2003) Optimal Structure Requirements for Pluronic Block Copolymers in Modifying Drug Efflux Transporters Activity in BBMEC Monolayers. *JPET*, 304, 845-854. PMID: 12538842
 94. Kabanov A.V., Batrakova E.V., and Miller D.W. (2003) Pluronic block copolymers as modulators of drug efflux transporter activity in the blood-brain barrier. *Adv. Drug Deliv. Rev.*, 55,151-164. PMID: 12535579
 95. Kabanov A.V., Batrakova E.V., and Alakhov V.Yu. (2003) An essential relationship between ATP depletion and chemosensitizing activity of Pluronic block copolymers. *J. Contr. Release*, 91, 75-83. PMID: 12932639
 96. Batrakova E.V., Li S., Elmquist W.F., Miller D.W., Alakhov V.Yu., and Kabanov A.V. (2003) Sensitization of cells overexpressing multidrug resistant protein by Pluronic P85. *Pharm. Res.*, 20, 1581-1590. PMID:14620511
 97. Kabanov A.V., Batrakova E.V., and Alakhov V.Yu. (2002) Pluronic Block Copolymers as Novel Polymer Therapeutics for Drug and Gene Delivery. *J. Contrl. Rel.*, 82, 189-212. PMID: 12175737
 98. Kabanov A.V., Batrakova E.V., and Alakhov V.Yu. (2002) Pluronic Block Copolymers for Overcoming Drug Resistance in Cancer. *Adv. Drug Deliv. Rev.*, 54, 759-779. PMID: 12204601
 99. Batrakova E.V., Miller D.W., Li S., Alakhov V.Yu., Kabanov A.V., and Elmquist W.F. (2001) Pluronic P85 Enhances the Delivery of Digoxin to the Brain: in vivo and in vitro Studies. *JPET* 296, 556-562. PMID:11160643
 100. Batrakova E.V., Li S., Vinogradov S.V., Alakhov V.Yu., Miller D.W., and Kabanov A.V. (2001) Mechanism of Pluronic Effect on P-glycoprotein Efflux System in Blood Brain Barrier: Contribution of Energy Depletion and Membrane Fluidization. *JPET*, 299, 483-493. PMID: 11602658
 101. Batrakova E.V., Li S., Elmquist W.F., Miller D.W., Alakhov V.Yu., and Kabanov A.V. (2001) Mechanism of Sensitization of MDR Cancer Cells by Pluronic Block Copolymers: Selective Energy Depletion. *British J. Cancer*, 85, 1987-1997. PMID: 11747344
 102. Kabanov A.V., Batrakova E.V., Li S., Alakhov V.Yu., (2001) Selective Energy Depletion and Sensitization of Multiple Drug-Resistant Cancer Cells by Pluronic Block Copolymers. *Macromolecular Symposia* 172,103-112.
 103. Kozlov M.Yu., Melik-Nubarov N.S., Batrakova E.V., and Kabanov A.V. (2000) Relationship between Pluronic block copolymer structure, critical micellization concentration and partitioning coefficients of low molecular mass solutes, *Macromolecules* 33, 3305-3313.
 104. Lemieux P., Vinogradov S.V., Gebhart, C.L., Guérin N., Paradis G., Nguyen H.-K., Ochietti B., Suzdaltseva Y.G., Batrakova E.V., Bronich T.K., St-Pierre Y., Alakhov V.Yu., and Kabanov A.V. (2000) Block and graft copolymers and Nanogel copolymer networks for DNA delivery into cell. *J Drug Targeting*, 8(2), 91-105.
 105. Vinogradov S., Batrakova E., Kabanov A. (2000) Novel drug delivery systems: Nanogel networks. *The American Chemical Society*, 220, U284-U284.

106. Melik-Nubarov N.S., Dorodnykh T.Y., Batrakova E.V., Kozlov M.Y., Suzdaltseva Y.G., Kabanov A.V., Alakhov V.Yu., Arzhakov S.A. (1999) Synthesis and Chemical Transformations-Synthesis and Biological Activity of the Functional Block Copolymers Based on Pluronic P85-Doxorubicin Conjugates. *Polymer Science-Series A* 41 (5), 494-499.
107. Melik-Nubarov N.S., Dorodnykh T.Y., Batrakova E.V., Kozlov M.Y., Suzdaltseva Y.G., Kabanov A.V., Alakhov V.Yu., Arzhakov S.A. (1999) Synthesis and biological activity of the functional block-copolymers based on Pluronic P85-doxorubicin conjugates. *Vysokomol Soed (in Russian)* 41(5), 768-775.
108. Miller D.W., Batrakova E.V., and Kabanov A.V. (1999) Inhibition of multidrug resistance-associated protein (MRP) functional activity with Pluronic block copolymers. *Pharm Res* 16, 396-401. PMID: 10213370
109. Batrakova E.V., Li S., Miller D.W. and Kabanov A.V. (1999) Pluronic P85 increases permeability of broad spectrum of drugs in polarized BBMEC and Caco-2 cell monolayers. *Pharm Res* 16, 1368-1374. PMID:10496651
110. Batrakova E., Lee S., Li S., Venne A., Alakhov V. and Kabanov A. (1999) Fundamental relationships between the composition of Pluronic block copolymers and their hypersensitization effect in MDR cancer cells. *Pharm Res* 16, 1375-1381. PMID: 10496652
111. Vinogradov S.V., Batrakova E.V., Li S., and Kabanov A.V. (1999) Polyion complex micelles with protein- modified corona for receptor-mediated delivery of oligonucleotides into cells. *Bioconjugate Chem.* 10, 851-860. PMID: 10502353
112. Alakhov V., Klinsky E., Li S., Pietrzynski G., Venne A., Batrakova E., Bronich T., Kabanov A. (1999) Block copolymer-based formulation of doxorubicin. From cell screen to clinical trials. *Colloids and Surfaces B: Biointerfaces* 16, 113-134.
113. Vinogradov S., Batrakova E., Kabanov A. (1999) Poly(ethylene glycol)-polyethyleneimine NanoGel™ particles: novel drug delivery systems for antisense oligonucleotides. *Colloids and Surfaces B: Biointerfaces* 16, 291-304.
114. Batrakova E.V., Han H.-Y., Alakhov V.Y., Miller D.W. and Kabanov A.V. (1998) Effects of Pluronic block copolymers on drug absorption in Caco-2 cell monolayers. *Pharm Res* 15, 850-855. PMID: 9647349
115. Batrakova E.V., Han H.-Y., Miller D.W., and Kabanov A.V. (1998) Effects of Pluronic P85 unimers and micelles on drug permeability in polarized BBMEC and Caco-2 cells. *Pharm Res* 15, 1525-1532. PMID:9794493
116. Miller D.W., Batrakova E.V., Waltner T.O., Alakhov V.Yu., and Kabanov A.V. (1997) Interactions of Pluronic block copolymers with brain microvessel endothelial cells: evidence for multiple absorption pathways. *Bioconjugate Chemistry* 8, 649-657. PMID: 9327127
117. Kabanov, A.V., Nazarova, I.R., Astafieva, I.V., Batrakova, E.V., Alakhov, V.Yu., Yaroslavov, A.A., and Kabanov, V.A. (1996) Micelle formation and solubilization of fluorescent probes in poly(oxyethylene-b- oxypropylene-b-oxyethylene). *Macromolecules*, 29(27), 8999.
118. Alakhov V.Yu., Moskaleva E.Yu., Batrakova E.V., and Kabanov A.V. (1996) Hypersensitization of multidrug resistant human ovarian carcinoma cells by Pluronic P85 block copolymer. *Bioconjugate Chemistry* 7, 209-216. PMID: 8983343
119. Alakhov V., Batrakova E., Li S., Venne A., and Kabanov A. (1996) Block copolymer drug carriers: 1. Hypersensitization of MDR cancers and in vivo activity. *Pharm Res* 13, S-214.
120. Batrakova E.V., Dorodnykh T.Yu., Klinskii E.Yu., Kliushnenkova E.N., Shemchukova O.B., Arjakov S.A., Alakhov V.Yu., and Kabanov A.V. (1996) Anthracycline antibiotics non-covalently incorporated into micelles of Pluronic block copolymers: activity against drug sensitive and resistant tumors, *Br J Cancer* 74,1545-1552. PMID: 8932333
121. Kabanov A.V., Nazarova I.R., Astafieva I.V., Batrakova E.V., Alakhov V.Yu., Yaroslavov A.A. and Kabanov V.A. (1995) Micelle formation and solubilization of fluorescent probes in poly(oxyethylene-b- oxypropylene-b-oxyethylene) solutions. *Macromolecules* 28, 2303-2314.
122. Kabanov A.V., Batrakova E.V., Melik-Nubarov N.S., Fedoseev N.A., Dorodnich T.Yu., Alakhov V.Yu., Chekhonin V.P., Nazarova I.R., and Kabanov V.A. (1992) A new class of drug carriers: micelles of poly(oxyethylene)-poly(oxypropylene) block copolymers as microcontainers for drug targeting from blood in brain. *J Contr Release* 22, 141-158.

123. Slepnev V.I., Kuznetsova L.E., Gubin A.N., Batrkova E.V., Alakhov V.Yu., and Kabanov A.V. (1992) Micelles of poly(oxyethylene)-poly(oxypropylene) block copolymer (pluronic) as a tool for low-molecular compound delivery into a cell. Phosphorylation of intracellular proteins with micelle incorporated [³²P]ATP. *Biochem Internat* 26, 587-595. PMID: 1610369
124. Kabanov A.V., Slepnev V.I., Kuznetsova L.E., Batrkova E.V., Alakhov V.Yu., Melik-Nubarov N.S., Sveshnikov P.G., and Kabanov V.A. (1992) Pluronic micelles as a tool for low-molecular compound vector delivery into a cell: effect of Staphylococcus aureus enterotoxin B on cell loading with micelle incorporated fluorescent dye. *Biochem Internat* 26, 1035-1042. PMID: 1632800
125. Egorov V.V., Ksenofontova O.B., and Batrkova E.V. (1991) Specific features of the colloid-chemical behavior of surfactant monomers based on dimethylaminoethyl methacrylate in water in the presence of water-soluble polymers. *Colloid journal of the USSR [in Russian]* 53(2), 351-356.
126. Egorov V.V., Ksenofontova O.B., and Batrkova E.V. (1991) Colloid-chemical behavior of surfactant monomers based on dimethylaminoethylmethacrylate in water in the presence of water-soluble polymers. *Colloid journal of the USSR [in Russian]* 53(2), 305-309.
127. Alakhov V.Yu., Kabanov A.V., Batrkova E.V., Koromysova I.A., Levashov A.V., and Severin E.S. (1990) Increasing cytostatic effects of ricin A chain and Staphylococcus aureus enterotoxin A through in vitro hydrophobization with fatty acid residues. *Biotech Appl Biochem* 12, 94-98. PMID: 2310510
128. Egorov V.V., and Batrkova E.V. (1990) Radical Polymerization Kinetics of Unsaturated Alkylammonium Halides in Ethanol. *Vestn. Mosk. Univ. [in Russian] Ser. 2: Khim.* 31(2), 199-202
129. Egorov V.V., Batrkova E.V., and Zubov V.P. (1990) Radical Polymerization in Spherical Micelles of Unsaturated Alkylammonium Halides in Water. *Vysokomol. Soedin. [in Russian] Ser. A* 32(5), 927-932.
130. Egorov V.V., Ksenofontova O.B., Batrkova E.V., and Permin A.M. (1989) Effect of Ethanol on the Structure Formation and Kinetics of Radical Polymerization of Cationic Surface-active Monomers in Water. *Vestn. Mosk. Univ. [in Russian] Ser. 2: Khim.* 30(5), 517-522.
131. Kabanov A.V., Chekhonin V.P., Alakhov V.Yu., Batrkova E.V., Lebedev A.S., Melik-Nubarov N.S., Arzhakov S.A., Levashov A.V., Morozov G.V., Severin E.S., and Kabanov V.A. (1989) The neuroleptic activity of haloperidol increases after its solubilization in surfactant micelles. Micelles as microcontainers for drug targeting. *FEBS Lett* 258, 343-345. PMID: 2599097
132. Egorov V.V., Ksenofontova O.B., Batrkova E.V., and Zubov V.P. (1988) Influence of counterion nature on colloidal and chemical properties of surfactant monomers. *Kolloidn. Zh. [in Russian]* 50(4), 821-825.
133. Egorov V.V., Batrkova E.V., Ksenofontova O.B., and Zubov V.P. (1988) Radical polymerization in aqueous dispersions of ionic surface-active monomers with different counterions. *Vysokomol. Soedin. [in Russian] Ser. A* 30(9), 1854-1858.
134. Egorov V.V., Batrkova E.V., and Zubov V.P. (1988) Effect of Initiator Nature on the Kinetics of Radical Polymerization of N,N-dimethyl-N-(acetodecyl) [(methacryloyloxy)ethyl] Ammonium Bromide in Water. *Vysokomol. Soedin. [in Russian] Ser. A* 30(9), 1859-1861.
135. Batrkova E.V., Orlov Yu.N., Egorov V.V., Zubov V.P., Titkova L.V., Shapiro Yu.E., and Kabanov V.A. (1985) Colloid-chemical properties of cationic surfactant vinyl monomers in water. *Kolloidn. Zh. [in Russian]* 47(1), 130-134
136. Batrkova E.V., Orlov Yu.N., Egorov V.V., Zubov V.P., and Kabanov V.A. (1985) Effect of structurization on the kinetics of radical polymerization of cationic surface-active vinyl monomers in aqueous dispersions. *Vysokomol. Soedin. [in Russian] Ser. B* 27(2), 87-93.
137. Egorov V.V., Batrkova E.V., Titkova L.V., Demin V.V., Zubov V.P., and Barnakov A.N. (1982) Characteristics of the behavior of N-cetyl-N,N-diallyl-(dodecyloxycarbonylmethyl)-ammonium bromide in water. *Vysokomol. Soedin. [in Russian] Ser. B* 24(5), 370-371.

