INSTITUTE OF THEORETICAL AND EXPERIMENTAL BIOPHYSICS,

RUSSIAN ACADEMY OF SCIENCES

Laboratory of pharmacological regulation of cellular resistance

International Conference of Young Scientists

Mitochondrial pores and channels as pharmacological targets

October 30, 2014

CONFERENCE PROGRAM

Pushchino, 2014

The conference is organized in accordance with the implementation of the project «The development of the drugs of target influence on mitochondrial pores and channels for heart and hepar treatment and cancer therapy», supported by a grant from the Government of the Russian Federation (contract № 14.Z50.31.0028) in the framework of the decree of the Government of the Russian Federation from April 9, 2010 № 220 "on measures to attract leading scientists in the Russian educational institution of higher professional education and scientific institutions of the state academies of Sciences and state research centers of the Russian Federation".

October 27, 2014

Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences

Big Conference Room (Main building, 4th floor)

13.30 – 14.30 John J. Lemasters, Professor

REGULATION OF HEPATIC MITOCHONDRIAL METABOLISM BY ETHANOL

Medical University of South Carolina, Charleston, USA

Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Russia

(The report will be accompanied by a simultaneous translation)

October 30, 2014

Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences

Big Conference Room (Main building, 4th floor)

8.00 - 10.00 Registration of participants

9.45 OPENING CEREMONY. WELCOME SPEECH TO THE PARTICIPANTS OF THE CONFERENCE

10.00 - 13.00 - LECTURES OF LEADING SCIENTISTS

10.00 Anna-Liisa Nieminen, Professor
MITOCHONDRIAL IRON UPTAKE THROUGH MITOFERRIN
Medical University of South Carolina, Charleston, USA
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Russia

10.40 Vladimir S. Akatov, Professor
MULTIDRUG RESISTANCE OF TUMOR CELLS AND MITOCHONDRIA PORE AND CHANNELS
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Russia

11.20 Galina D. Mironova, Professor
URIDINE AS A POTENTIAL MEDICINE FOR OXIDATIVE STRESS. THE STUDY OF THE MECHANISM OF ITS ACTION
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Russia

12.00 – 12.30 Lunch

12.30 - 15.00 ORAL REPORTS OF YOUNG SCIENTISTS

(Chairman - Alexey G. Kruglov, PhD)

12.30 Alexey G. Kruglov
VDAC ISOFORMS 1, 2 AND 3 LACK NADH OXIDOREDUCTASE ACTIVITIES.
Shmatkova M.L.[1,2], Teplova V.V.[2], Chekanov A.V.[2], Krestinina O.V.[2], Solov'eva M.E.[2], Sheiko T.V.[3], Nikiforova A.B.[2], Kudriavtsev A.A.[2], Craigen W.J.[3], Kruglov A.G.[2]
[1]Voronezh State University, Department of Biochemistry, Voronezh, Russia
[2]Institute of Theoretical and Experimental Biophysics, Pushchino, Russia
[3]Baylor College of Medicine, Department of Molecular and Human Genetics, Baylor, USA

12.45 Yulia L. Baburina
2', 3'-CYCLIC NUCLEOTIDE 3'-PHOSPHODIESTERASE MIGHT BE POTENTIAL REGULATOR OF MITOCHONDRIAL MEMBRANE PERMEABILITY.
Baburina Y., Krestinina O., Odinokova I., Azarashvili T.
Institute of Theoretical and Experimental Biophysics RAS, Pushchino, Russia

13.00 Olga V. Krestinina
MELATONIN EFFECT IN MITOCHONDRIA MIGHT BE EXERTED VIA 2',3'-CYCLE NUCLEOTIDE-3'-PHOSPHODIASTARASE.
Krestinina O.V., Odinokova I.V., Baburina Yu.L., Azarashvili T.S.
Institute of Theoretical and Experimental Biophysics RAS, Pushchino, Russia

13.15 Mariya I. Shigaeva
ROLE OF CALRETICULIN IN THE FORMATION OF POTASSIUM-TRANSPORTING CHANNELS IN MITOCHONDRIA
Shigaeva M.I.[1], Talanov E.Y.[1], Murzaeva S.V.[1,2], Mironova G.D.[1,2]
[1]Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Pushchino, Russian Federation
[2]Pushchino State Institute of Natural Sciences, Pushchino, Russia

13.30 Natalia V. Belosludtseva
INVOLVEMENT OF PALMITATE/Ca^{2+}(Sr^{2+})-INDUCED PORE IN THE CYCLING OF IONS ACROSS THE MITOCHONDRIAL MEMBRANE
Belosludtseva N.V, Agafonov A.V, Belosludtsev K.N., Mironova G.D.
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Pushchino, Russia

13.45 Olga S. Gorbacheva
DISRUPTION OF POTASSIUM HOMEOSTASIS AND OXIDATIVE EXCHANGE OF RAT BRAIN AND LIVER MITOCHONDRIA IN EXPERIMENTAL EPILEPSY.

Gorbacheva O.S.[1,2], *Shigaeva M.I.*[1], *Kravchenko S.V.*[1], *Shchipakina T.G.*[1] , *Mironova G.D.*[1,2].
[1]Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Pushchino, Russia;
[2]Pushchino State Institute of Natural Sciences, Pushchino, Russia

14.00 Anna B. Nikiforova
CYTOCHROME B5 REDUCTASE 3 (CYB5R3) OR VDAC1 IS THE NADH-DEPENDENT REDUCTASE OF REDOX-CYCLING XENOBIOTICS IN THE EXTERNAL MITOCHONDRIAL COMPARTMENTS?
Nikiforova A. B., Kruglov A. G.
Institute of Theoretical and Experimental Biophysics (Russian Academy of Sciences) Pushchino, Russia

14.15 Nikolai I. Markevich
COMPUTATIONAL MODELING ANALYSIS OF MITOCHONDRIAL SUPEROXIDE PRODUCTION
Markevich M.N.[1], *Markevich N.I.*[2,3]
[1]Bauman State Technical University, Moscow, Russia
[2]Thomas Jefferson University, Philadelphia, USA
[3]Institute of Theoretical and Experimental Biophysics, Pushchino, Russia

14.30 Tim Valuev
STUDY OF THE EFFECT OF THE MOTOR PROTEIN VIMINTIN ON RAT LIVER MITOCHONDRIAL RESPIRATION
Valuev T.[1], *Gorbacheva O.S.*[2,3]
[1]Northeastern University, College of Science, Boston, MA, United States of America
[2]Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences; Pushchino, Russia
[3]Pushchino State Institute of Natural Sciences, Pushchino, Russia

14.45 Maria S. Frolova
FORMATION OF LIPOFUSCIN FROM MITOCHONDRIA DURING HEATING AND LIGHTING
Frolova M.S.[1], *Surin A.M.*[2], *Braslavski A.V.*[3], *Vekshin N.L.*[1]
[1]Institute of Cell Biophysics, Russian Academy of Sciences, Pushchino, Russia
[2]Institute of General Pathology and Pathophysiology, Russian Academy of Medical Sciences, Moscow, Russia
[3]BRL Laborotary 2F-1, 65, Hsin Yi Rd., Sec. 3, Taipei, 10651, Taiwan

15.00 – Coffee Break

Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences

Hall of Big Conference Room (Main building, 4th floor)

15.00 - 17.00 Poster session