

Резюме: Зарайский Андрей Георгиевич

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/27>

Образование

2011	Россия		Диплом профессора по специальности "молекулярная биология"
2000	Россия, Москва	Московский государственный университет имени М.В. Ломоносова (МГУ), биологический факультет	Присуждена учёная степень доктора биологических наук
1990	Россия, Москва	Московский государственный университет имени М.В. Ломоносова (МГУ), биологический факультет	Присуждена учёная степень кандидата биологических наук

Работа в ИБХ

2018–наст.вр.	Главный научный сотрудник
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Членство в советах и комиссиях ИБХ

Диссертационный совет
Ученый совет

Награды

2006	Премия РАН имени А.О. Ковалевского	За работу «Гомеобоксные гены класса ANF регуляторы раннего развития головного мозга позвоночных»
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Научные интересы

Основные работы А.Г. Зарайского посвящены структурно-функциональному изучению генов и белков, регулирующих эмбриональное развитие мозга.

Членство в сообществах

А. Г. Зарайский является членом Ученого и Диссертационного советов ИБХ РАН, редколлегий журналов «Молекулярная биология» и «Онтогенез».

Степени и звания

Профессор
Доктор наук (Биологические науки, 03.00.03 — Молекулярная биология)

Гранты и проекты

2014–2018	Изменение скорости диффузии морфогенов как механизм регуляции морфогенетического поля.
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2023– [Геномные механизмы эмбрионального развития и регенерации как фундаментальная основа](#)
наст.вр. [для разработки медицинских технологий](#)

2019– [Поиск и изучение функций генов эмбрионального скейлинга](#)
2021

2018– [Изучение роли нового трансмембранного белка-регулятора регенерации, исчезнувшего в](#)
2021 [эволюции позвоночных, с-Answer, с применением системы генного нокаута CRISPR/Cas9](#)