BOOKS AND BOOK CHAPTERS:

1. Kumar S., El-Hage N., Batrkova E.V. **Executive Guest Editor for Special Theme Issue "Exosomes and Drug Delivery"** (2020) *Journal of Neuroimmune Pharmacology*.
2. Kabanov A.V., Batrkova E.V. *Polymer Nanomaterials for Drug Delivery across the Blood Brain Barrier*

- (2015) In “Neuroimmune pharmacology textbook”. Second edition, Chapter 3.3.1. **Senior/Corresponding author.**
3. Batrkova E.V.7. Parkinson’s Disease; Nanomedical therapies in development (2011) In "Nanomedicine in Health and Disease". Chapter 7. **Senior/Corresponding author.**
 4. Kabanov A.V., Batrkova E.V. Polymer Nanomaterials (2008) In “Neuroimmune pharmacology textbook”. Chapter 47, pp 731-748.
 5. Batrkova E.V., Bronich T.K., Vetro J.A., and Kabanov A.V. Polymer micelles as drug carriers (2006) In “Nanoparticles as drug carriers” Torchilin V.P., ed. Imperial College Press, London, Chapter 5, pp 56-93.
 6. Batrkova E.V. and Kabanov A.V. Strategies to overcome the blood-brain barrier (2006) In “Enhancement in drug delivery” Touitou E., and Barry B.W., eds., CRC Press. Chapter 28, pp 593-614. **Senior/Corresponding author.**
 7. Kabanov A.V., Batrkova E.V., Sherman S., and Alakhov V.Yu. Polymer genomics (2006) In “Advances in polymer science”, Duncan R., and Satchi-Fainaro R, eds., Springer-Verlag GmbH & Co, 193, pp 1-24.
 8. Kabanov A.V., Batrkova E.V., and Alakhov V.Yu. “Pluronic block copolymers as novel therapeutics in drug delivery (2004) In “Carrier Based Drug Delivery” Svenson S., ed., ACS, Washington. Chapter10, pp 130-153.

SELECTED ABSTRACTS:

1. Batrkova E.V., Haney M.J., and Zhao Y. “Extracellular Vesicles for Drug Delivery to the Brain”, (2021) 1st meeting of the American Society for Intercellular Communication (ASIC), Potomac, Maryland, VA, October 21 – 23.
2. Batrkova E.V., Haney M.J., Zhao Y., Harrison E.B., and Kabanov A.V., “Development of Cell-based Drug Delivery System for Treatment of Batten Disease”, (2021) The 17th International Congress on Neuronal Ceroid Lipofuscinosis (NCL), St. Louis, MO, October 6 – 10.
3. Batrkova E.V., Haney M.J., Zhao Y., Harrison E., “Using Extracellular Vesicles for Brain Delivery of Therapeutic proteins”, (2021) 6th World Congress on Recent Advances in Nanotechnology (RAN 2021), Portugal, June 14 – 16.
4. Freire C., Pho H., Ramsey J.D., Streeter S.R., Kojima R., Berger S., Fleury-Curado T., Sokolsky M., Batrkova E.V. Kabanov A.V, Polotsky V.Y. “Treatment of sleep disordered breathing with leptin loaded exosomes” (2021) SLEEP Annual Meeting of the Associated Professional Sleep Societies (APSS), Seattle, June 12 – 16.
5. Batrkova E.V., Haney M.J., Zhao Y., Harrison E., Klyachko N.L. “Using Immune Activation and Inflammation as Driving Force for EV-based Drug Delivery” (2021) Annual meeting “Extracellular Vesicles and Infection”, Virtual-Zoom meeting, May14.
6. Batrkova E.V., Haney M.J., Zhao Y., Gololobova O., Klyachko N.L. “Neurodegeneration and sEVs” (2021) Congress “Extracellular vesicles in Biomedicine” Santiago, Chile, January 10-14.
7. Batrkova E.V., Haney M.J., Klyachko N.L., Zhao Y., Jin Y.S., and Kabanov A.V. “Biocompatible nanocarriers, exosomes, for drug delivery to the brain” (2020) 260th ACS national Meeting & Exposition, San Francisco, CA, August 16 – 20.
8. Batrkova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V. “Extracellular vesicles as Drug Delivery Vehicles for Lysosomal Enzyme TPP1 to Treat Batten Disease” (2020) *WORLD Symposium*, Orlando, FL, February 10 – 13.
9. Rho H., Daggett R., Kojima R., Batrkova E.V., A.V. Kabanov A.V., Polotsky S. “Treatment of Sleep Disordered Breathing with Leptin Loaded Exosomes” (2020) The FASEB Journal, Experimental Biology meeting, San Diego, CA, April 4 – 7.
10. Batrkova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V. “Trojan Horses of the 21st century: Targeted Delivery of Therapeutics in Macrophages to the Brain” (2019) Center for Targeted Therapeutics and translational Nanomedicine, CT3N Symposium, Philadelphia, PA, December 13-14.
11. Haney M.J., Klyachko N.L., Harrison E.B., Zhao Y., Kabanov A.V., and Batrkova E.V. “Developing Exosome-based Gene and Enzyme Delivery for Batten Disease Therapy” (2019) EII Igniting Innovation Symposium, Chapel Hill, NC, October 10.

12. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V. “Exosomes as Drug Delivery System for Transport of Therapeutic Proteins to the Brain” (2019) Joint Life Sciences Forum, Sochi, Russia, October 1 – 5.
13. Kojima R., Batrakova E.V., Kabanov A.V. “Leptin-loaded Macrophage-derived Exosomes: High Efficiency Loading and its Properties” (2019) International Society of Extracellular Vesicles Meeting (ISEV2019), Kyoto, Japan, April 25 – 28. Chair of a Section “EVs in the Central and Peripheral Nervous System”.
14. Haney M.J., Klyachko N.L., Zhao Y., Kabanov A.V., and Batrakova E.V. “Macrophage-derived Extracellular Vesicles Target Inflamed Brain and Deliver Therapeutic Proteins for Treatment of Neurodegenerative Disorders” (2019) 25th Scientific Conference of the Society on Neuroimmune Pharmacology (SNIP), Portland, OR, USA, April 11 – 13.
15. Haney M.J., Klyachko N.L., Zhao Y., Kabanov A.V., and Batrakova E.V. “Macrophage-derived Extracellular Vesicles Facilitate Brain Transport of Therapeutic Enzymes to Treat Neurodegenerative Disorders” (2019) NY Academy of Sciences conference; Extracellular vesicles in Diagnostics and Therapeutics, NY, USA, February 18 – 20.
16. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V. “Extracellular vesicles as drug delivery vehicles for Potent Redox Enzyme Catalase to treat Parkinson’s disease” (2018) 25th Annual Meeting of the Society for Radical Biology & Medicine (SfRBM), November 14 – 17.
17. Kojima R., Batrakova E.V., and Alexander V. Kabanov A.V. “High-efficiency method to load protein drugs into exosome while keeping innate exosome properties” (2018) AAPS Annual meeting, November.
18. Fay J.M., Batrakova E.V., and Kabanov A.V. “Nano-Formulation of Brain Derived Neurotrophic Factor Using Novel Polymers”, (2018) Carolina Biophysics Symposium, UNC, November.
19. Batrakova E.V., Haney M.J., Klyachko N.J., Harrison E.B., Zhao Y., and Kabanov A.V. (2018) “Macrophage-derived Extracellular Vesicles Facilitate Brain Transport of Therapeutic Enzymes for Lysosomal Storage Disease Therapy”, NCL 2018 Annual Meeting, London, Great Brittan, September 12-16.
20. Kojima R., Batrakova E.V., Kabanov A.V. (2018) “High-efficiency method to load protein drugs in exosome while keeping innate exosome properties”, AAPS 75th Annual meeting, Indianapolis, IN, October 3 – 6.
21. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., Banks W.A., and Kabanov A.V. (2018) “Development of EV-based drug formulations for treatment of neurodegenerative disorders”, Gordon’s Research Conference, Extracellular Vesicles, Grand Summit Hotel at Sunday River, Newry, ME, August.
22. Batrakova E.V., Kim M.C., Haney M.J., Zhao Y., Klyachko N.L., and Kabanov A.V. (2018) “Engineering Macrophage-derived Exosomes for Targeted Paclitaxel Delivery to Cancer Cells”, Controlled Release Society Annual Meeting & Exposition, New York, July 22 – 24.
23. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V (2018) “Macrophage-derived Exosomes for targeted drug delivery to the brain” PsychoNeuroImmunology Research Society (PNIRS) 25th Annual Scientific Meeting, Miami Beach, FL, USA, June 6 – 9.
24. Wayne E., Batrakova E.V., Kabanov A.V (2018) “Delivery of CIB1-siRNA Via Macrophage Horizontal Gene Transfer in an Orthotopic Mouse Breast Cancer Model”, Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, USA, October 17 – 20.
25. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., and Kabanov A.V (2018) “Exosomes as drug delivery vehicles for therapeutic proteins to the brain”, International Society of Extracellular vesicles Meeting (ISEV2018), Barcelona, Spain, May 2 – 6.
26. Batrakova E.V., Kim M.S., Haney M.J., Zhao Y., Mahajan V., Deygen I., Klyachko N.L., Inskoe E., Piroyan A., Sokolsky M., and Kabanov A.V., (2017) “Engineering Exosomes for Targeted Paclitaxel Delivery to Pulmonary Metastases”, Gordon’s Research Conference, Cancer Nanotechnology, West Dover, VT, June.
27. Batrakova E.V., Kim M.S., Haney M.J., Zhao Y., Mahajan V., Deygen I., Klyachko N.L., and Kabanov A.V. (2017) “Exosome-mediated drug delivery for treatment of pulmonary metastases” 11th World Drug Delivery Summit, Baltimore, Maryland, USA, October 16 – 18.
28. Batrakova E.V., Kim M.S., Haney M.J., Zhao Y., Deygen I., Klyachko N.L., and Kabanov A.V. (2017) “Using Exosomes for Drug Delivery”, In vitro Biology Meeting, Raleigh, NC, June.
29. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., Plotnikova E.G., and Kabanov A.V. (2017) “Harnessing the Power of Extracellular Vesicles for Therapy of Brain Infectious Diseases”, Extracellular Vesicles and Infections, Potomac, MD, June.
30. Batrakova E.V., Klyachko N.L., Haney M.J., Zhao Y., and Kabanov A.V. (2017) “Engineering Exosomes to

