

PROGRAM AT-A-GLANCE

OCTOBER 3

13.00 – 19.00

R E G I S T R A T I O N D E S K O P E N – H o t e l L o b b y

Rubin Hall

ADFLIM
CONFERENCE

OCTOBER 4

12.00 – 19.00

R E G I S T R A T I O N D E S K O P E N – H o t e l L o b b y

Rubin Hall

ADFLIM
CONFERENCE

C O N G R E S S H A L L

17.00 – 17.30

CONGRESS OPENING

Chairmen:

Anatoly Grigoriev, Yuri Natochin, Revaz Sepiashvili, Vadim Ivanov, Alexander Gabibov, Alexander Savitsky, Arieh Warshel, Christopher Contag, Vsevolod Tkachuk, Mikhael Ostrovsky, Valery Chereshev, Alain Krol, Michael Blackburn

17.30 – 18.15

KEYNOTE LECTURE

ARIEH WARSHEL “How to model the action of complex biological systems and to advance molecular medicine”
Moderator: Michael Blackburn

18.20 – 19.05

IVAN PAVLOV KEYNOTE LECTURE

VSEVOLOD TKACHUK “Vladimir Demikhov: a great academic surgeon, organ transplant pioneer, and physiologist”
Moderator: Revaz Sepiashvili

19.10 – 19.40

PLENARY LECTURE

CHRISTOPHER CONTAG “Imaging Biology in Living Animals and Humans”
Moderator: Alexander Savitsky

20.00 – 21.30

GET-TOGETHER PARTY

OCTOBER 5

08.30 – 10.30

SYMPOSIUM

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Proteins and Pathological States of Cells Session 1 B. Margulis, V. Muronets	OMICS TECHNOLOGIES V. Govorun Methods and Algorithms of Genome Medicine V. Govorun, E. Imyanitov	MECHANISMS OF NEURODEGENERATION AND NEUROPLASTICITY I. Zhuravin, M. Ugrumov	MOLECULAR AND INTEGRATIVE PHYSIOLOGY OF KIDNEYS L. Ivanova, Yu. Natochin	ION CHANNEL SIGNALING Session 1 F. Hucho, V. Tsetlin	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova Organization of Eucaryotic Genomes S. Razin	BIOENGINEERING V. Popov Eco- and Biogeotechnologies N. Pimenov, O. Karnachuk	ADFLIM CONFERENCE

PLENARY SESSION

CONGRESS HALL

10.45 – 11.15	PLENARY LECTURE	MICHAEL UGRUMOV "Physiological basics of early diagnostics and preventive treatment of brain diseases" <i>Moderator: Yuri Natochin</i>
11.15 – 11.30	COFFEE BREAK	
11.30 – 12.00	PLENARY LECTURE	MICHAEL OSTROVSKY, MICHAEL KIRPICHNIKOV "Optogenetics and vision" <i>Moderator: Vsevolod Tkachuk</i>
12.05 – 12.35	PLENARY LECTURE	SERGEY NEDOSPASOV "Cytokines, reverse genetics, and new approaches to the therapy of autoimmune disorders" <i>Moderator: Alexander Gabibov</i>
12.40 – 13.25	KEYNOTE LECTURE	ALEXANDER NOZDRACHEV "Membranous digestion from the viewpoint of a physiologist" (<i>dedicated to A.M. Ugolev</i>) <i>Moderator: Mikhail Roshchevsky</i>
13.25 – 14.20	LUNCH	
14.20 – 15.05	OLEG GAZENKO KEYNOTE LECTURE	RUPERT GERZER "Learning from a pioneer: Physiology in the 21 st century" <i>Moderator: Anatoly Grigoriev</i>

