

VI INTERNATIONAL CONFERENCE
POSTGENOME'2024

XI RUSSIAN SYMPOSIUM
PROTEINS AND PEPTIDES

RUSSIAN-CHINESE CONGRESS
**RUSSIAN-CHINESE
LIFE SCIENCES CONGRESS**



CONGRESS PROGRAM



OCTOBER 29 – NOVEMBER 2, 2024

CONGRESS ORGANIZERS



Federal Service for Surveillance on Consumer Rights
Protection and Human Wellbeing



Russian Academy of Sciences (RAS)



Ministry of Science and Higher Education
of the Russian Federation



Russian Biochemical Society



National Genetic Initiative "100,000+Me"



Research Institute for Systems Biology and Medicine



Shemyakin & Ovchinnikov Institute of Bioorganic
Chemistry, Russian Academy of Sciences

ГЕНЕРАЛЬНЫЙ ОПЕРАТОР ФОРУМА



RUSSIAN-CHINESE LIFE SCIENCES CONGRESS

CONGRESS CO-CHAIRS



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Vice President, Russian Academy of Sciences



Muming P00
Academician, Chinese Academy of Sciences



**欢迎中国朋友参加纪念俄罗斯科学院
成立300周年俄中生命科学大会**



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PROGRAM SCHEDULE

October 28

19:00 – 22:00 Welcome Reception in the Presidium of the Russian Academy of Sciences (RAS) *RAS Presidium*

October 29

10:00 – 10:20 Opening Ceremony. Russian-Chinese Life Sciences Congress *IBCH*
 10:20 – 13:00 Plenary Session
 13:00 – 13:20 Lunch
 13:20 – 14:20 Laboratory Tour in the Shemyakin & Ovchinnikov Institute (IBCH)
 15:20 – 17:00 Visit to Kurchatov Institute *Kurchatov Institute*
 18:00 – 18:30 Opening Ceremony. VI International Conference POSTGENOME'2024 and the XI Russian Conference PROTEINS AND PEPTIDES *Patriot Congress Center*
 18:30 – 19:50 Plenary Session *Zhukov Hall*
 21:00 – 22:30 Welcome Party

October 30

09:00 – 11:00 Plenary Session *Zhukov Hall*
 11:00 – 11:20 Coffee Break *Prefunction*
 11:20 – 13:55 Plenary Session *Zhukov Hall*
 13:55 – 14:30 Lunch
 14:30 – 16:30 Symposia

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|-----------------------------|------------------------------|------------------------------|---------------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| PG4 <i>Zhukov</i> | PP2 <i>Kutuzov</i> | CN1 <i>Gallery</i> | CN5 + PG7 <i>M. Donskoi</i> | PP6 <i>Suvorov</i> | PP5 <i>Potemkin</i> | PP4 <i>Nakhimov</i> | PG1 <i>Tent #1</i> | PG2 <i>Tent #2</i> |
|-----------------------------|------------------------------|------------------------------|---------------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|

16:30 – 16:50 Coffee Break *Prefunction*
 16:50 – 18:50 Symposia

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|-----------------------------|------------------------------|------------------------------|---------------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|------------------------------|
| PG4 <i>Zhukov</i> | PG6 <i>Kutuzov</i> | CN1 <i>Gallery</i> | CN5 + PG7 <i>M. Donskoi</i> | PP6 <i>Suvorov</i> | PP5 <i>Potemkin</i> | PP4 <i>Nakhimov</i> | PG1 <i>Tent #1</i> | PG2 <i>Tent #2</i> |
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09:00 – 19:00 Poster Session of Young Scientists' Competition

October 31

09:00 – 11:00 Plenary Session *Zhukov*
 11:00 – 11:20 Coffee Break *Prefunction*
 11:20 – 13:30 Plenary Session *Zhukov*
 13:30 – 14:00 Lunch
 14:00 – 16:00 Symposia

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| Biotec <i>Zhukov</i> | PG4 <i>Kutuzov</i> | CN1 <i>Gallery</i> | PG2 <i>M. Donskoi</i> | CN2 <i>Suvorov</i> | PP3 <i>Potemkin</i> | PG6 <i>Nakhimov</i> | PG1 <i>Tent #1</i> |
|--------------------------------|------------------------------|------------------------------|---------------------------------|------------------------------|-------------------------------|-------------------------------|------------------------------|

16:00 – 16:20 Coffee Break *Prefunction*
 16:20 – 18:20 Symposia

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|--------------------------------|------------------------------|------------------------------|---------------------------------|------------------------------|-------------------------------|-------------------------------|-----------------------------|
| Biotec <i>Zhukov</i> | PG4 <i>Kutuzov</i> | PP2 <i>Gallery</i> | PG2 <i>M. Donskoi</i> | CN2 <i>Suvorov</i> | PP3 <i>Potemkin</i> | PG6 <i>Nakhimov</i> | MC <i>Tent #1</i> |
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18:30 – 19:30 POSTGENOME Special Event. Evening Lecture for Young Scientists
 09:00 – 18:00 Poster Session