- Deliver a Potent Redox Enzyme Catalase to the Brain”, Gordon Research Conference on Oxidative Stress & Disease, Lucca (Barga) Italy, March.
31. Batrakova E.V., Klyachko N.L., Haney M.J., Zhao Y., and Kabanov A.V. (2017) “Exosomes as drug delivery vehicles”. Moscow International Biotechnology Congress, Russia, February.
 32. Batrakova E.V. (2016) “Cell-mediated Gene therapy for CNS Disorders”, Batten Disease: Update of Translational Research for Management of INCL/LINCL, Bethesda, MD, March.
 33. Batrakova E.V., Kim M.S., Haney M.J., Zhao Y., and Kabanov A.V. (2016) “Autologous Macrophages as Active Biocompatible Drug Delivery vehicles for the Treatment of Neurodegenerative Disorders”, 3rd Annual Personalized Nanomedicine Symposium Miami, FL, May
 34. Batrakova E.V., Kim M.S., Haney M.J., Zhao Y., Gupta R., Mahajan V., Inskoe E., Piroyan A., Sokolsky M., Okolie O., Hingtgen S.D., Kabanov A.V., and (2016) “Development of exosome-encapsulated paclitaxel to overcome MDR in cancer cells”. American Society of Exosomes and Microvesicles (ASEMV) Annual Meeting, Pacific Beach, CA, October 20 – 24.
 35. Polak R., Haney M.J., Klyachko N. L., Zhao Y., Neto R. J. G., Batrakova E.V., Cohen R. E., Rubner M.F. (2016) “Polymer backpacks for cell-based therapies across the blood-brain barrier” 2nd Annual Blood-Brain Barrier Conference, Boston, June 15 – 16.
 36. Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y., Gupta R., Plotnikova E.G., He Z., Patel T., Piroyan A., Sokolsky M., and Kabanov A.V., (2015) “Exosomes as Drug Delivery Vehicles for Parkinson’s Disease Therapy”, Annual Meeting American Society of Exosomes and Microvesicles (ISEV), Washington D.C., April 23 – 26.
 37. Kim M.S., Haney M.J., Zhao Y., Gupta R., He Z., Phua P., Piroyan A., Sokolsky M., Kabanov A.V., and Batrakova E.V. (2015) “Characterization of Exosome-Encapsulated Paclitaxel for the Treatment of Neoplasms”, Annual Meeting American Society of Exosomes and Microvesicles (ISEV), Washington D.C., April 23 – 26.
 38. Batrakova E.V., Haney M.J., Zhao Y., Harrison E.B., V. Mahajan, S. Ahmed, Z. He, Hingtgen S.D., Klyachko N.L., Mosley R.L., Gendelman H.E., and A.V. Kabanov (2014) “Cell-mediated Delivery of Redox Enzymes for Treatment of Neurodegenerative Disorders”, 17th Biannual Meeting of Society for Free Radical Research International (FSRRI), Kyoto, Japan, March 23 – 26.
 39. Batrakova E.V., Haney M.J., Y. Zhao, Harrison E.B., V. Mahajan, S. Ahmed, Z. He, Hingtgen S.D., Klyachko N.L., Mosley R.L., Gendelman H.E., and Kabanov A.V. (2014) “Carriers that Break Barriers” ASNM 4th Annual Meeting, Rockville, MD, March 28 – 30.
 40. Batrakova E.V., Haney M.J., Zhao Y., Klyachko N.L., Mahajan V., Ahmed S., He Z., Hingtgen S.D., Klyachko N.L., Mosley R.L., Gendelman H.E., and Kabanov A.V. (2014) “Cell-mediated delivery of nanoformulated antioxidants for treatment of neurodegenerative disorders”, 5th Annual Nanotechnology for Health Care Conference, Little Rock, Arkansas, April 2 – 4.
 41. Batrakova E.V., Haney M.J., Zhao Y., Klyachko N.L., Mahajan V., Ahmed S., He Z., Hingtgen S.D., Klyachko N.L., Mosley R.L., Gendelman H.E., and Kabanov A.V. (2014) “Carriers that Break Barriers”, International Congress on Natural Sciences and Engineering, Kyoto, Japan, May 7 – 9.
 42. Yuan D., Yi X., Alakhova D., Batrakova E.V., Kabanov A.V. (2014) “In vitro and in vivo characterization of Raw 264.7 macrophages-derived exosomes as brain delivery nanovectors” NanoDDS, Chapel Hill, NC, October 2 – 6.
 43. Kim M.S., Haney M., Zhao Y., Phua P., Kabanov A.V., Batrakova E.V. (2014) Exosome-Encapsulated Water-Insoluble Small Molecule Chemotherapeutics for the Treatment of Pulmonary Metastases”, NanoDDS, Chapel Hill, NC, October 2 – 6.
 44. Batrakova E.V., Haney M.J., Zhao Y., Li S., Klyachko N.L., Mosley R. L., Gendelman H.E., and Kabanov A.V. (2013) “Treatment of neurological disorders with nanoformulated antioxidants delivered to the brain in living cells”, ICEAS, Tokyo, Japan, March 15 – 17.
 45. Batrakova E.V., Haney M.J., Zhao Y., Li S., Klyachko N.L., Mosley R. L., Gendelman H.E., and Kabanov A.V. (2013) “Carriers that break barriers”, Biocatalysis, Moscow, Russia, July 2 – 5.
 46. Batrakova E.V., Haney M.J., Zhao Y., Li S., Klyachko N.L., Mosley R. L., Gendelman H.E., and Kabanov A.V. (2013) “Blood-Borne Macrophages Hitchhike Endosome Networks for Brain Delivery of Antioxidant, Catalase”, American Society for Exosomes and Microvesicles, Orlando, Florida,

USA, September 7 – 9.

47. Batrakova E.V., Haney M.J., Zhao Y., Brynskikh A.M., Li S., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2012) “Living Cells as Drug Delivery Vehicles for Transport of Nanoformulated Antioxidants to the Brain”, Zing Nanoscience Conference, Lanzarote, Spain, February 14 – 17.
48. Batrakova E.V., Haney M.J., Zhao Y., Klyachko N.L., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2012) “Exosomes as drug carriers in Macrophage-mediated Drug Delivery”, ISEV Annual Scientific Meeting, Gothenburg, Sweden, April 18 – 20.
49. Batrakova E.V., Haney M., Zhao Y., Brynskikh A.M., Li S., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2012) “Living Cells as Drug Delivery Vehicles for Transport of Nanoformulated Antioxidants to the Brain”, BU Symposium on "Therapeutic Innovation: The Next Generation of Discovery", Boston, MA, April 30.
50. Batrakova E.V., Haney M., Zhao Y., Li S., Klyachko N.L., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2012) “Living cells as drug delivery vehicles for CNS delivery”, Southeastern Regional Meeting of the ACS (SERMACS), Raleigh, NC, November 14 – 17.
51. Batrakova E.V., Brynskikh A.M., Haney M.J., Zhao Y., Li S., Mosley R. L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2011) “Living cells as drug delivery vehicles for Parkinson's Disease Therapy”, International Conference on Biomaterials Science (ICBS), Tsukuba, Japan, March 15 – 18.
52. Batrakova E.V., Haney M.J., Zhao Y., Suresh P., Vetro J.A., Klyachko N.L., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2011) “Living Cells as Drug Delivery Vehicles for Treatment of Neurodegenerative Disorders”, Molecular Mechanisms of Neurodegeneration, Milano, Italy, May 13 – 15.
53. Batrakova E.V., Brynskikh A.M., Haney M.J., Zhao Y., Li S., Mosley R. L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2011) “Living cells as drug delivery vehicles for Parkinson's Disease Therapy”, IDeA Central Regional Meeting, Omaha, NE, May 23 – 25.
54. Batrakova E.V., Haney M.J., Zhao Y., Suresh P., Klyachko N.L., Li S., Vetro J.A., Mosley R. L., Kabanov A.V., and Gendelman H.E. (2011) “Using living cells for targeted drug transport across blood brain barrier”, Pharmaceutics and Novel Drug delivery Systems, Las Vegas, June 6-8.
55. Batrakova E.V., Haney M.J., Zhao Y., Suresh P., Klyachko N.L., Li S., Vetro J.A., Mosley R. L., Kabanov A.V., and Gendelman H.E. (2011) “Development of nanoformulations of Therapeutic proteins for brain delivery in macrophages”, First International Conference on Small Science, Sydney, Australia, August 15 – 18.
56. Batrakova E.V., Haney M.J., Zhao Y., Suresh P., Brynskikh A.M., Mosley R. L., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2011) “Macrophages as Trojan Horses for Brain Delivery of Redox Enzymes”, 2nd International School on Nanomaterials and Nanotechnology in Living Systems, Safety and Nanomedicine, Moscow, Russia, September 19 – 24.
57. Batrakova E.V., Haney M.J., Zhao Y., Klyachko N.L., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2011) “Using Exosomes for Drug Transport in Macrophage-mediated Drug Delivery”, Conference for Exosomes and Microvesicles, Orlando, FL, October 15 – 17.
58. Batrakova E.V., Brynskikh A.M., Li S., Zhao Y., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2010) “Polymer therapeutics for delivery of antioxidants in Parkinson’s disease” Symposium on Biomedical Polymers for Drug Delivery, Salt Lake City, Utah, March 26 – 28.
59. Batrakova E.V., Brynskikh A.M., Zhao Y., Li S., Mosley R.L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2010) “Cell-mediated Delivery of Catalase Nanoparticles to Treat Parkinson's Disease” First World Conference on nanomedicine and Drug Delivery (WCN-2010), Kottayam, Kerala, India, April 16 – 18.
60. Batrakova E.V., Brynskikh A.M., Li S., Mosley R. L., Kabanov A.V., and Gendelman H.E. (2010) “CNS Delivery of Antioxidants in Monocytes for Parkinson’s Disease” 8th International; Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Valencia, Spain, May 24 – 26.
61. Luxenhofer R., Schulz A., Roques C., Li S., Bronich T.K., Batrakova E.V., Jordan R., Kabanov A.V. (2010) “Doubly-Amphiphilic poly(2-Oxazoline)s with Unusual Microenvironment as High-capacity Drug Delivery Systems” 8th International; Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Valencia, Spain, May 24 – 26.
62. Alakhova D.Yu., Rapoport N.Y., Batrakova E.V., Timoshin A.A., Li S., Alakhov V.Yu., and Kabanov A.V.

- (2010) “Effect of Pluronic Amphiphilic Copolymers on Cancer Stem Cells in Multidrug Resistant Models” 8th International; Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Valencia, Spain, May 24-26.
63. Batrakova E.V., Brynskikh A.M., Li S., Mosley R.L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2010) “Development of Cell-mediated Drug Delivery of Antioxidants for Parkinson's Disease Therapy” First Annual World Congress of NeuroTalk-2010, Singapore, June 25-28.
 64. Batrakova E.V., Brynskikh A.M., Zhao Y., Haney M., Mosley R.L., Li S., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2010) “Macrophages as Drug carriers for Antioxidant Enzymes in Parkinson's Disease” Drug carriers in Medicine and Biology, Gordon Research Conference, Waterville Valley, NH, August 15-20.
 65. E.V. Batrakova, A.M. Brynskikh, Y. Zhao, M. Haney, R.L. Mosley, S. Li, Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E., (2010) “Cell-mediated drug delivery for Parkinson's disease therapy” 8th International Nanomedicine and Drug Delivery Symposium (NanoDDS), Omaha, NE, October 3-5.
 66. Batrakova E.V., Brynskikh A.M., Zhao Y., Li S., Mosley R.L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2010) “Nanoformulated Catalase for Parkinson's Disease Therapy”, 2nd International Nanotechnology Conference & Exhibition, Tel Aviv, Israel, November 8-9.
 67. Batrakova E.V., Brynskikh A.M., Li S., Mosley R.L., Kabanov A.V., and H.E. Gendelman (2009) “Therapeutic Proteins Delivered by Monocytes to the Brain in Parkinson's Disease” Protein & Peptide Conference-2009, Seoul, Korea, April 1-4.
 68. Batrakova E.V., Brynskikh A.M., Li S., Mosley R.L., Boska M.D., Klyachko N.L., Kabanov A.V., and Gendelman H.E. (2009) “A Macrophage-based Delivery System of Antioxidant Enzymes for Parkinson's Disease: Therapeutic Effect in vivo” NIH IDEa Central Region Conference, Oklahoma City, OK, May 28-29.
 69. Batrakova E.V., Alakhova D.Yu., Sahay G., Sharma A.K., Li S., Boska M., Mosley R.L., Gendelman H.E., Alakhov V.Yu., and Kabanov A.V. (2009) “A new polymer-based nanoformulation for overcoming multi-drug resistance in cancer” Second World Cancer Congress 2009, Beijing, China, June 22-25.
 70. Batrakova E.V., Brynskikh A.M., Manickam D.S., Zhao Y., Li S., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2009) “Living Cells as Drug Delivery Vehicles for Protein Transport to the Brain” 1st International Summer School on Nanomaterials and Nanotechnology in Living Systems, Moscow, Russia, June 29 – July 4.
 71. Manickam D.S., Klyachko N.L., Batrakova E.V., Bronich T.K. and Kabanov A.V. (2009) “Polyelectrolyte complexes of redox enzymes and block copolymers – physicochemical characterization and cellular uptake mechanisms” 7th International Nanomedicine and Drug Delivery Symposium (NanoDDS), Indianapolis, IN, October 4-5.
 72. Brynskikh A.M., Batrakova E.V., Gendelman H.E., Kabanov A.V. (2009) “Development of Antioxidant Nanozymes for Parkinson's disease Therapy” 7th International Nanomedicine and Drug Delivery Symposium (NanoDDS), Indianapolis, IN, October 4-5.
 73. Batrakova E.V., Brynskikh A.M., Zhao Y., Li S., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2009) “CNS delivery of therapeutic proteins in living cells” 3rd BBBB-Bosphorus International Conference on Pharmaceutical Sciences, Turkey, Antalya, October 26-28.
 74. Brynskikh A., Kabanov A.V., Howard E. Gendelman H.E., Batrakova, E.V. (2008) Development of Antioxidant Nanozymes for Parkinson's Disease Therapy, 6th International Nanomedicine and Drug Delivery Symposium (NanoDDS), Toronto, Canada.
 75. Batrakova E.V., Brynskikh A.M., Li S., Reynolds A.D., Mosley R.L., Kabanov A.V., and Gendelman H.E. (2008) “Monocytes for Delivery of Antioxidants in Parkinson's Disease” 7th International Symposium on Polymer Therapeutics, Spain, Valencia.
 76. Batrakova E.V., Brynskikh A.M., Li S., Reynolds A.D., Mosley R.L., Kabanov A.V., and Howard E. Gendelman H.E. (2008) “Building a Trojan Horse for Delivery of Therapeutic Peptides to the Brain” 5th Barriers on the CNS Gordon Research Conference, Tilton, NH.
 77. Erickson M.A., Batrakova E.V., Kabanov A.V., Vinogradov S., and Banks W.A (2008) “Transport of Superoxide Dismutase-nanozyme across the Blood-brain Barrier” 5th Barriers on the CNS Gordon Research

Conference, Tilton, NH.