SYMPOSIUM

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Proteins as Targets of Biologically Active Compounds T. Ovchinnikova	OMICS TECHNOLOGIES V. Govorun Big Data Integration M. Gelfand, F. Khaitovich	REGENERATIVE MEDICINE I. Buravkova, V. Tkachuk	SENSOMOTOR REGULATIONS: NEW TECHNOLOGIES AND STRATEGIES FOR RECOVERY OF MOTOR FUNCTIONS A. Grigoriev, I. Kozlovskaya	REGULATION MECHANISMS OF VISCERAL FUNCTIONS P. Maslyukov, A. Nozdrachev	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova DNA Damage and Repair O. Lavrik	ROUND TABLE DISCUSSION New Ways to Improve Industrial Strains N. Stoynova, A. Yanenko	ADFLIM CONFERENCE

17.30 – 19.30

SYMPOSIUM

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Protein Dynamics and Biocatalysis Session 1 T. Demidkina, V. Tishkov, Nigel Richards	OMICS TECHNOLOGIES V. Govorun Human Genomics and Metagenomics in Norm and Pathology V. Govorun, E. Imyanitov	PHYSIOLOGICAL ASPECTS OF TUMOR GROWTH M. Krasilnikov, N. Cherdyntseva	ELECTROPHYSIOLOGICAL MECHANISMS OF BEHAVIOR CONTROL Yu. Kropotov, S. Medvedev	ION CHANNEL SIGNALING Session 2 F. Hucho, V. Tsetlin	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova Organization of Eucaryotic Genomes and DNA Repair O. Lavrik, S. Razin	BIOENGINEERING V. Popov Agro- and Food Biotechnologies I. Tikhonovich	ADFLIM CONFERENCE

09.00 – 17.00

POSTER SESSION

OCTOBER 6

08.30 – 10.30

SYMPOSI A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Proteins and Pathological States of Cells Session 2 B. Margulis, V. Muronets	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Principals and Methods of Molecular Diagnostics I. Demin, A. Karyakin	NEURAL AND HORMONE COMPONENTS IN THE 'GUT – BRAIN' AXIS L. Filaretova, K. Gyires	SPACE AND HYPERBARIC PHYSIOLOGY E. Ilyin, E. Krasavin	NEW APPROACHES TO THE STUDY OF THE HIGHEST FUNCTIONS OF BRAIN P. Balaban	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova Quantitative Genomics V. Gladyshev, Alain Krol	BIOENGINEERING V. Popov Genomics, Metagenomics and Metabolic Engineering of Microorganisms Session 1 N. Ravin, A. Yanenko	ADFLIM CONFERENCE

PLENARY SESSION

CONGRESS HALL

10.45 – 11.30

ILYA METCHNIKOFF KEYNOTE LECTURE SERGEY DEYEV "Oncotheranostics and physiology of the immune system" *Moderator: Revaz Sepiashvili*

11.30 – 12.00

COFFEE BREAK

12.00 – 12.30

FEB S PLENARY LECTURE

ISRAEL SILMAN "Structure-function relationships in the synaptic enzyme acetylcholinesterase: a target of nerve agents, pesticides, and anti-Alzheimer drugs" *Moderator: Patrick Masson*

12.35 – 13.05

PLENARY LECTURE

ALEXEY BOGDANOV "Peptides and antibiotics in the ribosomal tunnel" *Moderator: Olga Dontsova*

13.10 – 13.40

PLENARY LECTURE

ELENA PARFENOVA, VSEVOLOD TKACHUK "Physiological mechanisms of the contribution of stem cells in tissue regeneration" *Moderator: Lyudmila Ivanova*

13.10 – 16.00
Hall # 1

13.40 – 14.30

LUNCH

14.30 – 15.15

KEYNOTE LECTURE

IAN WILSON "Broad neutralization of influenza viruses and implications for a universal vaccine and therapy" *Moderator: Matthias Wilmanns*

GENOMICS AND METAGENOMICS
N. Kolcahnov,
K. Skryabin

15.20 – 16.05

PLATON KOSTYUK KEYNOTE LECTURE PAVEL BALABAN "Molecular and cellular mechanisms of memory" *Moderator: Michael Ostrovsky*