Публикации

1. Ivanova ED, Parshina EA, **Zaraisky AG**, Martynova NY (2024). Isoforms of the Cytoskeletal LIM-Domain Protein Zyxin in the Early Embryogenesis of *Xenopus laevis*. *Russ. J. Bioorganic Chem.* 50 (3), 723–732, [10.1134/S1068162024030026](#)
2. Parshina EA, **Zaraisky AG**, Martynova NY (2024). Ribonucleoprotein Complex Factor Ybx1 Stabilizes the Maternal mRNA of the *ssx2ip* Gene Encoding the Centrosome Maturation Protein in *Xenopus laevis* Embryogenesis. *Russ. J. Bioorganic Chem.* 50 (3), 715–722, [10.1134/S1068162024030051](#)
3. **Zaraisky AG**, Araslanova KR, Shitikov AD, Tereshina MB (2024). Loss of the ability to regenerate body appendages in vertebrates: from side effects of evolutionary innovations to gene loss. *Biol Rev Camb Philos Soc* , , [10.1111/brv.13102](#)
4. Bayramov AV, Yastrebov SA, Mednikov DN, Araslanova KR, Ermakova GV, **Zaraisky AG** (2024). Paired fins in vertebrate evolution and ontogeny. *Evol Dev* , e12478, [10.1111/ede.12478](#)
5. Ermakova GV, Kucheryavyy AV, **Zaraisky AG**, Bayramov AV (2024). The Molecular Mechanism of Body Axis Induction in Lampreys May Differ from That in Amphibians. *Int J Mol Sci* 25 (4), , [10.3390/ijms25042412](#)
6. Ermakova GV, Meyntser IV, **Zaraisky AG**, Bayramov AV (2024). Loss of *noggin1*, a classic embryonic inducer gene, in elasmobranchs. *Sci Rep* 14 (1), 3805, [10.1038/s41598-024-54435-9](#)
7. Eroshkin FM, Fefelova EA, Bredov DV, Orlov EE, Kolyupanova NM, Mazur AM, Sokolov AS, Zhigalova NA, Prokhortchouk EB, Nesterenko AM, **Zaraisky AG** (2024). Mechanical Tensions Regulate Gene Expression in the *Xenopus laevis* Axial Tissues. *Int J Mol Sci* 25 (2), , [10.3390/ijms25020870](#)
8. Ermakova GV, Kucheryavyy AV, Mugue NS, Mischenko AV, **Zaraisky AG**, Bayramov AV (2024). Three *foxg1* paralogues in lampreys and gnathostomes—brothers or cousins? *Front Cell Dev Biol* 11, 1321317, [10.3389/fcell.2023.1321317](#)
9. Lyubetsky VA, Rubanov LI, Tereshina MB, Ivanova AS, Araslanova KR, Uroshlev LA, Goremykina GI, Yang JR, Kanovei VG, Zverkov OA, Shitikov AD, Korotkova DD, **Zaraisky AG** (2023). Wide-scale identification of novel/eliminated genes responsible for evolutionary transformations. *Biol Direct* 18 (1), 45, [10.1186/s13062-023-00405-6](#)
10. Bayramov AV, Ermakova GV, Kucheryavyy AV, Meintser IV, **Zaraisky AG** (2022). Lamprey as Laboratory Model for Study of Molecular Bases of Ontogenesis and Evolutionary History of Vertebrata. *J Ichthyol* 62 (7), 1213–1229, [10.1134/S0032945222060029](#)
11. Korotkova DD, Gantsova EA, Goryashchenko AS, Eroshkin FM, Serova OV, Sokolov AS, Sharko F, Zhenilo SV, Martynova NY, Petrenko AG, **Zaraisky AG**, Deyev IE (2022). Insulin Receptor-Related Receptor Regulates the Rate of Early Development in *Xenopus laevis*. *Int J Mol Sci* 23 (16), , [10.3390/ijms23169250](#)
12. Parshina EA, Orlov EE, **Zaraisky AG**, Martynova NY (2022). The Cytoskeletal Protein Zyxin Inhibits Retinoic Acid Signaling by Destabilizing the Maternal mRNA of the RXR γ Nuclear Receptor. *Int J Mol Sci* 23 (10), , [10.3390/ijms23105627](#)
13. Orlov EE, Nesterenko AM, Korotkova DD, Parshina EA, Martynova NY, **Zaraisky AG** (2022). Targeted search for scaling genes reveals matrix metalloproteinase 3 as a scaler of the dorsal-ventral pattern in *Xenopus laevis* embryos. *Dev Cell* 57 (1), 95–111.e12, [10.1016/j.devcel.2021.11.021](#)
14. Filenko PA, Chechenina AA, **Zaraisky AG**, Eroshkin FM (2022). The Effect of Myosin Inhibitors on the Expression of Mechano-Dependent Genes in the Early Development of the Clawed Frog. *Russ. J. Bioorganic Chem.* 48 (4), 854–857, [10.1134/S1068162022040094](#)
15. Ermakova GV, Kucheryavyy AV, Eroshkin FM, Martynova NY, **Zaraisky AG**, Bayramov AV (2021). Study of the Early Telencephalon Genes of Cyclostomes as a Way to Restoring the Evolutionary History of This

