

Letter from the Editors

This new issue of the journal begins, as is the tradition, with reviews. The first paper comes from a famous Novosibirsk school of bioorganic chemists (the Institute of Chemical Biology and Fundamental Medicine, Siberian Branch, Russian Academy of Sciences) and is devoted to escort aptamers. The review lays emphasis on innovative methods for the target delivery of drugs using oligoribonucleotides and deoxyribonucleotides that can recognize a variety of target cells. The next comprehensive review also pertains to modern “hotbeds of growth” (mesenchymal stem cells). It is by a world-renowned team working at the Department of Fundamental Medicine, Lomonosov Moscow State University. The work delves into both the fundamental aspects of the problem and the potential of stem cells in the repair and regeneration of tissues. Finally, a team from Lomonosov MSU and the Bach Institute of Biochemistry, Russian Academy of Sciences presents a classical review in the field of biotechnology and bioengineering.

The series of experimental papers opens with a presentation by a team from MSU, RAS Engelhardt Institute of Molecular Biology, and University Medical Center Hamburg-Eppendorf. The work centers on the development of prospective cell models intended for the screening of anti-HIV drugs. Scientists from the Institute for General Pathology and Pathophysiology, Russian Academy of Medical Sciences, and MSU report on the problems associated with the use of stem cells in regenerating the retina. The problem of protein expression in plants, which is topical today, is examined in a paper by researchers from the Belozersky Institute of Physico-Chemical Biology and

the Biological Department of MSU. In the paper, practical aspects of the expression of the epitopes of vaccine proteins are clearly laid out. Very topical studies in the field of innate immunity are presented by researchers from the Gamaleya Research Institute of Epidemiology and Microbiology. It should be stressed that the Nobel Prize in physiology and medicine was awarded in 2011 for the development of the concept of innate immunity. A practical paper dealing with the development of inhibitors-antibiotics targeted at the suppression of the activity of DNA-gyrases is by RAS institutes: the Engelhardt Institute of Molecular Biology and the Postovsky Institute of Organic Synthesis. A cell biology study on the change of the nucleolus during mitosis was penned by researchers at the Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, RAS. The anti-bacterial activity of photosensibilizing agents is the subject matter generalized in the paper by scientists of the Pirogov Russian National Research Medical University and Gamaleya Research Institute of Epidemiology and Microbiology. The series of experimental papers closes with a topical publication by researchers of the Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, who have discovered a new pathway of acid-base balance regulation in animals.

As usual, we at the journal could not abstain from vital issues of development related to Russian science. In the Forum section, we present an analytical review of the progress achieved in the “Life Sciences” program initiated by the Ministry of Education and Science.

The editorial board and the editorial council of *Acta Naturae* wish their readers success in research and invite them to cooperate. ●