PROGRAM SCHEDULE

November 1

| | | |
|---------------------------------|--|-------------------------------|
| 09:00 – 10:40 | Plenary Session | <i>Zhukov</i> |
| 10:40 – 11:00 | Coffee Break | <i>Prefunction</i> |
| 11:00 – 13:40 | Plenary Session | <i>Zhukov</i> |
| 13:40 – 14:10 | Lunch | |
| 14:10 – 16:10 | Symposia | |
| PG4 <i>Zhukov</i> | PG7 <i>Kutuzov</i> | PG5 <i>Gallery</i> |
| CN4 <i>M. Donskoi</i> | MC <i>Suvorov</i> | PG3 <i>Potemkin</i> |
| | | PP1 <i>Nakhimov</i> |
| | | PP2 <i>Tent #1</i> |
| 16:10 – 16:30 | Coffee Break | <i>Prefunction</i> |
| 16:30 – 18:30 | Symposia | |
| PG4 <i>Zhukov</i> | PG7 <i>Kutuzov</i> | PG5 <i>Gallery</i> |
| CN4 <i>M. Donskoi</i> | CN3 <i>Suvorov</i> | PG3 <i>Potemkin</i> |
| | | PP1 <i>Nakhimov</i> |
| | | PP2 <i>Tent #1</i> |
| 18:40 – 19:40 | POSTGENOME Special Event. Evening Lecture for Young Scientists | |
| 09:00 – 19:00 | Poster Session | |

November 2

| | | |
|-----------------------------|--|---------------------------------|
| 09:00 – 11:00 | Symposia | |
| PG1 <i>Zhukov</i> | PG4 <i>Kutuzov</i> | PG5 <i>Gallery</i> |
| | | PG6 <i>M. Donskoi</i> |
| | | CN3 <i>Suvorov</i> |
| | | MC <i>Potemkin</i> |
| 11:00 – 11:20 | Coffee Break | <i>Prefunction</i> |
| 11:20 – 13:15 | Plenary Session | <i>Zhukov</i> |
| 13:15 – 14:00 | Congress Closing. Handling of Awards to the Authors of Best Poster Presentations | <i>Zhukov</i> |

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|---------------|---|
| CN1 | Neurosciences |
| CN2 | Structural biology |
| CN3 | Stem cells |
| CN4 | Plant biology |
| CN5 | Immunology |
| PG1 | Systems and synthetic biology |
| PG2 | Modern methods of drug development |
| PG3 | Digital technologies in biomedicine |
| PG4 | Genomic and multi-omix technologies |
| PG5 | Technologies for maintaining optimal health |
| PG6 | Infections. Antibiotic resistance |
| PG7 | Oncology. Autoimmunity |
| Biotec | National Genetic Initiative |
| PP1 | Search, isolation and synthesis of peptides and proteins |
| PP2 | Functions and mechanisms of action of peptides and proteins |
| PP3 | Bioengineering of proteins and peptides |
| PP4 | Methods for studying the structure of peptides and proteins |
| PP5 | Chemistry and biology of enzymes |
| PP6 | Medicinal products based on peptides and proteins |
| MC | Master class |

GENERAL INFORMATION

CONGRESS VENUE

The main Congress venue is the PATRIOT Congress Center. Address: PATRIOT Hotel, 143063 Moscow Region, Odintsovo District. Tel: +7(985) 048-1723 (whatsapp).

REGISTRATION DESK

Registration desk will open in the lobby of the PATRIOT Congress Center according to the schedule below

| | |
|---------------------------|--------------------------|
| October 29, 16:00 – 21:00 | November 1, 8:30 – 17:00 |
| October 30, 8:30 – 17:00 | November 2, 8:30 – 13:00 |
| October 31, 8:30 – 17:00 | |

RUSSIAN–CHINESE CONGRESS OPENING

The opening of the Russian–Chinese Life Sciences Congress will be held in the Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences (16/10 Miklukho-Maklaya Str, 117997 Moscow). After the opening and the first plenary session, Congress participants are invited to a short laboratory tour. After it, a visit to the National Research Center “Kurchatov Institute” is planned. Transportation will be provided.

OPENING OF THE VI INTERNATIONAL CONFERENCE POSTGENOME'2024 AND THE XI RUSSIAN SYMPOSIUM PROTEINS AND PEPTIDES

The opening of the POSTGENOME'2024 Conference and the PROTEINS AND PEPTIDES Symposium will be held on October 29, 18:00, in the Zhukov Hall of the PATRIOT Congress Center.

LANGUAGE

The official language of the Russian–Chinese Life Sciences Congress is English. The official languages of the POSTGENOME'2024 Conference and the PROTEINS AND PEPTIDES Symposium are Russian and English.

Speakers are requested to prepare their slideshow (pptx presentations) in English. Most **keynote lectures** will be delivered in English. Translation from Russian into English will be provided at the opening and some plenary session. **Symposia talks** should be delivered in English if international audience is present at the respective session. In case of domestic audience, the speaker can make the choice as regards the language, either English or Russian.

