**«Targeting the RNA World:**

**Using Chemistry to Understand RNA Biology».**

## International Research Workshop

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***Nika Mansion House, Usnezya Village, Altai, 24th – 30th August 2015***

The international research workshop 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

The international research workshop is supported by Russian Scientific Found grant № 14-44-00068

**PROGRAMME**

International Research Workshop

**Targeting the RNA World: Using Chemistry to Understand RNA Biology**

*Nika Mansion House, Usnezya Village, Altai, 24th – 30th August 2015*

***Monday 24th August***

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

***Tuesday 25th August***

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| **9:00 – 13:00** | Excursion  |
| **13:00 – 14:00**  | Lunch |

***Session 1. Peptides and other molecules: oligonucleotide conjugates as tools for RNA research***

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

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| **14:00 – 15:00** | *New methods in peptide synthesis***Dr. Dmitry A. Stetsenko**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **15:00 – 16:00** | *siRNA – peptide conjugates***Prof. Masayuki Fujii**Department of Environmental and Biological Chemistry, Kinki University, Iizuka, Fukuoka, Japan |
| **16:00 – 16:30** | *Developing a New Generation of Peptidyl-Oligonucleotide Conjugates with Desirable Biocatalytic Properties***Aled Williams**, University of Manchester, UK |
| **16:30 – 17:00** | Coffee Break |
| **17:00 – 17:30** | *Different approach to design modified oligonucleotides***Maxim S. Kuprushkin**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **17:30 – 18:00** | *Novel Ribonuclease Mimetics: Investigation of 3D Structure and Dynamic Behavior by 2D NMR Spectroscopy***Linda Trivoluzzi**, University of Manchester, UK |
| **18:00 – 18:30** | *Spin-labeled oligonucleotides - useful tool for the structural investigations***Georgiy Shevelev**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **18:30 – 19:00** | *Notes on amphiphiles: peptides and more***Dr. Pasquale Palladino**, Dipartimento di Scienze Chimiche, Università degli Studi di Catania, Catania, Italia |
| **19:30 – 22:00** | Get-together party |

***Wednesday 26th August***

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| **9:00 – 13:00** | Excursion  |
| **13:00 – 14:00** | Lunch |

***Session 2. Structural insights into RNA functions***

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

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| **14:00 – 15:00** | *From basic science to medicine: use of NMR and X-ray in modern drug discovery* **Dr. Elena V. Bichenkova**, University of Manchester, UK |
| **15:00 – 16:00** | *Computer-aided molecular design***Dr. Richard A. Bryce**, University of Manchester, UK |
| **16:00 – 16:30** | *Physicochemical properties of the nucleic acid derivatives: experiment vs molecular dynamics simulations***Dr. Alexander A. Lomzov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **16:30 – 17:00** | Coffee Break |

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| **17:00 – 18:00** | *Applications of p53 interactome analysis to personalised cancer therapy***Prof. Marija Kristic-Demonacos**, University of Salford, UK |
| **18:00 – 18:30** | *The impact of chemical modifications on the carrier-free uptake and silencing activity of siRNA in hematopoietic and cancer cells***Ivan Chernikov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **18:30 – 19:00** | *Visualization of different conjugates and complexes of therapeutic siRNA in mice***Daniil Gladkih**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **19:00 – 19:20** | *Search for correlation between concentration of extracellular DNA and deoxyribonuclease activity of blood plasma of patients with different tumors under the treatment with DNase I in oral form (O’Shadi D)***Ludmila Alekseeva**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **19:20 – 19:50** | *Immunotherapy of hepatocellular carcinoma and melanoma with 22-nt double-stranded RNA***Dr. Tatyana Kabilova**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **20:00 – 21:00** | Dinner |

***Thursday 27th August***

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| **9:00 – 13:00** | Excursion  |
| **13:00 – 14:00**  | Lunch |

***Session 3. RNA-targeting agents as prospective antiviral or anticancer drugs***

***Сhair: Prof. David J. Clarke, University of Manchester, UK***

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| **14:00 – 15:00** | *Infections transmitted by ticks***Prof. Valentin V. Vlassov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **15:00 – 15:45** | *Anti-influenza and anti-inflammatory activity of new glycyrrhetinic acid derivative Soloxolone methyl***Dr. Eugenia Logashenko**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **15:45 – 16:30** | *Artificial ribonucleases as a new class of antiviral agents***Dr. Elena Goncharova**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **16:30 – 17:00** | Coffee Break |
| **17:00 – 17:30** | *Effect of Soloxolon Methyl on gene expression profiles in epidermoid carcinoma cells: a DNA microarray analysis***Andrej V. Markov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **17:30 – 18:30** | *Cytochrome P450 profiling as a tool to plan anticancer therapy and predict drug resistance in breast cancer***Dr. Konstantinos Demonakos**, University of Manchester, UK |
| **18:30 – 19:30** | *RNase A caused rearrangement of intracellular pathways in tumor cells providing restoration of normal cell proliferation and differentiation***Dr. Nadezhda L. Mironova**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **19:30 – 20:00** | *Site-specific cleavage of microRNA by oligonucleotide-peptide conjugates***Dr. Olga Patutina**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **20:00** | Dinner |

