

## Резюме: Шипунова Виктория Олеговна

### Адрес

Федеральное государственное бюджетное учреждение науки Институт биоорганической химии им. академиков М.М. Шемякина и Ю.А. Овчинникова Российской академии наук, Москва, Россия

### Контакты

<https://www.ibch.ru/users/1031>

### Образование

2007– 2013	Москва, Россия	Московский Физико-Технический Институт (ГУ)	Диплом магистра с отличием по направлению "Биотехнология".
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### Работа в ИБХ

2021–наст.вр.	Старший научный сотрудник
2021–наст.вр.	Старший научный сотрудник
	Старший научный сотрудник

### Награды

2017	Медали РАН для молодых ученых и студентов с премией	За работу «Комплексное исследование многофункциональных надмолекулярных комплексов, контролируемо воздействующих на клетки эукариот, с целью создания эффективных агентов для тераностики»
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### Научные интересы

Наночастицы, адресная доставка лекарственных препаратов, биосенсоры, умные материалы

### Членство в сообществах

IEEE

### Степени и звания

Кандидат наук (Биологические науки, 03.00.03 — Молекулярная биология)

### Гранты и проекты

2020– 2021	<a href="#">Распознающие скаффолдовые полипептиды как инструмент для адресной доставки наноструктур in vitro и in vivo</a>
2020– 2021	<a href="#">Разработка агентов для онкотераностики на основе эффекта усиления биолюминесценции плазмонными наноструктурами</a>
2018– 2020	<a href="#">Создание агентов для тераностики на основе нано- и микроструктур</a>
2017– 2022	<a href="#">Комплексное исследование мультифункциональных супрамолекулярных систем, контролируемо воздействующих на клетки эукариот, с целью создания эффективных агентов для тераностики</a>
2017–	<a href="#">Новые подходы к адресной терапии злокачественных новообразований с использованием</a>