SLIDESHOW

Due to a very tight time schedule and in order to provide a smooth slideshow, PPT(X) or PDF presentations should be saved at conference laptops in the respective congress hall before the respective session or in advance. **We regret not to be able to connect speakers' laptops to our projectors.** Congress staff responsible for slideshow in the respective hall, will assist the speakers. We will not transfer any of your data to the third parties.

HOTEL FACILITIES

The new country PATRIOT hotel embodies the multifaceted beauty of the Moscow region through cozy rooms, author's cuisine, picturesque territory and an atmospheric SPA complex with a swimming pool and authentic Russian baths. Check-in 17:00, check-out 14:00.

For further information see p. 21

October 29, 10:00 – 13:00

OPENING CEREMONY
OF THE RUSSIAN-CHINESE LIFE SCIENCES CONGRESS
Chairs: Mikhail KOVALCHUK and Alexander GABIBOV

October 29, 10:00 – 13:00

Institute of Bioorganic Chemistry

WELCOME ADDRESSES

PLENARY LECTURE

40 min **Mikhail KOVALCHUK** *National Research Center “Kurchatov Institute”, Moscow, Russia*
Nature-like technologies

40 min **Muming POO** *Institute of Neuroscience, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences, China*
Non-human primate models for biomedical research

40 min **Alexander GABIBOV** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Combinatorial approaches in physical-chemical biology

October 29, 13:00 – 13:20

Institute of Bioorganic Chemistry

Coffee Break

October 29, 13:20 – 14:20

Institute of Bioorganic Chemistry

Laboratory tour in the Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry,
Russian Academy of Sciences

October 29, 15:20 – 17:00

Institute of Bioorganic Chemistry

Visit to the National Research Center “Kurchatov Institute”

October 29, 18:00 – 22:30

OPENING CEREMONY
OF THE VI INTERNATIONAL CONFERENCE POSTGENOME'2024
AND THE XI RUSSIAN SYMPOSIUM PROTEINS AND PEPTIDES

Chairs: Anna POPOVA and Vladimir KUTYREV

October 29, 18:00 – 18:30

ZHUKOV Hall

Anna POPOVA

Congress President

Head, Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing

WELCOME ADDRESSES

Russian Academy of Sciences

Ministry of Science and Higher Education of the Russian Federation

Alexander GABISOV

Program Committee Co-Chair

Director, Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences

Konstantin SEVERINOV

Program Committee Member

Chair, Biotechnology Campus

WELCOME ADDRESSES

Official sponsors

Vadim GOVORUN

Program Committee Co-Chair

Director, Research Institute for Systems Biology and Medicine

PLENARY SESSION

Chairs: Alexander GABISOV and Elena ILINA

October 29, 18:30 – 19:50

ZHUKOV Hall

40 min **Evgeny IMYANITOV** *Petrov National Medicine Research Center of Oncology, St Petersburg, Russia*
Evolution of cancer treatment in the era of molecular diagnostics

40 min **Bo HUANG** *Chinese Academy of Medical Sciences & Peking Union Medical College, China*
All the efforts of cells converge on glycogen-NADPH axis to control ROS

WELCOME PARTY

October 29, 21:00 – 22:30

ZHUKOV Hall

October 30, 9:00 – 13:55

PLENARY SESSION

Chairs: Vadim GOVORUN and Evgeny IMYANITOV

October 30, 9:00 – 11:00

ZHUKOV Hall

40 min **Olga DONTSOVA** *Lomonosov Moscow State University, Moscow, Russia*

Canonical and non-canonical function of telomerase components

40 min **Senfang SUI** *Tsinghua University, China*

Cryo-EM studies of photosynthetic protein machine of marine red algae

40 min **Sergey DEYEV** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow; National Research Centre "Kurchatov Institute", Moscow; Research Centrum for Oncotheranostics, Tomsk Polytechnic University, Tomsk, Russia*

Innovative approaches to facilitate tumor treatment

PLENARY SESSION

Chairs: Roman EFREMOV and Areg TOTOLYAN

October 30, 11:20 – 13:55

ZHUKOV Hall

40 min **Sergey NEDOSPASOV** *Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow; Department of Biology, Lomonosov Moscow State University, Moscow; Sirius University of Science and Technology, Sochi, Russia*

Proinflammatory cytokines and a novel concept of anti-cytokine therapy

40 min **Evgeny NASONOV** *Nasonova Research Institute of Rheumatology, Moscow, Russia*

Modern concepts of autoimmunity and autoinflammation in rheumatology

25 min **Petr SERGIEV** *Skolkovo Institute of Science and Technology, Center for Molecular and Cell Biology; Belozersky Institute of Physical-Chemical Biology and Institute of Functional Genomics, Lomonosov Moscow State University, Moscow, Russia*

Methylation of small nuclear RNAs and its role in splicing

25 min **Vladimir KUTYREV** *Russian Research Anti-Plague Institute "Microbe", Saratov, Russia*

