



**2nd International
Conference
“Genetically modified
organisms: The History,
Achievements, Social and
Environmental Risks”**

**Conference program
Программа конференции**

St. Petersburg State University
St. Petersburg, Russia, December 6–8, 2022



St Petersburg
University



AGROTECHNOLOGY
FOR THE FUTURE



Program Committee

Matveeva T.V., Professor of the Department of Genetics and Biotechnology, St. Petersburg State University — Co-Chairman;

Tikhonovich I.A., acting Dean of the Faculty of Biology, St. Petersburg State University - Co-Chairman;

Diveeva N.I., Professor of the Department of Labor and Social Law, St. Petersburg State University;

Dolgikh E.A., Head of the Signal Regulation Laboratory, Federal State Budgetary Scientific Institution "All-Russian Research Institute of Agricultural microbiology"

Bruskin S.A., Deputy Director of the Institute of General Genetics

Lutova L.A., Professor of the Department of Genetics and Biotechnology, St. Petersburg State University.

Organising Committee

Khudyakova D.V., Manager, Events & Partnership Department, St. Petersburg State University

Matveeva T.V., Professor of the Department of Genetics and Biotechnology, St. Petersburg State University

December 6, Tuesday

Join the conference via Zoom (the link's available for 3 days):

<https://zoom.us/j/95825073608?pwd=V1dOeUIVVVvK4Z0F6U1ItWHAwd3ZkZz09>

10.00–11.00 Registration

11.00 Conference opening ceremony. Welcome speech by the Dean of the Faculty of Biology of St. Petersburg State University I.A. Tikhonovich

11.30–13.30 Section “Genetic engineering. History of research in Russia and abroad»

Chairmen Matveeva T.V., Chekunova EM

11.30–
12.10
IL1

Matveeva T.V.

St. Petersburg State University, St. Petersburg, Russia
Natural GMOs: a history of research

12.10–
12.50
OL1
E

Wuyao W.¹, Yuqiao Z²

¹*China University of Political Science and Law, China*

²*Civil, Commercial and Economic Law School, China*

The Fiscal and Tax Policies on the Development of GMOs for Agriculture and Medicine in China: Retrospect, Status Quo and Prospect

12.50–
13.30
OL2

Chekunova E.M.

St. Petersburg State University, St. Petersburg, Russia

Chloroplast genomes and GMOs. History, features and perspectives on plastid transgenesis in plant biotechnology

13.30–14.30 Lunch

14:30–16:30 Section “GMOs in basic research”

Chairmen Dolgikh E.A., Lebedeva M.A.

14.30-
15.00
IL2

Dolgikh E.A., Kantsurova E.S., Dymo A.M.

All-Russian Research Institute for Agricultural Microbiology, St. Petersburg, Russia

The development of approaches to create new symbiotic systems

15.00-
15.30
IL3
E

Chen K.

*Shanghai Chenshan Plant Science Research Center (CAS)
Shanghai, China*

Agrobacterium mediated Natural transgenic plants and their effects on plant growth, development and evolution

15.30-
16.00
OL3

Lebedeva M.A., Dobyckina D., Lutova LA

St. Petersburg State University, St. Petersburg, Russia

Systemic control of symbiotic nodulation in legume plants: genetic engineering in functional studies of key regulators

16.00–16.15 Coffee break

16.15–17.00 Poster session

December 7, Wednesday

Join the conference via Zoom (the link's available for 3 days):

<https://zoom.us/j/95825073608?pwd=V1dOeUIVVVvK4Z0F6U1ltWHAwd3ZkZz09>

11:00–13:00 Section “GMOs in basic research”

Chairmen Rumyantsev A.M., Ilina E.L.