78. Batrakova E.V., Alakhova D.Yu., Sahay G., Sharma A.K., Li S., Boska M., Mosley R.L., Gendelman H.E.,
79. Alakhov V.Yu., Kabanov A.V. (2008) "Polymer Micelles from Bench to Bedside" NCI Translational Science Meeting, Washington DC.
80. Klyachko N.L., Batrakova E.V., Shlyakhtenko L.S., Kurova V., and Kabanov A.V. (2008) "SOD/catalase conjugated with block ionomer - antioxidant delivery system" Bioencapsulation, Dublin, Ireland, Sept. 3-7.
81. Batrakova E., Li S., Shlyakhtenko L., Reynolds A., Thomas M., Gendelman H.E., and Kabanov A. (2007) "Inflammatory response cells for protein delivery to the brain" Immunochemistry and Immunobiology Gordons Research Conference, Ventura, CA.
82. Batrakova E., Li S., Shlyakhtenko L., Reynolds A., Thomas M., Gendelman H.E., and Kabanov A. (2007) "Cell-mediated delivery of therapeutic polypeptides in nanoparticles across the BBB" International Symposium on Polymer Therapeutics, FU, Berlin.
83. Batrakova E., Li S., Sharma A.K., Li Y., Boska M., Valery Yu. Alakhov V.Yu., and Kabanov A. (2007) "Mechanism of Pluronic P85 sensitization effects in MDR tumors in vivo" 6th International Symposium on Polymer Therapeutics, FU, Berlin.
84. Batrakova E.V., Li S., Reynolds A.D., Mosley R.L., Bronich T.K, Kabanov A.V., and Gendelman H.E. (2007) "Cell-mediated Delivery of Nanozymes" 5th International Nanomedicine and Drug Delivery Symposium, Boston, MA.
85. Alakhova D.Yu., Rapoport N.Y., Batrakova E.V., Timoshin A.A., Li S., Alakhov V.Yu., and Kabanov A.V. (2007) "Targeting Metabolic Pathways by an Amphiphilic Block Copolymer to Sensitize Multidrug Resistant Cells", 5th International Nanomedicine and Drug Delivery Symposium, Boston, MA.
86. Yi X., Vinogradov S., Batrakova E.V., Kabanov A.V. (2007) "Modification of a Protein with Pluronic Block Copolymers for Cellular Delivery", Fifth International Nanomedicine and Drug Delivery Symposium, Boston, MA.
87. Zhang X., Batrakova E.V., and Kabanov A.V. (2007) "Effect of Pluronic P85 on Organic Anion Transport across the Blood Brain Barrier", 5th International Nanomedicine and Drug Delivery Symposium, Boston, MA.
88. Sahay G., Batrakova E.V., and Kabanov A.V. (2007) "Nanomaterials influencing trafficking Mechanism", 5th International Nanomedicine and Drug Delivery Symposium (NanoDDS), Boston, MA.
89. Batrakova E., Li S., Reynolds A., Thomas M., Gendelman H.E., and Kabanov A. (2006) Inflammatory Cells for Transport of Therapeutic Polypeptides across the BBB. 4th Barriers on the CNS Gordon Research Conference, Tilton, NH.
90. Batrakova E., Li S., Reynolds A., Thomas M., Gendelman H.E., and Kabanov A. (2006) Trojan Horses for CNS Drug Delivery. Drug Carriers in Medicine & Biology Gordon Research Conference. Big Sky, MT.
91. Zhang X., Batrakova E.V., Li S., Yang Z., Li Y., Zhang L., and Kabanov A.V. (2006) Effect of Pluronic P85 on Amino Acid Transporters in the Blood Brain Barrier. Pharm Res, Poster # W5113, AAPS Annual Meeting and Exposition, San Antonio, TX.
92. Sharma A.K., Zhang L., Li S., Alakhov V.Yu., Batrakova E.V., and Kabanov AV. (2006) Formulation of Doxorubicin with Pluronic P85 prevents development of Drug resistance *in vitro* and *in vivo*. Pharm Res, Poster # T2101, 2006 AAPS Annual Meeting and Exposition, San Antonio, TX.
93. Batrakova E., Li S., Reynolds A., Thomas M., Gendelman H.E., and Kabanov A. (2006) "Nanozymes" for cell-mediated delivery across the Blood-Brain Barrier. 4th International Nanomedicine and Drug Delivery Symposium, Omaha, NE.
94. Sahay G., Batrakova E., Zhang X., Sriadibhatala S., Li S., and Kabanov A. (2006) Pluronic P85 Modulated Endocytosis in Brain Endothelial Cells. 4th International Nanomedicine and Drug Delivery Symposium, Omaha, NE.
95. Zhang X., Batrakova E., Li S., Yang Z., and Kabanov A. (2006) Effect of Pluronic P85 on Amino Acid Transport across Blood Brain Barrier. 4th International Nanomedicine and Drug Delivery Symposium, Omaha, NE.
96. Sharma A.K., Zhang L., Li S., Alakhov V.Yu., Batrakova E.V., and Kabanov A.V. (2006) Formulation of Doxorubicin with Pluronic P85 prevents development of Drug resistance to Doxorubicin. 4th International Nanomedicine and Drug Delivery Symposium, Omaha, NE.
97. Sahay G, Batrakova E.V., Zhang X, Sriadibhatala S.S, Li S and Kabanov A.V. (2006) Pluronic P85 modulates

- endocytosis in Brain Endothelial Cells. Poster Presentation at Globalization of Pharmaceuticals and Education Network (GPEN), Lawrence, Kansas.
98. Sahay G, Batrakova E., Zhang X, Li S and Kabanov AV. (2006) Effect of Pluronic on fluid phase endocytosis in Blood Brain Barrier. Pharmaceutics Graduate Student Research Meeting (PGSRM) Minneapolis, Minnesota.
 99. Batrakova E.V., Kabanov A.V., Li S., Li Y., Yang Zhihui, Kelly D.L., Sherman S. and Alakov V.Yu. (2005) Polymer Genomics: Effect of Amphiphilic Block Copolymers on Genetic Responses to a Drug in Cancer Cells. Oncogenomics 2005: Dissecting Cancer through Genome Research. San Diego, CA.
 100. Batrakova E.V., Kabanov A.V., Minko T., Li S., Li Y., Pakunlu R., and Alakhov V.Yu. (2005) Pluronic Block Copolymer Formulation with Doxorubicin Induces Apoptosis in Drug-Resistant Cancer Cells. 32nd Annual Meeting & Exposition held by the CRS Conference, Miami, FL.
 101. Vinogradov S.V., Kohli E., and Batrakova E.V. (2005) Cytotoxic Drug Formulations in Polymer Nanogels. The AAPS Journal Vol. 7, No. S2, Abstract M1186; 2005 AAPS Annual Meeting, Nashville, TN, Nov.5-10.
 102. E. Batrakova, S. Li, Y. Li, V. Alakhov, W. Elmquist, and A. Kabanov (2004) Formulations of a micelle-forming Block Copolymer, Pluronic P85, for Chemotherapy of drug-resistant tumors. In Proceedings of 6th International Symposium on Polymer Therapeutics, The Welsh school of Pharmacy, Cardiff, UK.
 103. A. Kabanov, E. Batrakova, D. Kelly, and V. Alakhov (2004) Polymer Genomics for Polymer Therapeutics. In Proceedings of 6th International Symposium on Polymer Therapeutics, The Welsh school of Pharmacy, Cardiff, UK.
 104. A.V. Kabanov, E.V. Batrakova, S. Sriadibhatla, D.L. Kelly, and V.Yu. Alakov (2004) Polymer Genomics: Shifting the Gene and Drug Delivery Paradigm. 8 Enschede, Netherlands. European Symposium on Controlled Drug Delivery.
 105. Yu Q., Batrakova E., Jerome L., Banerjee K., Li S., Li Y., Page V., Kabanov A. and Leyland-Jones B. (2004) Reversal of multidrug resistance by Pluronic block copolymers correlates with inhibition of drug efflux transporters and depletion of intracellular ATP and GSH levels. 95th Annual Meeting of American association for Cancer Research, Orlando, FL.
 106. Batrakova E., Zhang Y, Li S., Li Y, Alakhov V., Miller D., and Kabanov A. (2004) Effects of Pluronic P85 on GLUT-1 and MTC1 Transporters in the Blood Brain Barrier. 3rd Barriers on the CNS Gordon Research Conference, Tilton, NH.
 107. Kabanov A.V., Batrakova E.V., Sriadibhatla S., Yang Z., Kelly D., and Alakhov V.Yu. (2004) Polymer genomics: shifting the drug delivery paradigm. 228th National ACS Meeting, Philadelphia, PA.
 108. Batrakova E.V., Li S., Li Y., Alakhov V.Yu., and Kabanov A.V. (2004) Pluronic Block Copolymers as a Novel Drug Delivery System for Overcoming Drug Resistance in Cancer. Drug Carriers in Medicine & Biology Gordon Research Conference. Big Sky, MT.
 109. Kabanov A.V., Batrakova E.V., Sriadibhatla S., Kelly D.L., and Alakhov V.Yu. (2004) Polymer Genomics: A Paradigm Shift in Drug and Gene Delivery. 7th Symposium on Biomaterials Science. New Brunswick, NJ.
 110. Batrakova E.V., Kabanov A.V., Li S., Li Y., Kelly D.L., and Alakhov V.Yu. (2004) Amphiphilic Block Copolymers Alter genetic Responses to a Drug. 7th Symposium on Biomaterials Science. New Brunswick, NJ.
 111. Batrakova E., Li S., Alakhov V., and Kabanov A. (2003) Mechanism of Sensitization of cells Overexpressing Multidrug Resistant Protein by Pluronic P85. Multi-drug Efflux Systems Gordon Research Conference, Ventura, CA.
 112. Kabanov A., Li S., Alakhov V., and Batrakova E. (2003) Kinetic Considerations of Pluronic Block Copolymer P85 Effects on Drug Efflux Transporters. Multi-drug Efflux Systems Gordon Research Conference, Ventura, CA.
 113. Vinogradov S., Batrakova E., and Kabanov A. (2003) Nanosized Polymer Formulation of Phosphorylated Cytotoxic Nucleoside Analogues. 30th Annual Meeting of Controlled Release Society, Glasgow, Scotland United Kingdom.
 114. Batrakova E., Alakhov V., and Kabanov A. (2003) An Essential Relationship between ATP Depletion and Chemosensitizing Activity of Pluronic Block Copolymers. 30th Annual Meeting of Controlled Release Society, Glasgow, Scotland United Kingdom.

