



XX INTERNATIONAL CONFERENCE ON SPACE BIOLOGY AND AEROSPACE MEDICINE

THE BION-M №2 PROJECT



FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS

27–29 OCTOBER 2026

CONFERENCE PROGRAMME



76 A Khoroshevskoe shosse, IBMP RAS, Moscow, Russia

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ON SPACE BIOLOGY AND AEROSPACE MEDICINE

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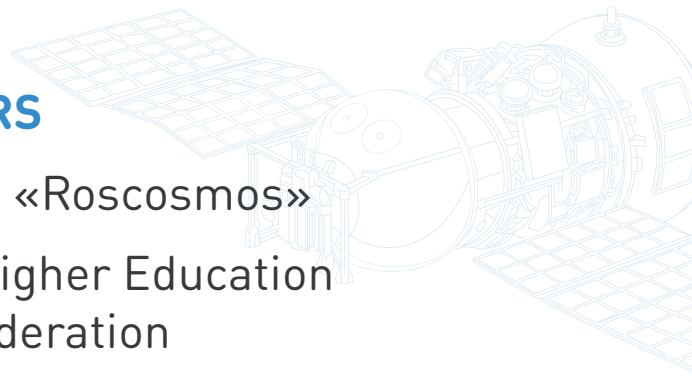
27–29 october 2026

CONFERENCE PROGRAMME

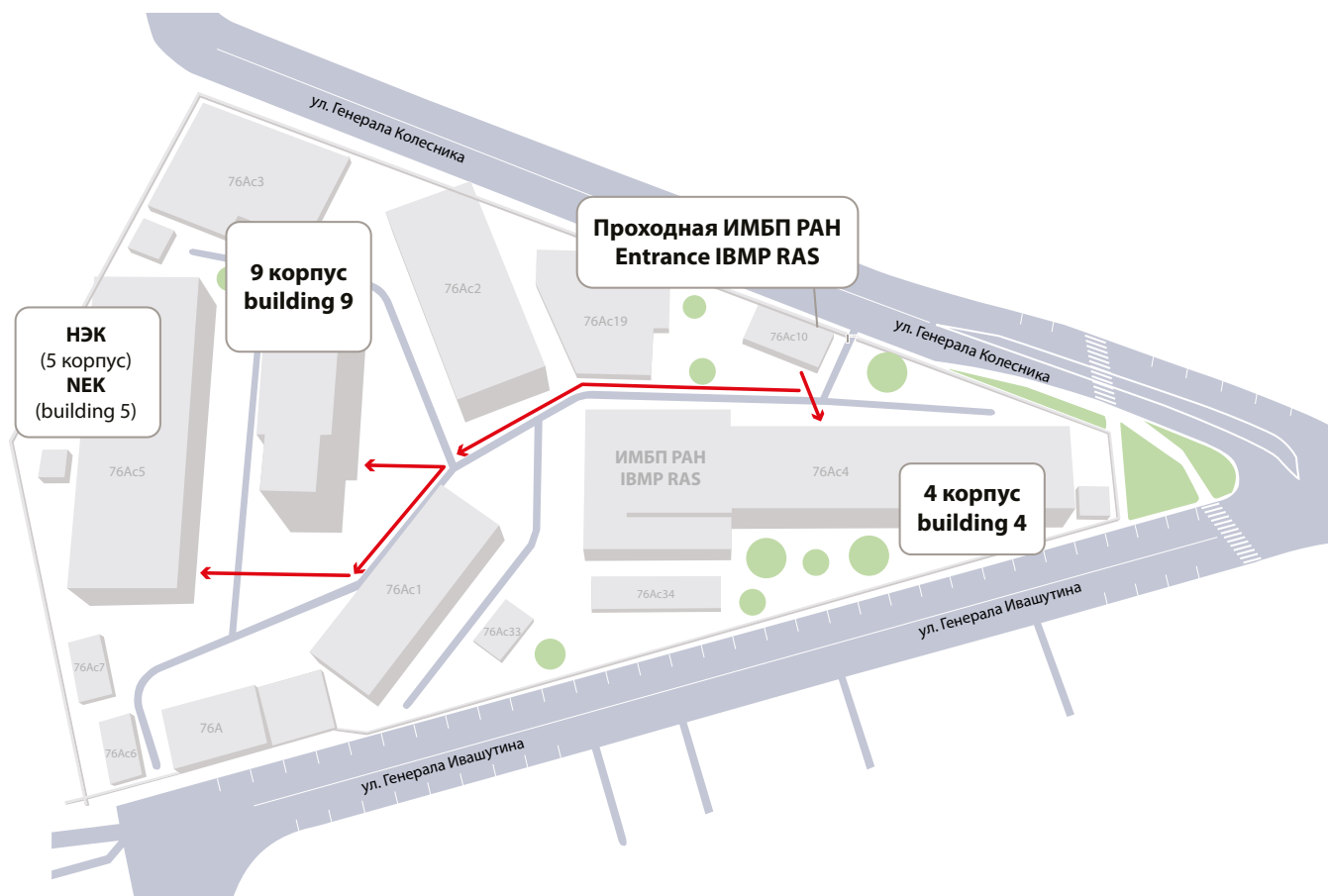
ORGANIZERS

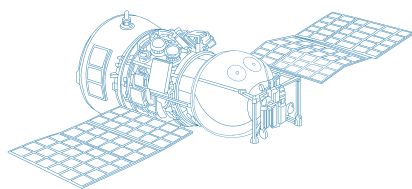
State Space Corporation «Roscosmos»
Ministry of Science and Higher Education
of the Russian Federation
Russian Academy of Sciences
IBMP RAS

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Moscow, Russia



THE SCHEME OF THE IMBP RAS





FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS 27-29 OCTOBER 2026

CONFERENCE PROGRAMME

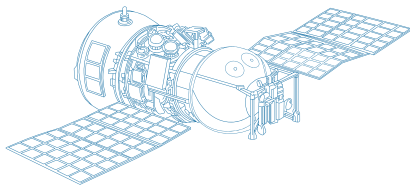
October 27th

Grand Hall Bldg. 9, Floor 8 (online broadcast)	Grand Hall Bldg. 4, Floor 3, Room 317	Small Hall Bldg. 4, Floor 4, Room 416
09:00–16:00 Registration (Bldg. 4, Floor 1)		
10:30–11:15 Conference Opening (Grand Hall, Bldg. 9, Floor 8)		
11:15–11:30 Break		
11:30–12:30 Plenary Session		
12:30–13:00 Coffee Break (Bldg. 9, Floor 8)		
13:00–14:30 Section 1. Experiments on Mammals. Bion-M2: Design, Animal Preparation, and Systemic Adaptation	13:00–14:15 Section 2. Experiments with Plants. Educational Programme	13:00–14:15 Section 3. Radiation Studies in High- Latitude Orbit Inside and Outside the Bion-M No.2 Spacecraft: Physical Session
14:30–15:00 Coffee Break	14:30–15:00 Coffee Break (Bldg. 4, Floor 3)	
15:00–16:00 Section 1. Experiments on Mammals. Bion-M2: Design, Animal Preparation, and Systemic Adaptation	15:00–16:30 Section 2. Experiments with Plants. Educational Programme	15:00–16:45 Section 4. Bion-M2 Experiment: Space Microbiology: Exobiology, Astrobiology, Biotechnology
16:00–16:30 Section 1. Experiments on Mammals. Visceral Organs		
16:30–17:30 Section 6. Poster Session (Bldg. 4, Floor 2)		
17:30–19:30 Banquet (Bldg. 9, Floor 8)		