16.15 – 18.15

SYMPOSI A

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PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Protein Dynamics and Biocatalysis Session 2 T. Demidkina, V. Tishkov, Nigel Richards	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Molecular oncology E. Stepanova, N. Chernov	PHYSIOLOGY OF THE IMMUNE SYSTEM R. Sepiashvili, V. Chereshnev	SENSOMOTOR REGULATIONS: NEW TECHNOLOGIES AND STRATEGIES FOR RECOVERY OF MOTOR FUNCTIONS A. Grigoriev, I. Kozlovskaya	NEUROPHYSIOLOGY A. Umyukhin, N. Veselkin	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova RNA world Session 1 P. Sergiev	BIOENGINEERING V. Popov Genomics, Metagenomics and Metabolic Engineering of Microorganisms Session 2 N. Ravin, A. Yanenko	ADFLIM CONFERENCE

18.30 – 20.30

SYMPOSI A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Structural Biology and Protein Modeling Session 1 G.M. Blackburn, A.G. Gabibov	OMICS TECHNOLOGIES V. Govorun Proteomics and Peptidomics Session 1 A. Archakov, V. Ivanov	ADAPTATION, STRESS, AND HEALTH F. Furdul, V Chokine, F. Shukurov	MECHANISMS OF SYNAPTIC TRANSMISSION A. Zefirov, L. Magazanik	MOLECULAR AND CELLULAR MECHANISMS OF STRESS-INDUCED PSYCHOLOGICAL AND BEHAVIORAL DISORDERS N. Gulyaeva, N. Dygalo	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova RNA world Session 2 A. Kulbachinsky	BIOENGINEERING V. Popov Genomics, Metagenomics and Metabolic Engineering of Microorganisms Session 3 N. Ravin, A. Yanenko	ADFLIM CONFERENCE

09.00 – 17.00

POSTER SESSION

OCTOBER 7

08.30 – 10.30

S Y M P O S I A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Protein Interaction with Low Molecular Weight Compounds A. Khomutov, D. DeBiase	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova RNA world Session 3 L. Patrushev	PHYSIOLOGY OF SENSOR SYSTEMS 08.30 – 09.40 I. Vartanyan PHYSIOLOGY OF SLEEP 09.45 – 10.30 E. Verbitsky, Ya. Khananashvili	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Molecular Immunology Session 1 S. Deyev, R. Sepiashvili	PHYSIOLOGY OF AGING N. Volf, N. Goncharova, O. Rasumnikova	GENERAL ASPECTS OF BIOCHEMISTRY A. Grechkin Glycobiology Session 1 N. Bovin, T. Gorshkova	BIOENGINEERING V. Popov Biocatalysis and Industrial Biotechnologies Session 1 V. Popov, V. Švedas	PHYSIOLOGICAL MECHANISMS OF HORMONAL REGULATION T. Sollertinskaya, P. Shabanov, A. Shpakov

P L E N A R Y S E S S I O N

C O N G R E S S H A L L

- 10.45 – 11.30 **KEYNOTE LECTURE MARVIN CARUTHERS** “Synthesis and applications of new nucleic acid analogs useful for research in biology and nanotechnology” *Moderator: Marina Gottikh*
- 11.30 – 12.00 **COFFEE BREAK**
- 12.00 – 12.30 **PLENARY LECTURE LAWRENCE STERN** “Many ways to recognize a featureless peptide: Broad TCR repertoire and diverse structural solutions to CD8 T cell recognition of an immunodominant epitope from influenza A virus” *Moderators: Alexander Nozdrachev, Yuri Sykulev*
- 12.35 – 13.05 **PLENARY LECTURE SVYATOSLAV MEDVEDEV** “Are there any restrictions in brain studies?” *Moderator: Nikolai Veselkin*
- 13.10 – 13.40 **PLENARY LECTURE LEV MAGAZANIK, A. ZAITSEV** “Changes in functioning of the glutamatergic system of the brain upon convulsive conditions” *Moderator: Vladimir Skrebitsky*
- 13.40 – 14.30 **LUNCH**
- 14.30 – 15.00 **PLENARY LECTURE VADIM IVANOV** “Peptidomics: state-of-the-art and challenges” *Moderator: Alexander Grechkin*
- 15.05 – 15.35 **PLENARY LECTURE VALENTIN VLASSOV** “Design of nucleic acid based therapeutics” *Moderator: Alain Krol*
- 15.40 – 16.10 **PLENARY LECTURE VADIM GOVORUN** “Human metagenome plasticity as a factor of personalized medicine” *Moderator: Vadim Ivanov*

