



Russian Academy of Sciences (RAS)
Institute of Chemical Biology and Fundamental Medicine,
Siberian Branch of the RAS
Centre National de la Recherche Scientifique
International Research Network "SupraChem"
ARCUS Alsace-Russia/Ukraine

First Symposium
Supramolecular Chemistry for
Materials and Life Sciences

**June 29 – July 3, 2010 Akademgorodok (Novosibirsk),
Russia**

Exhibition Center of the Siberian Branch of the RAS

PROGRAM



International Organizing Committee

Valentin Vlassov (Russia) – *Chairman*

Galina Karpova (Russia) – *Vice-chairwoman*

Alain Krol (France) – *Vice-chairman*

Vladimir Fedin (Russia)

Richard Giegé (France)

Wais Hosseini (France)

Ivan Huc (France)

Vitaly Kalchenko (Ukraine)

Olga Lavrik (Russia)

Alexandre Varnek (France)

Marina Zenkova (Russia)

Local organizing committee

Galina Karpova - *Chairwoman*

Dmitri Graifer – *Scientific Secretary*

Anton Ivanov

Olga Klimchuk

Ekaterina Kovalenko

Elena Kuligina

Alexey Malygin

Svetlana Mysina

Ekaterina Pinaeva

Vladimir Richter

All scientific events of the Conference will take place at the Exhibition Center of the Siberian Branch of the Russian Academy of Sciences located in the central part of Akademgorodok (Novosibirsk Scientific Center) behind the House of Scientists.

June 29

15h00-17h00 **Registration** (at the *Exhibition Center*)

17h00 – **Opening ceremony**

Opening lectures

Chair: Valentin Vlassov, Alexandre Varnek

17h15- 17h55 Wais Hosseini (Strasbourg)

Controlling molecular movements: molecular gates and turnstiles

17h55- 18h35 Valentin Vlassov (Novosibirsk)

Supramolecular complexes of nucleic acids: new materials, devices and biotherapeutics

19h30 *Welcome party* (in the House of Scientists SB RAS)

June 30

Morning session

Chair: Galina Karpova, Vladimir Fedin

Plenary lectures

9h00 – 9h40 Olga Dontsova (Moscow)

Telomerase activity regulation

9h40 – 10h20 Vladimir Fedin (Novosibirsk)

Homochiral metal-organic coordination polymers and related studies

Chemistry session

10h20 - 10h45 Emmanuel Cadot (Versailles)

From the first structural link between Nanosized molybdenum oxide-based ions and derived Keggin structure to the Giant Sulfurated-Keplerate Anion

10h45 - 11h00 Vladimir Korenev (Versailles)

Oxothiomolybdenum derivative of the crown heteropolyanion $\{P_8W_{48}\}$: Structures, studies in solution and electrochemical properties

Coffee break 11h00 – 11h20

Biology session

11h20 - 11h45 Marina Zenkova (Novosibirsk)

Non-enzymatic Recombination of RNA

11h45 - 12h10 Grigory Dianov (Oxford)

Mechanisms involved in formation and stability of DNA repair complexes

12h10 - 12h35 Olga Fedorova (Novosibirsk)

Coordinated conformational changes of enzymes and DNA accompany lesion recognition and catalysis in base excision repair pathway

12h35 – 12h55 I.A. Popkov (RUSCHEMBIO)

Increase of effectiveness of fundamental research and innovations in high technology segment

Lunch 13h00 – 15h00

Afternoon session

Chair: Vitaly Kalchenko

Chemistry session

15h00 – 15h25 Sergey Gromov (Moscow)

Molecular Design of Light-Sensitive Supramolecular Systems Based on Unsaturated and Macrocyclic Compounds

15h25 – 15h50 Gediminas Jonusauskas (Bordeaux)

Photoinduced processes in fluorescent Ca²⁺ receptors

15h50 - 16h15 Gennadyi Kostin (Novosibirsk)

Complexation and extraction of non-ferrous metals by calixarenes, upper and lower rim functionalized with PO-groups

Coffee break 16h15 – 16h45

Poster session

17h00 – 19h00

July 1

Morning session

Chair: Mir Wais Hosseini, Ivan Huc

Plenary lectures

9h00 – 9h40 Vitaly Kalchenko (Kyiv)

Calixarene receptors for molecules and ions

9h40 – 10h20 Richard Giegé (Strasbourg)

Supramolecular chemistry and biology of tRNA and aminoacyl-tRNA synthetases

Mixed session

10h20 – 10h45 Alexandre Varnek (Strasbourg)

ISIDA approaches to virtual screening based on fragment and pharmacophoric descriptors

10h45 – 11h10 Alain Krol (Strasbourg)

Dramatic conformation differences in a brain-specific RNA between chimpanzee and humans. A link to human brain evolution?