CONFERENCE PROGRAMME

October 28th

Grand Hall Bldg. 9, Floor 8 (online broadcast)	Grand Hall Bldg. 4, Floor 3, Room 317	Small Hall Bldg. 4, Floor 4, Room 416
09:00–16:00 Registration (Bldg. 4, Floor 1)		
9:30–10:30 Section 3. Radiation Studies in High-Latitude Orbit Inside and Outside the Bion-M No.2 Spacecraft: Technical Session	9:30–11:20 Section 5. Molecular and Cellular Mechanisms of Spaceflight Factor Effects (In Memory of Prof. L.B. Buravkova, PhD in Medical Science, Corresponding Member of RAS)	09:30–11:00 Section 4. Bion-M No.2 Experiment: Space Microbiology: Exobiology, Astrobiology, Biotechnology
10:30–10:45 Break		
10:45–12:00 Секция 1. Эксперименты на млекопитающих. Скелетная мышца: структура, функция и молекулярная регуляция	11:20–11:50 Coffee Break	11:00–11:30 Coffee Break
	11:50–13:35 Section 5. Molecular and Cellular Mechanisms of Spaceflight Factor Effects (In Memory of Prof. L.B. Buravkova, PhD in Medical Science, Corresponding Member of RAS)	11:30–13:00 Section 4. Bion-M No.2 Experiment: Space Microbiology: Exobiology, Astrobiology, Biotechnology
12:00–12:30 Coffee Break		
12:30–14:00 Section 1. Experiments on Mammals. Skeletal Muscle: Structure, Function, and Molecular Regulation	13:35–14:35 Lunch	13:00–14:00 Lunch
14:00–15:00 Lunch	14:35–17:05 Section 5. Molecular and Cellular Mechanisms of Spaceflight Factor Effects (In Memory of Prof. L.B. Buravkova, PhD in Medical Science, Corresponding Member of RAS)	14:00–15:45 Section 4. Bion-M No.2 Experiment: Space Microbiology: Exobiology, Astrobiology, Biotechnology
15:00–16:15 Section 1. Experiments on Mammals. Skeletal System: Mechanics, Microarchitecture, and Mineralization		



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CONFERENCE PROGRAMME

October 29th

Grand Hall Bldg. 9, Floor 8 (online broadcast)
09:00–16:00 Registration (Bldg. 4, Floor 1)
09:30–11:00 Section 1. Experiments on Mammals. Cardiovascular and Respiratory Systems: Functional and Molecular Remodeling
11:00–11:30 Coffee Break
11:30–12:30 Section 1. Experiments on Mammals. Cardiovascular and Respiratory Systems: Functional and Molecular Remodeling
12:30–12:45 Break
12:45–13:45 Section 1. Experiments on Mammals. Session: Immune System and Lymphoid Organs
13:45–14:15 Coffee Break
14:15–15:15 Section 1. Experiments on Mammals. Session: Nervous System and Sensorimotor Re-adaptation
15:30–16:30 Summary. Conference Closing

OCTOBER 27th

PLENARY SESSION

V.N. Sychev

Flight Tests of the BION-M Space Facility and the BION-M No.2 Spacecraft

V.A. Shurshakov

Dosimetry Study for Biological Experiments on BION-M No.2 Spacecraft

TECHNICAL SESSIONS

Section 1. Experiments on Mammals

Session: Bion-M No.2 Experiment: Design, Animal Preparation, and Systemic Adaptation

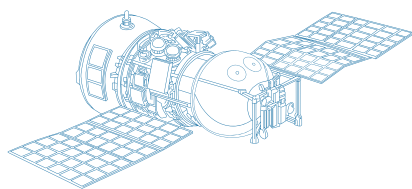
13:00–16:30

Chairs:

Prof. Olga L. Vinogradova, PhD in Biology

Dr. Aleksandr A. Andreev-Andrievsky, PhD in Biology

13:00–13:15	1	Experimental Design of the Mouse Study in the BION-M No.2 Programme	A.A. Andreev-Andrievsky, M.A. Mashkin, S.V. Drugova, D.V. Popov, O.S. Tarasova, O.L. Vinogradova, V.N. Sychev
13:15–13:30	2	Selection and Pre-Flight Preparation of Mice for Spaceflight on the BION-M No.2 Biosatellite	S.P. Shipova, S.V. Drugova, A.P. Grigoryan, M.A. Mashkin, O.V. Fadeeva, O.P. Rodicheva, A.A. Andreev-Andrievsky
13:30–13:45	3	Continuous Monitoring of Body Temperature and Heart Rate in Mice During a 30-Day Spaceflight on the BION-M No.2 Biosatellite	A.A. Andreev-Andrievsky, M.A. Mashkin, S.V. Drugova
13:45–14:00	4	Video Monitoring of Mice During the BION-M No.2 Biosatellite Mission: From Operational Flight Oversight to Automated Analysis of a Large Video Dataset	S.V. Drugova, A.A. Andreev-Andrievsky
14:00–14:15	5	Effects of Housing Conditions and Diet in the MLZH-02 Scientific Hardware on the Physiological Status and Behaviour of Mice	M.A. Mashkin, S.V. Drugova, E.I. Mednikova, T.S. Gureva, M.O. Rak, V.N. Sychev, A.A. Andreev-Andrievsky



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14:15–14:30	6	Structural Changes in the Intestinal Microbiome of Mice after a Flight on the BION-M No.2 Biosatellite	K.A. Shef, A.R. Kiry, M.A. Mashkin, S.V. Drugova, S.V. Poddubko, A.A. Andreev-Andrievsky
14:30–15:00	Coffee Break		
15:00–15:15	7	Temporal Reorganization of Spontaneous Locomotor Activity in Mice after a 30-Day Spaceflight: Results of Continuous Home-Cage Monitoring	V.V. Semenova, S.V. Drugova, A.P. Grigoryan, S.P. Shipova, A.A. Andreev-Andrievsky
15:45–15:30	8	Post-Flight Condition and Behavioural Responses of Mice after a 30-Day Spaceflight on the BION-M No.2 Biosatellite	S.V. Drugova, M.A. Mashkin, V.V. Semenova, A.P. Grigoryan, S.P. Shipova, A.A. Andreev-Andrievsky
15:30–15:45	9	Hematological Effects of a 30-Day Spaceflight in Mice: Readaptation Dynamics and the Role of Nrf2	M.A. Mashkin, S.V. Drugova, O.V. Fadeeva, A.A. Andreev-Andrievsky
15:45–16:00	10	Multisystem Adaptation of Mice to a 30-Day Spaceflight: An Integrative Analysis of Flight Effects, Readaptation, the Role of Diet, and Nrf2-Dependent Regulation	A.A. Andreev-Andrievsky

Section 1. Experiments on Mammals

Session: Visceral Organs

16:00–16:30

Chair:

Dr. Irina B. Alchinova, PhD in Biology

16:00–16:15	1	The Impact of Long-Term Spaceflight on the Mouse Endocrine Pancreas	Yu.S. Krivova, G.A. Sonin, E.O. Grushetskaya, A.E. Proshchina
16:15–16:30	2	Assessment of the Effect of Space Flight Factors on Liver Tissue (Histological Examination)	I.B. Alchinova, M.S. Demorzhi

Section 2. Experiments with Plants. Educational Programme

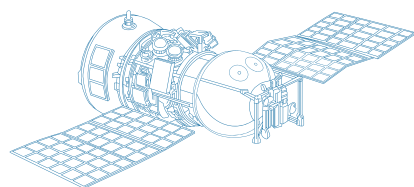
13:00–16:30

Chairs:

Dr. Margarita A. Levinskikh, PhD in Biology

Vladislav S. Sedletsky

13:00–13:15	1	Preliminary Results of Educational Experiments Conducted by Students of the Moscow Palace of Pioneers Center for Environmental Education aboard the Biosatellite «BION-M» No.2	A.V. Koloskov
13:15–13:30	2	Space biomedicine in Uzbekistan: first steps, initiatives and perspective projects	A.Sh. Yashinov
13:30–13:45	3	Spectrum-Dependent Phototropic Responses of <i>Physcomitrium patens</i> Gametophores aboard the BION-M No.2 Spacecraft	<i>Yu.A. Berkovich, I.O. Konovalova, A.S. Krivobok, A.M. Belyak, S.O. Smolyanina, Ya.V. Morozov, V.B. Nikitin, A.Yu. Skripnikov</i>
13:45–14:00	4	Technical Design Solutions and Operational Experience with the BIOKONT-BM5 and BIOKONT-BM6 Units of the BIOKONT-BM Research Hardware in the Gravisensor-3 Space Experiment	Ya.V. Morozov, <i>Yu.A. Berkovich, I.O. Konovalova, A.M. Belyak, A.A. Ivanova, V.B. Nikitin, I.N. Trusov</i>
14:00–14:15	5	Macro- and Microalgae in Orbit: Results of the Experiment on the BION-M Spacecraft No.2	O.V. Anisimova, <i>I.N. Trusov, M.Yu. Dyakov, A.V. Aleksandrova</i>
14:15–15:00	Coffee Break		
15:00–15:15	6	Characteristics of Wheat Seeds During their Formation and Exposure to Space Flight Conditions	M.A. Levinskikh, <i>E.L. Nefedova, O.B. Signalova, N.N. Cherednikova, V.N. Sychev, K.S. Golokhvast, M.A. Grinberg</i>
15:15–15:30	7	Assessment of Seed Quality and Seedling Viability of Carrot after Exposure to Space and Microgravity on the BION-M No.2 Biosatellite	M.R. Bagretsova, <i>M.A. Levinskikh, Ya.V. Morozov, S.O. Smolyanina, E.N. Baranova, A.V. Ivanova, A.A. Buryak, T.V. Leus</i>



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15:30–15:45	8	The Impact of Spaceflight Factors on the Metabolome of Certain Species of Medicinal Plants from the Asteraceae Family	V.A. Kurkin, <i>O.E. Pravdivtseva, Yu.N. Gorelov, L.V. Kurganskaya</i>
15:45–16:00	9	Impact of Space Environment Factors on Carrot Under the Conditions of the BION-M №2 Biological Satellite Flight	E.A. Kazakova, <i>Ya.A. Blinova, M.S. Podlutsky, E.M. Shesterikova, A.S. Khanova, I.V. Gorbatova</i>
16:00–16:15	10	The Influence of the Presence of Seeds on Board the Biosatellite «BION-M» No.2 on the Morphometric, Physiological and Signal Indicators of Plants	M.A. Grinberg
16:15–16:30	11	Preliminary Results of the Post-Flight Phase of the Flora-BS2 Experiment on the BION-M Spacecraft: The Influence of Spaceflight Factors Complex on Seed Germination and the Initial Development of Natural Flora Rare Species	<i>I.V. Ruzaeva, D.D. Kuzkinova,</i> L.M. Kavelenova, <i>Yu.N. Gorelov, L.V. Kurganskaya</i>

Section 3. Radiation Studies in High-Latitude Orbit Inside and Outside the Bion-M No.2 Spacecraft: Physical Session

13:00–14:15

Chairs:

Dr. Lyubov V. Kurganskaya, PhD . in Physical and Mathematical Science

Dr. Vyacheslav A. Shurshakov, PhD in Technological Science

13:00–13:15	1	Biologically Significant Characteristics of Ionizing Space Radiation Inside BION-M No.2 spacecraft, Obtained Using a Combined Method Based on Passive Detectors	R.V. Tolochek, <i>O.A. Ivanova, V.A. Shurshakov</i>
13:15–13:30	2	Dose Rate Dynamics Inside and Outside BION-M No.2 Spacecraft According to RD3-B3 Dosimeter-Radiometer Data	S.G. Drobyshev, <i>O.A. Ivanova, A.E. Lishnevsky, V.A. Shurshakov</i>
13:30–13:45	3	Dynamics of the Ionizing Space Radiation Dose Characteristics Inside BION-M №2 Spacecraft According to the TRITEL-B Instrument Data	A.E. Lishnevsky, <i>S.G. Drobyshev, I.S. Kartsev, V.I. Kartseva, O.A. Ivanova, V.A. Shurshakov</i>
13:45–14:00	4	Doses of Ionizing Space Radiation Measured by Passive Detectors on the Outer Surface of BION-M No.2 Satellite	R.V. Tolochek, <i>V.A. Shurshakov</i>

14:00–14:15	5	Low-Dose Effects from Exposure of <i>Lactuca sativa</i> Seeds Inside and Outside the BION-M No.2 Spacecraft	N.G. Platova, <i>R.V. Tolochev,</i> <i>V.A. Shurshakov</i>
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14:15–15:00 Coffee Break

Section 4. Bion-M2 Experiment: «Space Microbiology: Exobiology, Astrobiology, Biotechnology»

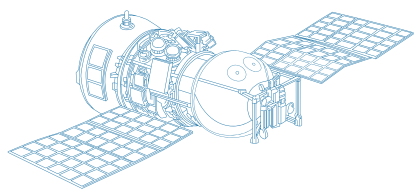
15:00–16:45

Chairs:

Dr. Vyacheslav K. Ilin, PhD in Medical Science. Corresponding Member of RAS

Dr. Aleksandr N. Suvorov, PhD in Medical Science. Corresponding Member of RAS

15:00–15:15	1	Analysis of the Effects of Adverse Spaceflight Factors on the Properties of Industrial Probiotic Microbial Strains	I.V. Solovyeva, <i>V.K. Ilin,</i> <i>I.V. Belova,</i> <i>A.G. Tochilina,</i> <i>A.A. Guridov,</i> <i>V.S. Kropotov,</i> <i>S.B. Molodtsova</i>
15:15–15:30	2	Application of Microbial Therapy Technologies for Spaceflight Support	A.N. Suvorov, <i>V.K. Ilin,</i> <i>A.B. Zalicheva,</i> <i>A.N. Tsapieva</i>
15:30–15:45	3	Studying the Effect of Space Flight Factors on Cellulose Degradation by Anaerobic Bacteria	V.K. Ilin, <i>D.V. Korshunov,</i> <i>V.E. Trubitsyn,</i> <i>M.E. Safronova</i>
15:45–16:00	4	Results of the BIOCONT Experiment on the «BION-M» №2 Satellite. Probiotic Bacteria <i>Lactiplantibacillus plantarum</i>	A.N. Kokoreva, <i>N.I. Zhuchkina,</i> <i>N. Atanasova,</i> <i>L. Dobrev,</i> <i>S. Danova,</i> <i>P. Donchev,</i> <i>M.P. Zarubin,</i> <i>A.A. Rubekina,</i> <i>R. Khristova,</i> <i>A. Gospodinov,</i> <i>N.A. Koltovaya</i>
16:00–16:15	5	Results of the BIOCONT Experiment on the BION-M № 2 Satellite. <i>Saccharomyces cerevisiae</i> and <i>Saccharomyces boulardii</i> Yeast	N.I. Zhuchkina, <i>A.N. Kokoreva,</i> <i>D.A. Kopylova,</i> <i>N.A. Koltovaya</i>
16:15–16:30	6	Study of the Influence of Space Flight Factors on <i>Corynebacterium amycolatum</i> Microorganisms	<i>I.V. Gladysheva,</i> <i>A.S. Balkin,</i> <i>V.Ya. Kataev,</i> <i>E.S. Roshchina,</i> S.V. Cherkasov



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16:30-16:45	7	Probiotic Properties of Ayran Prepared Using a Microbial Association from the Karachay-Cherkess State University Collection after Exposure to Flight Conditions of the BION-M No.2 Spacecraft	A.A. Parfenova, A.A. Tekeev, N.A. Usanova, Yu.A. Morozova, M.E. Safronova, V.K. Ilin
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OCTOBER 28th

TECHNICAL SESSIONS

Section 3. Radiation Studies in High-Latitude Orbit Inside and Outside the Bion-M No.2 Spacecraft: Technical Session

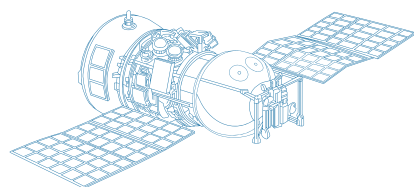
9:30–10:30

Chairs:

Dr. Lyubov V. Kurganskaya, PhD . in Physical and Mathematical Science

Dr. Vyacheslav A. Shurshakov, PhD in Technological Science

09:30–09:45	1	On the Results of the MRT-2 Experiment: Monitoring the Thermal State of the Structure of the Scientific Equipment Containers on the Outer Surface of the BION-M Nº2 Spacecraft During the Flight	<i>Yu.N. Gorelov,</i> <i>L.V. Kurganskaya,</i> <i>A.V. Shcherbak</i>
09:45–10:00	2	On the Results of the KARBON 2 Experiment Conducted on the BION-M Nº2 Spacecraft: A Study of the Influence of Factors in Outer Space on the Electrophysical, Optical, and Photovoltaic Properties of Silicon Carbide Based Structures	<i>L.V. Kurganskaya,</i> <i>O.V. Ryabenkova,</i> <i>A.V. Shcherbak</i>
10:00–10:15 online	4	Differential Intra- and Extra-Vehicular Radiation Dosimetry in High-Latitude Polar Orbits and Organ-Specific Biological Risks: A Systematic Review and Meta-Synthesis	<i>A. Ascencio,</i> <i>D. Bailon,</i> <i>E. Silva,</i> <i>F. Carrasco,</i> <i>L. Alipázaga,</i> <i>M. Contreras,</i> <i>M. Cunza,</i> <i>T. Santillán,</i> <i>R. Huayanay</i>
10:15–10:30 online	5	Bioacoustic Engineering and Cognitive Ergonomics for Long-Term Human Crew Stays in Next Lunar/Martian Module/Bases (Above-Ground and Under-Ground Settlement): Research Topics, Engineering Models and Experimental Technological Protocols	<i>R. Toscano,</i> <i>A. Toscano</i>
10:30–10:45	Break		



Section 1. Experiments on Mammals

Session: Skeletal Muscle: Structure, Function, and Molecular Regulation

10:45–14:00

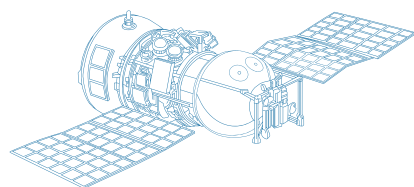
Chairs:

Dr. Daniil V. Popov, Phd in Biology, RAS Professor

Prof. Irina G. Bryndina, PhD in Medical Science

10:45–11:00	1	Muscle Fiber Phenotype, Mitochondrial Respiration, Gene Expression, and its Regulation in Mouse Respiratory and Locomotor Muscles: Organization, Results, and Research Prospects in the BION-M №2 Program	<i>D.V. Popov,</i> <i>A.A. Andreev-Andrievsky,</i> <i>O.L. Vinogradova,</i> <i>V.N. Sychev,</i> <i>O.I. Orlov</i>
11:00–11:15	2	Severity of Atrophic Changes in the Locomotor Muscle and Diaphragm after a Month-Long Space Flight	<i>E.M. Lednev,</i> <i>V.V. Semenova,</i> <i>A.P. Grigoryan,</i> <i>S.P. Shipova,</i> <i>M.A. Mashkin,</i> <i>S.V. Drugova,</i> <i>O.L. Vinogradova,</i> <i>A.A. Andreev-Andrievsky,</i> <i>D.V. Popov</i>
11:15–11:30	3	The Impact of Mechanical Unloading and Other Risk Factors of 30 Days Spaceflight on the Skeletal Muscle Transcriptome	<i>L.Zh. Mameshova,</i> <i>A.A. Borzykh,</i> <i>N.S. Kurochkina,</i> <i>E.M. Lednev,</i> <i>M.A. Mashkin,</i> <i>S.V. Drugova,</i> <i>O.L. Vinogradova,</i> <i>A.A. Andreev-Andrievsky,</i> <i>D.V. Popov</i>
11:30–11:45	4	Gene Expression Dynamics in the Murine Diaphragm and Locomotor Skeletal Muscle Following a One-Month Spaceflight	<i>N.S. Kurochkina,</i> <i>L.Zh. Mameshova,</i> <i>A.A. Borzykh,</i> <i>M.A. Mashkin,</i> <i>S.V. Drugova,</i> <i>O.L. Vinogradova,</i> <i>A.A. Andreev-Andrievsky,</i> <i>D.V. Popov</i>