Epidemiology in the era of post-genome technologies

25 min **Roman EFREMOV** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

The technology of "Dynamic Molecular Portrait" in protein biophysics

October 30, 14:30 – 16:30

NEUROSCIENCES

Moderators: Muming POO and Alexey SEMYANOV

October 30, 14:30 – 16:30

GALLERY Hall

Session 1

Chairs: Yulong LI and Phillipp KHAITOVICH

- 20 min **Yangang SUN** *Institute of Neuroscience, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences, China*
Neural mechanism of itch sensation
- 20 min **Konstantin ANOKHIN** *Institute for Advanced Brain Studies, Lomonosov Moscow State University, Moscow, Russia*
Neurobiology of life-long traumatic memory
- 15 min **Susan WU** *RWD Life Science*
Advances in *in vivo* blood flow imaging and fiber photometry technology cutting-edge application
- 20 min **Alla SALMINA**, V.S. Sukhorukov, A.V. Stavrovskaya, S.N. Illarioshkin *Research Center of Neurology, Moscow, Russia*
Mechanisms of aberrant brain plasticity in neurodegeneration
- 20 min **Pavel MUSIENKO** *Life Improvement by Future Technologies Center "LIFT", Moscow; St Petersburg State University, St Petersburg, Russia*
Directed neuroplasticity after spinal cord injury

October 30, 14:30 – 16:30

ONCOLOGY, AUTOIMMUNITY, IMMUNOLOGY

Moderators: Alexander GABISOV, Evgeny IMYANITOV, Evgeny NASONOV,
Alexander RUMYANTSEV, and Dmitry CHUDAKOV

October 30, 14:30 – 16:30

MALY DONSKOI Hall

Session 1

Chairs: Yuting MA and Evgeny NASONOV

- 20 min **Yuting MA** *Institute of Systems Medicine, Chinese Academy of Medical Sciences/Peking Union Medical College, China*
Stress reshapes the immune macroenvironment

20 min **Danila BOBKOV**^{1,2}, R. Likhomanova^{1,2}, G. Fofanov², A. Lukacheva^{1,2}, N. Yudintseva^{1,2}, M. Shevtsov^{1,2}, A. Kayumov³, M. Bogachev^{3,4} ¹*Institute of Cytology, Russian Academy of Sciences, St Petersburg;* ²*Personalized Medicine Centre, Almazov National Medical Research Centre, St Petersburg;* ³*Kazan Federal University, Kazan;* ⁴*St Petersburg State Electrotechnical University "LETI", St Petersburg, Russia*
Human MSCs and glioblastoma cell motility patterns as a differential marker in co-culture

20 min **Tatyana GRINENKO** *Shanghai Institute of Hematology, State Key Laboratory of Medical Genomics, National Research Center for Translational Medicine at Shanghai, Ruijin Hospital Affiliated to Jiao Tong University School of Medicine, Shanghai, China*
Regulation of hematopoietic stem cell activation

20 min **Evgenia STAROSTINA**, I.N. Dyakov, E.A. Troshina *Endocrinology Research Center, Russian Ministry of Health, Moscow, Russia*
The thyroid gland function in patients with COVID-19 who received genetic engineering therapy, focus on cytokines

October 30, 16:50 – 19:50

NEUROSCIENCES

Moderators: Muming POO and Alexey SEMYANOV

October 30, 16:50 – 19:10

GALLERY Hall

Session 2

Chairs: Konstantin ANOKHIN and Hong QING

20 min **Yongyong SHI** *Institute of Neuroscience, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences, China*
Genomic studies of schizophrenia

20 min **Philipp KHAITOVICH** *Skoltech, Moscow, Russia*
Molecular profiling of psychiatric disorders

20 min **Xiaohui WANG** *Changchun Institute of Applied Chemistry, China*
The chemical biology of psychoactive substances

20 min **Vladimir VIGONT**¹, D.A. Grekhnev¹, O.S. Lebedeva^{2,3}, A.N. Bogomazova^{2,3}, M.A. Lagarkova^{2,3}, E.V. Kaznacheyeva¹ ¹*Institute of Cytology, Russian Academy of Sciences, St Petersburg;* ²*Lopukhin Federal Research and Clinical Center of Physical-Chemical Medicine, Federal Medical Biological Agency, Moscow;* ³*Center for Precision Genome Editing and Genetic Technologies for Biomedicine, Lopukhin Federal Research and Clinical Center of Physical-Chemical Medicine, Federal Medical Biological Agency, Moscow*
Application of iPSCs technologies to the study of the phenomenon of selective neurodegeneration

20 min **Alan KALUEV (KALUEFF)**, T.G. Amstislavskaya, L. Yang, J. Cui, Yu. Zhang, Ya. Lin, C. Zhao, J. Wang, J. Jiang, V. Bley, H. Cai, K. He, Sh. He, Y. Qin, H. Feng, Yu. Liu, R. Li, Ch. Wang *School of Sciences, Xi'an Jiatong-Liverpool University, Suzhou, China; ITBM, St Petersburg State University, St Petersburg; Moscow Institute of Physics and Technology, Moscow; Institute of Neurosciences and Medicine, Novosibirsk, Russia*
Zebrafish models relevant to complex human brain disorders