16.20 – 18.20

S Y M P O S I A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
GENERAL ASPECTS OF BIOCHEMISTRY A. Grechkin Plant Biochemistry Session 1 A. Grechkin, I. Fesenko	CHEMISTRY AND BIOLOGY OF NUCLEIC ACIDS P. Georgiev, O. Dontsova Nucleic acids targets and therapeutics M. Gottikh, V. Prasolov	MOLECULAR PHYSIOLOGY OF RECEPTORS AND ION Session 1 E. Kaznacheeva, S. Kolesnikov	MECHANISMS OF FUNCTIONAL INTERACTIONS BETWEEN BRAIN STRUCTURES IN HUMANS AND ANIMALS M. Kireev, S. Medvedev	PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Structural Biology and Protein Modeling Session 2 S. Varfolomeev	GENERAL ASPECTS OF BIOCHEMISTRY A. Grechkin Glycobiology Session 2 N. Bovin, T. Gorshkova	BIOENGINEERING V. Popov Biocatalysis and Industrial Biotechnologies Session 2 V. Popov, V. Švedas	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov New Trends in Drug Design A. Mazhuga, N. Menshutina

18.30 – 20.30

S Y M P O S I A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
GENERAL ASPECTS OF BIOCHEMISTRY A. Grechkin Plant Biochemistry Session 2 A. Grechkin, I. Fesenko	OMICS TECHNOLOGIES V. Govorun Proteomics and Peptidomics Session 2 A. Archakov, V. Ivanov	MOLECULAR PHYSIOLOGY OF RECEPTORS AND ION Session 2 E. Kaznacheeva, S. Kolesnikov	PHYSIOLOGY OF HEART AND BLOOD CIRCULATION Ya. Khananashvili, Yu. Moskalenko, I. Roshchevskaya	PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Physical Techniques in the Study of Biopolymers V. Oleinikov, A. Fedorov	PHYSIOLOGY OF BLOOD I. Tikhomirova	BIOENGINEERING V. Popov Biocatalysis and Industrial Biotechnologies Session 3 V. Popov, V. Švedas	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Neurobiochemistry and Modern Medicine V. Chekhonin

09.00 – 17.00

P O S T E R S E S S I O N

OCTOBER 8

08.30 – 10.30

S Y M P O S I A

Congress Hall	Hall # 1	Hall # 2	Hall # 3	Blue Hall	Turquoise Hall	Dyonisis Hall	Rubin Hall
PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Protein Dynamics and Biocatalysis Session 3 T. Demidkina, V. Tishkov, N. Richards	EMBL - SyncFELmed SYMPOSIUM Synchrotron and Free-Electron Laser Infrastructures for Applications in Structural Biology M. Wilmanns, A. Gabibov	MOLECULAR MECHANISMS OF HYPOXIA L. Lukyanova, E. Rybnikova, M. Samoilov	MEDICAL-PHYSIOLOGICAL AND ECOLOGICAL ASPECTS OF ADAPTATION IN THE ARCTIC REGION V. Belkin, M. Bocharov, S. Krivoshchekov, S. Soroko	PHYSIOLOGICAL ASPECTS IN COGNITIVE ACTIVITY A. Latanov, A. Shestakova	GENERAL ASPECTS OF BIOCHEMISTRY A. Grechikhin Biochemistry of invertebrates N. Nemova	BIOENGINEERING V. Popov Agro- and Food Biotechnologies I. Tikhonovich	BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Biochemical Mechanisms of Pathology I. Bykov, R. Parnova, T. Saatov

