

Резюме: Семьянов Алексей Васильевич



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/1162>

Образование

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

Работа в ИБХ

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

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)

Гранты и проекты

2021– наст.вр.	ГФЕН: Влияние диеты с высоким содержанием жиров и сахаров на нейрон-глиальные взаимодействия в мозге
2020– наст.вр.	Влияние сокращения потребляемых калорий на нейрон-глиальные взаимодействия при старении и в модели болезни Альцгеймера
2019– 2019	Международная научная конференция «Baikal Neuroscience Meeting 2019»
2017– наст.вр.	Физиологические изменения в астроцитах при синаптической пластичности и патологических процессах в мозге

Публикации

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- Semyanov A**, Verkh ratsky A (2021). Astrocytic processes: from tripartite synapses to the active milieu. *Trends Neurosci* , , [10.1016/j.tins.2021.07.006](#)
- Wang T, Ulrich H, **Semyanov A**, Illes P, Tang Y (2021). Optical control of purinergic signaling. *Purinergic Signal* , , [10.1007/s11302-021-09799-2](#)
- Denisov P, Popov A, Brazhe A, Lazareva N, Verkh ratsky A, **Semyanov A** (2021). Caloric restriction modifies spatiotemporal calcium dynamics in mouse hippocampal astrocytes. *BIOCHIM BIOPHYS ACTA* 1868 (7), 119034, [10.1016/j.bbamcr.2021.119034](#)
- Dembitskaya Y, Gavrilov N, Kraev I, Doronin M, Tang Y, Li L, **Semyanov A** (2021). Attenuation of the extracellular matrix increases the number of synapses but suppresses synaptic plasticity through upregulation of SK channels. *Cell Calcium* 96, 102406, [10.1016/j.ceca.2021.102406](#)
- Huang Z, Xie N, Illes P, Di Virgilio F, Ulrich H, **Semyanov A**, Verkh ratsky A, Sperlagh B, Yu SG, Huang C, Tang Y (2021). From purines to purinergic signalling: molecular functions and human diseases. *Signal Transduct Target Ther* 6 (1), 162, [10.1038/s41392-021-00553-z](#)
- Cao X, Yin HY, Ulrich H, **Semyanov A**, Tang Y (2021). A Neural Circuit for Gut-Induced Sugar Preference. *Neurosci Bull* 37 (5), 754–756, [10.1007/s12264-021-00692-x](#)
- (книга) Lim D, **Semyanov A**, Genazzani A, Verkh ratsky A (2021). Calcium signaling in neuroglia. *Int Rev Cell Mol Biol* 362, 1–53, [10.1016/bs.ircmb.2021.01.003](#)
- Verkh ratsky A, Illes P, Tang Y, **Semyanov A** (2021). The anti-inflammatory astrocyte revealed: the role of the microbiome in shaping brain defences. *Signal Transduct Target Ther* 6 (1), 150, [10.1038/s41392-021-00577-5](#)
- Popov A, Brazhe A, Denisov P, Sutyagina O, Li L, Lazareva N, Verkh ratsky A, **Semyanov A** (2021). Astrocyte dystrophy in ageing brain parallels impaired synaptic plasticity. *Aging Cell* 20 (3), e13334, [10.1111/ace1.13334](#)
- Escartin C, Galea E, Lakatos A, OCallaghan JP, Petzold GC, Serrano-Pozo A, Steinhäuser C, Volterra A, Carmignoto G, Agarwal A, Allen NJ, Araque A, Barbeito L, Barzilai A, Bergles DE, Bonvento G, Butt AM, Chen WT, Cohen-Salmon M, Cunningham C, Deneen B, De Strooper B, Díaz-Castro B, Farina C, Freeman M, Gallo V, Goldman JE, Goldman SA, Götz M, Gutiérrez A, Haydon PG, Heiland DH, Hol EM, Holt MG, Iino M, Kastanenka KV, Kettenmann H, Khakh BS, Koizumi S, Lee CJ, Liddel SA, MacVicar BA, Magistretti P, Messing A, Mishra A, Molofsky AV, Murai KK, Norris CM, Okada S, Oliet SHR, Oliveira JF, Panatier A, Parpura V, Pekna M, Pekny M, Pellerin L, Perea G, Pérez-Nievas BG, Pfrieder FW, Poskanzer KE, Quintana FJ, Ransohoff RM, Riquelme-Perez M, Robel S, Rose CR, Rothstein JD, Rouach N, Rowitch DH, **Semyanov A**, Sirko S, Sontheimer H, Swanson RA, Vitorica J, Wanner IB, Wood LB, Wu J, Zheng B, Zimmer ER, Zorec R, Sofroniew MV, Verkh ratsky A (2021). Reactive astrocyte nomenclature, definitions, and future directions. *Nat Neurosci* 24 (3), 312–325, [10.1038/s41593-020-00783-4](#)
- McCauley JP, Petroccione MA, DBrant LY, Todd GC, Affinnih N, Wisnoski JJ, Zahid S, Shree S, Sousa AA,

- De Guzman RM, Migliore R, Brazhe A, Leapman RD, Khmaladze A, **Semyanov A**, Zuloaga DG, Migliore M, Scimemi A (2020). Circadian Modulation of Neurons and Astrocytes Controls Synaptic Plasticity in Hippocampal Area CA1. *Cell Rep* 33 (2), 108255, [10.1016/J.CELREP.2020.108255](https://doi.org/10.1016/J.CELREP.2020.108255)
13. Verkhatsky A, Augusto-Oliveira M, Pivoriūnas A, Popov A, Brazhe A, **Semyanov A** (2020). Astroglial asthenia and loss of function, rather than reactivity, contribute to the ageing of the brain. *Pflugers Arch Gesamte Physiol Menschen Tiere* 473 (5), 753–774, [10.1007/s00424-020-02465-3](https://doi.org/10.1007/s00424-020-02465-3)
 14. **Semyanov A**, Henneberger C, Agarwal A (2020). Making sense of astrocytic calcium signals — from acquisition to interpretation. *Nat Rev Neurosci* 21 (10), 551–564, [10.1038/s41583-020-0361-8](https://doi.org/10.1038/s41583-020-0361-8)
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 17. Dembitskaya Y, Wu YW, **Semyanov A** (2020). Tonic GABAA conductance favors spike-timing-dependent over theta-burst-induced long-term potentiation in the hippocampus. *J Neurosci* 40 (22), 4266–4276, [10.1523/JNEUROSCI.2118-19.2020](https://doi.org/10.1523/JNEUROSCI.2118-19.2020)
 18. Popov A, Denisov P, Bychkov M, Brazhe A, Lyukmanova E, Shenkarev Z, Lazareva N, Verkhatsky 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)
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 21. Браже АР, Доронин МС, Попов АВ, Денисов ПА, **Семьянов АВ** (2019). Patterns of Calcium Dynamics in Brain Astrocytic Networks. *Russ Fiziol Zh Im I M Sechenova* 105 (11), 1436–1451, [10.1134/S0869813919110037](https://doi.org/10.1134/S0869813919110037)
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 23. Verkhatsky A, **Semyanov A** (2019). Astroglial Ca²⁺ signals trigger pathological behaviour in optogenetic mouse. *Cell Calcium* 82, 102062, [10.1016/j.ceca.2019.102062](https://doi.org/10.1016/j.ceca.2019.102062)
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