11:45-12:00	5	Transcription Factors Associated with Changes in Gene Expression in Mouse Skeletal Muscle after a Month-Long Spaceflight	P.A. Makhnovskiy, N.S. Kurochkina, L.Zh. Mameshova, A.A. Borzykh, M.A. Mashkin, S.V. Drugova, O.L. Vinogradova, A.A. Andreev-Andrievsky, D.V. Popov
12:00-12:30	Coffee Break		
12:30-12:45	6	Proteomic Profile and Mitochondrial Respiration in a Limb Muscle and the Diaphragm of Mice after a One-Month Spaceflight	M.A. Orlova, M.A. Mashkin, S.V. Drugova, G.V. Galkin, O.L. Vinogradova, A.A. Andreev-Andrievsky, D.V. Popov
12:45-13:00	7	The Impact of Nrf2 Activity Alterations on the Transcriptome and Proteome of Mouse Locomotor Muscles after a 30-Day Spaceflight	A.A. Borzykh, L.Zh. Mameshova, N.S. Kurochkina, M.A. Orlova, M.A. Mashkin, S.V. Drugova, T.F. Vepkhvadze, O.L. Vinogradova, A.A. Andreev-Andrievsky, D.V. Popov
13:00-13:15	8	Effect of Spaceflight on Mitochondrial DNA Stability in Mouse Skeletal Muscle	A.A. Kulishenko, K.A. Sharlo, B.S. Shenkman
13:15-13:30	9	Comparison of Actin-Myosin Interaction Characteristics in Mouse Slow Skeletal Muscle Following 30-Day Spaceflight and Movement Restriction	O.P. Gertsen, V.O. Votnova, A.E. Tsybina, N.A. Stukalova, M.V. Zhigulina, K.A. Butova, B.S. Shenkman, L.V. Nikitina
13:30-13:45	10	Comparison of Actin-Myosin Interaction Characteristics in Mouse Slow Skeletal Muscle Following 30-Day Spaceflight and Movement Restriction	M.V. Zhigulina, V.O. Votnova, N.A. Stukalova, A.E. Tsybina, K.A. Butova, B.S. Shenkman, O.P. Gertsen, L.V. Nikitina



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13:45–14:00	11	Assessment of Sphingomyelinase and Ceramide Levels in the Diaphragm of C57BL/6 Mice Under Conditions of Long-Term Spaceflight on the BION-M2 Biosatellite	V.A. Protopopov, A.V. Sekunov, D.N. Burganova, I.G. Bryndina
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14:00–15:00

Lunch

Section 1. Experiments on Mammals

Session: Skeletal System: Mechanics, Microarchitecture, and Mineralization

15:00–16:15

Chairs:

Dr. Galina Yu. Vasileva, PhD in Medical Science

Viktoriya I. Gulimova, PhD in Biology

15:00–15:15	1	Assessment of the Physico-Mechanical Properties of Mouse Tibial Bones Within the BION-M No.2 Project	A.I. Akhmetzyanova, N.V. Kharin, E.K. Konkova, E.O. Chibirev, O.A. Sachenkov, T.V. Baltina
15:15–15:30	2	Geometric Morphometrics of the Mouse Mandible after a 30-Day Spaceflight	V.I. Gulimova, Yu.S. Krivonosov, A.V. Buzmakov, M.A. Bolshenko, N.S. Gladyshev, A.A. Malkov, V.E. Asadchikov, S.V. Savelev
15:30–15:45	3	Continuous Monitoring of Body Temperature and Heart Rate in Mice During a 30-Day Spaceflight on the BION-M No.2 Biosatellite	V.I. Gulimova, I.A. Artyukov, N.G. Borisenko, D.V. Pavlov, A.A. Postnov, A.A. Malkov, N.S. Gladyshev, S.V. Savelev
15:45–16:00	4	Mineral Status and Microarchitectural Properties of Bone Tissue in Mice Following a 30-Day Spaceflight	K.V. Gordienko, N.A. Lukicheva, D.O. Yarmak, K.A. Romanenko, A.A. Andreev-Andrievsky, M.A. Mashkin, V.N. Sychev, G.Yu. Vasileva

16:00–16:15	5	Local Mineral Content in Mouse Bones after a 30-Day Spaceflight (BION-M No.2)	N.A. Lukicheva, K.V. Gordienko, N.A. Korotkova, M.S. Doronina, A.A. Andreev-Andrievsky, V.N. Sychev, G.Yu. Vasileva
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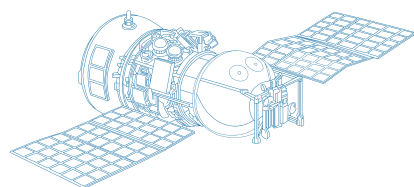
Section 5. Molecular and Cellular Mechanisms of Spaceflight Factor Effects (In Memory of Prof. L.B. Buravkova, PhD in Medical Science, Corresponding Member of RAS)

9:30–17:05

Chairs:

Prof. Irina V. Ogneva, PhD in Physical and Mathematical Science;
Danila A. Yakubets

09:30–09:50	1	Opening Remarks. In Memory of L.B. Buravkova: Researcher, Mentor, Person	E.R. Andreeva
09:50–10:05	2	Transcriptomic and Morphofunctional Changes of Multipotent Mesenchymal Stromal Cells after a 30 Day Space Flight: Main Results of the “Transcriptom-Msc” Experiment	D.A. Yakubets, E.A. Tyrina, E.R. Andreeva, L.B. Buravkova
10:05–10:20	3	Secretome Modifications of Mesenchymal Stromal Cells Under Spaceflight Conditions aboard the BION-M No.2 Biosatellite	D.N. Kashirina, A.A. Reyngardt, D.A. Yakubets, L.Kh. Pastushkova, I.M. Larina
10:20–10:35	4	Modulation of the Angiogenic Potential in Multipotent Mesenchymal Stromal Cells Exposed to Simulated and Real Spaceflight Conditions	M.I. Ezdakova, D.A. Yakubets, L.B. Buravkova
10:35–10:50	5	Analysis of Bone Marrow Hematopoiesis in C57BL/6 Mice after a 30-Day Spaceflight on the BION-M №2 Biosatellite	E.A. Tyrina, E.A. Markina, L.B. Buravkova
10:50–11:05	6	Functional Activity of Bone Marrow Hematopoietic Progenitor Cells in Mice Following a 30-Day Flight aboard the «BION-M2» Biosatellite During the Early and Late Post-Flight Recovery Phases	E.A. Markina, D.K. Matveeva, I.V. Andrianova, A.N. Gornostaeva, L.B. Buravkova
11:05–11:20	7	Morphofunctional Characterization of a Primary Bone Marrow Cell Culture from Mice after a 30-Day Spaceflight	F.A. Sadovnikov, I.B. Alchinova
11:20–11:50	Coffee Break		



FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS 27–29 OCTOBER 2026

11:50–12:05	8	Analysis of DNA Damage in Mouse Bone Marrow Cells after the BION-M No.2 Satellite Flight	A.E. Melik-Pashaev, E.A. Tyrina, D.A. Yakubets, E.I. Safonova, L.B. Buravkova
12:05–12:20	9	Assessment of Radiobiological Effects in Mice Using Cytogenetic Damage Biomarkers in the BION-M 2 Mission	O.V. Belov, O.V. Nikitenko, T.M. Bychkova, K.P. Afanaseva, O.M. Rozanova, E.N. Smirnova, T.A. Belyakova, L.P. Sycheva, A.N. Osipov
12:20–13:35	10	Assessment of Lymphocytes DNA Damage by Electrophoresis of Single Cells (Based on the Results of the BION-M No.2 Biosatellite Flight)	I.B. Alchinova, M.V. Polyakova
12:35–12:50	11	The Effect of 30-Day Flight on the Activity of Enzymes of the DNA Excision Repair System in Fruit Flies <i>Drosophila melanogaster</i>	A.T. Davletgildeeva, I.V. Ogneva, N.M. Fokina, N.S. Biryukov, N.A. Kuznetsov
12:50–13:05	12	Effects of Spaceflight Factors on the <i>Drosophila Melanogaster</i> Microbiome During Progressive Neurodegeneration	S.V. Sarantseva, E.E. Slepneva, E.V. Ryabova, A.E. Komissarov
13:05–13:20	13	The Effect of a 30-Day Space Flight on the Speed of the Fruit Fly <i>Drosophila melanogaster</i> in a Negative Geotaxis Test	A.M. Kulakova, S.A. Narkhova, E.V. Ryabova, N.M. Fokina, N.S. Biryukov, I.V. Ogneva
13:20–13:35	14	The Development of <i>Drosophila melanogaster</i> after a 30 Day Space Flight	K.P. Afanaseva, N.M. Fokina, E.V. Ryabova, N.S. Biryukov, I.V. Ogneva
13:35–14:35	Lunch		
14:35–14:50	15	The Development of <i>Drosophila melanogaster</i> after a 30 Day Space Flight	S.A. Narkhova, A.M. Kulakova, E.V. Ryabova, N.S. Biryukov, N.M. Fokina, I.V. Ogneva

14:50–15:05	16	The Effect of a 30-Day Space Flight on the Relative Content of Reactive Oxygen Species and the State of Mitochondria in the Sperm of C57BL/6 Mice	N.S. Biryukov, A.M. Kulakova, S.A. Narkhova, N.M. Fokina, I.V. Ogneva
15:05–16:20	17	Morphofunctional Parameters of Sperm Isolated from C57BL/6 Mice after 30-Day Space Flight	N.M. Fokina, A.M. Kulakova, S.A. Narkhova, N.S. Biryukov, I.V. Ogneva
16:20–16:35	18	Synaptonemal Complex as a Possible Marker of Chromosomal Variability Induced by Spaceflight Factors	S.N. Matveevsky, V.O. Sokolov, I.V. Redekop, E.V. Kuznetsova
16:35–16:50	19	The Effect of a 30-Day Spaceflight on Cholesterol and Calcium Levels in Spermatozoa of C57BL/6 Mice	I.V. Ogneva, A.M. Kulakova, S.A. Narkhova, N.M. Fokina, N.S. Biryukov, Yu.S. Zhdankina
16:50–17:05	20	Cholesterol Content in the Buccal Epithelial Cells of Male C57BL/6 Mice Following a 30-Day Space Flight	R.V. Serebryakova, A.M. Kulakova, S.A. Narkhova, N.M. Fokina, N.S. Biryukov, I.V. Ogneva

Section 4. Bion-M №2 Experiment: Space Microbiology: Exobiology, Astrobiology, Biotechnology

9:30–15:45

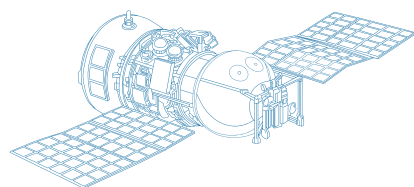
Chairs:

Mikhail Yu. Karganov, D.Sc.

Svetlana.Viktorovna Poddubko, PhD.

Sergey A. Kharin, PhD.

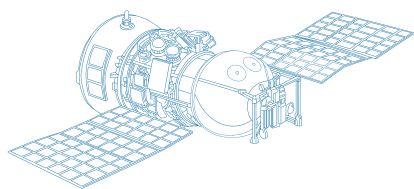
09:30–09:45	1	Dormant Forms of Pro- and Eukaryotes Under Long-Term Space Exposure (Main Results of the Biorisk Space Experiment)	S.A. Kharin, S.V. Poddubko, E.A. Deshevaya, D.S. Karpov, S.V. Fialkina, P.D. Osipova, A.A. Guridov, A.R. Kiry, A.A. Pazenko, V.D. Rodimin, M.A. Levinskikh, E.L. Nefedova, V.N. Sychev
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FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS 27–29 OCTOBER 2026

09:45–10:00	2	Dose-Dependent Fragmentation of Dry Lambda Phage DNA Exposed on the BION-M No.2 Satellite	M.V. Polyakova, <i>I.B. Alchinova, A.A. Guridov, S.V. Poddubko, M.Yu. Karganov</i>
10:00–10:15	3	Comparative Analysis of the Effects of Spaceflight Factors on Tobacco Mosaic Virus During Exposure aboard the BION-M No.2 Biosatellite	N.A. Nikitin, <i>M.A. Arkhipenko, O.V. Karpova, I.B. Alchinova, A.A. Guridov, S.V. Poddubko, M.Yu. Karganov</i>
10:15–10:30	4	Selection and Pre-Flight Preparation of Mice for Spaceflight on the BION-M No.2 Biosatellite	A.A. Sidorenko, <i>A.D. Gerasimovich, D.E. Gulyaeva, E.I. Ladutko, P.I. Orlovskaya, A.A. Guridov, S.V. Poddubko</i>
10:30–10:45	5	Survival and Physiological-Biochemical Properties of Roseateles amylovorans BIM B-1768 Bacterial Strain Following Flight Aboard the BION-M No.2 Biosatellite	D.E. Gulyaeva, <i>A.A. Sidorenko</i>
10:45–11:00	6	Whole-Genome Mutatiun Analysis in the Serratia marcescens Strain after Flight Onboard a Biosatellite BION-M №2	A.R. Kiriy, <i>E.N. Pushkova, S.V. Poddubko</i>
11:00–11:30	Coffee Break		
11:30–11:45	7	Survival, Growth, and Biodegradation Activity of Microscopic Fungi in the Experiments in the Polar Orbit of the Earth on the BION-M No.2 Biosatellite	V.D. Rodimin, <i>S.A. Kharin, S.V. Poddubko, A.A. Guridov, E.A. Zhukova, A.V. Kurakov</i>
11:45–12:00	8	Potential of Microscopic Fungi Isolated From Extreme Habitats to Adapt and Survive in Space Conditions	<i>I.Yu. Kirtsideli,</i> G.N. Zvereva
12:00–12:15	9	Study of the Effect of Near-Earth Orbit Conditions on Samples of Chernozem and Sod-Podzolic Soil Exposed in the Biosatellite BION-M №2	A.A. Dymova, <i>A.D. Zolotova, P.A. Kozhevin, M.V. Gorlenko, D.D. Filippov, N.V. Kostina</i>
12:15–12:30	10	Ecophysiological Features of a Different Fungal Strains after Space Impact on the BION-M №2	E.A. Chernyateva, <i>A.E. Ivanova, T.A. Panova, M.Yu. Dyakov</i>