10.30 – 11.00

COFFEE BREAK

P L E N A R Y S E S S I O N

C O N G R E S S H A L L

11.00 – 11.30

PLENARY LECTURE MATTHIAS WILLMANN "Novel opportunities for hybrid structural biology approaches" *Moderator: Ian Wilson*

11.35 – 12.05

PLENARY LECTURE THOMAS SCHNEIDER "Synchrotron crystallography for medical biochemistry" *Moderator: Vladimir Popov*

12.10 - 12.40

PLENARY LECTURE MICHAEL BLACKBURN "How do enzymes catalyze phosphate transfer? – It's H-bonds, stupid!" *Moderator: Sergey Kochetkov*

12.45 – 13.15

PLENARY LECTURE VLADIMIR SKREBITSKY "Disruption of synapsis plasticity in hippocampus and directions to its recovery" *Moderator: Svyatoslav Medvedev*

13.20 – 13.50

PLENARY LECTURE NIKOLAI DYGALO "The Neurobiology of stress" *Moderator: Firuz Shukurov*

13.50 – 14.40

LUNCH

14.40 – 15.10

PLENARY LECTURE FEDOR FURDUI, VALENTINA CHOKINE "Directed shaping of human health – the most important task of physiology and sanocreatology" *Moderator: Svyatoslav Soroko*

15.15 – 15.45

PLENARY LECTURE VLADIMIR GVOZDEV "Functions of polyfunctional conservative Piwi protein" *Moderator: Pavel Georgiev*

15.50 – 16.20

PLENARY LECTURE SERGEY VARFOLOMEEV "Computational modeling in molecular medicine and drug discovery" *Moderator: Vladimir Tishkov*

16.25 – 16.55

PLENARY LECTURE ANDREY ZEFIROV "Types of quantum secretion of mediator: vesical pools and role of Ca ions" *Moderator: Lev Magazanik*

17.00 – 17.30

PLENARY LECTURE VLADIMIR POKROVSKY "Evolution of Ivan Petrovich Pavlov's ideas regarding integrality of organism in terms of modern physiology" *Moderator: Fedor Furdui*

17.45 – 19.45

S Y M P O S I A

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BIOCHEMISTRY AND MOLECULAR MEDICINE A. Egorov Molecular Immunology Session 2 S. Deyev, I. Krasilnikov, R. Sepiashvili	EMBL - SyncFELmed SYMPOSIUM Synchrotron and Free-Electron Laser infrastructures for Applications in Structural Biology S. Molodtsov	PHYSIOLOGICAL MECHANISMS OF HEALTH AND ITS DIRECTED SHAPING U. Gashimova, F. Furdui, V. Chokine	MECHANICS OF HEARTBEAT: NONLINER PROCESSES IN THE CARDIOVASCULAR SYSTEM O. Bokeria	ROUND TABLE DISCUSSION: TEACHING IN PHYSIOLOGY A. Nozdrachev, A. Tyukavkin, F. Shukurov	PHYSIOLOGY OF PHYSICAL ACTIVITY AND BIOCONTROL IN SPORTS L. Kapilevich, S. Krivoshchekov	BIOENGINEERING V. Popov Agro- and Food Biotechnologies Session 3 I. Tikhonovich	PROTEINS: THE DIVERSITY OF FUNCTIONS S. Kochetkov Structural Biology and Protein Modeling Session 3 A. Petrenko, S. Varfolomeev

09.00 – 17.00

Y O U N G S C I E N T I S T S C O M P E T I T I O N – P O S T E R S E S S I O N

20.00

C L O S I N G