

## Резюме: Семьянов Алексей Васильевич



### Адрес

Федеральное государственное  
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Институт биоорганической химии им.  
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### Контакты

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### Образование

1996–1998	Пушино	ПущГУ	нейробиолог
1991–1996	Нижний Новгород	ННГУ	биофизик

### Работа в ИБХ

	Заведующий отделом
2018–наст.вр.	Главный научный сотрудник
2021–наст.вр.	Заместитель директора по науке
2018–2022	Заведующий лабораторией

### Членство в советах и комиссиях ИБХ

Ученый совет
Аттестационная комиссия

### Членство в сообществах

С 2019 – действительный член Европейской Академии;  
С 2017 – член ученого совета Института биоорганической химии;  
С 2016 – член-корреспондент Российской Академии Наук;  
С 2016 – член диссертационного совета по физиологии/ биофизике (Д 212.166.21)  
2014 – 2018 – член ученого совета Нижегородского государственного университета.

#### Участие в научных обществах

С 2017 – действительный член Физиологического Общества Великобритании;  
С 2006 – член Общества Нейронаук, Япония;  
С 2003 – член Общества изучения мозга, Финляндия;  
С 2002 – 2017 – член Физиологического общества Великобритании;  
1999 – 2002 – аффилированный член Физиологического общества Великобритании;  
С 1999 – член Общества Нейронаук, США (ID# 100006439).

### Степени и звания

2016	Член-корреспондент РАН
	Профессор
2002	Доктор наук (Биологические науки)

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## Гранты и проекты

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2023– наст.вр.	<a href="#">Эффект морфологической перестройки астроцитов на функции мозга</a>
2021– 2022	<a href="#">ГФЕН: Влияние диеты с высоким содержанием жиров и сахаров на нейрон-глиальные взаимодействия в мозге</a>
2020– 2022	<a href="#">Влияние сокращения потребляемых калорий на нейрон-глиальные взаимодействия при старении и в модели болезни Альцгеймера</a>
2019– 2019	<a href="#">Международная научная конференция «Baikal Neuroscience Meeting 2019»</a>
2017– 2021	<a href="#">Физиологические изменения в астроцитах при синаптической пластичности и патологических процессах в мозге</a>

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## Публикации

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2. Kostyuk AI, Rapota DD, Morozova KI, Fedotova AA, Jappy D, **Semyanov AV**, Belousov VV, Brazhe NA, Bilan DS (2024). Modern optical approaches in redox biology: Genetically encoded sensors and Raman spectroscopy. *J Free Radic Biol Med* 217, 68–115, [10.1016/j.freeradbiomed.2024.03.010](#)
3. Christie IN, Theparambil SM, Braga A, Doronin M, Hosford PS, Brazhe A, Mascarenhas A, Nizari S, Hadjihambi A, Wells JA, Hobbs A, **Semyanov A**, Abramov AY, Angelova PR, Gourine AV (2023). Astrocytes produce nitric oxide via nitrite reduction in mitochondria to regulate cerebral blood flow during brain hypoxia. *Cell Rep* 42 (12), 113514, [10.1016/j.celrep.2023.113514](#)
4. Popov A, Brazhe N, Morozova K, Yashin K, Bychkov M, Nosova O, Sutyagina O, Brazhe A, Parshina E, Li L, Medyanik I, Korzhhevskii DE, Shenkarev Z, Lyukmanova E, Verkhatsky A, **Semyanov A** (2023). Mitochondrial malfunction and atrophy of astrocytes in the aged human cerebral cortex. *Nat Commun* 14 (14), 8380, [10.1038/s41467-023-44192-0](#)
5. Ivanova AD, Kotova DA, Khramova YV, Morozova KI, Serebryanaya DV, Bochkova ZV, Sergeeva AD, Panova AS, Katrukha IA, Moshchenko AA, Oleinikov VA, **Semyanov AV**, Belousov VV, Katrukha AG, Brazhe N, Bilan DS (2023). Redox differences between rat neonatal and adult cardiomyocytes under hypoxia. *J Free Radic Biol Med* 211, 145–157, [10.1016/j.freeradbiomed.2023.11.034](#)
6. Kotova DA, Ivanova AD, Pochechuev MS, Kelmanson IV, Khramova YV, Tiaglik A, Sudoplatov MA, Trifonova AP, Fedotova A, Morozova K, Katrukha VA, Sergeeva AD, Raevskii RI, Pestriakova MP, Solotenkov MA, Stepanov EA, Tsopina AS, Moshchenko AA, Shestopalova M, Zalygin A, Fedotov IV, Fedotov AB, Oleinikov V, Belousov VV, **Semyanov A**, Brazhe N, Zheltikov AM, Bilan DS (2023). Hyperglycemia exacerbates ischemic stroke not through increased generation of hydrogen peroxide. *J Free Radic Biol Med* 208, 153–164, [10.1016/j.freeradbiomed.2023.08.004](#)
7. Barshutina M, Doroshina N, Baizhumanov A, Nikelsparg E, Fedotova A, Popov A, **Semyanov A**, Yakubovsky D, Tselikov G, Luneva O, Kirilyuk I, Maksimov G, Volkov V, Arsenin A, Brazhe N, Novikov S (2023). SERS substrates based on rose petal replicas for the oxidative stress detection. *Appl Surf Sci* 626, , [10.1016/j.apsusc.2023.157281](#)
8. Verkhatsky A, **Semyanov A** (2023). Decline of astrocyte Ca<sup>2+</sup> signalling in Alzheimer's disease: STIM1 to the rescue! *Cell Calcium* 113, 102756, [10.1016/j.ceca.2023.102756](#)
9. Lin SS, Zhou B, Chen BJ, Jiang RT, Li B, Illes P, **Semyanov A**, Tang Y, Verkhatsky A (2023). Electroacupuncture prevents astrocyte atrophy to alleviate depression. *Cell Death Dis* 14 (5), 343, [10.1038/s41419-023-05839-4](#)