12:30–12:45	11	Protective Effect of a Hypomagnetic Field on the Survival of Mutant <i>Saccharomyces cerevisiae</i> Yeast Under Exposure to Spaceflight Factors	S.A. Melnikova, <i>P.D. Osipova, E.A. Zhukova, S.V. Poddubko, D.S. Karpov</i>
12:45–13:00	12	The Effect of Space Flight Factors on the Reducing Function of Bacterial Strains and the Level of Biocidal Activity of a Nanomaterial Polymer Anti-Fungal Coating	T.A. Voeykova, <i>A.Yu. Vlasova, O.A. Zhuravleva, E.A. Nikulina, N.A. Grebenkina, A.A. Guridov, M.E. Safronova, A.S. Egorov, A.S. Yanenko, V.K. Ilin</i>
13:00–14:00	Lunch		
14:00–14:15	13	Survival of Archaea, Bacteria, and Eukaryotes in Outer Space on the External Surface of the BION-M №2 Spacecraft.	A.A. Guridov, <i>S.V. Poddubko</i>
14:15–14:30	14	The Role of Bacterial Physiological State in Survival During Spaceflight and after Return to Earth	E.V. Demkina, <i>A.A. Guridov, O.A. Galuza, P.Yu. Kolesnikov, S.V. Poddubko, V.K. Ilin, Yu.A. Nikolaev</i>
14:30–14:45	15	Effect of Pre-Flight Standby and Space Flight Factors on the Viability of Bacteria and Fungi Exposed to the Surface of the BION-M №2 Spacecraft	P.A. Abolentseva, <i>A.A. Guridov, V.K. Ilin, S.V. Ovsyankina, S.V. Poddubko, S.V. Khizhnyak</i>
14:45–15:00	16	Effect of Space Flight Factors on the Antibiotic Activity of <i>Bacillus atrophaeus</i> VKPM B-13893 Against Phytopathogenic Fungi of the Genus <i>Fusarium</i>	P.A. Abolentseva, <i>V.V. Gruber, A.A. Guridov, V.K. Ilin, S.V. Ovsyankina, S.V. Poddubko, S.V. Khizhnyak</i>
15:15–15:30	17	Macro- and Microalgae in Orbit: Results of the Experiment on the BION-M Spacecraft No.2	O.V. Kondratenko, <i>R.R. Galieva, A.M. Kovalev, A.V. Lyamin, A.S. Sustretov</i>



**FINAL RESULTS AND ROLE
IN SAFE INTERPLANETARY SPACEFLIGHTS
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15:30-15:45	18	Radioprotective tardigrade Dsup protein reduces adverse effects in E. coli of exposure to ionizing radiation and spaceflight conditions inside/outside Bion-M №2 biosatellite	<i>M.P. Zarubin,</i> <i>A.A. Rubekina,</i> <i>E.V. Kravchenko,</i> <i>E.A. Shirshin</i>
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OCTOBER 29th

TECHNICAL SESSIONS

Section 1. Experiments on Mammals

Session: Cardiovascular and Respiratory Systems: Functional and Molecular Remodeling

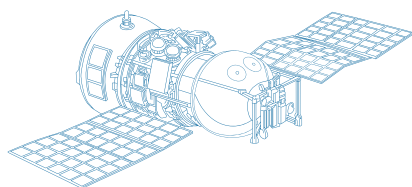
9:30–12:30

Chairs:

Dr. Olga S. Tarasova, PhD in Biology

Prof. Vladislav S. Kuzmin, PhD in Biology

9:30–9:45	1	Remodeling of Sinoatrial Node Automaticity in Mice after a 30-Day Space Flight. Acceleration of Basal Rhythm, Loss of A1-Adrenergic Response, and Enhancement of Cholinergic Inhibition	M.A. Gonotkov, Yu.V. Egorov, Ya.A. Voronina, V.S. Kuzmin
9:45–10:00	2	Effect of Long-Duration Spaceflight on Transcriptional Patterns of Cardiac Pacemaker Tissue Remodeling	A.M. Karkhov, Ya.A. Voronina, V.S. Kuzmin
10:00–10:15	3	Morphofunctional Parameters of Sperm Isolated from C57BL/6 Mice after 30-Day Space Flight	Yu.V. Egorov, M.A. Gonotkov, Ya.A. Voronina, V.S. Kuzmin
10:15–10:30	4	Effect of Long-Duration Spaceflight on The Bioelectrical Activity of the Cardiac Pacemaker and Atrial Myocardium in Wild-Type and Nrf2 Knockout Mice	Ya.A. Voronina, Yu.V. Egorov, M.A. Gonotkov, V.S. Kuzmin
10:30–10:45	5	Study of Functional Characteristics and Isoform Composition of Contractile Proteins in the Left Ventricle of Mice Hearts after a 30-Day Spaceflight	V.O. Votinova, O.P. Gertsen, A.E. Tsybina, N.A. Stukalova, M.V. Zhigulina, K.A. Butova, B.S. Shenkman, L.V. Nikitina
10:45–11:00	6	Changes in the Regulation of Tone of Intracranial and Extracranial Arteries of Mice During a 30-Day Space Flight on the BION-M №2 Biosatellite	D.K. Gaynullina, O.E. Fadyukova, A.A. Shvetsova, O.O. Kiryukhina, A.A. Borzykh, A.A. Druzhinina, O.L. Vinogradova, O.S. Tarasova
11:00–11:30	Coffee Break		



FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS 27–29 OCTOBER 2026

11:30–11:45	7	The Influence of 30-Day Spaceflight Conditions on Tone Regulation of Mice Hindlimb Artery and Vein	O.S. Tarasova, <i>O.O. Kiryukhina, D.K. Gaynullina, A.A. Shvetsova, O.E. Fadyukova, M.G. Pechkova, A.A. Druzhinina, A.A. Borzykh, O.L. Vinogradova</i>
11:45–12:00	8	Effect of 30-Day Spaceflight aboard the BION-M №2 Biosatellite on the Functional Characteristics of the Mouse Portal Vein	M.G. Pechkova, <i>O.O. Kiryukhina, R.Yu. Zhedyaev, A.A. Druzhinina, A.A. Borzykh, O.L. Vinogradova, O.S. Tarasova</i>
12:00–12:15	9	Nrf2 Gene Knockout Alters the Gene Expression Profile of the Pulmonary Surfactant System Under Spaceflight Conditions	A.V. Sekunov, <i>V.A. Protopopov, N.R. Gavrilov, N.G. Ovchinina, D.N. Burganova, D.R. Ziganshin, V.I. Churilov, I.G. Bryndina</i>
12:15–12:30	10	Assessment of Pulmonary Water Balance Parameters in C57BL/6 Mice Under Prolonged Spaceflight aboard the BION-M №2 Biosatellite	I.G. Bryndina, <i>N.R. Gavrilov, A.V. Sekunov, V.A. Protopopov, N.G. Ovchinina, D.N. Burganova, D.R. Ziganshin</i>
12:30–12:45	Break		

Section 1. Experiments on Mammals

Session: Immune System and Lymphoid Organs

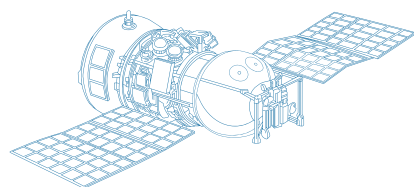
12:45–14:00

Chairs:

Sergey A. Ponomarev, M.D., D.Sc.

Olga V. Glushkova, D.Sc.