- Unique Part of the Central Nervous System of Vertebrates. *PALEONTOLOGICAL JOURNAL* 55 (7), 752–765, [10.1134/S0031030121070030](https://doi.org/10.1134/S0031030121070030)
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 17. Ivanova AS, Tereshina MB, Araslanova KR, Martynova NY, **Zaraisky AG** (2021). The Secreted Protein Disulfide Isomerase Ag1 Lost by Ancestors of Poorly Regenerating Vertebrates Is Required for *Xenopus laevis* Tail Regeneration. *Front Cell Dev Biol* 9, 738940, [10.3389/fcell.2021.738940](https://doi.org/10.3389/fcell.2021.738940)
 18. Bayramov AV, Ermakova GV, Kucheryavyy AV, **Zaraisky AG** (2021). Genome Duplications as the Basis of Vertebrates' Evolutionary Success. *RUSS J DEV BIOL* 52, 141–163, [10.1134/S1062360421030024](https://doi.org/10.1134/S1062360421030024)
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 21. Ермакова ГВ, Кучерявый АВ, **Зарайский АГ**, Байрамов АВ (2021). СРАВНИТЕЛЬНЫЙ АНАЛИЗ ПАТТЕРНОВ ЭКСПРЕССИИ ГЕНОВ СЕМЕЙСТВА NOGGIN НА РАННИХ СТАДИЯХ РАЗВИТИЯ ГОЛОВНЫХ СТРУКТУР ЕВРОПЕЙСКОЙ РЕЧНОЙ МИНОГИ LAMPETRA FLUVIATILIS. *Ontogenez* 52 (1), 46–55, [10.31857/S0475145021010031](https://doi.org/10.31857/S0475145021010031)
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 23. Ermakova GV, Kucheryavyy AV, **Zaraisky AG**, Bayramov AV (2021). Comparative Analysis of Expression Patterns of the Noggin Gene Family Genes at the Early Development Stages of Head Structures in the European River Lamprey *Lampetra fluviatilis*. *RUSS J DEV BIOL* 52, 33–41, [10.1134/S1062360421010033](https://doi.org/10.1134/S1062360421010033)
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 25. Паршина ЕА, **Зарайский АГ**, Мартынова НЮ (2020). Роль материнского гена pou5f3.3/oct60 в регуляции начальных этапов дифференцировки тканей в эмбриогенезе шпорцевой лягушки *Xenopus laevis*. *Bioorg Khim* 46 (6), 719–728, [10.31857/S013234232006024X](https://doi.org/10.31857/S013234232006024X)
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 28. Ermakova GV, Kucheryavyy AV, **Zaraisky AG**, Bayramov AV (2020). Publisher Correction: Discovery of four Noggin genes in lampreys suggests two rounds of ancient genome duplication. *Commun Biol* 3 (1), 532, [10.1038/s42003-020-01272-x](https://doi.org/10.1038/s42003-020-01272-x)
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- mouse genes lost in mammals with long lifespans. *BioData Min* 12 (1), 20, [10.1186/s13040-019-0208-x](https://doi.org/10.1186/s13040-019-0208-x)
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 36. Tereshina MB, Ivanova AS, Eroshkin FM, Korotkova DD, Nesterenko AM, Bayramov AV, Solovieva EA, Parshina EA, Orlov EE, Martynova NY, **Zaraisky AG** (2019). Agr2-interacting Prod1-like protein Tfp4 from *Xenopus laevis* is necessary for early forebrain and eye development as well as for the tadpole appendage regeneration. *Genesis* 57 (5), e23293, [10.1002/dvg.23293](https://doi.org/10.1002/dvg.23293)
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 38. Байрамов АВ, Ермакова ГВ, Кучерявый АВ, **Зарайский АГ** (2018). Миноги – “живые ископаемые” в исследованиях раннего развития и регенерации позвоночных. *Ontogenez* 49 (5), S3–S14, [10.1134/S0475145018080013](https://doi.org/10.1134/S0475145018080013)
 39. Kotlobay AA, Sarkisyan KS, Mokrushina YA, Marcet-Houben M, Serebrovskaya EO, Markina NM, Gonzalez Somermeyer L, Gorokhovatsky AY, Vvedensky A, Purto KV, Petushkov VN, Rodionova NS, Chepurnyh TV, Fakhranurova LI, Guglya EB, Ziganshin R, Tsarkova AS, Kaskova ZM, Shender V, Abakumov M, Abakumova TO, Povolotskaya IS, Eroshkin FM, **Zaraisky AG**, Mishin AS, Dolgov SV, Mitiouchkina TY, Kopantzev EP, Waldenmaier HE, Oliveira AG, Oba Y, Barsova E, Bogdanova EA, Gabaldón T, Stevani CV, Lukyanov S, Smirnov IV, Gitelson JI, Kondrashov FA, Yampolsky IV (2018). Genetically encodable bioluminescent system from fungi. *Proc Natl Acad Sci U S A* 115 (50), 12728–12732, [10.1073/pnas.1803615115](https://doi.org/10.1073/pnas.1803615115)
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 43. **(конференция)** Байрамов АВ, Ермакова ГВ, Ерошкин ФМ, Иванова АС, Мартынова НЮ, Терёшина МБ, **Зарайский АГ** (2018). Гены, исчезнувшие в эволюции, как регуляторы развития мозга и регенерации. *Современные проблемы физикохимической и клеточной биологии: от молекул к живым системам*, 36.
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 46. **(конференция)** Иванова АС, Мартынова НЮ, Ермакова ГВ, Короткова ДД, **Зарайский АГ** (2018). GENES MISSING IN AMNIOTES REGULATE REGENERATION IN ANAMNIOTES. *EMBO Conference*, 124.
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- the Xanf1 Homeobox Gene Expression Regulation during the Early Development of the Forebrain Rudiment in the Clawed Frog. *Russ. J. Bioorganic Chem.* 44 (3), 310–321, [10.1134/S1068162018030032](https://doi.org/10.1134/S1068162018030032)
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 50. (конференция) Иванова АС, **Зарайский АГ** (2018). The secreted factor Ag1 and small GTPases Ras-dva missing in amniotes regulate fins regeneration in *Danio rerio*. *2nd International FishMed Conference on Zebrafish Research*, 104.
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