11.00– 11.30 OL4	<p><u>Ilina E.L.</u>, Kiryushkin A.S., Puchkova V.A., Demchenko K.N. <i>¹Komarov Botanical Institute of the Russian Academy of Sciences. St. Petersburg, Russia,</i></p> <p>Composite plants of cucumber and buckwheat as a tool to study auxin distribution and transport in the root system</p>
11.30– 12.00 OL5	<p><u>Rumyantsev A.M.</u>, Sidorin A.V., Ianshina T.M., Petrova K.V., Ishtuganova V.V., Sambuk E.V., Padkina M.V. <i>St. Petersburg State University, St. Petersburg, Russia</i></p> <p><i>Komagataella phaffii</i> yeast as a model organism in biotechnology and fundamental research</p>
12.00– 12.15 OL6	<p><u>Kuznetsova K.A.</u>, Dodueva I.E., Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i></p> <p>Identification of SNPs and InDels probably associated with the development of spontaneous tumors in radish (<i>Raphanus sativus</i> L.)</p>

12.15– 12.30 OL7	<u>Fremova E.P.</u> , Tvorogova V.E., Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> The <i>MtWOX</i> and <i>MtCLE</i> genes in the regulation of <i>Medicago truncatula</i> somatic embryogenesis
12.30– 12.45 OL8	<u>Kozlov N.</u> , Simonova V.Y., Krasnoperova E.Y., Potsenkovskaia E.A., Tvorogova V.E., Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> Development of a transgenic tissue visualization system in representatives of Fabaceae
12.45– 13.00 OL9 E	<u>Simonova V.Y.</u> ¹ , Potsenkovskaia E.A. ¹ , Kozlov N.V. ² , Tvorogova V.Y. ² , Lutova L.A. ² <i>¹Sirius University of Science and Technology, Sochi, Russia</i> <i>²St. Petersburg State University, St. Petersburg, Russia</i> Development of a testing system for regeneration regulators in <i>Pisum sativum</i>

13:00–14:30 Lunch

14:30–16:30 Section “GMOs for agriculture and medicine”

Chairmen Rumyantsev A.M., Sopova J.V

14.30– 15.00 IL4	<u>Leonova E.I.</u> <i>St. Petersburg State University, St. Petersburg, Russia</i> Genetically Altered Mouse Models: which way to choose
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<p>15.00- 15.20 OL10</p>	<p><u>Kulichikhin K.Yu.</u>, Zelinsky A.A., Gorsheneva N.A., Ryabinina M.V., Grizel A.V., Azarov V.V., Rubel A.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> The use of genetically modified yeast in human amyloidosis research</p>
<p>15.20- 15.40 OL11</p>	<p><u>Makeeva A.S.</u>, Shubert M.A., Al Shanaa O.R., Rumyantsev A.M. <i>St. Petersburg State University, St. Petersburg, Russia</i> Methylotrophic yeast <i>Komagataella phaffii</i> as Neoleukin producer</p>
<p>15.40- 16.00 OL12</p>	<p><u>Timonin V.D.</u>, Burlakovskiy M.S. , Padkina M.V. , Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> Transgenic plants-immunomodulators for animal husbandry.</p>
<p>16.00- 16.20 OL 13</p>	<p><u>Kantsurova E.S.</u>, Dolgikh E.A. <i>All-Russian Research Institute for Agricultural Microbiology, St. Petersburg, Russia</i> Features of the regulation of the transcription factor NIN, which determined its participation in the control of nodule organogenesis in legumes plants</p>

16:30–17:00 Coffee break

17:00–18:00 Poster session

December 8, Thursday

Join the conference via Zoom (the link's available for 3 days):

<https://zoom.us/j/95825073608?pwd=V1dOeUJlVWVk4Z0F6U1ltWHAwd3ZkZz09>

11:00–13:00 Section “Environmental aspects of transgenic technologies”

Chairmen Khafizova G.V., Matveeva T.V.

11.00-11.30
IL5
E
Weisberg A.J., Davis II E., Tabima J., Putnam M., Miller M., Belcher M., Grünwald N.1,2, Ream W.3, Lai E.4, Kuo C.4, Loper J.1.2, Chang J.H.1,2 Alexandra Weisberg¹, Edward Davis II¹, Javier Tabima¹, Melodie Putnam¹, Marilyn Miller¹, Michael Belcher¹, Niklaus Grünwald^{1,2}, Walt Ream³, Erh-Min Lai⁴, Chih-Horng Kuo⁴, Joyce Loper^{1,2}, Jeff Chang¹

¹*Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331*

²*Horticultural Crops Research Laboratory, US Department of Agriculture, Agricultural Research Service, Corvallis, OR 97331*

³*Department of Microbiology, Oregon State University, Corvallis, OR 97331*

⁴*Institute of Plant and Microbial Biology, Academia Sinica, Taipei 11529, Taiwan*

Evolution and epidemiology of global populations of nursery-associated *Agrobacterium*

11.30-12.00
OL14
Khafizova G.V., Matveeva T.V.

