**“Targeting the RNA World: The Future of Nucleic Acid Therapeutics” Russian-British Scientific Seminar**

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**January 20-24, 2015. Saint-Petersburg, RUSSIA**

The conference is organized by Institute of Chemical Biology and Fundamental Medicine Siberian Branch of Russian Academy of Sciences (ICBFM SB RAS), Lavrentieva ave. 8, Novosibirsk 630090, Russia

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**PROGRAM**

**“Targeting the RNA World: The Future of Nucleic Acid Therapeutics” Russian-British Scientific Seminar**

**Pulkovskaya ParkInn Hotel, Saint-Petersburg**

**January 20-24 2015, Saint-Petersburg, RUSSIA**

***Tuesday, January 20***

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| **18:30** | **Coffee Break** |
| **18:30 – 19:30** | Opening Ceremony  *‘Introduction to the Scientific Project.’* **Prof. Marina A. Zenkova** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia) and **Dr. Elena V. Bichenkova** (University of Manchester, UK). |
| **20:00** | ***Dinner*** |

***Wednesday, January 21***

***Session 1:*** *Exploring RNA World.*

***Chair: Dr. Elena V. Bichenkova. The University of Manchester, Manchester, UK***

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| **9:00 – 10:00** | **‘***Spontaneous recombination of RNA: the way to RNA diversity.’* **Prof. Marina A. Zenkova** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **10:00 – 10:30** | *‘Nonenzymatic recombination of RNA: detection of novel sequences by next-generation sequencing.’* **Yaroslav Staroseletz** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **10:30 – 11:00** | ***‘****Computational aspects of non-enzymatic recombination in viral RNAs.’* **Catherine Watson** (University of Manchester, UK). |
| **11:00 – 11:20** | **Coffee Break** |
| **11:20 – 12:20** | ***‘****Microorganisms in geologic history’* **Prof. Anatoly V. Brushkov** (Moscow State University). |
| **12:20 – 13:20** | *‘Phosphoryl guanidines: a new class of RNA-targeting oligonucleotide analogues.’* **Dr. Dmitry Stetsenko** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **13:20 – 14:10** | ***Lunch*** |
| **14:10 –15:10** | *‘The role of microenvironment in resistance to therapy of acute lymphoblastic leukaemia: importance for translational research.’* **Prof. Marija Kristic-Demonacos** (University of Salford, UK). |
| **15:10 – 15:30** | **Coffee Break** |
| **15:45** | ***Excursion to the Hermitage*** |
| **21:00** | ***Dinner*** |

***Thursday, January 22***

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| **9:00 – 13:00** | ***Excursion to Peter&Paul Fortress*** |
| **13:30 – 14:30** | ***Lunch*** |

***Session 2*** *Structural studies of nucleic acids: What can we gain by looking at the data?*

***Chair: Prof. Marina A. Zenkova*** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia).

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| **14:30 – 15:30** | ***’****Structural aspects of nucleic acid diagnostics and therapeutics: NMR spectroscopy and molecular modeling.’* **Dr. Elena V. Bichenkova** (University of Manchester, UK). |
| **15:30 – 16:10** | *‘Developing a new generation of peptidyl-oligonucleotide conjugates with desired biocatalytic properties against biologically relevant RNA.’* **Aled Williams** (University of Manchester, UK). |
| **16:10 – 16:30** | ***‘****In vitro selection of bacteria-internalizing 2’-modified RNA aptamers’* **Anna Davydova** (Organisation ??). |
| **16:30 – 17:00** | *‘Multi-functional aptamer nano-biosensors: self-assembling peptidyl-oligonucleotide hydrogels for potential application in diagnostics and biomedicine.’* **Dr Patrick King** (University of Manchester, UK). |
| **17:00 – 17:20** | **Coffee Break** |

***Session 3:*** *New and Emerging Chemistries: Does the Key Fit the Lock?*

***Chair: Dr. Dmitry V. Pyshniy*** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia).

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| **17:20 – 18:20** | *‘Therapeutic nucleic acids: current state of art’.* Closing remarks. **Prof.** **Valentin V. Vlassov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia) |
| **18:20 – 18:50** | *‘Efficient functionalisation of oligonucleotides by new non-nucleosidic monomers.’* **Maxim Kuprjushkin** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia) |
| **18:50 – 19:10** | *‘Cellular accumulation of modified oligonucleotide.’***Anton Filatov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **19:10 – 19:40** | *‘Design of antisense oligonucleotides for the directed RNase P-mediated cleavage of bacterial mRNA.’* **Mariya Vorob`eva** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **19:40 – 20:00** | *‘Spin-labeled oligonucleotides as tools for nanometer-scale distance measurements.’* **Georgiy Shevelev** ((Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **20:00 – 21:00** | ***Dinner*** |
| **21:00 – 22:00** | *‘Exploring biopolymer conformation using molecular simulation.’* **Dr. A. Richard Bryce** (University of Manchester, UK). |

***Friday, January 23***

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| **8:45 – 13:30** | ***Excursion “Three Cathedrals”*** |
| **13:30 – 14:30** | ***Lunch*** |

***Session 4:*** *Therapeutic nucleic acids - from lab bench to bed side.*

***Сhair: Dr. Richard A. Bryce (University of Manchester, UK).***

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| **14:30 – 15:30** | *‘Strategies in siRNA Design.’* **Dr. Elena Chernolovskaya** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **15:30 – 16:00** | *‘The interaction of lipophilic derivatives of siRNA with hematopoietic and tumor cells.’* **Ivan Chernikov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **16:00 – 16:30** | *‘Targeted delivery of nucleic acids into dendritic cells in vitro and in vivo by mannose-containing liposomes.’* **Oleg Markov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **16:30 – 17:00** | *‘Visualization of therapeutic nucleic acids biodistribution in mice.’* **Daniil Gladkih** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **17:00 – 17:30** | **Coffee Break** |
| **17:30 – 18:30** | *‘miRNAs in the interface of inflammation, endoplasmic reticulum stress and unfolded protein response.’* **Dr.****Constantinos Demonacos** (University of Manchester, UK). |
| **18:30 – 19:00** | *‘Inhibition of miRNAs by antisense oligodeoxyribonucleotides and their conjugates with catalytically active peptides containing arginine and leucine residues (miRNases).’* Dr. **Nadezhda Mironova** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **19:00 – 19:30** | ***‘****Search for oncogenic microRNAs-targets for antisense therapy.’* **Dr.** **Olga Patutina** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia). |
| **19:30 – 20:00** | ***‘****Rational design of oligonucleotide probes for molecular diagnostics.’* **Dr. Dmitry V. Pyshniy** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia).Closing remarks. |
| **20:00** | ***Conference Dinner*** |

***Saturday, January 24***

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| **9:00 – 15:00** | ***Special tour ”Pushkin-Tzarskoe Selo/Ekaterinensky Palace”*** |
| **20:00** | ***Dinner*** |

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