115. Batrakova E., Li S., Alakhov V., Miller D., and Kabanov A. (2002) Mechanism of Pluronic effect on P-glycoprotein efflux system in blood brain barrier. In Proceedings of 5th International Symposium on Polymer Therapeutics, The Welsh school of Pharmacy, Cardiff, UK.
116. Batrakova E., Li S., Alakhov V., Miller D., and Kabanov A. (2002) Evaluation the optimal structure of Pluronic block copolymers revealing the maximal biological response in BBMEC monolayers. 2nd Barriers on the CNS Gordon Research Conference, Tilton, NH.
117. Kabanov A.V., Batrakova E.V., Li S., and Alakhov V.Yu. (2001) Selective energy depletion and sensitization of multiple drug-resistant cancer cells by Pluronic block copolymer, Boston, MA.
118. Prabha S., Batrakova E., and Vinogradov S. (2000) Study of intracellular uptake of Pluronic P85 in drug resistant MCF7/ADR cell line. 32nd Annual Scientific Research meeting, June, Columbus, OH.
119. Batrakova E., Li S., Alakhov V., Elmquist W., Miller D., and Kabanov A. (2000) Pluronic block copolymers for drug delivery to the brain. In Proceedings of 4th International Symposium on Polymer Therapeutics, London, England.
120. Batrakova E.V., Li S., Alakhov V.Yu., and Kabanov A.V. (2000) Selective energy depletion and sensitization of multiple drug resistant cells by Pluronic block copolymers. *Polym Prepr* 41(2), 1639-1640.
121. Vinogradov S., Batrakova E., and Kabanov A. (2000) Novel drug delivery systems: Nanogel networks.
122. Kabanov A.V., Lemieux P., Vinogradov S.V., Nguyen H.-K., Batrakova E.V., Gebhardt, C.L., Ochietti B., Guerin N., and Alakhov V.Yu. (1999) Self-assembly and activity of polyplexes. In *Structure and Design of Synthetic Gene Carriers*, UCSF Molecular Design Institute, San Francisco, CA, USA.
123. Batrakova E., Lee S., Miller D., and Kabanov A. (1998) Effects of Pluronic P85 on drug transport across blood brain and intestinal barriers. *PharmSci Suppl* 1, S-380; S-446.
124. Kabanov A.V., Lemieux P., Vinogradov S.V., Nguyen H.-K., Batrakova E.V., Ochietti B., Guerin N., and Alakhov V.Yu. (1998) Taking polycation gene delivery systems from in vitro to in vivo. *PharmSci Suppl* 1, S-604-605.
125. Kabanov A., Batrakova E.V., Miller D., and Alakhov V. (1997) Amphiphilic block copolymers in drug delivery. In *Abstracts of Papers 214th ACS National Meeting, Part 2, Las Vegas, NV, COLL 0157*.
126. Vinogradov S., Bronich T., Batrakova E., Miller D., and Kabanov A. (1997) Cationic block copolymers for delivery of phosphorothioate oligonucleotides. *Pharm Res* 14, S-641.
127. Batrakova E., Miller D., Alakhov V., and Kabanov A. (1997) Effects of polyoxyethylated surfactants on drug transport in blood-brain barrier. *Pharm Res* 14, S-221.
128. Alakhov V.Yu., Batrakova E.V., Dorodnich T., Li S., Venne A., and Kabanov A.V. (1996). Block copolymeric drug carriers: 1. Delivery of antineoplastic drugs. In *Proceedings of 1st International Symposium on Polymer Therapeutics*, London, England.
129. Batrakova E., Fontane M., Alakhov V., Miller D., and Kabanov A. (1996) Block copolymer drug carriers: 2. Multiple mechanisms for drug transport in brain endothelial cells. *Pharm Res* 13, S-214.
130. Alakhov V.Yu., Batrakova E.V., Klinsky E.Yu., Moskaleva E.Yu., and Kabanov A.V. (1995) Poly(oxyethylene)-poly(oxypropylene) block copolymer micelles as a delivery vehicle for cytotoxic drugs. Reversion of multiple drug resistance to carcinoma cells. In *Abstracts of Seventh International Symposium on Recent Advances in Drug Delivery Systems*, Salt Lake City, UT.

SYMPOSIUM PRESENTATIONS:

1. “Extracellular Vesicles for Drug Delivery to the Brain”, Oral presentation at the 1st meeting of the American Society for Intercellular Communication (ASIC), Potomac, Maryland, VA, October 21 – 23, 2021.
2. “Development of Cell-based Drug Delivery System for Treatment of Batten Disease”, Oral presentation at the 17th International Congress on Neuronal Ceroid Lipofuscinosis (NCL), St. Louis, MO, October 8, 2021.
3. “Using Extracellular Vesicles for Brain Delivery of Therapeutic proteins”, Keynote speaker at 6th World Congress on Recent Advances in Nanotechnology (RAN 2021), Portugal, June 2021.
4. “Extracellular vesicles as Drug Delivery Vehicles for Lysosomal Enzyme TPP1 to Treat Batten Disease”, Invited talk at *WORLD Symposium*, Orlando, FL, February 2020.
5. “Trojan Horses of the 21st century: Targeted Delivery of Therapeutics in Macrophages to the Brain” Invited talk at the Center for Targeted Therapeutics and translational Nanomedicine (CT3N) Symposium, Philadelphia,

PA, USA, December 2019.

6. “Exosomes as Drug Delivery System for Transport of Therapeutic Proteins to the Brain” Invited talk at Joint Life Sciences Forum, Sochi, Russia, October 2019.
7. “Macrophage-derived Extracellular Vesicles Target Inflamed Brain and Deliver Therapeutic Proteins for Treatment of Neurodegenerative Disorders” Invited talk at 25th Scientific Conference of the Society on Neuroimmune Pharmacology (SNIP), Portland, OR, USA, April 2019.
8. “Macrophage-derived Extracellular Vesicles Facilitate Brain Transport of Therapeutic Enzymes to Treat Neurodegenerative Disorders” Invited talk at NY Academy of Sciences conference; New York, NY, USA, February 2019.
9. “Extracellular vesicles as drug delivery vehicles for Potent Redox Enzyme Catalase to treat Parkinson’s disease” SfRBM 25th Annual Meeting, Chicago, IL, USA, November 2018.
10. “Macrophage-derived Extracellular Vesicles Facilitate Brain Transport of Therapeutic Enzymes for Lysosomal Storage Disease Therapy”, NCL 2018 Annual meeting, London, Great Brittan, September 2018.
9. “Development of EV-based drug formulations for treatment of neurodegenerative disorders”, Gordon’s Research Conference, Extracellular Vesicles, Grand Summit Hotel at Sunday River, Newry, ME, USA, August 2018.
10. “Engineering Macrophage-derived Exosomes for Therapeutic Protein Delivery to the Brain”, Controlled Release Society Annual Meeting & Exposition, New York, NY, USA, July 2018.
11. “Macrophage-derived Exosomes for targeted drug delivery to the brain” PsychoNeuroImmunology Research Society (PNIRS) 25th Annual Scientific Meeting, Miami Beach, FL, USA, June 2018.
12. “Exosomes as drug delivery vehicles for therapeutic proteins to the brain”, International Society of Extracellular vesicles Meeting (ISEV2018), Barcelona, Spain, May 2018.
13. “Engineering Exosomes for Targeted Paclitaxel Delivery to Pulmonary Metastases”, Gordon’s Research Conference, Cancer Nanotechnology, USA, June 2017.
14. “Harnessing the Power of Extracellular Vesicles for Therapy of Brain Infectious Diseases”, Extracellular Vesicles and Infections, Potomac, USA, June 2017.
15. “Engineering Exosomes to Deliver a Potent Redox Enzyme Catalase to the Brain”, Gordon Research Conference on Oxidative Stress & Disease (GRC), Lucca (Barga) Italy, March 2017.
16. “Exosomes as drug delivery vehicles”, Moscow International Biotechnology Congress, Russia, February 2017.
17. “Development of exosome-encapsulated paclitaxel to overcome MDR in cancer cells”. Annual Meeting American Society of Exosomes and Microvesicles (ASEMV) Pacific Beach, CA, USA, October 2016.
18. “Autologous Macrophages as Active Biocompatible Drug Delivery vehicles for the Treatment of Neurodegenerative Disorders”, third Annual Personalized Nanomedicine Symposium Miami, FL, USA, May 2016.
19. “Cell-mediated Gene therapy for CNS Disorders”, Batten Disease: 2016 Update of Translational Research for Management of INCL/LINCL, Bethesda, MD, USA, March 2016.
20. “Exosomes as Drug Delivery Vehicles for Parkinson’s Disease Therapy”, Annual Meeting International Society of Exosomes and Microvesicles (ISEV), Washington D.C., USA, April 2015.
21. “Cell-mediated Delivery of Redox Enzymes for Treatment of Neurodegenerative Disorders”, 17th Biannual Meeting of Society for Free Radical Research International (FSRRI), Kyoto, Japan, March 2014.
22. “Carriers that Break Barriers” ASNM 4th Annual Meeting, Rockville, MD, USA, March 2014.
23. “Cell-mediated Delivery of Nanoformulated Antioxidants for Treatment of Neurodegenerative Disorders”, 5th Annual Nanotechnology for Health Care Conference, Little Rock, AR, USA, April 2014.
24. “Carriers that Break Barriers”, International Congress on Natural Sciences and Engineering, Kyoto, Japan, in May 2014, a keynote speaker.
25. “Treatment of Neurological Disorders with Nanoformulated Antioxidants Delivered to the Brain in Living Cells”, ICEAS, Tokyo, Japan, 2013.
26. “Carriers that break barriers”, Biocatalysis, Moscow, Russia, 2013.
27. “Blood-Borne Macrophages Hitchhike Endosome Networks for Brain Delivery of Antioxidant, Catalase”, ASEMV, Orlando, Florida, USA, 2013.
28. “Living Cells as Drug Delivery Vehicles for Transport of Nanoformulated Antioxidants to the Brain”, Conference for Nanoscience, Lanzarote, Spain, 2012.

29. "Cells for Drug Delivery of Nanoformulated Antioxidants to the Brain", BU Symposium on "Therapeutic Innovation: The Next Generation of Discovery", Boston, MA, USA, 2012.
30. "Living cells as drug delivery vehicles for CNS delivery", Southeastern Regional Meeting of the ACS (SERMACS), Raleigh, NC, USA, 2012.
31. "Using Living Cells for Targeted Drug Transport across Blood Brain Barrier", Pharmaceutics and Novel Drug delivery Systems, Las Vegas, USA 2011.
32. "Development of Nanoformulations of Therapeutic Proteins for Brain Delivery in Macrophages", First International Conference on Small Science, Sydney, Australia, 2011.
33. "Macrophages as Trojan Horses for Brain Delivery of Redox Enzymes", 2nd International School on Nanomaterials and Nanotechnology in Living Systems, Safety and nanomedicine, Moscow, Russia in 2011.
34. "Using Exosomes for Drug Transport in Macrophage-mediated Drug Delivery", Conference for Exosomes and Microvesicles, Orlando, FL, USA 2011.
35. "Cell-mediated Delivery of Catalase Nanoparticles to Treat Parkinson's Disease" First World Conference on nanomedicine and Drug Delivery (WCN-2010), Kottayam, Kerala, India, 2010.
36. "Development of Cell-mediated Drug Delivery of Antioxidants for Parkinson's Disease Therapy" First Annual World Congress of NeuroTalk-2010, Singapore, 2010.
37. "CNS Delivery of Antioxidants in Monocytes for Parkinson's Disease" 8th International; Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Valencia, Spain, 2010.
38. "Therapeutic Proteins Delivered by Monocytes to the Brain in Parkinson's Disease" Protein & Peptide Conference-2009, Seoul, Korea, 2009.
39. "A new polymer-based nanoformulation for overcoming multi-drug resistance in cancer" 2nd World Cancer Congress, Beijing, China, 2009.
40. "Living Cells as Drug Delivery Vehicles for Protein Transport to the Brain" 1st International Summer School on Nanomaterials and Nanotechnology in Living Systems, Moscow, Russia, 2009.
41. "A Macrophage-based Delivery System of Antioxidant Enzymes for Parkinson's disease: Therapeutic Effect in vivo" NIH IDeA Central Region Conference, Oklahoma City, OK, USA, 2009.
42. "A new polymer-based nanoformulation for overcoming multi-drug resistance in cancer" 2nd World Cancer Congress, Beijing, China, 2009.
43. "Living Cells as Drug Delivery Vehicles for Protein Transport to the Brain" 1st International Summer School on Nanomaterials and Nanotechnology in Living Systems, Moscow, Russia, 2009.
44. "CNS Delivery of Therapeutic Proteins in Living Cells" 3rd BBBB-Bosphorus International Conference on Pharmaceutical Sciences, Turkey, Antalya, 2009.
45. "Monocytes for Delivery of Antioxidants in Parkinson's Disease" International Symposium on Polymer Therapeutics, 7th International Symposium on Polymer Therapeutics, Spain, Valencia, 2008.
46. "Nanomedicine: from Bench to Bedside" 14th International Pharmaceutical Technology Symposium, Turkey, Antalya, 2008.
47. "Cell-mediated delivery of therapeutic polypeptides in nanoparticles across the BBB" International Symposium on Polymer Therapeutics, FU, Berlin, 2007.
48. "Overcoming MDR using Block Copolymers" AAPS Annual Meeting and Exposition, San Diego, CA, USA, 2007.
49. "Nanozymes" for cell-mediated delivery across the Blood-Brain Barrier". 4th International Nanomedicine and Drug Delivery Symposium, Omaha, NE, USA, 2006.
50. "Effects of Pluronic P85 on GLUT-1 and MTC1 Transporters in the Blood Brain Barrier" on Gordon Research Conferences, Tilton, NH, USA, 2004.
51. "Pluronic Block Copolymers as a Novel Drug Delivery System for Overcoming Drug Resistance in Cance" on Gordon Research Conference "Drug Carriers in Medicine & Biology", Big Sky, MT, USA, 2004.
52. "Mechanism of Pluronic effect on P-glycoprotein efflux system in blood brain barrier" on 5th International Symposium on Polymer Therapeutics, The Welsh school of Pharmacy, Cardiff, UK, 2002.
53. "Selective energy depletion and sensitization of multiple drug resistant cells by Pluronic block copolymers" on ACS meeting in Washington, DC, USA, 2000.
54. "Effects of polyoxyethylated surfactants on drug transport in blood-brain barrier" on AAPS Annual Meeting in Boston, MA, USA, 1997.