20 min **Ekaterina LYUKMANOVA**^{1,2}, M.L. Bychkov², D.S. Kulbatskii², A.B. Isaev², M.P. Kirpichnikov², Z. Shenkarev²
¹Shenzhen MSU-BIT University, China; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia
Molecular and cellular mechanisms of action of Ly6/uPAR proteins in the brain

October 30, 16:50 – 19:50

ONCOLOGY, AUTOIMMUNITY, IMMUNOLOGY

Moderators: Alexander GABISOV, Evgeny IMYANITOV, Evgeny NASONOV,
 Alexander RUMYANTSEV, and Dmitry CHUDAKOV

October 30, 16:50 – 18:50

MALY DONSKOI Hall

Session 2

Chairs: Yuting MA and Evgeny Nasonov

20 min **Yiwei CHU** *Fudan University, China*
Immune regulation of B cell in autoimmune diseases and cancer

20 min **Yakov LOMAKIN**¹, L.A. Ovchinnikova¹, S.S. Dzhelad¹, S.S. Terekhov¹, T.O. Simaniv², M.N. Zakharova², A.G. Gabibov¹ ¹Shemyakin–Ovchinnikov Institute of Bioorganic Chemistry, RAS; ²Research Center of Neurology, Moscow, Russia
Characterization of pathological antigen-specific B cell repertoire in multiple sclerosis

20 min **Limin ZHENG** *Sun Yat-sen University, China*
Myeloid cells and tumor microenvironment

20 min **Senlian HONG** *Peking University, Beijing, China*
Developing glycan-centric chemical approaches to augment immunity: Fundamentals and applications

20 min **Alexey STEPANOV** *Shemyakin–Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Improving control and specificity of CAR T cells

October 31, 9:00 – 13:30

PLENARY SESSION

Chairs: Valentin VLASSOV and Evgeny NIKOLAEV

October 31, 9:00 – 11:00

ZHUKOV Hall

40 min **Sofia GEORGIEVA** *Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*

Interaction of PBAF remodeling complex with chromatin in proliferating progenitors and differentiated neurons: PHF10 protein and its functions

40 min **Jiayang LI** *Yazhouwan National Laboratory, China*

Phytohormone strigolactones: Biosynthesis and signaling in higher plants

40 min **Elena ILINA** *Research Institute for Systems Biology and Medicine, Moscow, Russia*

The human microbiome through the prism of the metagenomics: what do we know?

PLENARY SESSION

Chairs: Olga LAVRIK and Sergey NEDOSPASOV

October 31, 11:20 – 13:30

ZHUKOV Hall

40 min **Konstantin SEVERINOV** *Biotech Campus, LLC, Moscow, Russia*

National Genetic Initiative “100,000+Me”

40 min **Nikolai KOLCHANOV** *Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia*

Bioinformatics, systems computer biology and big genetic data

25 min **Maxim NIKITIN** *Moscow Institute of Physics and Technology (State University), Moscow; Sirius University of Science and Technology, Sochi; Abisense LLC, Sirius, Sochi, Russia*

Molecular commutation of DNA: engaging novel physical methods

25 min **Evgeny NIKOLAEV** *Skolkovo Institute of Science and Technology, Moscow, Russia*

Practice of using methods of quantitative proteomics of physiological fluids based on isotope-labeled peptide standards in the search for protein panels of biomarkers of various diseases

October 31, 14:00 – 16:00

NEUROSCIENCES

Moderators: Muming POO and Alexey SEMYANOV

October 31, 14:00 – 16:00

GALLERY Hall

Session 3

Chairs: Alan KALUEV and Yangang SUN

20 min **Yulong LI** *Peking University, China*

Spying on neuromodulator dynamics *in vivo* by constructing multi-color genetically-encoded sensors

20 min **Dmitry BILAN** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*

Genetically encoded fluorescent redox biosensors for *in vivo* studies

20 min **Alexey SEMYANOV** *Jiaxing University, Jiaxing, China*

Morphofunctional changes of cortical astrocytes in brain ageing

20 min **Nadezhda BRAZHE**^{1,2}, K.I. Morozova¹, A.B. Tiaglik^{1,2}, A.A. Fedotova^{1,2}, A.R. Brazhe^{1,2}, M.S. Shestopalova², Yu.V. Khranova^{1,2}, A.V. Zalygin², A.A. Bykov³, G.N. Martynov⁴, V.A. Oleinikov², D.S. Bilan², A.V. Semyanov²

¹*Faculty of Biology, Lomonosov Moscow State University;* ²*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences;* ³*Scientific and Technological Center of Unique Instrumentation, Russian Academy of Sciences;* ⁴*Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia*

Metabolic brain imaging with Raman microspectroscopy *in vivo*

20 min **Min XU** *Institute of Neuroscience, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences, China*