St. Petersburg State University, St. Petersburg, Russia

Natural GMOs in the genus *Nicotiana* L

12.00-12.30 OL15	<p>Zhidkin R.¹, Zhurbenko P^{1,2}., Gorodilova E.¹, Matveeva T¹.</p> <p>¹<i>St. Petersburg State University, St. Petersburg, Russia</i> ²<i>Komarov Botanical Institute of the Russian Academy of Sciences. St. Petersburg, Russia,</i></p> <p>Molecular genetic and bioinformatic approaches for the allele reconstruction of the rolB/C-like gene in representatives of the genus <i>Vaccinium</i> L</p>
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12.30–14.00 Lunch

14.00–16.00 Section “GMO and society”

Chairman Matveeva T.V.	
14.00-14.30 OL16	<p>Himmel M.¹, Malygina A.A.², Dukhinova M.S.³</p> <p>¹<i>Independent Lecturer in Bioethics and Biosecurity, Hamburg, Germany</i> ²<i>St. Petersburg State University, St. Petersburg, Russia</i> ³<i>ITMO University, St Petersburg, Russia</i></p> <p>Biorisk Assessment of Genetic Engineering - Lessons Learned from Teaching Interdisciplinary Courses on Responsible Conduct in the Life Sciences</p>
14.30-15.00 IL7	<p>Diveeva N. I.</p> <p><i>St. Petersburg State University, St. Petersburg, Russia</i></p> <p>Legal problems of Risk Assessment in Genetic Engineering Processes in Russia</p>

15.00- 15.30 OL 17	<u>Bruskin S.A.</u> <i>Vavilov Institute of General Genetics, Moscow, Russia</i> Legal aspects of new genetic technologies
15.30- 16.00	Closing of the conference

16:00–16:30 Coffee break

16.45–17.45 Excursion around Twelve Collegia and Dmitry Mendeleev's Memorial Museum Apartment

Poster presentations

PP1	<u>Potsenkovskaya E.A.</u> , Tvorogova V.E., Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> NF-Y genes in the somatic embryo development
PP2	<u>Krasnoperova E.Yu.</u> , Tvorogova V.E., Lutova L.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> MtWOX2 gene in somatic embryogenesis of <i>Medicago truncatula</i>
PP3	<u>Gancheva M.</u> ¹ , Safronova D., Valitova E., Dulesov M., Chebykina A., Solovyov Y., Semenova T., Mamonova X., Volchkov A., Fomina D., Korneva S., Lutova LA ¹ <i>St. Petersburg State University, St. Petersburg, Russia</i> Assembly of genetic constructs for analysis of three promoters in plants

PP4	<p>Lipatov P. ¹, Bogomaz F. ¹, Gosudarev K. ¹, Kondrashova S. ¹, Kuchevsky M. ¹, Malyuga N. ¹, Miagkii E. ¹, Sergeenkova M. ¹, Tverdokhlebova V. ¹, Shtina A ¹, Khafizova G.V.²</p> <p>¹<i>Sirius University of Science and Technology, Sochi, Russia</i></p> <p>²<i>St. Petersburg State University, St. Petersburg, Russia</i></p> <p>New cellular T-DNAs in naturally transgenic plants</p>
PP5	<p>Bemova V.D.¹, Matveeva T.V.²</p> <p>¹<i>Federal Research Center N. I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), St. Petersburg, Russia,</i></p> <p>²<i>St. Petersburg State University, Russia</i></p> <p>Prospects for the use of naturally transgenic cultivated peanut (<i>Arachis hypogaea</i> L.) in breeding</p>
PP6	<p>Zhurbenko P.M.¹, Klimenko F.N.²</p> <p>¹<i>Komarov Botanical Institute of the Russian Academy of Sciences. St. Petersburg, Russia,</i></p> <p>²<i>Federal Scientific Center of Rehabilitation of the Disabled named after G.A. Albrecht of the Ministry of Labour and Social Protection of the Russian Federation</i></p> <p>PhaseAll: a simple tool for read-based allele phasing</p>
PP7	<p>Shaposhnikov A.D., Matveeva T.V.</p> <p><i>St. Petersburg State University, St. Petersburg, Russia</i></p>

