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Book Review



# Review of the book of abstracts of the Fourth International Conference “Genetically modified organisms: The History, Achievements, Social and Environmental Risks”, Saint Petersburg, October 21–23, 2024

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## ABSTRACT

The book of abstracts of the Fourth International Conference “Genetically modified organisms: The History, Achievements, Social and Environmental Risks” contains 38 abstracts covering a broad field of GMO research. Nowadays genetically modified organisms, their construction and study, are an essential part of many investigations as well as a part of modern agriculture. The results presented in the book are from different fields of research and performed on a broad range of organisms (plants, animals, fungi and algae).

**Keywords:** genetically modified organisms; basic research; genome editing; agriculture; medicine; environment; society.

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Рецензия

## Рецензия на сборник тезисов Четвертой Международной конференции «Генетически модифицированные организмы: история, достижения, социальные и экологические риски», Санкт-Петербург, 21–23 октября 2024 г.

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### АННОТАЦИЯ

Сборник тезисов Четвертой Международной конференции «Генетически модифицированные организмы: история, достижения, социальные и экологические риски» содержит 38 тезисов, охватывающих широкую область исследований генетически модифицированных организмов. В настоящее время генетически модифицированные организмы, их создание и изучение является неотъемлемой частью многих исследований, а также частью современного сельского хозяйства. Результаты, представленные в сборнике, относятся к различным областям исследований и выполнены на широком спектре организмов (растениях, животных, грибах и водорослях).

**Ключевые слова:** генетически модифицированные организмы; фундаментальные исследования; редактирование генома; сельское хозяйство; медицина; окружающая среда; общество.

### Как цитировать

Андреева Е.А. Рецензия на сборник тезисов Четвертой Международной конференции «Генетически модифицированные организмы: история, достижения, социальные и экологические риски», Санкт-Петербург, 21–23 октября 2024 г. // Экологическая генетика. 2025. Т. 23. № 1. С. 107–109. DOI: <https://doi.org/10.17816/ecogen642820>

The book of abstracts of the Fourth International Conference "Genetically modified organisms: The History, Achievements, Social and Environmental Risks" contains 38 abstracts covering a broad field of GMO research. Nowadays genetically modified organisms, their construction and study, are an essential part of many investigations as well as a part of modern agriculture. The results presented in the book are from different fields of research and performed on a broad range of organisms (plants, animals, fungi and algae).

Animal studies are presented as research focusing on creating models based on transgenic animals to study human diseases (I.I. Akhmarov et al., p. 6; O.A. Kirillov et al., p. 20). To solve the same problem E.I. Stepchenkova and Y.I. Pavlov (p. 38) and M.E. Velizhanina et al. (p. 41) used transgenic yeasts. Some animal models were created for fundamental studies, like transgenic mice for *in vivo* cell lineage fate observation (A.V. Chirinskaite et al., p. 11). Animal research is also focused on improving agricultural animals, like pigs (O.V. Chubukova et al., p. 12).

A considerable part of presented research is dealing with GM-plants: improving plants agriculture via genetic engineering technologies (N.V. Borisenko et al., p. 10; S.V. Dolgov, p. 14; M.V. Lebedeva et al., p. 22; P.L. Razhina et al., p. 33; S.A. Slezova et al., p. 37) and producing specific GM-plants for fundamental studies (I.E. Dodueva et al., p. 13; A.A. Ermoshin et al., p. 15; V.D. Karlov et al., p. 19; X.A. Kuznetsova et al., p. 21; I.M. Mikhel and E.A. Rogozhin, p. 25; G.V. Mitina et al., p. 27; V.A. Petrenko et al., p. 31; O.L. Razhina et al.,

p. 34; O.O. Timina et al., p. 39; A.S. Tugbaeva et al., p. 40; P.A. Virolainen et al., p. 42).

A specific type of GMO, the natural GM-plants, is also presented in published results: T.V. Matveeva (p. 24), N.A. Mirgorodskii et al. (p. 26), A.D. Shaposhnikov and T.V. Matveeva (p. 35).

Studies of transgenic bacteria are also presented in the book: bacteria used as a source of metabolites (S.S. Issa and T.V. Matveeva, p. 16) and possibilities of genome-editing of pathogenic bacteria (D.A. Kandina et al., p. 18) are shown.

New approaches to construct or improve of GMO are presented by M.A. Panfilova et al. (p. 29), N.V. Permyakova et al. (p. 30), D.Yu. Shvets et al. (p. 36); I.V. Zhdankov et al. (p. 44).

Theoretical questions of producing, applying in the modern agriculture or biosafety of transgenic organisms are presented in abstracts of E.A. Andreeva et al. (p. 7), E.S. Okulova et al. (p. 28), T.A. Pilipchuk et al. (p. 32), I.V. Yakovleva and A.M. Kamionskaya (p. 43).

The report of S.A. Bondarev (p. 9) covers problems and achievements in educational approaches to lecturing genetic engineering technologies to students and scholars.

Administrative and legal questions regarding GMOs have not escaped the attention of participants: abstracts of B.V. Kabylnskii and M.A. Zimanova (p. 17) are considering some customs authorities' prohibitions and restrictions on cross-border movement of GMOs.

All abstracts are written in a clear and comprehensive manner and were peer-reviewed.

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