Basal forebrain control of adenosine and sleep homeostasis

20 min **Alexander POPOV** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*

We are what we eat: how the diet influences astrocyte morphology and functions

Poster Presentation

Yibo WANG *Changchun Institute of Applied Chemistry, China*

Stereoselective recognition of morphine enantiomers by μ -opioid receptor

October 31, 14:00 – 16:00

STRUCTURAL BIOLOGY

Moderators: Senfang SUI and Ekaterina LYUKMANOVA

October 31, 14:00 – 16:00

Suvorov Hall

Session 2

Chairs: Ning GAO and Ekaterina Lyukmanova

20 min **Konstantin USACHEV**, M.M. Yusupov *FRC "Kazan Scientific Center of RAS", Kazan; FRC "Kurchatov Institute", Moscow, Russia*

Structural insights into the ribosomes of pathogenic bacteria and yeast

20 min **Aleksandra LUGININA**, V. Borshchevskiy, A. Mishin *Moscow Institute of Physics and Technology (National Research University), Russia*

Sphingosine-phosphate and cysteinyl leukotriene GPCR receptors structural investigation for rational drug design

20 min **Xueming LI** *Tsinghua University, China*

Segmentation and visualization of proteins in CryoET cellular tomogram

20 min **Zakhar SHENKAREV**², A.D. Ivannikov², M.V. Kocharovskaya², P.A. Mironov², E.A. Kovalenko², S.D. Oreshkov², D.S. Kulbatskii², A.S. Paramonov², M.M. Zaigraev², M.A. Shulepko¹, A.V. Kuznetsov¹, M.P. Kirpichnikov², E.N. Lyukmanova¹ *¹Faculty of Biology, MSU–BIT Shenzhen University, Shenzhen, China; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Spider toxins acting on voltage-gated ion channels regulate activation of the voltage-insensitive channel TRPA1 through interaction with the S1-S4 domains

October 31, 16:20 – 18:20

STRUCTURAL BIOLOGY

Moderators: Senfang SUI and Ekaterina LYUKMANOVA

October 31, 16:20 – 18:20

SUVOROV Hall

Session 2

Chairs: Senfang SUI and Zakhar SHENKAREV

20 min **Ning GAO** *Peking University, China*

Structural study of DNA replication initiation in eukaryotes

20 min **Olesya KRUMKACHEVA**¹, E.G. Bagryanskaya², M.V. Fedin¹, D.M. Graifer³, A.K. Malygin³ *¹International Tomographic Centre, Siberian Branch of the Russian Academy of Sciences (SB RAS); ²N.N. Vorozhtsov Novosibirsk Institute of Organic Chemistry, SB RAS; ³Institute of Chemical Biology and Fundamental Medicine, SB RAS, Novosibirsk*

Electron paramagnetic resonance spectroscopy as a useful complementary method to cryo-EM in studying the structural organization of human ribosome complexes

20 min **Xinzheng ZHANG** *Institute of Biophysics, Chinese Academy of Sciences, China*

Method developments in in-situ cryo-EM and their applications

20 min **Tatiana KALEBINA**, V.V. Rekestina *Lomonosov Moscow State University, Faculty of Biology, Molecular Biology Department, Moscow, Russia*

Proteins with amyloid properties noncovalently attached to the cell surface of yeast: structure, functions, and significance for medicine

20 min **Qingtao SHEN** *Southern University of Science and Technology, China*

Annealing: a magic wand to synchronize macromolecules to their minimum-energy states

20 min **Ekaterina LYUKMANOVA**^{1,6}, M. Kocharovskaya¹, E. Pichkur², D. Nolde¹, D. Dormeshkin³, M. Shapiro³, V. Borshchevskiy⁴, A. Varizhuk⁵, M. Kirpichnikov¹, Z. Shenkarev¹ *¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²National Research Center "Kurchatov Institute", Moscow, Russia; ³Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus; ⁴Moscow Center for Advanced Studies, Moscow, Russia; ⁵Federal Research and Clinical Center of Physical-Chemical Medicine, Federal Medical Biological Agency, Moscow, Russia; ⁶Shenzhen MSU-BIT University, China*

Cryo-EM and *in silico* study of SARS-CoV-2 S-protein interaction with neutralizing antibodies

November 1, 9:00 – 13:40

PLENARY SESSION

Chairs: Vadim GOVORUN and Ekaterina TROSHINA

November 1, 9:00 – 10:40

ZHUKOV Hall

- 25 min **Olga TKACHEVA** *Russian Research and Clinical Center for Gerontology, Pirogov Russian National Research Medical University, Moscow, Russia*
Translational approaches to the management of aging processes
- 25 min **Ekaterina TROSHINA** *Endocrinology Research Center, Moscow, Russia*
The function of the thyroid gland. Focus on key physiological conditions (puberty, pregnancy, breastfeeding, healthy aging)
- 25 min **Vladimir POROIKOV** *Orekhovich Institute of Biomedical Chemistry, Moscow, Russia*
AI/ML approaches to assessment of biological activity of pharmaceutical agents *in silico*: From basic research to applications
- 25 min **Alexey TOMILIN** *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*
New players involved in the acquisition, maintenance, and exit from the state cellular pluripotency