## Публикации

1. Shaban N, Raevskiy M, Zakharova G, **Shipunova V**, Deyev S, Suntsova M, Sorokin M, Buzdin A, Kamashev D (2024). Human Blood Serum Counteracts EGFR/HER2-Targeted Drug Lapatinib Impact on Squamous Carcinoma SK-BR-3 Cell Growth and Gene Expression. *Biochemistry (Mosc)* 89 (3), 487–506, [10.1134/S000629792403009X](#)
2. Kotelnikova PA, **Shipunova VO**, Deyev SM (2023). Targeted PLGA–Chitosan Nanoparticles for NIR-Triggered Phototherapy and Imaging of HER2-Positive Tumors. *Pharmaceutics* 16 (1), 9, [10.3390/pharmaceutics16010009](#)
3. Komedchikova EN, Kolesnikova OA, Syuy AV, Volkov VS, Deyev SM, Nikitin MP, **Shipunova VO** (2023). Targosomes: Anti-HER2 PLGA nanocarriers for bioimaging, chemotherapy and local photothermal treatment of tumors and remote metastases. *J Control Release* 365, 317–330, [10.1016/j.jconrel.2023.11.036](#)
4. Shlepova OV, Shulepko MA, **Shipunova VO**, Bychkov ML, Kukushkin ID, Chulina IA, Azev VN, Shramova EI, Kazakov VA, Ismailova AM, Palikova YA, Palikov VA, Kalabina EA, Shaykhutdinova EA, Slashcheva GA, Tukhovskaya EA, Dyachenko IA, Murashev AN, Deyev SM, Kirpichnikov MP, Shenkarev ZO, Lyukmanova EN (2023). Selective targeting of  $\alpha 7$  nicotinic acetylcholine receptor by synthetic peptide mimicking loop I of human SLURP-1 provides efficient and prolonged therapy of epidermoid carcinoma in vivo. *Front Cell Dev Biol* 11, 1256716, [10.3389/fcell.2023.1256716](#)
5. Tselikov GI, Danilov A, **Shipunova VO**, Deyev SM, Kabashin AV, Grigorenko AN (2023). Topological Darkness: How to Design a Metamaterial for Optical Biosensing with Ultrahigh Sensitivity. *ACS Nano* 17 (19), 19338–19348, [10.1021/acsnano.3c06655](#)
6. Mochalova EN, Egorova EA, Komarova KS, **Shipunova VO**, Khabibullina NF, Nikitin PI, Nikitin MP (2023). Comparative Study of Nanoparticle Blood Circulation after Forced Clearance of Own Erythrocytes (Mononuclear Phagocyte System-Cytoblockade) or Administration of Cytotoxic Doxorubicin- or Clodronate-Loaded Liposomes. *Int J Mol Sci* 24 (13), 10623, [10.3390/ijms241310623](#)
7. Sogomonyan AS, Deyev SM, **Shipunova VO** (2023). Internalization-Responsive Poly(lactic-co-glycolic acid) Nanoparticles for Image-Guided Photodynamic Therapy against HER2-Positive Breast Cancer. *ACS Applied Nano Materials* 6 (13), 11402–11415, [10.1021/acsanm.3c01446](#)
8. **Shipunova VO**, Komedchikova EN, Kotelnikova PA, Nikitin MP, Deyev SM (2023). Targeted Two-Step Delivery of Oncotheranostic Nano-PLGA for HER2-Positive Tumor Imaging and Therapy In Vivo: Improved Effectiveness Compared to One-Step Strategy. *Pharmaceutics* 15 (3), 833, [10.3390/pharmaceutics15030833](#)
9. Petrunina NA, Shtork AS, Lukina MM, Tsvetkov VB, Khodarovich YM, Feofanov AV, Moysenovich AM, Maksimov EG, **Shipunova VO**, Zatsepin TS, Bogomazova AN, Shender VO, Aralov AV, Lagarkova MA, Varizhuk AM (2023). Ratiometric i-Motif-Based Sensor for Precise Long-Term Monitoring of pH Micro Alterations in the Nucleoplasm and Interchromatin Granules. *ACS Sens* 8 (2), 619–629, [10.1021/acssensors.2c01813](#)
10. Kalinin RS, **Shipunova VO**, Rubtsov YP, Ukrainskay VM, Schulga A, Konovalova EV, Volkov DV, Yaroshevich IA, Moysenovich AM, Belogurov AA, Telegin GB, Chernov AS, Maschan MA, Terekhov SS, Knorre VD, Khurs E, Gnuchev NV, Gabibov AG, Deyev SM (2023). Barnase-barstar Specific Interaction Regulates Car-T Cells Cytotoxic Activity toward Malignancy. *Dokl Biochem Biophys* 508 (1), 17–20, [10.1134/S1607672922700041](#)
11. Drozdov AS, Komarova KS, Mochalova EN, Komedchikova EN, **Shipunova VO**, Nikitin MP (2023). Fluorescent Magnetic Nanoparticles for Bioimaging through Biomimetic Surface Modification. *Int J Mol Sci* 24 (1), 134, [10.3390/ijms24010134](#)
12. Kovalenko VL, Komedchikova EN, Sogomonyan AS, Tereshina ED, Kolesnikova OA, Mirkasymov AB, Iureva AM, Zvyagin AV, Nikitin PI, **Shipunova VO** (2023). Lectin-Modified Magnetic Nano-PLGA for Photodynamic Therapy In Vivo. *Pharmaceutics* 15 (1), 92, [10.3390/pharmaceutics15010092](#)
13. Komedchikova EN, Kolesnikova OA, Tereshina ED, Kotelnikova PA, Sogomonyan AS, Stepanov AV, Deyev SM, Nikitin MP, **Shipunova VO** (2023). Two-Step Targeted Drug Delivery via Proteinaceous Barnase-Barstar Interface and Doxorubicin-Loaded Nano-PLGA Outperforms One-Step Strategy for Targeted Delivery to HER2-Overexpressing Cells. *Pharmaceutics* 15 (1), 52, [10.3390/pharmaceutics15010052](#)