	<p>Homologues of octopine/vitopine synthase genes in natural GMOs</p>
PP8	<p><u>Sokornova S.V.</u>¹, Alekseeva A.N.^{1,2}, Shaposhnikov A.D.¹, Matveeva T.V.¹</p> <p>¹<i>Saint Petersburg State University, Saint Petersburg, Russia</i></p> <p>²<i>Saint Petersburg State University of Industrial Technologies and Design</i></p> <p>Genetic engineering approaches to study of the opines of natural GMOs</p>
PP9	<p><u>Yu. S. Cheryatova</u>, E. Yu. Yembaturova</p> <p><i>Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, Moscow,</i></p> <p>Transgenic plants – a threat to local flora?</p>
PP10	<p><u>Virolainen P.A.</u>¹, Chekunova E.M.²</p> <p>¹<i>Federal Research Center N. I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), St. Petersburg, Russia,</i></p> <p>²<i>St. Petersburg State University, St. Petersburg, Russia</i></p> <p>Optimization of CRISPR/Cas9 method for transgenesis of model microalgae <i>Chlamydomonas reinhardtii</i></p>
PP11	<p><u>Ryabinina M.V.</u>, Zelinsky A.A., Rubel A.A.</p> <p><i>St. Petersburg State University, St. Petersburg, Russia</i></p>

	<p>Application of genetically modified microorganisms for potential human amyloids search</p>
PP12	<p><u>Chirinskaite A.V.</u>, Fotina A.S., Markova E.V., Vishnyakova P.A., Poltavets A.S., Sopova J.V., Leonova E.I. <i>St. Petersburg State University, St. Petersburg, Russia</i> Design of COMT-Knockout mouse as a preeclampsia model</p>
PP13	<p><u>Malikova O.A.</u>, Zobnina A.E., Kachkin D.V., Aksenova A.Y., Chernoff Y.O., Rubel A.A. <i>St. Petersburg State University, St. Petersburg, Russia</i> Transgenic yeast model for searching mutations affecting human $\alpha\beta 42$ peptide aggregation</p>
PP14	<p><u>Markova E.</u>, Chirinskaite A., Sopova J., Leonova E. <i>St. Petersburg State University, St. Petersburg, Russia</i> The sweet protein brazzein as a promising natural sweetener</p>
PP15	<p><u>Vasyutkina E.</u>¹, Yugay Y.¹, Grigorchuk V.¹, Grishchenko O.¹, Stepochkina V., Shkryl Y.¹. <i>1Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far East Branch of Russian Academy of Sciences, Vladivostok, Russia</i> <i>2Advanced Engineering School «Institute of Biotechnology, Bioengineering and Food Systems» of the Far Eastern Federal University, Vladivostok, Russia</i></p>

	<p>Overexpression of the <i>lb-rolB/C</i> gene perturbs biosynthesis of caffeoylquinic acid derivatives in transgenic calli of sweet potato</p>
<p>PP16</p>	<p><u>Degtyarenko A.I.</u>¹ Stepochkina V.², Shkryl Y.¹ ¹<i>Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far East Branch of Russian Academy of Sciences, Vladivostok, Russia</i> ²<i>Advanced Engineering School «Institute of Biotechnology, Bioengineering and Food Systems» of the Far Eastern Federal University, Vladivostok, Russia</i> Heterologous expression of β-alanine betaine biosynthesis gene increases <i>Nicotiana tabacum</i> resistance to abiotic stresses</p>