11h10 - 11h35 Galina Karpova (Novosibirsk)

RNAs carrying cross-linkers at specific locations as tools for studying cellular protein synthesizing bionanomachinery

Coffee break 11h35 – 11h55

Chemistry session

11h55 - 12h20 Isabelle Billard (Strasbourg)

New calixarenes based on IL platform

12h20 - 12h45 Elena Bagryanskaya (Novosibirsk)

EPR study of supramolecular complexes of functional nitroxides and nanocapsules

12h45 - 13h00 Ekaterina Kovalenko (Novosibirsk)

New inclusion compounds of molecular container cucurbit[8]uril

Lunch 13h00 – 15h00

Afternoon

15h15-16h00 *Excursion to the Geology Museum of the Academy of Sciences (SB RAS)*

Visit of the Institute of Inorganic Chemistry

July 2

Morning session

Chair: Richard Giegé, Olga Lavrik

Plenary lecture

9h00 – 9h40 Ivan Huc (Bordeaux)

Foldamers: expanding the chemical space

Chemistry session

9h40 - 10h05 Nikolai Petrov (Moscow)

Effect of Cucurbit[7]uril on the Primary Photoprocesses of Thiocarbocyanine Dye

10h05 - 10h30 Kira Vostrikova (Novosibirsk)

Supramolecular chemistry of nitronyl and imino nitroxyl radicals and cucurbit[*n*]urils

10h30 - 10h55 Valery Gorbachuk (Kazan)

Biomimetic Molecular Recognition with Cross-Linked Hydrophilic Polymer and Macrocyclic Receptors

Coffee break 10h55 – 11h15

Biology session

11h15 - 11h40 Svetlana Khodyreva (Novosibirsk)

Poly(ADP-ribose) polymerase 1 is a key regulator of damage processing in base excision repair

11h40 - 12h05 Alexandre Butorine (Paris)

Sequence-specific recognition of double-stranded DNA and optimization of the twisted intercalating nucleic acids (TINA) forming triple helix with the polypurine tract of the proviral HIV DNA

12h05 - 12h30 Benoît Masquida (Strasbourg)

Control of ribozyme folding avoids cell death

12h30 - 12h45 Ekaterina Ilina (Novosibirsk)

Interaction of Ku antigen with abasic sites

12h45 – 13h05 Elena Morozova (Carl Zeiss, Novosibirsk)

New technologies of Carl Zeiss for cell imaging

Lunch 13h05 – 15h00

Afternoon

15h00-17h00 Excursion to the Botanic Garden of the Academy of Sciences (SB RAS)

Visit of the Institute for Chemical Biology and Fundamental Medicine

Conference dinner 19h30

July 3

Morning session

Chair: Alain Krol, Olga Dontsova

Plenary lecture

9h00 – 9h40 Olga Lavrik (Novosibirsk)

Study of supramolecular machines of nucleotide excision repair by using chemical approaches

Biology session

9h40 – 10h05 Alexey Malygin (Novosibirsk)

Key role of human ribosomal protein p40 in the recognition of the hepatitis C virus Internal Ribosome Entry Site

10h05 – 10h30 Elena Chernolovskaya (Novosibirsk)

Design and properties of shRNA expressing cassettes

10h30 – 10h45 Olga Kossinova (Novosibirsk)

The structure of the SBP2 binding site on the large subunit of the human ribosome

Coffee break 10h45 – 11h05

11h05 – 11h30 Nina Entelis (Strasbourg)

Mitochondrial diseases: modeling anti-genomic therapy by imported oligonucleotides

11h30 – 11h55 Dmitri Graifer (Novosibirsk)

Eukaryote-specific feature of the ribosome site where mRNA codon is decoded

11h55 – 12h10 Yulia Khairulina (Novosibirsk)

Conserved motif GTx in positions 31-33 of translation termination factor eRF1 neighbors stop codon of mRNA in the human ribosome

12h10 – 12h25 Lyubov Kanazhevskaya (Novosibirsk)

Stopped-flow conformational study of abasic site repair by specific AP endonucleases from human and yeast *S. cerevisiae*

12h25 – 12h40 Natalia Kruglova (Novosibirsk)

Lipophilic siRNA conjugates: cellular uptake and anti-MDR activity

Lunch 13h00 - 15h00

Afternoon session

Chair: Isabelle Billard, Gennadyi Kostin

Chemistry session

15h00 - 15h25 Andrej Manakov (Novosibirsk)

Gas hydrates and ionic clathrate hydrates: recent results

15h25 - 15h50 Sylvie Ferlay (Strasbourg)

Coordination and Networks based on ThiaCALix[4]arene

15h50 – 16h15 Chantal Daniel (Strasbourg)

Spectroscopy and Photophysics of ruthenium (II) polypyridyl complexes used as DNA intercalators: a theoretical study

16h15 **Closing ceremony**