14. Kotelnikova PA, Iureva AM, Nikitin MP, Zvyagin AV, Deyev SM, **Shipunova VO** (2022). Peroxidase-like activity of silver nanowires and its application for colorimetric detection of the antibiotic chloramphenicol. *Talanta Open* 6, 100164, [10.1016/j.talo.2022.100164](https://doi.org/10.1016/j.talo.2022.100164)
15. Stepanov AV, Kalinin RS, **Shipunova VO**, Zhang D, Xie J, Rubtsov YP, Ukrainskaya VM, Schulga A, Konovalova EV, Volkov DV, Yaroshevich IA, Moysenovich AM, Belogurov AA, Zhang H, Telegin GB, Chernov AS, Maschan MA, Terekhov SS, Wu P, Deyev SM, Lerner RA, Gabibov AG, Altman S (2022). Switchable targeting of solid tumors by BsCAR T cells. *Proc Natl Acad Sci U S A* 119 (46), e2210562119, [10.1073/pnas.2210562119](https://doi.org/10.1073/pnas.2210562119)
16. Novoselova M, Chernyshev VS, Schulga A, Konovalova EV, Chuprov-Netochin RN, Abakumova TO, German S, **Shipunova VO**, Mokrousov MD, Prikhozhenko E, Bratashov DN, Nozdriukhin DV, Bogorodskiy A, Grishin O, Kosolobov SS, Khlebtsov BN, Inozemtseva O, Zatsepin TS, Deyev SM, Gorin DA (2022). Effect of Surface Modification of Multifunctional Nanocomposite Drug Delivery Carriers with DARPIn on Their Biodistribution In Vitro and In Vivo. *ACS Applied Bio Materials* 5 (6), 2976–2989, [10.1021/acsabm.2c00289](https://doi.org/10.1021/acsabm.2c00289)
17. **Shipunova VO**, Belova MM, Kotelnikova PA, Shilova ON, Mirkasymov AB, Danilova NV, Komedchikova EN, Popovtzer R, Deyev SM, Nikitin MP (2022). Photothermal Therapy with HER2-Targeted Silver Nanoparticles Leading to Cancer Remission. *Pharmaceutics* 14 (5), , [10.3390/pharmaceutics14051013](https://doi.org/10.3390/pharmaceutics14051013)
18. Sogomonyan AS, **Shipunova VO**, Soloviev VD, Larionov VI, Kotelnikova PA, Deyev SM (2022). 3D Models of Cellular Spheroids As a Universal Tool for Studying the Cytotoxic Properties of Anticancer Compounds In Vitro. *Acta Naturae* 14 (1), 92–100, [10.32607/actanaturae.11603](https://doi.org/10.32607/actanaturae.11603)
19. **Shipunova VO**, Deyev SM (2022). Artificial Scaffold Polypeptides As an Efficient Tool for the Targeted Delivery of Nanostructures In Vitro and In Vivo. *Acta Naturae* 14 (1), 54–72, [10.32607/actanaturae.11545](https://doi.org/10.32607/actanaturae.11545)
20. Shramova EI, Chumakov SP, **Shipunova VO**, Ryabova AV, Telegin GB, Kabashin AV, Deyev SM, Proshkina GM (2022). Genetically encoded BRET-activated photodynamic therapy for the treatment of deep-seated tumors. *Light Sci Appl* 11 (1), 38, [10.1038/s41377-022-00729-4](https://doi.org/10.1038/s41377-022-00729-4)
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22. **(конференция)** Kotelnikova PA, **Shipunova VO**, Deyev SM, Zvyagin AV (2022). Targeted silver nanoparticles for cancer phototherapy and diagnostics. , , [10.1109/ICLO54117.2022.9840281](https://doi.org/10.1109/ICLO54117.2022.9840281)
23. **Shipunova VO**, Kovalenko VL, Kotelnikova PA, Sogomonyan AS, Shilova ON, Komedchikova EN, Zvyagin AV, Nikitin MP, Deyev SM (2022). Targeting cancer cell tight junctions enhances plga-based photothermal sensitizers' performance in vitro and in vivo. *Pharmaceutics* 14 (1), , [10.3390/pharmaceutics14010043](https://doi.org/10.3390/pharmaceutics14010043)
24. **Shipunova VO**, Nikitin MP, Belova MM, Deyev SM (2021). Label-free methods of multiparametric surface plasmon resonance and MPQ-cytometry for quantitative real-time measurements of targeted magnetic nanoparticles complexation with living cancer cells. *Mater Today Commun* 29, , [10.1016/j.mtcomm.2021.102978](https://doi.org/10.1016/j.mtcomm.2021.102978)
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26. Yashchenok AM, Gusliakova OI, Konovalova EV, Novoselova MV, **Shipunova VO**, Abakumova TO, Efimova OI, Kholodenko R, Schulga AA, Zatsepin TS, Gorin DA, Deyev SM (2021). Barnase encapsulation into submicron porous CaCO<sub>3</sub> particles: studies of loading and enzyme activity. *J Mater Chem B Mater Biol Med* 9 (42), 8823–8831, [10.1039/d1tb01315g](https://doi.org/10.1039/d1tb01315g)
27. Ukrainskaya V, Rubtsov Y, Pershin D, Podoplelova N, Terekhov S, Yaroshevich I, Sokolova A, Bagrov D, Kulakovskaya E, **Shipunova V**, Deyev S, Ziganshin R, Chernov A, Telegin G, Maksimov E, Markov O, Oshchepkova A, Zenkova M, Xie J, Zhang H, Gabibov A, Maschan M, Stepanov A, Lerner R (2021). Antigen-Specific Stimulation and Expansion of CAR-T Cells Using Membrane Vesicles as Target Cell Surrogates. *Small* 17 (45), e2102643, [10.1002/smll.202102643](https://doi.org/10.1002/smll.202102643)
28. **Shipunova VO**, Sogomonyan AS, Zelepukin IV, Nikitin MP, Deyev SM (2021). PLGA Nanoparticles Decorated with Anti-HER2 Affibody for Targeted Delivery and Photoinduced Cell Death. *Molecules* 26 (13), , [10.3390/molecules26133955](https://doi.org/10.3390/molecules26133955)