12:45–13:00	1	Balance Between Immunoaging and Adaptation after Spaceflight	<i>O.V. Glushkova,</i> <i>E.S. Khodyko,</i> <i>A.A. Kuzekova,</i> <i>Yu.A. Evstratova,</i> <i>S.M. Lunin,</i> <i>M.O. Khrenov,</i> <i>E.K. Mubarakshina,</i> <i>E.E. Karmanova,</i> <i>T.V. Novoselova,</i> <i>M.G. Sharapov,</i> <i>S.B. Parfenyuk</i>
13:00–13:15	2	A Study of the Impact of Space Flight (Biosatellite «Bion-M» No.2) on the State of the Immune System of Mice	<i>V.A. Shmarov,</i> <i>O.V. Kutko,</i> <i>M.P. Rykova,</i> <i>K.D. Orlova,</i> <i>E.A. Zhirova,</i> <i>T.V. Zhuravleva,</i> <i>S.M. Shulgina,</i> <i>A.A. Kotikova,</i> <i>D.D. Vlasova,</i> <i>K.V. Utkin,</i> <i>E.A. Lysenko,</i> <i>S.A. Ponomarev</i>
13:15–13:30	3	Features of the Functional State of B-Lymphocytes in the Spleen of Mice After Space Flight (Biosatellite «Bion-M» No.2)	<i>V.A. Shmarov,</i> <i>O.V. Kutko,</i> <i>M.P. Rykova,</i> <i>K.D. Orlova,</i> <i>E.A. Zhirova,</i> <i>T.V. Zhuravleva,</i> <i>S.M. Shulgina,</i> <i>A.A. Kotikova,</i> <i>D.D. Vlasova,</i> <i>K.V. Utkin,</i> <i>E.A. Lysenko,</i> <i>S.A. Ponomarev</i>
13:30–13:45	4	Morphofunctional State of Peyer's Patch in Microgravity	<i>S.N. Abdreshov,</i> <i>G.A. Demchenko,</i> <i>M.N. Ermagambetov</i>
13:45–14:15	Coffee Break		



Section 1. Experiments on Mammals

Session: Nervous System and Sensorimotor Readaptation

14:15–15:15

Chairs:

Dr. Aleksandra E. Proshchina, PhD in Biology

Dr. Aleksandr A. Andreev-Andrievsky, PhD in Biology

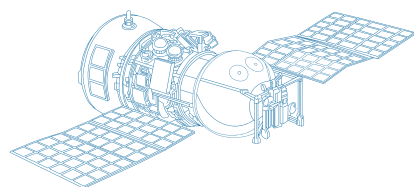
14:15–14:30	1	Altered Gait Kinematics in Mice During Early Readaptation after the BION-M No.2 Mission	<i>M.A. Mashkin, A.P. Grigoryan, A.A. Andreev-Andrievsky</i>
14:30–14:45	2	Mouse Vestibular Cerebellum after 30 Day Spaceflights aboard the BION-M №1 and BION-M №2 Biosatellites	<i>A.E. Proshchina, Yu.S. Krivova, A.A. Malkov, E.O. Grushetskaya, A.S. Kharlamova</i>
14:45–15:00	3	Possibilities of Multiplex Immunohistochemical Analysis of Neurogenesis Dynamics in the Brains of Mice Following a 30-Day Space Flight	<i>M.R. Saridis, Yu.K. Komleva, O.V. Belov, K.P. Afanaseva, A.V. Alekhovich, A.A. Kostin, D.A. Atyakshin</i>
15:00–15:15	4	A Five-Day Readaptation Period is Not Sufficient to Restore the Morphology of N. Suralis of Mice after Spaceflight on the BION-M №2 Biosatellite	<i>O.V. Tyapkina, K.A. Petrova, D.M. Maksimov, G.F. Shaymardanova, L.F. Nurullin, A.A. Andreev-Andrievsky, R.R. Islamov</i>

OCTOBER 27th

Section 6. Poster Session

16:30–17:30

Poster No.	Title	Authors
1	Selection and Pre-Flight Preparation of Mice for Spaceflight on the BION-M No.2 Biosatellite	G.A. Demchenko, <i>M.R. Khanturin,</i> <i>S.N. Abdreshov,</i> <i>M.A. Esenova</i>
2	The effect of spaceflight conditions on integrin-mediated signal transduction in cardiac tissue	N.B. Bilyug
3	Morphological changes in the thoracic aorta of mice caused by the effects of space flight factors (histological examination).	I.B. Alchinova, M.S. Demorzh
4	Geometric morphometrics of the mouse mandible after a 30-day spaceflight	G.A. Ivanova, <i>N.A. Lukicheva,</i> <i>P.Yu. Kolesnikov,</i> <i>K.V. Gordienko,</i> <i>G.Yu. Vasileva</i>
5	The effect of spaceflight factors on the structural and functional organization of the neuronal cytoskeleton in the thoracic spinal cord gray matter of C57BL/6 mice	P.A. Anfimova, <i>E.S. Sablin,</i> <i>V.V. Porseva,</i> <i>P.M. Maslyukov</i>
6	Morphometric study of the adrenal medulla in mice following spaceflight on the biosatellite «BION-M №2»	E.G. Otlyga, <i>D.A. Otlyga,</i> <i>S.V. Savelev</i>
7	Survival of <i>Saccharomyces cerevisiae</i> yeast under spaceflight conditions in the Exobiophrost experiment	K.A. Kulagin, <i>P.D. Osipova,</i> <i>E.A. Zhukova,</i> <i>S.V. Poddubko,</i> <i>D.S. Karpov</i>
8	Survival of Thermophilic Bacteria in an Artificial Meteorite after Atmospheric Entry on Board the Bion-M No.2 Spacecraft	<i>A.A. Guridov,</i> S.N. Gavrilov, <i>T.G. Sokolova,</i> <i>T.V. Kochetkova,</i> <i>A.I. Maltseva,</i> <i>E.N. Frolov,</i> <i>E.A. Zhukova,</i> <i>P.Yu. Kolesnikov,</i> <i>S.V. Poddubko,</i> <i>V.K. Ilin</i>



FINAL RESULTS AND ROLE IN SAFE INTERPLANETARY SPACEFLIGHTS 27–29 OCTOBER 2026

9	Effect of spaceflight factors on the lipidome of <i>Rhodotorula</i> yeasts surviving the Exobiophrost experiment	<i>I.O. Barinova,</i> <i>A.A. Guridov,</i> <i>S.V. Poddubko,</i> <i>D.S. Karpov</i>
10	Resilience of Soil Microbial Communities and Soil Microorganisms to Space Exposure	<i>A.A. Guridov,</i> <i>V.S. Cheptsov,</i> <i>A.A. Belov,</i> <i>S.V. Poddubko</i>
11	Comparative Analysis Of Methylophilic Microbial Survival Under Spaceflight Conditions During The Bion-M №2 Mission	<i>G.A. Ekimova,</i> <i>I.I. Mustakhimov,</i> <i>A.A. Gudinov,</i> <i>S.V. Poddubko</i>
12	Analysis of the Frequency of Micronuclei in Polychromatic Erythrocytes, Apoptosis and Cell Cycle in Mouse Bone Marrow Cells After a 30-Day Spaceflight on the Bion-M No.2 Spacecraft	<i>A.S. Zhirnik,</i> <i>D.A. Shaposhnikova,</i> <i>E.A. Markina,</i> <i>E.Yu. Moskaleva</i>
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15	Long-Term Changes in Anxiety Level and Cognitive Function After Fractionated X-Ray Irradiation in Mice	<i>E.M. Kandukova</i>

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