PLENARY SESSION

Chairs: Sofia GEORGIEVA and Petr SERGIEV

November 1, 11:00 – 13:40

ZHUKOV Hall

- 40 min **Ilya YAMPOLSKY** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Luminescence of living organisms: from basic mechanisms to synthetic biology
- 40 min **Jinsong LI** *Shanghai Institute of Biochemistry and Cell Biology, Center for Excellence in Molecular Cell Science, China*
Sperm-like stem cell-mediated semi-cloning technology
- 40 min **Sergey RAZIN** *Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia*
3D genome of lower eukaryotes
- 40 min **Dmitry CHUDAKOV** *Institute of Translation Medicine, Pirogov Russian National Research Medical University, Moscow, Russia*
Autoimmune clones of T lymphocytes: removing, convincing, retraining?

November 1, 14:10 – 16:10

PLANT BIOLOGY

Moderators: Jiayang LI and Konstantin MIROSHNIKOV

November 1, 14:10 – 16:10

MALY DONSKOI Hall

Session 1

Chairs: Jiayang LI and Konstantin MIROSHNIKOV

20 min **Weicai YANG** *Yazhouwan National Laboratory, China*

Sperm delivery and fertilization in Arabidopsis model plant

20 min **Maria SAMSONOVA**¹, A. Kanapin¹, T. Rozhmina² *¹Peter the Great Polytechnic University, St Petersburg;*

²Federal Research Center for Bast Crops, Torzhok, Russia

Fusarium wilt of flax: a case study of the plant–fungal interaction

20 min **Tatyana SAVCHENKO**¹, D.N. Miroshnichenko^{1,2}, A.V. Pigolev¹, E.A. Degtyarev¹, S.V. Dolgov² *¹Pushchino Scientific Center for Biological Research, Institute of Fundamental Problems of Biology, Russian Academy of Sciences; ²Branch of M.M. Shemyakin and Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Pushchino, Russia*

Genetic modification of the jasmonate system of wheat

20 min **Zhixi TIAN** *Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, China*

Soybean functional genomics and molecular breeding

20 min **Anna MAMAEVA**, I. Lyapina, D. Ganaeva, A. Knyazev, R. Azarkina, D. Kharlampieva, A. Galysh, A. Maiboroda, V. Lazarev, E. Rogozhin, I. Fesenko *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Plant peptidome is a complex and multicomponent system for balancing between the growth and stress responses

November 1, 16:30 – 18:40

PLANT BIOLOGY

Moderators: Jiayang LI and Konstantin MIROSHNIKOV

November 1, 16:30 – 18:40

MALY DONSKOI Hall

Session 2

Chairs: Maria SAMSONOVA and Weicai YANG

- 20 min **Konstantin MIROSHNIKOV**, A.A. Lukianova, A.D. Tokmakova *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Phage therapy for crops: progress, problems and prospects
- 20 min **Kang CHONG** *Institute of Botany, Chinese Academy of Sciences, China*
Cold signaling network and its potential in molecular design for breeding in rice
- 20 min **Alexander STAKHEEV**, M.E. Taliansky, S.K. Zavriev *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Modern molecular technologies to combat mycotoxin producers
- 20 min **Jinsheng LAI** *China Agricultural University, China*
The complete telomere-to-telomere assembly of maize genome and beyond
- 15 min **Dmitry MIROSHNICHENKO**^{1,2}, V. Timerbaev^{1,2}, M. Divashuk², A. Pushin^{1,2}, V. Alekseeva¹, V. Degtyaryova¹, O. Shulga², M. Samarina², A. Ermolaev¹, P. Kroupin², G. Karlov², S. Dolgov^{1,2} *¹Branch of Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Pushchino; ²All-Russia Research Institute of Agricultural Biotechnology, Moscow, Russia*
Efficient targeted multiallelic genome editing of polyploid cereals
- 15 min **Tatiana KOZLOVA**, A.V. Kartashov, A. Krapivina, P. Zaytsev, O.B. Chivkunova, K. Skarilkina, A.E. Solovchenko *G.R. Derzhavin Tambov State University, Tambov, Russia*
The effect of exogenous phytohormones on the biosynthesis and growth parameters of microalgae: the influence of the microbiome and silver nanoparticles on the induction process
- 10 min **Ivan CHUDINOV**^{1,2}, A.V. Lukina-Gronskaya¹, D.A. Petukhova¹, V.D. Gremyacheva¹, A.A. Krinitsina³, M.I. Antipin³, E.V. Korneenko¹, I.O. Butenko¹, A.S. Speranskaya¹ *¹Research Institute for Systems Biology and Medicine; ²Moscow Institute of Physics and Technology; ³Lomonosov Moscow State University, Moscow, Russia*
Proteogenomic analysis for controlling the composition of herbal mixtures
- 10 min **Anna VISHNEVSKAYA**, A.A. Bashilov, S.V. Osipenko, A.F. Kireev, Yu.I. Kostyukevich *Skolkovo Institute of Science and Technology, Moscow, Russia*
Analysis of biologically active metabolites of microalgae by isotope labeled methods in conjunction with chromatography-mass spectrometry