29. **Shipunova VO**, Kolesnikova OA, Kotelnikova PA, Soloviev VD, Popov AA, Proshkina GM, Nikitin MP, Deyev SM (2021). Comparative Evaluation of Engineered Polypeptide Scaffolds in HER2-Targeting Magnetic Nanocarrier Delivery. *ACS Omega* 6 (24), 16000–16008, [10.1021/acsomega.1c01811](https://doi.org/10.1021/acsomega.1c01811)
30. Zelepukin IV, Popov AA, **Shipunova VO**, Tikhonowski GV, Mirkasymov AB, Popova-Kuznetsova EA, Klimentov SM, Kabashin AV, Deyev SM (2021). Laser-synthesized TiN nanoparticles for biomedical applications: Evaluation of safety, biodistribution and pharmacokinetics. *Mater Sci Eng C Mater Biol Appl* 120, 111717, [10.1016/j.msec.2020.111717](https://doi.org/10.1016/j.msec.2020.111717)
31. **Шипунова ВО**, Шрамова ЕИ, Шульга АА, Шилова МВ, Деев СМ, Прошкина ГМ (2020). Доставка барназы к клеткам в составе липосом, функционализированных HER2-специфичным модулем DARPIn. *Bioorg Khim* 46 (6), 701–707, [10.31857/S0132342320060305](https://doi.org/10.31857/S0132342320060305)
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33. Shramova E, Proshkina G, **Shipunova V**, Ryabova A, Kamysinsky R, Konevega A, Schulga A, Konovalova E, Telegin G, Deyev S (2020). Dual targeting of cancer cells with darpin-based toxins for overcoming tumor escape. *Cancers (Basel)* 12 (10), 1–15, [10.3390/cancers12103014](https://doi.org/10.3390/cancers12103014)
34. **Shipunova VO**, Komedchikova EN, Kotelnikova PA, Zelepukin IV, Schulga AA, Proshkina GM, Shramova EI, Kutscher HL, Telegin GB, Kabashin AV, Prasad PN, Deyev SM (2020). Dual Regioselective Targeting the Same Receptor in Nanoparticle-Mediated Combination Immuno/Chemotherapy for Enhanced Image-Guided Cancer Treatment. *ACS Nano* 14 (10), 12781–12795, [10.1021/acsnano.0c03421](https://doi.org/10.1021/acsnano.0c03421)
35. Nikitin MP, Zelepukin IV, **Shipunova VO**, Sokolov IL, Deyev SM, Nikitin PI (2020). Enhancement of the blood-circulation time and performance of nanomedicines via the forced clearance of erythrocytes. *Nat Biomed Eng* 4 (7), 717–731, [10.1038/s41551-020-0581-2](https://doi.org/10.1038/s41551-020-0581-2)
36. Mitouchkina T, Mishin AS, Somermeyer LG, Markina NM, Chepurnyh TV, Guglya EB, Karataeva TA, Palkina KA, Shakhova ES, Fakhranurova LI, Chekova SV, Tsarkova AS, Golubev YV, Negrebetsky VV, Dolgushin SA, Shalaev PV, Shlykov D, Melnik OA, **Shipunova VO**, Deyev SM, Bubyrev AI, Pushin AS, Choob VV, Dolgov SV, Kondrashov FA, Yampolsky IV, Sarkisyan KS (2020). Author Correction: Plants with genetically encoded autoluminescence. *Nat Biotechnol* 38 (8), 1001, [10.1038/s41587-020-0578-0](https://doi.org/10.1038/s41587-020-0578-0)
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39. **(конференция)** Kabashin AV, Kravets VG, Wu F, Imaizumi S, **Shipunova VO**, Deyev SM, Grigorenko AN (2020). Fourier nanotransducers for phase-sensitive plasmonic biosensing. *Proc SPIE Int Soc Opt Eng* 11269, , [10.1117/12.2551438](https://doi.org/10.1117/12.2551438)
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42. Zelepukin IV, Yaremenko AV, **Shipunova VO**, Babenyshev AV, Balalaeva IV, Nikitin PI, Deyev SM, Nikitin MP (2019). Nanoparticle-based drug delivery via RBC-hitchhiking for the inhibition of lung metastases growth. *Nanoscale* 11 (4), 1636–1646, [10.1039/c8nr07730d](https://doi.org/10.1039/c8nr07730d)
43. **Shipunova VO**, Kotelnikova PA, Aghayeva UF, Stremovskiy OA, Novikov IA, Schulga AA, Nikitin MP, Deyev SM (2019). Self-assembling nanoparticles biofunctionalized with magnetite-binding protein for the targeted delivery to HER2/neu overexpressing cancer cells. *J Magn Magn Mater* 469, 450–455,