RESEARCH SEMINARS:

1. "Monocytes and Monocyte Derived Extracellular Vesicles for Gene Delivery to the Brain" Food for Thought Research seminar series, Amicus Therapeutics, September 2021.
2. "Cell-mediated and exosome-mediated drug delivery systems" Carolina Cancer Nanotechnology Training Program (CCNTP T32) Seminar Series, UNC at Chapel Hill, February 2021.
3. "Biocompatible Nanocarriers, Exosomes, for Drug Delivery to the Brain" Carolina Cancer Nanotechnology Training Program (CCNTP T32) Seminar Series, UNC at Chapel Hill, October 2020.
4. "Exosomes as Drug Delivery System" Catalyst Seminar series, UNC at Chapel Hill, June 2020.
5. "Back to Nature: Harnessing the Power of Exosomes for Anticancer Therapy" Marsico Lung Institute Seminar Series, College of Medicine, UNC at Chapel Hill, September 2019.
6. "Macrophage- and exosome-based drug delivery systems to the CNS" The Joint Seminar Series in Chemical Biology and Bioorganic Chemistry, Eshelman School of Pharmacy, UNC, August 2019.
7. "Engineering drug delivery systems by means of macrophages and macrophage-derived exosomes for treatment of neurodegenerative disorders" Seminar series at Johns Hopkins University, School of Medicine, Baltimore, MD, May 2019.
8. "Cell-mediated and Exosome-mediated Drug Delivery Systems" Invited lecture at Moscow M.V. Lomonosov State University, Moscow, Russia, March 2019.
9. "Autologous Macrophages as Active Biocompatible Drug Delivery Vehicles for the Treatment of Neurodegenerative Disorders" Seminar series at Rush University, Chicago, IL, November 2018.
10. "Proteins and Peptides Drug Delivery" Invited lecture at Moscow M.V. Lomonosov State University,
 - a. Moscow, Russia, October 2018.
11. "Back to Nature: Extracellular Vesicles for Drug Delivery", Invited lecture at Anatomy & Cell Biology
 - a. Seminar Series, Western University, London, Canada, September 2018.
12. "Cell-mediated and exosome-mediated drug delivery", Invited lecture at Moscow M.V. Lomonosov State
 - a. University, Russia, March 2018.
13. "Translational Applications in Exosome Research: From Biomarker Discovery to Drug Delivery", Science
 - a. Webinar Series, Science/AAAS Custom Publishing Office, April 2017.
14. "Cell-mediated Drug Delivery", Invited lecture at Moscow M.V. Lomonosov State University, Russia, April 2017.
15. "Exosome-mediated Delivery of Therapeutic Proteins to the Brain", Seminar series at George Mason University, VA, April 2017.
16. "Exosomes for Drug Delivery to the Brain", The Nanoscale Science Program at Seminar series at Chemistry Department, UNC-Charlotte, NC, February 2017.
17. "Harnessing the Power of Exosomes for Drug Delivery", CNDD Colloquium, September 2015.
18. "Carriers that Break Barriers", MOPH division seminar program, Omaha, NE, February 2014.
19. "Trojan Horses of 21st Century: Delivery of Therapeutics in Macrophages", research seminar for UNMC Eppley Cancer Center, CGMR Program, Omaha, NE, March 2012.
20. "Cell-mediated Drug Delivery", Surgery division research forum, UNMC, Omaha, April 2012.
21. "New Developments in CNS Drug Delivery", Invited lectures, Moscow State University, Russia, November 2012.
22. "Living Cells as Delivery Vehicles Antioxidant Enzymes in Parkinson's Disease" Department of Pharmaceutical Sciences seminar, UNMC, Omaha, NE, January 2010.
23. "Cell-cell Interactions and Nanoparticles Transfer in Macrophage-mediated Drug Delivery. A love story", COP, UNMC, Omaha, NE, October 2010.
24. "Cell-mediated Drug Delivery for Parkinson's Disease Therapy", research seminar for Department of Internal Medicine, division of Geriatrics and Gerontology, UNMC, Omaha, December 2010.
25. "Cell-Mediated Transport of Nanozymes across the Blood-Brain Barrier", American Chemical Society Seminar, UNMC, Omaha, May 2008.
26. "Nanozymes" for Cell-mediated Delivery across the Blood-brain Barrier", Department of Anatomy and Physiology, Kansas State University, Manhattan, KS, April 2007.
27. "Polymer Genomics: Shifting Drug Delivery paradigm", 37th Annual Higuchi Research Seminar, Dept. of Pharm. Chemistry, University of Kansas, May 2004.

28. "Kinetic Considerations of Pluronic Effects on Drug Efflux Transporters", 36th Annual Higuchi Research Seminar, Dept. of Pharmaceutical Chemistry, University of Kansas, May 2003.
29. "Kinetic Considerations of Pluronic Effects on Drug Efflux transporters", College of Pharmacy, UNMC, Omaha, NE, May 2003.
30. "Pluronic Interactions in MDR Cancer Cells and Blood Brain Barrier", College of Pharmacy, UNMC, Omaha, NE, March 2000.
31. "Amphiphilic Block Copolymers in Drug Delivery", College of Pharmacy, UNMC, Omaha, NE, October 1998.

PATENTS:

US Patents:

1. "BIOLOGICAL AGENT-EXOSOME COMPOSITIONS AND USES THEREOF" U.S. Batrakova E.V., Kabanov A.V., Haney M., M. Sokolsky. National Phase Patent Application No. US 2020/0297631 A1, September 2020.
2. "Cellular Backpacks for Drug Delivery Across the Blood-Brain Barrier", Batrakova E.V., Cohen R.E., Haney M.J., Klyachko N.L., Polak R., Rubner M.F., and Zhao Y. Patent M.I.T. Case # 18547J, February 2020.
3. "Synthetically functionalized living cells for targeted drug delivery", Polak R., Cohen R.E., Rubner M.F., Batrakova E.V., Haney M.J., Klyachko N.L., Zhao Y. US Patent application #15/458,925, MIT, December 2019.
4. "Delivery of therapeutic proteins to the brain by means of extracellular vesicles (EVs) and methods thereof", Batrakova E.V., Kabanov A.V., Haney M.J., Zhao Y. New Invention Notification (NIN) #19-0177, UNC, June 2019.
5. "BIOLOGICAL AGENT-EXOSOME COMPOSITIONS AND USES THEREOF" U.S. Batrakova E.V., Kabanov A.V., Haney M., M. Sokolsky. National Phase Patent Application No. 16/089,833, filed September 28, 2018.
6. "Compositions for protein delivery and methods of use thereof", Kabanov A.V. Bronich T.K., Batrakova E.V., Gendelman, H.E., US application #16/021,537, filed on June 28, 2018.
7. "Biological Agent-exosome Compositions and Uses thereof", Batrakova E.V., Kabanov A.V., Yuan, D., Haney M.J. U.S. PCT Application No. PCT/US2017/024931; filed March 30, 2017. International application was published by WIPO on October 5, 2017 under publication number WO 2017/173034.
8. "Nucleic acids (e.g. DNA) compositions of exosomes and methods thereof", Kabanov A.V., Batrakova E.V., and Haney M.J. NIN OTD: 16-0112, March 2016.
9. "Biological agent compositions of exosomes and methods thereof", Batrakova E.V., Kabanov A.V., Yuan, D., Haney M.J. U.S. Provisional Patent Application No. 62/315,389; filed March 30, 2016
10. "Synthetically Functionalized Living cells for targeted Drug delivery", Polak R., Cohn R., Rubner M., Batrakova E.V., Haney M., Klyachko N.L., Zhao Y. US patent application, Case No.: 18547, March 2016.
11. "Compositions and Methods for Gene Therapy", Kabanov A.V., Batrakova E.V., Mahijan V., Haney M. US patent extension, Docket #12084PCT, No. PCT/US13/040577, 2014.
12. "Compositions and Methods for Gene Therapy", Kabanov A.V., Batrakova E.V., Mahijan V., Haney M. US patent, Docket #12084PCT, No. PCT/US13/040577, 2013.
13. "Drug-loaded exosomes released from inflammatory cells for treatment of neurodegenerative disorders", Batrakova E.V., Kabanov A.V., Haney M.J., Zhao Y. Provisional patent filing, UNC, 2013.
14. "Using inflammatory cells for transfection of neurons, brain microvessel endothelial cells (BMVEC), and astrocytes for treatment of neurodegenerative disorders", Batrakova E.V., Kabanov A.V., New Invention Notification (NIN) #11088, UNMC, 2012.
15. "Amphiphilic Polymer-Protein Conjugates and Methods Thereof", Batrakova, E.V., Vinogradov, S.V., Kabanov A.V. US Patent #8017151 A 2011.
16. "Treatment of Neurodegenerative Disorders", Batrakova E.V., Kabanov A.V., Gendelman, HE., US Patent #07006 A 2007.
17. "Compositions for Protein Delivery and Methods of Use Thereof", Kabanov A.V. Bronich T.K., Batrakova E.V., Gendelman, H.E., US Patent #07015 A 2007.

18. "Amphiphilic Polymer-Protein Conjugates and Methods of Use Thereof" Batrkova, E.V.; Vinogradov, S.V.; Kabanov A.V. US Patent #63203 A 2004.
19. "Copolymer compositions for oral delivery" Kabanov, A.V.; Alakhov, V.Y.; Batrkova, E.V. US Patent #6387406 A 2002/05-14
20. "Copolymer compositions for oral delivery" Kabanov, A.V.; Alakhov, V.Yu.; Batrkova, E.V. US Patent #6277410 A 2001/08-21
21. "Compositions for targeting biological agents" Kabanov, A.V.; Alakhov, V.Yu; Chekhonin, V.P.; Batrkova, E.V.; Kabanov, V.A. US Patent # 6153193 A 2000/11-28

PCT and Foreign patents:

22. "Pharmaceutical compositions containing a biological agent and a poly (oxyethylene)-poly (oxypropylene) block copolymer" Kabanov, A.V.; Alakhov, V.Y.; Batrkova, E.V. WO 99-US2538 1999/0205
23. "Polyether block copolymer micellar compositions for targeting biological agents" Kabanov, A.V.; Alakhov, V.Yu.; Chekhonin, V.P.; Batrkova, E.V.; Kabanov, V.A. WO 96/40056 A1 1996/1219
24. "Preparation of aqueous dispersions of polymer vesicles from dialkylammonium halides" Zubov, V.P.; Egorov, V.V.; Batrkova, E.V.; Ksenofontova, O.B. SU Patent # 1523550 A1 1989/11-23

F. TEACHING ACTIVITIES:

a. Lectures in Team-taught Courses for the past ten years:

1. DPMP 738 "Nanomedicine", UNC, 2021 (Spring).
2. DPMP 738 "Nanomedicine", UNC, 2020 (Spring).
3. BME 590 "Special Topics in Biomedical Engineering: Advanced Drug Delivery", NC State University, 2020 (Spring).
4. BIOC/PHCO 745 "Intercellular Signaling in Development and Disease", UNC, 2020 (Spring).
5. RASP Honors, UNC, 2020 (Spring).
6. Honors Research Carolina, UNC, 2020 (Spring).
7. BIOL 395/495/395H, "Undergraduate Research in Biology", UNC, 2019 (Fall).
8. DPMP 738, "Nanomedicine", UNC, 2019 (Spring).
9. BIOL 395/495/395H, "Undergraduate Research in Biology", 2019 (Spring).
10. PHCY 726, "RASP III", 2019 (Spring).
11. BIOC/PHCO 745, "Intercellular Signaling in Development and disease", 2018 (Spring).
12. MOPH 862 "Advanced Physical Pharmacy", 2018 (Spring).
13. DPMP 868 "Advanced Physical Pharmacy", 2017 (Fall).
14. BIOC/PHCO 740-745 "Intercellular Signaling in Development and Disease", 2017 (Spring).
15. MOPH 862 "Advanced Physical Pharmacy", 2017 (Spring).
16. PHRS 899 Seminar, UNC Eshelman School of Pharmacy, 2016 (Fall).
17. MOPH 868 "Advances in Drug Delivery and Nanomedicine", UNC Eshelman School of Pharmacy, 2016 (Fall).
18. PHCY 512 "Pharmaceutics and Drug Delivery Systems", UNC Eshelman School of Pharmacy, 2016 (Spring)
19. MOPH 862 "Advanced Physical Pharmacy", UNC Eshelman School of Pharmacy, 2016 (Spring)
20. MOPH 864 "Advances in Drug Delivery", UNC Eshelman School of Pharmacy, 2015 (Fall).
21. PHRS 899 Seminar, UNC Eshelman School of Pharmacy, Course Director, 2015 (Spring).
22. MOPH 738 "Nanomedicine", UNC Eshelman School of Pharmacy, 2014 (Fall).
23. MOPH 864 "Advances in Drug Delivery", UNC Eshelman School of Pharmacy, 2014 (Fall).
24. PHCY 410 Basic Pharmaceutics I, UNC Eshelman School of Pharmacy, 2013, 2014 (Fall).
25. MOPH 864 "Advances in Drug Delivery", UNC Eshelman School of Pharmacy, 2013 (Fall).
26. MOPH 738 "Nanomedicine", UNC Eshelman School of Pharmacy, 2012 (Fall).

b. Mentorship/Students Supervision:

Graduate supervisory/advisory committees:

Amit Sharma	2004-2007
Zagit Gaymalov	2005-2010
Gaurav Sahay	2005-2010
Xiang Yi	2005-2010
Mark Ueda	2009-2011
Daria Alakhova	2004-2012
Anna Brynskikh	2007-2012
Yi Zhao	2008-2013
Erin G. Rosenbaugh	2009-2013
Poornima Suresh	2011-2013
Inmaculada Sánchez	2013 (member of
PhD thesis examination panel)	
James Huckle	2013-2014
Michaela L. Eggen	2011-2015
Gang Zhang	2011-2015
Zhijian He	2013-2015
Yuan, Dongfen	2014-2017
Jiang, Yuhang	2014-2016
Seo, Youn Gee	2014-2019
Rahhal, Tojan Bassam	2014-2016
Wan, Xiaomeng	2015-2018
Lei Miao	2015-2016
Srinivas, Nithya	2015-2018
Yeon Soo Jin	2017-2020
James Fay	2018-present
Ana Cartaya	2019-present

Undergraduate visiting/summer students/unpaid interns:

Song Mu	1997
Haiquin Dai	1999
Swayam Prabha	1999-2000
Jason Jokerst	2003-2004
Aaron Mayo	2003-2004
Daria Alakhova	2004-2005
Stephanie L. Booth	2009-2010
Kelvin Chin	2011
Muna Pokhrel	2011
Tatyana Kasperovich	2011
Eli Inscoe	2013-2014
Richa Gupta	2013-2014
Phi Phua	2014-2015
Corey Pahel-Short	2015
Joseph Zhao	2015
Lena Cohen	2016
Oyesola Popoola	2017
Halle Lutz	2017
Carolyn Reuland	2017-2018*
Yeon Soo Jin	2017-2020 (RASP student)
Karlie Tong	2019-2020
Sam Michael Li	2018-2021
Cami Arzt	2019-2021
Keyao (Mori) Liu	2021-present

Carson Swain 2021-present
*jointly with Dr. F. Church

Graduate Students:

Jian Zhu 2004*
Amit Sharma 2004-2007*
Gaurav Sahay 2005-2010*
Xiang Yi 2005-2010*
Michelle Gasko 2007-2008*
Mark Ueda 2009-2011*
Daria Alakhova 2006-2011*
Anna Brynskikh 2007-2012*
Yi Zhao 2008-2013*
Poornima Suresh 2010-2013*
Myung Soo Kim 2013-2016
James Fay 2017-present*
*jointly with Dr. A.V. Kabanov

Rotation Graduate Students:

Chaitali Passey 2008
Rajesh R. Wakaskar 2009
Hardeep S. Oberoi 2007
Emily B. Harrison 2011-2012
John P. Bohnsack 2012
Tojan Rahhal 2012-2013
Tejash Patel 2012-2013
Myung Soo Kim 2012-2013
Goodwin, Tyler Jay 2013-2014
Erin Wilson 2013
Olga Uvarov 2015
Yue Wang 2019

Postdoctoral/Visiting Scientists:

Li Zhang 2004-2005
Mirjam Clemens-Hemmelmann 2012
Fiona Cooke 2015
Natalia Klyachko 2012-2018
Roberta Polak 2015

Research Technologists:

Shu Li 1998-2011
Yulili Li 2002-2005
Yuling Zhao 2009-present
Matthew Haney 2010-present

G. GRANTS:

1R01NS102412-01A1 (E. Batrakova) 06/01/18 – 05/31/23 40% effort
NIH / NINDS \$1,950,000
“Cell-based Platform for Gene Delivery to the Brain”
Principal Investigator
ACTIVE

1R01NS112019-01A1 (E. Batrakova)	07/01/19 – 06/31/24	40% effort
NIH / NINDS	\$1,979,628	
“Extracellular Vesicles for CNS Delivery of Therapeutic Enzymes to Treat Lysosomal Storage Disorders”		
Principal Investigator		
ACTIVE		
MJF 19-5960 (E. Batrakova)	01/01/20 – 09/15/2021	3% effort
M.J. Fox Foundation for Parkinson’s Research	\$297,000	
“Bio-inspired Nanoformulation of GDNF for Treatment of Parkinson's Disease (PD)”		
Principal Investigator		
ACTIVE		
1R01 (U. Roy)	09/01/2020 – 08/31/2025	5% effort
NIH/NIDA	\$416,594	
“A targeted anti-HIV drug delivery to the GALT”		
MPI		
ACTIVE		
1R21MH118985 (N. El-Hage)	03/01/19 – 04/30/21	3% effort
NIH / NIDA	\$39,000	
“Develop and evaluate efficacy of nanoformulated siBeclin1 delivered intranasally to eliminate HIV in brain”		
Co-Investigator		
COMPLETED		
20-0916 (E. Batrakova)	01/01/20 – 03/31/21	2% effort
Aruna Biomedical	\$28,378	
“Loading fluorescently labeled catalase into neural stem cell derived exosomes <i>via</i> saponin permeabilization and sonication and the characterization, quantification and neural protective effects of the catalase-loaded exosomes”		
Principal Investigator		
COMPLETED		
550KR242035 (J. Taylor)	07/01/20 – 07/01/21	1%
NC TRaCS	\$50,000	
“Pre-clinical evaluation of a novel therapeutic target for Parkinson's disease”		
Co-Investigator		
COMPLETED		
PA2019TierA-ID33 (Monash-UNC)	01/12/19-10/30/21	2% effort
PharmAlliance	\$63,720	
“Screening of EVs as natural nanocarriers using a B ³ -chip”		
Co-Investigator		
COMPLETED		
UNC 38-124 (E. Batrakova)	06/01/18 – 08/30/21	5% effort
Eshelman Institute for Innovation (EII)	\$50,000	
“Developing Exosome-based Delivery of TPP1 for Batten Disease Therapy”		
Principal Investigator		

COMPLETED

University Cancer Research Fund (UCRF) (E. Batrakova)
UNC Lineberger Comprehensive Cancer Center \$11,394 6% effort
Theme 3: “Development of new cancer treatments”
Co-Investigator
COMPLETED

A20-0944 (E. Batrakova) 01/01/20 – 12/31/20 3%
BDSRA \$40,000
“Novel Nanoformulation of TPP1 for Treatment of LINCL Batten Disease”
Principal Investigator
COMPLETES

UNC RX03812420 (A. Kabanov) 06/01/18 – 06/01/20 1% effort
Eshelman Institute for Innovation (EII) \$200,000
“Nanoparticle delivery of Cas9 and therapeutic gRNAs to the brain”
Co-Investigator
COMPLETED

RR172267 (S. Whitehead) 11/01/18-03/31/20 2% effort
Canada 2017: AD-Related Diseases program \$300,000
“Evaluating the neuroprotective potential of CAT-SKL in a pre-clinical model of AD”
Collaborator
COMPLETED

RG-1607-25207 (G. Matsushima) 4/1/2017-3/31/2020 5% effort
NIH / NMSS \$381,530
“Function of microglia during remyelination”
Co-Investigator
COMPLETED

UNC RX03712415 (A. Kabanov) 06/01/17 – 01/01/20 1% effort
Eshelman Institute for Innovation (EII) \$375,000
“Systemic Targeting of Mononuclear Phagocytes for Parkinson’s Disease Gene Therapy” Co-
Investigator
COMPLETED

EUP 17-4676 (E. Batrakova) 10/01/17 – 03/31/19 25% effort
Elsa U Pardee Foundation \$159,024
“Targeting the Triple Negative Breast Cancer with Paclitaxel-loaded Biomimetic Nanovesicles,
Exosomes”
Principal Investigator
COMPLETED

1R01 NS057748-01A2 (E. Batrakova) 09/29/08 – 08/31/13 35% effort
NIH / NINDS \$1,250,000
“Inflammatory Cells for Transport of Therapeutic Polypeptides across the Blood Brain Barrier”
Principal Investigator

COMPLETED

UNC EII29-201 (E. Batrakova) Eshelman Institute for Innovation (EII) “Engineering 3D models of cancer metastasis with pro-inflammatory microenvironment for cancer immunotherapy” Principal Investigator COMPLETED	06/01/16 – 06/01/17 \$50,000	1% effort
UNC TEG15-4849 (E. Batrakova) NC Biotechnology Center “Use of Autologous Macrophages for Sustained Delivery of GDNF as Treatment of Parkinson’s Disease” Principal Investigator COMPLETED	09/01/15 – 06/30/17 \$50,000	5% effort
Oldfield Alzheimer’s Research Fund Award UNMC (E. Batrakova) Principal Investigator COMPLETED	06/01/10 – 06/01/11 \$20,000	5% effort
1P20 RR021937-01A2 (A. Kabanov) NIH / NCRR COBRE: “Nebraska Center for Nanomedicine” Project Leader COMPLETED	09/26/08 – 06/30/13 \$1,473,976	25 % effort
2 R01 NS051334 (A. Kabanov) NIH / NINDS “Polypeptide modification for enhanced brain delivery” Co-Investigator COMPLETED	01/01/10 – 03/31/16 \$1,750,000	5% effort
W81XWH11-1-0700 (A. Kabanov) DoD “Integrate Immune, Biomaterial & Stem Cell Platform for Neuroprotection in Battlefield Injuries” Co-Investigator COMPLETED	08/29/11 – 08/28/14 \$190,794,000	5% effort
2R01 CA89225 (A. Kabanov) NIH / NCI "Interactions of Pluronic block copolymers in drug resistant cancer" Co-Investigator COMPLETED	02/01/08 – 01/31/12 \$1,250,000	5% effort
1R43GM062054-01 (F. Wang) NIH / NCI “Star polymer unimolecular micelles for drug delivery” Co-Investigator COMPLETED	08/01/00 – 01/31/01 \$99,961	25% effort
NCI SBIR Phase II CA-221487 (R. Gupta) NIH / NIDS	01/26/17 – 08/31/19 \$200,000	1% effort

“Exosomal Drug Delivery”

Paid Consultant

COMPLETED

UNC RX03812408 (A. Kabanov) 06/01/18 – 05/31/19 1% effort

Eshelman Institute for Innovation (EII) \$50,000

Brain Drug Delivery: Optimizing miR-29 Nanoformulation for Neuroprotection”

Co-Investigator

COMPLETED

H. PROFESSIONAL SERVICE:

1. MMI candidates’ interviews, UNC at Chapel Hill, Eshelman School of Pharmacy, November 2021.
2. MMI candidates’ interviews, UNC at Chapel Hill, Eshelman School of Pharmacy, September 2021.
3. BBSP candidates’ interviews, UNC at Chapel Hill, Eshelman School of Pharmacy, January 2020.
4. MD-PhD candidate interviews, UNC at Chapel Hill, School of Medicine, January 2020.
5. BBSP Preview Weekend Interviews, UNC at Chapel Hill, Eshelman School of Pharmacy, September 2019.
6. Seminar coordinator at the Center for Nanotechnology in Drug Delivery (CNDD) at North Carolina University (UNC) at Chapel Hill, Eshelman School of Pharmacy, 2019 (Spring, Fall).
7. Committee member of the Honors Program, UNC, School of Pharmacy, 2018 (Spring).
8. Seminar coordinator at the Center for Nanotechnology in Drug Delivery (CNDD) at North Carolina University (UNC) at Chapel Hill, Eshelman School of Pharmacy, 2018 (Spring, Fall).
9. Committee member of the Honors Program, UNC, School of Pharmacy, 2017 (Spring, Fall).
10. Committee member of the Honors Program, UNC, School of Pharmacy, 2016 (Spring, Fall).
11. MOPH Prospective Graduate Student Interviews, January 2015
12. Member of a search committee for Research Associate position, February 2015.
13. Committee member of the Honors Program, UNC, School of Pharmacy, 2015 (Spring, Fall).
14. BBSP Prospective Graduate Student Interviews, February 2015
15. Member of a search committee for a Research Associate position, Spring 2015.
16. Member of a search committee for a Research Specialist at the UNC Center for Nanotechnology in Drug Delivery (CNDD), Fall 2015.
17. MOPH Prospective Graduate Student Interviews, January 2014
18. BBSP Prospective Graduate Student Interviews, February 2014
19. Committee member of the Honors Program, UNC, School of Pharmacy, 2014 (Spring, Fall).
20. Judge of Catalent Institute-AAPS Academic Competition, April 2014.
21. Member of the Committee to Review the Governance Document of Graduate Program, September 2014.
22. Committee member of the Honors Program, UNC, School of Pharmacy, 2013 (Fall).
23. Chair of search committee for recruiting a Research Assistant Professor, 2013 (Fall).
24. Member of UNC Eshelman School of Pharmacy Technology and Pedagogy (TAP) sub-committee, 2012.
25. Chair, Pharmaceutical Sciences Graduate Program (PSGP) Committee, 2011-2012.
26. Member of UNMC Graduate Council, 2011-2012.