***Friday 28th August***

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| **9:00 – 13:00** | Excursion  |
| **13:00 – 14:00**  | Lunch |

***Session 4. Diversity in the world of nucleic acids***

***Сhair: Dr. Elena L. Chernolovskaya, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia***

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| **14:00 – 15:00** | *Small regulatory RNAs in bacterial metabolism***Dr. Tatiana L. Azhikina**, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia |
| **15:00 – 15:30** | *Deoxyribozyme therapeutics: from in vivo experiments into clinical trials***Dr. Alesya A. Fokina**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **15:30 – 16:00** | *Study of modified oligonucleotide uptake into mammalian cells by laser fluorescent confocal microscopy***Dr. Boris P. Chelobanov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **16:00 – 16:30** | Coffee Break |
| **16:30 – 17:30** | *Graphene: Potential Applications in Biomedicine and Life Sciences***Prof. David Clark**, University of Manchester, UK |
| **17:30 – 18:30** | *Analyzing of a random set of RNA species with NGS***Yaroslav Staroseletz**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **18:30 – 19:00** | *Prophylactic dendritic cell-based anti-tumor vaccines is highly potential to treat murine metastatic tumors***Oleg V. Markov**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **19:00 – 19:30** | *The toxic effect of tumor with multi-drug resistance phenotype on the liver: experimental study***Dr. Alexandra V. Sen`kova**, Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia |
| **19:30 – 19:40** | Closing of the workshop |
| **20:00** | Conference Dinner |

***Saturday 29th August***

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| **9:00 – 19:00** | Excursion |
| **20:00** | Dinner |

***Sunday 30th August***

**10:00 Departure to Novosibirsk**

# LIST OF PARTICIPANTS

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

marzen@niboch.nsc.ru

**Dr. Elena V. Bichenkova** (University of Manchester, UK)

Elena.V.Bichenkova@manchester.ac.uk

**Yaroslav Staroseletz** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

staroselec@niboch.nsc.ru

**Dr. Dmitry Stetsenko** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

dmitry.stetsenko@ntlworld.com

**Prof. Marija Kristic-Demonacos** (University of Salford, UK)

**Aled Williams** (University of Manchester, UK)

aled.williams@manchester.ac.uk

**Prof.** **Valentin V. Vlassov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

vvv@niboch.nsc.ru

**Maxim Kuprjushkin** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

kuprummax@gmail.ru

**Anton Filatov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

01111000@mail.ru

**Georgiy Shevelev** ((Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

shevelev@niboch.nsc.ru

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

Richard.Bryce@manchester.ac.uk

**Dr. Elena Chernolovskaya** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

elena\_ch@niboch.nsc.ru

**Ivan Chernikov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

chernikovivanv@gmail.ru

**Oleg Markov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

markov\_ov@niboch.nsc.ru

**Andrej Markov** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

markov\_av@niboch.nsc.ru

**Daniil Gladkih** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

medulla@gmail.com

**Dr.****Constantinos Demonacos** (University of Manchester, UK)

cdemonacos@manchester.ac.uk

Dr. **Nadezhda Mironova** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

mironova@niboch.nsc.ru

**Dr.** **Olga Patutina** (Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

patutina@niboch.nsc.ru

**Dr. Linda T. Trivoluzzi** (University of Manchester, UK)

Linda.trivoluzzi@gmail.com

**Dr. Palladino Pasquale** (Università degli Studi di Catania)

**Dr. Masayuki Fujii** (Kinki University, Japan)

**Dr. Tatiana L. Azhikina (**Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia)

**Dr. Alesya A. Fokina (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

alesya\_fokina@mail.ru

**Dr. Boris P. Chelobanov (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

**Ludmila Alekseeva (** Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

mila\_alex@ngs.ru

**Dr. Eugenia Logashenko (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

evg\_log@niboch.nsc.ru

**Dr. Alexander A. Lomzov (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

lomzov@niboch.nsc.ru

**Dr. Tatyana Kabilova (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

kabilova@niboch.nsc.ru

**Dr. Elena Goncharova (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

egn@niboch.nsc.ru

**Dr. Alexandra V. Sen`kova (**Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia)

alsenko@mail.ru