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46. (конференция) Миронова КЕ, Апарин ИО, **Шипунова ВО**, Генералова АН, Деев СМ (2018). UV-emitting upconversion nanoparticles for the treatment of estrogen-dependent tumors. *FEBS Open Bio* 8, 274–274.
47. (конференция) Zelepukin IV, **Shipunova VO**, Mirkasymov AB, Nikitin PI, Nikitin MP, Deyev SM (2018). Synthesis of luminescent magnetic nanoparticles with controllable surface properties. , 576, [10.1109/LO.2018.8435620](https://doi.org/10.1109/LO.2018.8435620)
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50. Zelepukin IV, **Shipunova VO**, Mirkasymov AB, Nikitin PI, Nikitin MP, Deyev SM (2018). Synthesis and characterization of hybrid core-shell Fe<sub>3</sub>O<sub>4</sub>/SiO<sub>2</sub>nanoparticles for biomedical applications. *Acta Naturae* 9 (4), 58–65, [10.32607/2075-8251-2017-9-4-58-65](https://doi.org/10.32607/2075-8251-2017-9-4-58-65)
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52. **Shipunova VO**, Nikitin MP, Nikitin PI, Deyev SM (2016). MPQ-cytometry: A magnetism-based method for quantification of nanoparticle-cell interactions. *Nanoscale* 8 (25), 12764–12772, [10.1039/c6nr03507h](https://doi.org/10.1039/c6nr03507h)
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