EDITORIAL DUTIES AND REVIEW PANELS:

Ad Hoc Reviewer:

1. AAPS PharmSciTech
2. ACCR Review Journal of Chemistry
3. ACS Nano
4. Acta Biomaterialia
5. Acta Pharmaceutica Sinica
6. Advanced Drug Delivery
7. Advances Sciences
8. American Journal of Drug Delivery

9. Bentham Science Publishers
10. Biochemistry
11. Biochemical Pharmacology
12. Biomacromolecules
13. Biomaterials
14. Brain, Behavior, and Immunity
15. Cancers
16. Critical Reviews™ in Therapeutic Drug Carrier Systems
17. Current Pharmaceutical Design
18. Developmental neuroscience
19. Drug Targeting and Delivery
20. Drug DeliveryExp. Biology and Medicine
21. Hundai Publishing Corporation
22. Journal of Controlled Release
23. Journal of Drug Targeting
24. Journal of Extracellular Vesicles
25. Journal of Neuroimmune Pharmacology
26. Journal of Pharmaceutical Science
27. Journal of Pharmacy & Pharmaceutical Sciences
28. Langmuir
29. Life Sciences
30. Macromolecule Bioscience
31. Molecular Pharmaceutics
32. Molecular Therapy
33. Movement Disorders
34. Nanomedicine (London)
35. Nanotechnology, Biology, and Medicine
36. Nature Communications
37. Neurotherapeutics
38. Neuroscience Letters
39. Peptides
40. Pharmaceuticals
41. Pharmaceutics
42. Pharmaceutical Research
43. PlosONE
44. Scientific Reports
45. Therapeutic delivery
46. Wiley Interdisciplinary Reviews: Nanomedicine

Editorial Board Member:

47. Nanomedicine: Nanotechnology, Biology, and Medicine (Elsevier)
48. Journal of Bioanalytical Techniques
49. Mathews Journal of Cancer Science
50. Journal of Drug Delivery
51. Journal of Clinical Pharmacology (JCP)

52. Alzheimer's and Parkinsonism: Research Therapy
53. International Journal of Neurodegenerative Disorders
54. Pharmaceutics
55. Cells

GRANT REVIEW AND STUDY SECTIONS:

1. Grant reviewer on Special Emphasis Panel/Scientific Review Group ZRG1 ETTN-U (82) S, "DoD-Uniformed Services University High Priority Research Intramural Research Program" January 2022.
2. Co-chair on Special Emphasis Panel/Scientific Review Group ZRG1 BST-R (10), "Small Business: Biomaterials, Delivery, and Nanotechnology" November 2021.
3. Grant reviewer on Special Emphasis Panel/Scientific Review Group ZRG1 BST-R (10), "Small Business: Biomaterials, Delivery, and Nanotechnology" July 2021.
4. Grant reviewer on Special Emphasis Panel/Scientific Review Group ZRG1 BST-R (10), "Small Business: Biomaterials, Delivery, and Nanotechnology" March 2021.
5. Grant reviewer on Special Emphasis Panel/Scientific Review Group 2020/01 ZRG1 F09B-M (20) L meeting "Oncology" November 2020.
6. Grant reviewer on Special Emphasis Panel/Scientific Review Group 2020/10 ZRG1 F09B-M (20) L meeting "Oncology" July 2020.
7. Grant reviewer Special Emphasis Panel/Scientific Review Group 2020/05 ZRG1 MDCN-M (91) S, "The Blood-Brain Barrier, Neurovascular System and CNS Therapeutics", March 2020.
8. Grant reviewer to 2020/05 Gene and Drug Delivery (GDD) Study Section Panel/Scientific Review Group, February 2020.
9. Grant reviewer to 2020/01 ZRG1 F09B-M (20) L Special Emphasis Oncological Sciences Fellowship. Panel Panel/Scientific Review Group, November 2019.
10. Grant reviewer to 2019/10 ZAT1 SM(50) Special Emphasis Panel/Scientific Review Group "Early Phase Clinical Trials of Natural Products (R33 and R61/R33) and Natural Products Phase II Clinical Trial Cooperative Agreements (UO1) (NP)", July 2019.
11. Grant reviewer to ZRG1 VH-D(02)M Special Emphasis Panel/Scientific Review Group "Vascular Regulation and Hematology", June 2019.
12. Grant reviewer to ZRG1 IMST-H(55)R Special Emphasis Panel/Scientific Review Group "Innovative Research in Cancer Nanotechnology (IRCN)", March 2019.
13. Grant reviewer to 2019/05 ZRG1 CB-D (71) R review Group, "Advancing Extracellular RNA (exRNA) Communication Research: Towards Single Extracellular Vesicle (EV) Sorting, Isolation, and Analysis of Cargo", March 2019.
14. Grant reviewer to ZCA1 PCRB-G J1 S NCI R13/U13 conference grants review Group (PA-18-648), October 2018.
15. Grant reviewer to Transformational Research for the W. Garfield Weston Foundation: Canada 2018 program, August 2018.
16. Grant reviewer to 2018/10 ZRG1 F09B-M (20) L Special Emphasis Panel/Scientific Review Group, June 2018.
17. Grant reviewer to ZRG1 MDCN-T (50) Special Emphasis Panel/Scientific Review Group, May 2018.
18. Grant reviewer to NIH Shared Instrumentation for Animal Research (SIFAR) Grant Program (Internal review), April 2018.
19. Grant reviewer to Special Emphasis Oncological Sciences Fellowship Panel Panel/Scientific Review Group ZRG1 F09B-M 20 L, March 2018.
20. Grant reviewer to Special Emphasis Oncological Sciences Fellowship Panel Panel/Scientific Review Group 2018/01 ZRG1 F09B-M (20) L, November 2017.
21. Grant reviewer to Special Emphasis Panel/Scientific Review Group 2018/01 ZCA1 PCRB-G (J1) S, October 2017.
22. Grant reviewer to 2017/ NIH/CSR F09B Fellowship Study Section on Cancer Biology, March 2017.

23. Grant reviewer to 2017/05 ZCA1 TCRB-D (M2) S for NIH/UO1. Study section: Innovative Research in Cancer Nanotechnology (IRCNs) for NIH/NCI Study section, February 2017.
24. Grant reviewer to NIH Review Study, November 2016.
25. Grant reviewer to ZCA1 PCR-B-G J1 S, for R13 Conference Grant Review, October 2016.
26. Grant reviewer to ZCA1 TCRB-6 (O1) Study section: Innovative Research in Cancer Nanotechnology (IRCNs) for NIH/NCI Study section, July 2016.
27. Grant reviewer to 2016 Peer Reviewed Breast Cancer Research Program (BCRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP) Nanotechnology (BCRP NT) study section, July 2016.
28. Grant reviewer to 2016 Spring UNC Lineberger Cancer Center Developmental Grants program, June 2016.
29. Grant reviewer to NIH 2015/05 ZCA1 PCR-B-G (M1) S - R13 study section, February 2015.
30. Grant reviewer to Special Emphasis Panel/Scientific Review Group 2015/10 ZRG1 OTC-B (11) B, July 2015.
31. Judge for the 3rd Annual Catalent Institute Academic Competition, April 2014.
32. Grant reviewer to UNC Nutrition Obesity Research Center, February 2014.
33. Grant reviewer to NIH Special ZRG1 F05-R (20) L Fellowship: Cell Biology, Developmental Biology, and Bioengineering Panel, July 2014.
34. Grant reviewer to NIH Neural Oxidative Metabolism, Mitochondria and cell Death (NOMD) Study section, October 2014.
35. Grant reviewer to NIH Center for Scientific Review Vascular Cell and Molecular Biology (VCMB) Study Section, October 2014.
36. Grant reviewer to Technology Foundation STW (Innovation Research Incentives Scheme), Netherlands, January 2013.
37. R13/U13 Grant reviewer to Special Emphasis Panel/Scientific Review Group 2013/05 ZCA1 PCR-B-G Study section, April 2013.
38. Grant reviewer to Biobehavioral Regulation, Learning and Ethology (BRLE) Study Section, June 2013.
39. Grant reviewer to P2RMIS Department of Defense program, August 2013.
40. Grant reviewer to NIH Small Business: Biological Chemistry, Biophysics, and Drug Discovery (SBIR/STTR) Study section, February 2012.
41. R13 Grant reviewer to NIH/NCI Study section, April 2012.
42. Vice-Chair of UNMC AY2012-13 Assistantship/Fellowship Competition, Bioinformatics Study Section, April 2012.
43. Grant reviewer to American Institute of Biological Sciences, January 2011.
44. Committee Member, NIH Gene and Drug Delivery Study section, June 2011.
45. R13 Committee Member, NIH/NCI Study section, June 2011.
46. Grant reviewer to NIH Small Business: Biological Chemistry, Biophysics, and Drug Discovery (SBIR/STTR) Study section, October 2011.
47. Grant reviewer to Edna Ittner Pediatric Research Support Fund, June 2010.
48. Grant reviewer to NIH Challenge Grants in Health and Science Research, RFA-09-003, July 2009.
49. Grant reviewer to Italian Ministry of Health Grants, August 2009.

PROFESSIONAL SOCIETIES:

Controlled Release Society (CRS)
 American Chemical Society (ACS)
 American Association of Pharmaceutical Scientists (AAPS)
 American Association of Cancer Research (AACR)
 International Society of Exosomes and Microvesicles (ISEV)
 American Society of Exosomes and Microvesicles (ASEMV)

NY Academy of Sciences (NYAS)

OTHER:

1. Oral presentation at UNC Catalyst Seminar series, UNC at Chapel Hill, June 2020.
2. Poster presentation at UNC Catalyst for Rare Diseases Event, UNC at Chapel Hill, February 2020.
3. Moderator/Session Chair, International Society of Extracellular Vesicles Meeting (ISEV2019), Kyoto, Japan, April 25-28, 2019.
4. Speaker at National Center for Advancing translational Sciences (NCATS) event, February 2019.
5. Speaker at public event “Spotlight on Rare Disease”, April 25, 2018.
6. Participation in the hosting a delegation of pharmacy faculty from Moldova, April 2018.
7. Recording lecture for Carolina Nanoformulation Workshop “Exosome-mediated drug delivery”, March 2018.
8. Speaker of webinar panel of Science magazine “Translational applications in exosome research: From biomarker discovery to drug delivery”, April 19, 2017.
9. Recording lecture for Carolina Nanoformulation Workshop “Exosomes for Drug Delivery”, July 2015.
10. Volunteer for two lectures “Brain and Polymers” at Ephesus Elementary School, Chapel Hill, December 2014.
11. Moderator/Session Chair, Eight Annual Chapel Hill Pharmaceutical Sciences Conference, May 28-29, 2014.
12. Volunteer for UNMC Skate-a-Thon for Parkinson’s, January 2012.
13. Member of UNMC Translational Research Task Force group, 2012.
14. The first-in-man polymeric micelle drug SP1049C (now SKC1049) that was developed with my active participation received FDA’s SPA for Phase III and is in clinical development by SoftKemo.