October 31, 16:30 – 18:30

STEM CELLS
Moderator: Jinsong LI

November 1, 16:30 – 18:30

SUVOROV Hall

Session1

Chairs: Jinsong LI and Alexey TOMILIN

- 20 min **Dong GAO** *Shanghai Institute of Biochemistry and Cell Biology, Center for Excellence in Molecular Cell Science, China*
Androgen signaling and cell fates determination
- 20 min **Ekaterina VOROTELYAK** *Koltsov Institute of Developmental Biology, Russian Academy of Sciences, Moscow, Russia*
Niche trajectories in epithelial morphogenesis and stem cell differentiation
- 20 min **Peng DU** *Peking University, China*
Capturing and maintenance of totipotent stem cells *in vitro*
- 20 min **Jiekai CHEN** *Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, China*
Cell lineage analysis of neurodevelopmental disorders
- 20 min **Albert RIZVANOV**¹, Y.A. Mukhamedshina¹, E.F. Davletshin¹, M.A. Mukhamedyarov² ¹Kazan (Volga Region) Federal University; ²Kazan State Medical University, Kazan, Russia
Mesenchymal stem cells and derived microvesicles for therapeutic advances in spinal cord injury and neurodegenerative diseases
- 20 min **Xiaohua SHEN** *Tsinghua University, China*
Decode the noncoding genome

November 2, 9:00 – 11:00

STEM CELLS
Moderator: Jinsong LI

November 2, 9:00 – 11:00

SUVUROV Hall

Session 2

Chairs: Dong GAO and Albert Rizvanov

20 min **Natella ENUKASHVILY**, N.V. Ponomartsev, E.A. Gushcha, V.V. Volkov *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*

Tandemly repeated RNA: role in carcinogenesis and tumorigenesis

20 min **Hui YANG** *Institute of Neuroscience, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences, China*

Generation of rat forebrain tissues in mice

20 min **Anna MALASHICHEVA** *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*

Driving osteogenic differentiation through Notch signaling: the search for stem cell therapy for bone defects and heart diseases

20 min **Ping HU** *Guangzhou Laboratory, China*

Profound stem cell defects in non-human primate DMD model

20 min **Irina NEGANOVA**, V. Gursky *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*

Analysis of the human induced pluripotent stem cells using machine-learning methods; the prospect of the best clone selection for purpose of regenerative medicine

November 2, 11:20 – 14:00

PLENARY SESSION

Chairs: Vladimir CHEKHONIN and Alexander RUMYANTSEV

November 2, 11:20 – 13:15

ZHUKOV Hall

25 min **Vladimir CHEKHONIN** *Endocrinology Research Center, Moscow, Russia*

Selective vector systems for drug delivery to target cells

25 min **Alexey BELOGUROV** *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Processing and presentation of antigens as basis for targeted therapy of neurodegeneration of autoimmune and traumatic etiology

25 min **Alexey MOSKALEV** *Russian Research and Clinical Center for Gerontology, Pirogov Russian National Research Medical University, Moscow, Russia*

Healthy longevity medicine

40 min **Alexander RUMYANTSEV** *Dmitry Rogachev National Research Center of Pediatric Hematology, Oncology and Immunology, Moscow, Russia*

Aging of immune system

HANDLING OF AWARDS

TO THE WINNERS OF THE YOUNG SCIENTISTS COMPETITION.

CLOSING OF THE CONGRESS

Chairs: Vadim GOVORUN and Alexander GABIBOV

November 2, 13:15 – 14:00

ZHUKOV Hall

CONGRESS HALLS AND MEETING ROOMS

Plenary sessions: Zhukov Congress Hall (ground floor)

Commercial Exhibition: Pre-function Zone and Zhukov Congress Hall (ground floor)

Symposia and master classes will be held according to the Congress schedule in the following halls and meeting rooms::

Ground floor: Zhukov, Kutuzov, Gallery and Maly Donskoi halls.

First floor: Suvorov, Potemkin, and Nakhimov halls.

Tent #1 and Tent #2 are located outdoors, near the Zhukov Hall.

Coffee breaks will be served in the Hotel lobby and in the pre-function zone.

TRANSPORTATION

Pick-up in the airports will be provided for all participants of the Russian-Chinese Life Sciences Congress according to their flight schedule. Congress organizers will also provide group transportation to reach the Congress venues.

SCIENTIFIC PROGRAM

For any updates in the Congress program, please visit our website at to get a current version of the program

[https://www.postgenome.org/pages/russian-chinese life sciences congress](https://www.postgenome.org/pages/russian-chinese-life-sciences-congress) .



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VI МЕЖДУНАРОДНАЯ КОНФЕРЕНЦИЯ

ПОСТГЕНОМ'2024

XI РОССИЙСКИЙ СИМПОЗИУМ

БЕЛКИ И ПЕПТИДЫ

РОССИЙСКО-КИТАЙСКИЙ КОНГРЕСС

RUSSIAN-CHINESE LIFE SCIENCES CONGRESS



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