10. Fedotova A, Brazhe A, Doronin M, Toptunov D, Pryazhnikov E, Khiroug L, Verkhatsky A, **Semyanov A** (2023). Dissociation Between Neuronal and Astrocytic Calcium Activity in Response to Locomotion in Mice. *Function* 4 (4), zqad019, [10.1093/function/zqad019](https://doi.org/10.1093/function/zqad019)
11. (книга) Verkhatsky A, **Semyanov A** (2023). Astrocytes in Ageing. *Subcell Biochem* 103, 253–277, [10.1007/978-3-031-26576-1\\_11](https://doi.org/10.1007/978-3-031-26576-1_11)
12. Xiong XY, **Semyanov A**, Tang Y (2022). Restored oligodendrogenesis by fibroblast growth factor 17: molecular mechanism for rejuvenating ageing-related memory deficit. *Signal Transduct Target Ther* 7 (1), 237, [10.1038/s41392-022-01092-x](https://doi.org/10.1038/s41392-022-01092-x)
13. Postnikova TY, Trofimova AM, Zakharova MV, Nosova OI, Brazhe AR, Korzhevskii DE, **Semyanov AV**, Zaitsev AV (2022). Delayed Impairment of Hippocampal Synaptic Plasticity after Pentylentetrazole-Induced Seizures in Young Rats. *Int J Mol Sci* 23 (21), , [10.3390/ijms232113461](https://doi.org/10.3390/ijms232113461)
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15. Verkhatsky A, **Semyanov A** (2022). The great astroglial metabolic revolution: Mitochondria fuel astrocyte homeostatic support and neuroprotection. *Cell Calcium* 104, 102583, [10.1016/j.ceca.2022.102583](https://doi.org/10.1016/j.ceca.2022.102583)
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20. Fedotova AA, Tiaglik AB, **Semyanov AV** (2021). Effect of Diet as a Factor of Exposome on Brain Function. *J Evol Biochem Physiol* (57), 577–604, [10.1134/S0022093021030108](https://doi.org/10.1134/S0022093021030108)
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  35. Ren WJ, Ulrich H, **Semyanov A**, Illes P, Tang Y (2020). TASK-3: New Target for Pain-Relief. *Neurosci Bull* 36 (8), 951–954, [10.1007/s12264-020-00516-4](https://doi.org/10.1007/s12264-020-00516-4)
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  38. Popov A, Denisov P, Bychkov M, Brazhe A, Lyukmanova E, Shenkarev Z, Lazareva N, Verkhratsky A, **Semyanov A** (2020). Caloric restriction triggers morphofunctional remodeling of astrocytes and enhances synaptic plasticity in the mouse hippocampus. *Cell Death Dis* 11 (3), 208, [10.1038/s41419-020-2406-3](https://doi.org/10.1038/s41419-020-2406-3)
  39. Marina N, Christie IN, Korsak A, Doronin M, Brazhe A, Hosford PS, Wells JA, Sheikhabahaei S, Humoud I, Paton JFR, Lythgoe MF, **Semyanov A**, Kasparov S, Gourine AV (2020). Astrocytes monitor cerebral perfusion and control systemic circulation to maintain brain blood flow. *Nat Commun* 11 (1), 131, [10.1038/s41467-019-13956-y](https://doi.org/10.1038/s41467-019-13956-y)
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49. (конференция) Kustikova VD, Krivonosov MI, Denisov PA, Zaikin AA, Ivanchenko MV, Meyerov IB, **Semyanov AV** (2018). Time-lapse imaging for calcium activity analysis in astrocytes with automatic video processing. *Opera Med Physiol* 4, 83.
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